

**NEW MARKETING OPPORTUNITIES FOR FIXED LINE
TELECOMMUNICATION OPERATORS IN SOUTH AFRICA: A
STRATEGIC EVALUATION**

By

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DEDICATION

Dedicated to my parents Suleiman Essop and Khatija Ali

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TABLE OF CONTENTS

	Page
CHAPTER 1: BACKGROUND TO THE STUDY	1
1.1 INTRODUCTION	1
1.2 A BRIEF OVERVIEW OF THE TELECOMMUNICATIONS INDUSTRY	2
1.3 HOW ICT IS TRANSFORMING THE BUSINESS SECTOR IN SOUTH AFRICA	6
1.3.1 Information Free flow	7
1.3.2 New economy strategic marketing options	8
1.3.3 Customer Needs	9
1.3.4 E-commerce relationship marketing	10
1.3.5 Business-to-Business e-commerce	11
1.4 CHANGES TRANSFORMING THE TELECOMMUNICATIONS SECTOR	12
1.4.1 Convergence of Voice, data and image	13
1.4.2 Future composition of network traffic	14
1.4.3 Mobile telephony	16
1.4.4 Internet	20
1.5 BRIEF OVERVIEW OF THE TELECOMMUNICATIONS MARKET FORCES IN SOUTH AFRICA	23
1.6 THE STATEMENT OF THE PROBLEM	25
1.7 OBJECTIVES OF THE STUDY	26
1.8 LIMITS OF THE STUDY	26
1.9 DEFINITION OF TERMS	27
1.10 RESEARCH METHODOLOGY	29
1.11 CHAPTER OUTLINE	30
CHAPTER 2: THE SOUTH AFRICAN TELECOMMUNICATIONS MACRO AND GLOBAL ENVIRONMENT	31
2.1 INTRODUCTION	31
2.2 THE BUSINESS ENVIRONMENT	31

2.2.1	The Micro environment	32
2.2.2	Market environment	33
2.2.3	The Macro environment	33
2.3	THE TELECOMMUNICATION BUSINESS ENVIRONMENT	34
2.4	THE SOUTH AFRICAN TELECOMMUNICATION GLOBAL ENVIRONMENT	36
2.4.1	Technology	36
2.4.2	Global telecommunication equipment suppliers	37
2.4.3	Global regulatory bodies	38
2.4.3.1	International Telecommunications Union (ITU)	39
2.4.3.2	Intelsat	40
2.4.3.3	Inmarsat	41
2.4.3.4	The American National Standards Institute (ANSI)	42
2.4.3.5	The European Telecommunications Standards Institute (ETSI)	42
2.4.4	Regional telecommunications organisations	43
2.4.4.1	Africa	43
2.4.4.2	North America	44
2.4.4.3	Europe	44
2.4.4.4	Asia	44
2.4.4.5	Middle East	45
2.5	GLOBAL ECONOMY	45
2.5.1	The health of the global economy	46
2.5.2	Future prospects for the global economy	48
2.6	THE SOUTH AFRICAN TELECOMMUNICATIONS MACRO ENVIRONMENT	50
2.6.1	Telecommunications political and regulatory sub environments	52
2.6.1.1	An overview of the South African political environment	53
2.6.1.2	The role of the South African Government in telecommunications	54
2.6.1.3	The Department of Communications	55
2.6.1.4	South African telecommunications policy evolution	57
2.6.1.5	Implications of telecommunications regulation on the telecommunications sector	65
2.6.2	South African telecommunications economic environment	67
2.6.2.1	Future outlook for the South African economy	70
2.6.3	South African telecommunications sociological environment	71
2.6.4	South African telecommunications technological environment	74
2.7	DEDUCTIONS FROM THE GLOBAL MACRO ENVIRONMENT	75

2.8 CONCLUSION	76
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CHAPTER 3: THE SOUTH AFRICAN TELECOMMUNICATIONS MARKET ENVIRONMENT.....77

3.1 INTRODUCTION	77
3.2 SOUTH AFRICAN TELECOMMUNICATION MARKET ENVIRONMENT ANALYTIC MODEL	77
3.2.1 Infrastructure	78
3.2.2 Network services	80
3.2.3 Value added products and services	80
3.2.4 Support services	81
3.2.5 Buyers (consumers of ICT products and services)	82
3.2.5.1 Retailers	83
3.2.5.2 Wholesalers	89
3.2.6 Suppliers	91
3.2.7 Substitute products	97
3.2.8 New market entrants	99
3.2.9 Market rivalry (competition)	100
3.3 SOUTH AFRICAN FIXED LINE SERVICE PROVIDERS	106
3.3.1 Telkom SA	106
3.3.1.1 Products and services	107
3.3.1.2 Ownership structure	108
3.3.1.3 Turnover	109
3.3.1.4 Competitive positioning	109
3.3.1.5 Markets served	110
3.3.1.6 Number of employees	110
3.3.1.7 Market strategy	111
3.3.2 Transnet – Transtel	113
3.3.2.1 Network	114
3.3.2.2 Products and services	116
3.3.2.3 Company structure and ownership	118
3.3.2.4 Competitive positioning	119
3.3.2.5 Markets served	120

3.3.2.6 Turnover	122
3.3.2.7 Number of Employees	122
3.3.2.8 Market Strategy	122
3.3.3 ESKOM ENTERPRISES - Esi~Tel	124
3.3.3.1 Network and technology	125
3.3.3.2 Products and services	125
3.3.3.3 Ownership structure	126
3.3.3.4 Markets served	126
3.3.3.5 Market strategy	126
3.4 SOUTH AFRICAN WIRELESS SERVICE PROVIDERS	128
3.4.1 Sentech	128
3.4.1.1 Customer profile	129
3.4.1.2 Network	129
3.4.1.3 Products and services	130
3.4.1.4 Employees	132
3.4.1.5 Turnover	132
3.4.1.6 Market Strategy	133
3.4.2 MOBILE TELECOMMUNICATION NETWORKS (MTN)	134
3.4.2.1 Products and services	135
3.4.2.2 Network	135
3.4.2.3 Social investment	136
3.4.2.4 MTN Shareholding	136
3.4.2.5 Number of employees	137
3.4.2.6 Turnover	137
3.4.2.7 Market Strategy	137
3.4.3 Vodacom	141
3.4.3.1 Ownership structure	142
3.4.3.2 Products and services	142
3.4.3.3 Network	144
3.4.3.4 Turnover	145
3.3.3.5 Employees	145
3.4.3.6 Market Strategy	146
3.4.4 CELL-C	148
3.4.4.1 Network	148

3.4.4.2 Products and services	149
3.4.4.3 Ownership structure	150
3.4.4.4 Number of employees	151
3.4.4.5 Turnover	151
3.4.4.6 Market strategy	151
3.5 VALUE ADDED NETWORK SERVICE PROVIDERS	152
3.5.1 UUNET SA	156
3.5.1.1 Network	156
3.5.1.2 Products and services	158
3.5.1.3 Turnover	158
3.5.1.4 Employees	158
3.5.1.5 Market strategy	158
3.5.2 ARIVIA.KOM	160
3.5.2.1 Products and Services	161
3.5.2.2 Employees	163
3.5.2.3 Market Strategy	163
3.5.3 AST	165
3.5.3.1 Network	166
3.5.3.2 Products and Services	166
3.5.3.3 Employees	168
3.5.3.4 Turnover	168
3.5.3.5 Market Strategy	168
3.5.4 Dimension data (DiData)	171
3.6.4.1 Products and services	171
3.5.4.2 Network	173
3.5.4.3 Employees	173
3.5.4.4 Turnover	173
3.5.4.5 Market Strategy	173
3.6 A SUMMARY OF THE SOUTH AFRICAN TELECOMMUNICATIONS BUSINESS ENVIRONMENT	175
3.6.1 South African telecommunications market trends	176
3.7 SWOT (STRENGTHS, WEAKNESSES, OPPORTUNITIES AND THREATS) ANALYSIS	178
3.7.1 Strengths	179

3.7.1.1 Infrastructure owner	180
3.7.1.2 Current customer base	181
3.7.1.3 Established reputation	181
3.7.1.4 Market leadership	181
3.7.1.5 Quality of service	182
3.7.1.6 Human and financial resources	182
3.7.1.7 Dominant positioning in SA market	183
3.7.1.8 Ownership of Vodacom	183
3.7.2 Weaknesses	184
3.7.2.1 Fixed line limitations	184
3.7.2.2 Reactive to market changes	185
3.7.2.3 Network development cost	185
3.7.2.4 Lack of innovation	186
3.7.2.5 Low employee morale	186
3.7.2.6 Organisational culture	187
3.7.2.7 Reputation for poor service	188
3.7.2.8 Capital investment decision-making	188
3.7.3 Opportunities	189
3.7.3.1 Convergence (new ICT products and services)	189
3.7.3.2 Fixed/mobile	189
3.7.3.3 New markets in Africa	190
3.7.4 Threats	190
3.7.4.1 Competitors (SNO, Sentech, Wireless operators, VAN's)	190
3.7.4.2 Telecommunication regulations	191
3.7.4.3 Global economic conditions	191
3.8 ISSUES TO BE SURVEYED	192
3.8 CONCLUSION	194
CHAPTER 4: STRATEGIC MARKETING.....	195
4.1 INTRODUCTION	195
4.2 STRATEGIC MANAGEMENT	196
4.3 STRATEGY	199

4.3.1 Defining Strategy	199
4.3.2 Strategy as being different	200
4.4 LEVELS OF STRATEGY	203
4.4.1 Corporate strategy	204
4.4.2 Business strategy	205
4.4.3 Market strategy	205
4.4.4 Functional strategy	206
4.5 GENERIC STRATEGIC MANAGEMENT MODEL	206
4.5.1 Components of the generic strategic management model	208
4.5.2 Company mission	208
4.5.3 Internal analysis	208
4.5.4 External Environment	208
4.5.5 Strategic analysis and choice	208
4.5.6 Long-Term Objectives	209
4.5.7 Generic and Grand strategies	209
4.5.8 Action plans and short-term objectives	210
4.5.9 Functional tactics	210
4.5.10 Policies that empower Action	210
4.5.11 Restructuring, reengineering and refocusing the organisation	211
4.5.12 Strategic control and continuous improvement	211
4.6 STRATEGIC MARKETING	212
4.6.1 MARKETING'S STRATEGIC ROLE	212
4.6.2 Strategic marketing model	213
4.6.3 Strategic marketing components	215
4.6.3.1 Component 1: strategic Thinking and Environmental scanning and Analysis	216
4.6.3.2 Component 2: Sustainable Competitive Advantages (SCA's)	219
4.6.3.3 Component 3A: Competitive Intelligence	220
4.6.3.4 Component 3B: Market intelligence	221
4.6.3.5 Component 4: Strategic options	221
4.7 COMPETITIVE STRATEGY	222
4.7.1 Cost leadership strategy	223
4.7.2 Differentiation strategy	226
4.7.3 Focus strategy	228
4.7.4 Pre-emptive move strategy	228

4.7.5 Revolutionary strategy	230
4.7.6 Synergy strategy	231
4.8 MARKET POSITIONING STRATEGIES	233
4.8.1 Market leader	233
4.8.2 Market Challenger and follower	233
4.8.3 Market nicher	234
4.9 STRATEGIES FOR MARKET LEADERS, MARKET FOLLOWERS AND MARKET NICHERS	234
4.9.1 Strategies for market leaders	235
4.9.2 Strategies for market challengers	238
4.9.3 Strategies for market followers	240
4.9.4 Strategies for market nichers	242
4.10 ORGANISATIONAL PRODUCT-MARKET LIFE CYCLE STRATEGIES	244
4.10.1 STRATEGIES IN THE PRODUCT-MARKET CONCEPTUAL AND INTRODUCTION PHASE	247
4.10.2 GROWTH STAGE STRATEGIES	246
4.10.2.1 Growth in existing product markets	248
4.10.2.2 Growth through product development	250
4.10.2.3 Market development	251
4.10.2.4 Diversification	252
4.10.2.5 Integration as a growth strategy	253
4.10.3 STRATEGIES IN MATURE STAGE	254
4.10.4 STRATEGIES IN PRODUCT-MARKET DECLINE STAGE	255
4.10.4.1 Attractiveness of declining markets	255
4.10.4.2 Product-Market Decline stage strategies	256
4.11 KEY STAKEHOLDER RELATIONSHIP BUILDING STRATEGIES	257
4.11.1 Employees	258
4.11.1.1 Employee relationship building strategies	258
4.11.2 Customers	259
4.11.2.1 Link between profitability and customer loyalty	259
4.11.2.2 Strategies for building customer relationships	260
4.11.3 Channels	261
4.11.3.1 Strategies to build relationships with channel intermediaries	262
4.11.4 Suppliers	263

4.11.4.1 Strategies to build relationships with suppliers	264
4.11.5 Shareholders and investors	264
4.11.6 Communities	265
4.12 STRATEGIC MARKETING FOR FIXED LINE TELECOMMUNICATION OPERATORS IN SOUTH AFRICA	265
4.13 ENVIRONMENTAL SCANNING AND ANALYSIS	269
4.13.1 Major challenges for Telkom	269
4.13.1.1 Changing needs of customers	269
4.13.1.2 Competition	269
4.13.1.3 Regulatory changes	270
4.13.1.4 Reduction in voice revenues and increase in data revenues	271
4.13.1.5 Increasing bandwidth supply resulting in aggressive competition	271
4.13.1.6 Technology	271
4.13.1.7 Globalisation	272
4.14 MARKET/COMPETITIVE INTELLIGENCE	272
4.14.1 Wholesale markets	272
4.14.2 Retail markets	277
4.14.2.1 Residential customers	277
4.14.2.2 Business and corporate customers	277
4.14.2.3 Government	278
4.14.3 Competitive intelligence	279
4.15 STRATEGIC THINKING	279
4.15.1 Telkom ten years hence	279
4.15.2 New customer functionalities	280
4.15.3 New products and services	281
4.15.4 Markets for competing	283
4.16 TELKOM SA VISION	283
4.17 TELKOM SUSTAINABLE COMPETITIVE ADVANTAGES	285
4.18 TELKOM STRATEGIC OPTIONS	285
4.18.1 Competitive strategy	285
4.18.2 Market positioning strategy	286
4.18.3 Organisational product market life cycle strategy	287
4.18.4 Relationship building strategy	288
4.18.4.1 Telkom customer relationship	288

4.18.4.2 Telkom Employee Relationship	289
4.18.4.2 Telkom Shareholder Relationship	289
4.18.4.4 Telkom Supplier Relationships	290
4.19 CONCLUSION	290

CHAPTER FIVE: RESEARCH METHODOLOGY.....291

5.1. INTRODUCTION	291
5.2 STEPS IN THE MARKETING RESEARCH PROCESS	291
5.2.1 Step 1: Identify and formulate the problem/objectives	292
5.2.2 Step 2: Preliminary decision on kind of data is required	294
5.2.3 Step 3: Exploring secondary data sources	294
5.2.4 Step 4: Revising and fine-tuning the research question	295
5.2.5 Step 5: Design the research study and determine the sample	295
5.2.6 Step 6: Conduct pilot test	296
5.2.7 Step 7: Collect primary data	296
5.2.8 Step 8: Analyse/interpret data, report results and provide strategic recommendations	296
5.3 IDENTIFYING AND FORMULATING THE RESEARCH OBJECTIVES OF THE STUDY	297
5.4 PRELIMINARY DECISION ON KIND OF DATA REQUIRED	297
5.4.1 Primary data	297
5.4.2 Secondary data	298
5.5 EXPLORING SECONDARY DATA SOURCES	298
5.6 REVISING AND FINE-TUNING THE RESEARCH QUESTION	298
5.7 DESIGNING THE RESEARCH STUDY AND DETERMINING THE SAMPLE	299
5.7.1 Secondary data	300
5.7.2 Case Study	300
5.7.3 Defining the universe	301
5.7.4 Selection and description of study participants	301
5.7.5 Telkom sample	303
5.7.6 Data-collection method	304
5.7.7 Questionnaire	305
5.7.7.1 Questionnaire layout	305
5.7.7.2 Wording, consistency and appropriate type of questions	306
5.7.7.3 Response category format	306

5.8 PILOT TESTING OF QUESTIONNAIRE	306
5.9 DATA COLLECTION	307
5.10 DATA ANALYSIS, INTERPRETATION AND REPORTING OF RESULTS	308
5.10.1 Data and method of data entry	308
5.10.2 Data comparison	309
5.10.3 Significance testing	310
5.10.4 Selecting the appropriate statistical test	311
5.10.5 Results and strategic recommendations	314
5.11 METHODS OF ACHIEVING TRUSTWORTHINESS	314
5.12 CONCLUSION	320

CHAPTER 6: PRESENTATION AND ANALYSIS OF RESEARCH RESULTS.... 321

6.1 INTRODUCTION	321
6.2 ANALYSIS OF THE TELKOM SA RESPONDENT PROFILES	322
6.2.1 Respondents biographical data	323
6.2.1.1 Job levels	325
6.2.1.2 Number of respondents per service organisation	325
6.2.1.3 Respondents' years of service	325
6.2.1.4 Respondents' qualifications	326
6.2.1.5 Respondents' age	326
6.2.1.6 Respondents' gender profile	327
6.2.1.7 Main study fields	327
6.2.1.8 Main job functions	327
6.3 IDENTIFYING THE CHANGES TAKING PLACE IN THE SOUTH AFRICAN TELECOMMUNICATION BUSINESS ENVIRONMENT	328
6.3.1 Respondents' perceptions to assess economic factors in the SA telecommunications business environment	329
6.3.2 Respondents' perceptions to assess regulatory factors in the SA telecommunications business environment	337
6.3.3 Respondents' perceptions to assess technological factors in the SA telecommunications business environment	340
6.3.3.1 Mobile voice telecommunications	340
6.3.3.2 Respondents' perceptions to assess mobile phone for fixed line substitution	342

6.3.3.3 Respondents' perceptions of whether mobile phones would be used for Internet application in two years' time	346
6.3.3.4 Respondents' perceptions of Telkom's technology dependence on suppliers	348
6.3.4 Respondents' perceptions of fixed line telecommunication and mobile telecommunication opportunities in Africa	349
6.3.5 Respondents' perceptions of whether teleworking/telecommuting would increase in South Africa	357
6.3.6 Respondents' perceptions of whether Telkom would need new revolutionary converged ICT products & services to survive	358
6.3.7 Respondents' perceptions of whether small medium micro enterprises would grow in South Africa	359
6.3.8 Respondents' perception of whether competition will be positive for Telkom	360
6.3.9 Respondents' responses of whether South African businesses were using ICT to compete globally	361
6.3.10 Respondents' responses to whether social groups would become more powerful as a force of change in SA	363
6.3.11 Respondents' views on whether many future opportunities exist for fixed line telecommunication operators	364
6.3.12 Respondents' views on whether there were future opportunities for mobile telecommunication operators	366
6.4 MAJOR DRIVERS OF CHANGE CREATING NEW MARKETING OPPORTUNITIES IN THE SOUTH AFRICAN TELECOMMUNICATIONS BUSINESS ENVIRONMENT	367
6.4.1 Respondents perception of regulatory influence on fixed and mobile telecommunication operators in South Africa	367
6.4.2 Respondents' perceptions of the influence of changes in telecommunication technology on fixed line communications	369
6.4.3 Respondents' perceptions of the impact of change in telecommunication technology on mobile communications	371
6.4.4 Respondents' perceptions of the influence of changing customer needs on the fixed line telecommunications	372
6.4.5 Respondents' perceptions of the influence of changing customer needs on mobile communications	373
6.4.6 Respondents' responses to the influence of convergence (integration of voice, data and image) on fixed line telecommunications	374
6.4.7 Respondents' views on the influence of economic conditions on fixed line and mobile telecommunications	376

6.4.8 Respondents' views on the influence of IT competitors on fixed line operators	377
6.4.9 Respondents' perceptions of the influence of SNO on telecommunication operators	378
6.4.10 Respondents' perceptions of the resellers and SMME's influence on telecommunications operators	380
6.4.11 Respondents' perception of the influence of social groups on telecommunication operators	381
6.4.12 Market competitiveness of South African Information Communication Technology (ICT) service providers	383
6.4.13 Respondent's perceptions of Telkom's competitive advantages	388
6.4.14 Competitor's competitive advantages in comparison to Telkom	391
6.4.15 Supplier importance to Telkom	394
6.5 IDENTIFYING NEW MARKETING OPPORTUNITIES THAT ARE EMERGING FOR FIXED LINE TELECOMMUNICATION OPERATORS IN SOUTH AFRICA	398
6.5.1 Management perceptions of change and marketing opportunities in the South African telecommunication business environment	398
6.5.2 Importance for fixed line telecommunication operators to find new revenue generating products and services	402
6.5.3 Future challenges for fixed line telecommunication operators in South Africa	403
6.5.4 Future challenges for mobile telecommunication operators in South Africa	406
6.5.5 Remote working (Teleworking) trends in South Africa	409
6.5.6 Future market segment revenue contribution to South African telecommunications operators	410
6.5.7 Main industry sector sources of future revenue for fixed line telecommunication operators	413
6.5.8 Sources of future revenue for mobile telecommunication operators	414
6.5.9 Major factors of influence in the South African organisations business environment	418
6.5.9.1 Corporates	418
6.5.9.2 Government	420
6.5.9.3 Business	421
6.5.9.4 Small Medium Micro Enterprises	422
6.5.9.5 Major factors of influence - general overall observations	423
6.5.10 Current importance of ICT products and services to South African organisations	425
6.5.11 ICT products and services required by South African organisations in future	434
6.5.12 Respondent's perceptions of some of the products and services that fixed line telecommunication service providers should provide to customers	439
6.5.13 Growth of telecommunication reseller market in South Africa	440

6.5.14 Respondents' perception analysis of the wholesale products and services that Telkom should provide	443
6.5.15 Telkom's development of mobile services	445
6.6 STRATEGIC MARKETING FOR SOUTH AFRICAN FIXED LINE TELECOMMUNICATION OPERATORS	447
6.6.1 Respondents' perceptions of Telkom organisational capabilities	447
6.6.2 Respondents' perceptions of the meaning of strategy	450
6.6.3 Respondents' understanding of Telkom's strategy	453
6.6.4 Competitors that will threaten Telkom the most	454
6.6.5 Telkom's competitive strategy/posture	456
6.6.6 Telkom stakeholder group relationships	459
6.6.7 Respondents' perceptions of Telkom in general	460
6.6.8 Telkom knows the kind of organisation it wants to become in ten years time	462
6.7 RELIABILITY	464
6.8 VALIDITY	464
6.9 CONCLUSION	465

CHAPTER 7: CONCLUSIONS AND RECOMMENDATIONS.....466

7.1 INTRODUCTION	466
7.2 RESEARCH OBJECTIVES REVIEWED	466
7.3 NEW MARKETING OPPORTUNITIES FOR TELKOM	467
7.4 CHANGES TAKING PLACE IN THE SA TELECOMMUNICATIONS BUSINESS ENVIRONMENT	469
7.4.2 Economic environment	471
7.4.3 Social environment	473
7.4.4 Technological environment	474
7.4.5 South African telecommunications market environment	475
7.4.5.1 Buyers	476
7.4.5.2 Suppliers	480
7.4.5.3 South African telecommunications market rivalry	482
7.4.5.4 Summary	483
7.5 MAJOR CHANGE DRIVERS CREATING NEW MARKETING OPPORTUNITIES IN THE SOUTH AFRICAN TELECOMMUNICATIONS SECTOR	483

7.6 IDENTIFYING NEW MARKETING OPPORTUNITIES ARISING FOR FIXED LINE TELECOMMUNICATION SERVICE PROVIDERS IN SOUTH AFRICA	487
7.6.1 Understanding where the new value resides	487
7.6.2 Value added products and services	487
7.6.3 Telecommunications products, services and markets for Telkom	488
7.6.4 SUMMARY	492
7.7 RECOMMENDATIONS ON MARKET STRATEGY FOR SOUTH AFRICAN FIXED LINE TELECOMMUNICATION OPERATORS	493
7.7.1 Corporate strategy	493
7.7.2 Market strategy for Telkom SA	495
7.7.3 Sustainable competitive advantage	495
7.7.4 Strategic options	496
7.7.5 RECOMMENDATIONS	501
7.8 NEW AREAS FOR FUTURE RESEARCH	507
7.9 CONCLUSION	507
BIBLIOGRAPHY	509

LIST OF APPENDICES

<u>APPENDIX:</u>	I
<u>APPENDIX A:</u> MEMORANDUM FOR OBTAINING PERMISSION TO CONDUCT STUDY IN PARTICULAR AREA OF RESEARCH	II
<u>APPENDIX B:</u> LETTER TO THE REGISTRAR ACADEMIC AT UNISA REQUESTING THAT THIS STUDY IS TREATED CONFIDENTIALLY	IV
<u>APPENDIX C:</u> RESEARCH QUESTIONNAIRE	V

LIST OF TABLES

Table 1.1 Estimated telecommunications spend overview per vertical sector.....	5
Table 1.2: Vertical market annual growth rates in South Africa.....	6
Table 1.3: South African cellular telecommunications market as at end of December 2002.....	19
Table 1.4: Overview of South African Internet market and e-Commerce services Market, 1999-2004.....	21
Table 2.1: Top 20 Global telecommunication equipment suppliers 1998.....	37
Table 2.2: Quarterly International Indicators.....	46
Table 2.3: Key variables and projections for major international economies.....	48
Table 2.4: SA telecommunications services market revenue forecasts (Rm), 2001-2005.....	51
Table 2.5: Quarterly South African national accounts.....	71
Table 3.1: Categories of telecommunication buyers.....	83
Table 3.2: Most prominent ICT organisations in South Africa.....	106
Table 3.3: MTN mobile subscribers.....	136
Table 3.4 Vodacom mobile subscribers.....	142
Table 3.5: Vodacom network services.....	144
Table 3.6: Vodacom Information Services.....	145
Table 3.7: Cell C contract Products.....	151
Table 3.8: Licenced VANS Operators (166), March 2001.....	156
Table 3.9: Telkom SA - SWOT analysis	180
Table 4.1: Market leadership strategies.....	237
Table 4.2: Challenges Telkom faces.....	270
Table 4.3: Main issues for selecting wholesale provider.....	277
Table 4.4: Telkom new products and services over time.....	283
Table 5.1: Number of Telkom SA managers/executives per service organisation.....	305
Table 5.2: Summary of questionnaire layout.....	306
Table 6.1: Cross tabulation of respondents' level per Telkom service organisation.....	323
Table 6.2: Summary of respondents' biographical data	325
Table 6.3: A slowdown in the global economy will negatively affect fixed line Telecommunication growth worldwide.....	330
Table 6.4: A slowdown in the global economy will negatively affect fixed line Telecommunication growth in South Africa.....	332
Table 6.5: An improvement in the global economy will take place in 2003/2004.....	333

Table 6.6: An improvement in the global economy will take place in 2004/2005.....	334
Table 6.7: Business confidence in SA will improve and this will lead to an increase in demand for Telecommunications in SA.....	336
Table 6.8: Government pressure will force Telkom to provide telecommunication services in predominantly non-profitable areas.....	339
Table 6.9: Fixed line voice revenues are being destroyed by mobile telephony.....	342
Table 6.10: Customers will use the fixed line only for Internet and mobile phones for voice communication.....	344
Table 6.11: In future consumers will use mobile telecommunications in place of fixed line telephones for voice, data and image.....	346
Table 6.12: Mobile phones will be used for Internet application in 2 years time.....	348
Table 6.13: Profitable telecommunication opportunities for telecommunication operators in Africa (fixed line).....	351
Table 6.14: Profitable telecommunication opportunities for telecommunication operators in Africa (mobile).....	352
Table 6.15: There are profitable opportunities in Africa for Value Added Networks.....	353
Table 6.16: There are profitable opportunities in Africa for e-commerce.....	354
Table 6.17: There are profitable opportunities in Africa for mobile telephony.....	355
Table 6.18: There are profitable opportunities in Africa for Internet.....	357
Table 6.19: Teleworking/Telecommuting (working between home and office) will increase in South Africa.....	358
Table 6.20: In order to survive in future Telkom will need revolutionary new converged Information Communication Technology products & services.....	359
Table 6.21: Small Medium Micro Enterprises will grow in South Africa.....	360
Table 6.22: Competition will be positive for Telkom.....	361
Table 6.23: South African businesses are using ICT to compete globally.....	363
Table 6.24: Social groups will become more powerful as a force of change in SA.....	364
Table 6.25: Many future opportunities exist for fixed line telecommunications operators.....	366
Table 6.25: Many future opportunities exist for mobile telecommunications operators.....	367
Table 6.27: Respondents perception analysis on most competitive ICT organisation.....	385
Table 6.28: Non parametric Kruskal Wallis test:Telkom service organisation mean rank per competitor...	386
Table 6.29: South African ICT organisations summarised competitive ranking per Telkom service organisation.....	387
Table 6.30: Summary of respondents' perceptions of Telkom's competitive advantages.....	388

Table 6.31: Competitor competitive advantages compared to Telkom.....	392
Table 6.32: Telkom Service organisations mean rankings of supplier’s importance to Telkom per service organisation	395
Table 6.33: Respondents perceptions analysis on change and emergent marketing opportunities in the South African telecommunication business environment.....	399
Table 6.34: Respondents perceptions on the importance for fixed line telecommunication operators to find new revenue generating products and services.....	402
Table 6.35: Respondents perceptions of the factors of future global importance for fixed line telecommunication operators in South Africa.....	404
Table 6.36: Summary of future areas of importance for fixed line telecommunication operators.....	405
Table 6.37: Respondents perceptions of the factors of future global importance for mobile telecommunication operators in South Africa.....	407
Table 6.38: Summary of future areas of importance for mobile telecommunication operators.....	408
Table 6.39: Respondents perceptions of when remote working will become a norm in South Africa.....	409
Table 6.40: South African fixed line telecommunications future revenue contribution per market segment.	411
Table 6.41: South African mobile telecommunications future revenue contribution per market segment....	412
Table 6.42: Important industry sources of future revenue for fixed line telecommunications operators.....	413
Table 6.43: Important industry sources of future revenue contribution for mobile telecommunication s operators.....	415
Table 6.44: Major factors of influence on South African corporates.....	419
Table 6.45: Factors of influence on South African corporates in order of importance.....	419
Table 6.46: Major factors of influence on South African government organisations.....	420
Table 6.47: Major factors of influence on South African business.....	421
Table 6.48: Major factors of influence on South African SMME’s.....	422
Table 6.49: Summary of main factors of influence for different categories of South African organisations..	423
Table 6.50: Current important ICT products & services for South African Corporates.....	426
Table 6.51: Summary of currently important ICT products and services for South African corporates.....	427
Table 6.52: Current important ICT products & services for South African government.....	428
Table 6.54: Current important ICT products & services for South African business.....	430
Table 6.55: Summary of currently important ICT products and services for South African business organisations.....	431
Table 6.56: Current important ICT products & services for South African SMME’s.....	432
Table 6.57: Summary of currently important ICT products and services for South African SMME’s.....	433
Table 6.58: Future ICT products & services for South African corporates.....	434

Table 6.59: Future ICT products & services for South African Government.....	436
Table 6.60: Future ICT products & services for South African business.....	437
Table 6.61: Future ICT products & services for South African SMME's.....	438
Table 6.62: ICT products and services telecommunication service providers should provide to customers.....	440
Table 6.63: Wholesale products and services Telkom should provide.....	444
Table 6.64: Respondents' perception of Telkom organisational capabilities.....	448
Table 6.65: Perceptions of the definition of the strategy concept.....	451
Table 6.66: Service organisation mean ranks of competitors that will threaten Telkom the most.....	454
Table 6.67: Telkom management perceptions of competitive strategy Telkom should adopt.....	456
Table 6.68: Respondents perception analysis of Telkom stakeholder relationships.....	459
Table 6.69: Means and ranking of respondent's perception of Telkom in general.....	461
Table 7.1: New products and services for fixed line telecommunications operators.....	490

LIST OF FIGURES

Figure 1.1 Options available to organisations	8
Figure 1.2: ICT convergence.....	13
Figure 1.3: Voice data growth comparison.....	15
Figure 1.4: Evolution of mobile phones.....	17
Figure 1.5: Fixed line to mobile evolution.....	18
Figure 1.6 Projected size and growth of the South African Internet and E-commerce service market, 1999-2004.....	22
Figure 1.7: forces that impact on industries, including the telecommunications industry.....	24
Figure 2.1: Business Environment Constituents.....	32
Figure 2.2: The telecommunications business environment composition.....	35
Figure 2.3: Global telecommunications regulatory span of influence.....	38
Figure 2.4: Structure for telecommunication policy making in SA.....	56
Figure 2.5: Developments of South African telecommunication Policy.....	58
Figure 3.1: South African telecommunication market environment model	79
Figure 3.2: Simplified public switched telecommunication network outlay in South Africa.....	80
Figure 3.3: Telecommunication market segments in South Africa.....	85
Figure 3.4: Product/Market expansion grid.....	104
Figure 3.5: Ownership structure of Telkom SA.....	109
Figure 3.6: Telkom SA strategic marketing position.....	113
Figure 3.7: Transtel strategic market positioning.....	125
Figure 3.8: Esi~tel's strategic marketing positioning	129
Figure 3.9: Sentech strategic marketing positioning.....	135
Figure 3.10: MTN Strategic marketing positioning.....	142
Figure 3.11: Vodacom ownership structure.....	144
Figure 3.12: Vodacom strategic market positioning.....	149
Figure 3.13: Cell C strategic market positioning.....	153
Figure 3.14: Private virtual network.....	154
Figure 3.15: Uunet Africa strategic market positioning.....	161
Figure 3.16: Arivia.kom strategic market position.....	166
Figure 3.17: AST strategic market position.....	171
Figure 3.18: Dimension Data strategic market positioning.....	175
Figure 3.19: South African telecommunication market competitor positioning.....	176

Figure 4.1: Different levels of organisational strategy.....	205
Figure 4.2: Generic strategic management model.....	208
Figure 4.3: Strategic marketing model applied to the South African telecommunication environment.....	215
Figure 4.4: Environmental Scanning sophistication levels.....	219
Figure 4.5: Cumulative profit-volume relationship.....	225
Figure 4.6: Telecommunication market positioning strategies.....	235
Figure 4.7: Organisational product-market life cycle.....	246
Figure 4.8: Different growth strategies.....	249
Figure 4.9: The impact of customer retention on profits.....	261
Figure 4.10: Strategic marketing process path.....	269
Figure4.11: New marketing opportunities in communication.....	274
Figure 4.12: Areas of wholesale opportunities.....	276
Figure 5.1: Steps in the marketing research process.....	293
Figure 5.2: Telkom SA management structure.....	304
Figure 5.3: Problem resolution strategy.....	311
Figure 6.1: Telkom is dependant on new technology from suppliers.....	349
Figure 6.2: Regulatory influence on fixed line telecommunication operators.....	369
Figure 6.3: Regulatory influence on mobile telecommunication operators.....	370
Figure 6.4: Influence of telecommunications technology on fixed line.....	371
Figure 6.5: Influence of changes in telecommunication technology on mobile communications.....	372
Figure 6.6: Influence of changing customer telecommunications needs on fixed line	373
Figure 6.7: Influence of changing customer needs on mobile communications.....	374
Figure 6.8: Influence of convergence (Integration of Voice, Data and Image) on fixed line.....	375
Figure 6.9: Influence of convergence (Integration of Voice, Data and Image) on mobile.....	376
Figure 6.10: Influence of economic conditions on fixed and mobile communications.....	377
Figure 6.11: Influence of competition from Information Technology organisations on fixed line and mobile telecommunication operators.....	378
Figure 6.12: Influence of competition from Second National Operator on fixed line and mobile operators..	380
Figure 6.13: Influence of new telecomm players such as resellers and Small Medium Micro Enterprises on fixed line and mobile telecommunication operators.....	381
Figure 6.14: Influence of social group pressure on fixed line and mobile telecommunication operators.....	383

Figure 6.15: Respondents' clustered perception of Telkom's competitive advantages.....	390
Figure 6.16 Clustered perceptions of Telkom competitor competitive advantages in comparison to Telkom.....	393
Table 6.17: Graphical comparison of important industry contribution to future South African fixed line and mobile operators revenues	416
Figure 6.18: Link between converged ICT products and services and business change.....	424
Figure 6.19: Illustration of important future corporate ICT products and services.....	435
Figure 6.20: Will the South African telecommunications market open to resellers?.....	441
Figure 6.21: Respondents' perceptions of the future number of resellers in South Africa.....	442
Figure 6.22: Respondents' perceptions of wholesale products and services Telkom should provide.....	444
Figure 6.23: Respondents responses to whether Telkom should develop mobile services?.....	446
Figure 6.24: Telkom's organisational capabilities.....	449
Figure 6.25: Telkom management understanding of Telkom's strategy.....	453
Figure 6.26: Graphical illustration of future Telkom strategy.....	458
Figure 6.27: Respondents' of whether Telkom knows the kind of organisation it wants to become in ten years time.....	463
Figure 7.1: Problem resolution approach.....	468
Figure 7.2 main drivers of change in the telecommunications business environment in South Africa.....	484
Figure 7.3: future value for fixed line telecommunication operators.....	489
Figure 7.4: Competitive strategy options for Telkom SA.....	498

SUMMARY

Information, communication and broadcasting convergence is changing the business landscape in South Africa, as organisations adopt new converged information, communication technology (ICT) products and services to satisfy the needs of customers. Simultaneously, major changes are taking place in the South African telecommunications business environment creating new marketing opportunities and threats for Telkom SA, the only fixed line telecommunication operator in South Africa.

Some of the findings of the study are

- the commodization of the fixed line telecommunication network
- political and regulatory changes are reshaping the telecommunications landscape by allowing the entry of new competitors
- new technological innovations in Information Communication Technology (ICT) and mobile communication is driving change
- social and economic change is fueling the speed of environmental change
- poor economic climate is quickening the competitive pace amongst South African businesses forcing them to attain efficiencies and effectiveness for survival
- organisations worldwide are competing for limited resources and markets and turning to ICT to achieve their objectives
- customer needs are changing - demanding better and innovative communication products and services - providing opportunities to competitors
- the Internet is reshaping traditional business models as businesses are seeking to establish competitive advantages through the Internet
- the migration of the Internet to the mobile telephony sector

These changes are creating new marketing opportunities and threats for South African fixed line telecommunication operators and are threatening the survival of fixed line telecommunication operators worldwide and in South Africa. Information Technology, broadcasting and telecommunication technology convergence, has created many new ICT products and services

opportunities that telecommunication competitors are offering existing customers of the fixed line operators network indicating lethargy from their side. In order for the fixed line operators to survive they must apply innovation and revise their strategic planning models.

Title of thesis:

NEW MARKETING OPPORTUNITIES FOR FIXED LINE TELECOMMUNICATION OPERATORS IN SOUTH AFRICA: A STRATEGIC EVALUATION

Key terms:

Fixed line telecommunication operators; Strategic marketing; Marketing opportunities; telecommunications; South African telecommunications business environment; Telecommunications market strategy; Information Communications Technology (ICT); Value Added Services; Market strategy; New ICT market opportunities; South African cellular telecommunications operators.

CHAPTER 1

BACKGROUND TO THE STUDY

1.1 INTRODUCTION

The convergence of information, communication and broadcasting brought about by new and more advanced technologies is rapidly altering the universal business landscape. Today, more than ever before, innovations in information communication technology (ICT) are changing the business field and redefining the basic rules of business, not only in a global but also in a South African context. Ohmae (1996) and McKinlay (1996) point out the world is progressing towards the central unification of regional economies. This is causing global competition between organizations to become more aggressive, and many organizations are using ICT to create sustainable competitive advantages over their competitors.

Throughout the world, businesses are faced with the challenge of competing on a global scale. Levine and Crom (1993, p 76) cites business consultant Dennis Waitely who states that “the customer is always king and queen” and therefore satisfying the needs of customers is supreme for business success. The separation of the organization from its business processes and customer interface through time and geographical space has been removed by the innovations of ICT. Simultaneously, liberalisation of the telecommunications sector dominates in most of the developed world and is quickly catching on in less developed countries such as Botswana, Zimbabwe, Mozambique, Namibia, Nigeria, the Democratic Republic of Congo, South Africa and others. Delaney and Hall (1999) assert that telecommunication operators cannot allow themselves to be complacent, inefficient and slow in responding to these changes.

Customers have become more reliant on organizations that have been quick to adapt to the changing business environment. These organizations are using the capability of the Internet and ICT to provide customized products and services to their clients. Slywotzky (2000, p 40) points

out that in the near future customers' will be able to make known exactly what they want and "suppliers will be able to deliver the desired products or services without compromise or delay". Precise information about customers' preferences and behaviour will enable companies to create loyal customer relationships (Slywotzky, 2000, p 40). At the same time the free flow of information will give customers a much wider choice of products and services to choose from at the lowest possible prices.

This change in the way value is created for organizations and customers highlights the new marketing opportunities and threats confronting telecommunication operators. At the same time, it raises important questions not previously examined or dealt with in South African studies, including the following: What changes dominate business activity? What changes are taking place in the telecommunications sector? Do these changes create a need for new telecommunication products and services? What are the major drivers of change? What new products and services opportunities and threats are arising in the South African telecommunications business environment? How should telecommunication operators position themselves from a strategic marketing perspective, to take advantage of these changes? The research tried to answer these questions by analysing the South African telecommunication business landscape from a strategic perspective. The study also evaluated the new marketing opportunities being created through the convergence of ICT, for South African telecommunication operators.

This chapter outlines the telecommunications industry and addresses how ICT is influencing South African businesses and the major forces of change that are transforming the telecommunications sector. The South African telecommunications market forces are also outlined. The statement of the problem and objectives of the study are formulated, the research methodology is described and finally the chapter layout of the study is given.

1.2 A BRIEF OVERVIEW OF THE TELECOMMUNICATIONS INDUSTRY

To date Telkom has been the sole provider of fixed line telecommunication products and services in South Africa and developed its revenue from generating voice and data traffic over its existing

telecommunication network. Since the 1990's fixed line telecommunication operators worldwide (such as British Telecom, France Telecom, AT&T, NTT, Portugal Telecom, Phillipines Long Distance Telecom, Telecom Malaysia, Matav, Cesky and Deutsche Telekom) have faced the problems of the decreasing price of bandwidth and new telecommunications regulations breaking down the monopoly barriers and opening the telecommunication market for new entrants. In 1996 this situation confronted South Africa with its highly regulated telecommunications sector monopolised by Telkom. The South African Government started the deregulation process of this sector by the introduction of the Telecommunications Act, No. 103 of 1996. The regulations were aimed at deregulating the South African telecommunications industry after years of regulation. To regulate the telecommunications industry, the state-owned enterprises in this sector had to undergo major restructuring.

Before 1991, the Department of Posts and Telecommunications (P&T) was a state owned organization that was responsible for both post and telecommunication services in South Africa. In 1991 the division of the Department of Posts and Telecommunications created Telkom SA, the only fixed line service provider in South Africa. A consortium comprising the South African Government (67%), Thintana (SBC and Telekom Malaysia) (30%) and Uthingo (3%) a black economic empowerment group consisting of a number of community trusts, owned the company. In 2000, Telkom SA started preparing for primary and secondary listing on the stock exchange. As part of the preparation, shares in Telkom would be made available to the public. The primary listing will be on the Johannesburg Stock Exchange (JSE) and the secondary listing would be the New York Stock Exchange (NYSE). The new legislation laid the foundation for deregulating and introducing competition into the telecommunications sector in South Africa, and paved the way for the liberalisation of the telecommunication sector. The 2001 South African telecommunication policy directives made allowance for the introduction of a second national operator (SNO) and later possibly a third national operator (TNO). In addition, small, medium and micro enterprises (SMME's) will be issued with licences to provide telecommunication services in "underserviced" areas. The policy directives define areas with less than five percent teledensity penetration as "underserviced".

As in the case of the telecommunications sector in the United States, France, Great Britain, Canada, Germany and Italy it is expected that as new competitors enter the South Africa telecommunications market, the supply of bandwidth will increase, competition will become aggressive between industry participants and the price of bandwidth will decrease, following international trends. This implies that as network traffic increases, the price charged for transporting data and voice traffic over the network should decrease. However, the long-run incremental costs of providing data and voice transport are increasing. Furthermore, changing technology brought about by the convergence of IT, communication and broadcasting technology is introducing a host of new products and services, such as electronic commerce (e-commerce), mobile commerce (m-commerce), virtual private networks (VPN), video on demand, website development and maintenance, network security and network management and the Internet. South African IT companies, such as Dimension Data, MGX, Datatec, Comparex, AST and CS Holdings use Telkom infrastructure to provide many of these products and services.

The South African mobile operators, Vodacom, Mobile Telecommunication Networks (MTN) and Cell C, have also taken market share for voice products away from Telkom and from each other. As their respective market shares come under pressure, the cellular phone service providers look for new products and services opportunities to complement their revenues.

If Telkom continues to focus on the revenue generated from its existing services that is the traffic that flows over its existing telecommunication network, it could soon be faced with decreasing revenue streams because of the worldwide trend of decreasing prices (income) for bandwidth. In the longer term, then Telkom could find that competitors from the IT and broadcasting sectors seriously threaten its financial and competitive position.

Against this background the research in this study wished to report on how ICT is changing the telecommunications sectors in a global and South African perspective, identify the major drivers of change in this sector, identify what ICT products and service opportunities are emerging in the South African business market, and to make recommendations on the products and services that telecommunication operators should provide.

Table 1.1 below illustrates the South African telecommunications spend per vertical sector, such as agriculture, manufacturing, mining, transport.

TABLE 1.1 ESTIMATED SA TELECOMMUNICATIONS SPEND OVERVIEW PER VERTICAL SECTOR

Revenue (Rm)	2000	2001	2002	2003	2004	2005	CAGR 00-05
Agriculture	1,004	1,136	1,274	1,392	1,488	1,583	9.5%
Mining	1,610	1,804	2,002	2,167	2,292	2,415	8.4%
Manufacturing	7,988	8,947	9,933	10,748	11,370	11,980	8.4%
Utilities	1,179	1,334	1,496	1,635	1,747	1,860	9.5%
Construction	804	919	1,041	1,149	1,240	1,333	10.6%
Wholesale and Retail	4,990	5,532	6,080	6,512	6,820	7,113	7.3%
Transport, storage and communication	6,421	7,555	8,811	10,016	11,023	12,084	13.5%
Financial Services	9,226	10,751	12,417	13,979	15,386	16,687	12.8%
Community and personal Services	7,781	8,979	10,169	11,226	12,116	13,024	10.9%
Other	8,367	9,466	10,615	11,602	12,398	13,195	9.5%
Total	49,372	56,422	63,838	70,427	75,880	81,454	10.5%

Adapted from: BMI-TECHKNOWLEDGE (2001², p 36)

Table 1.1 also reflects the estimated telecommunications spend overview per vertical sector from 2000 to 2005 (classified according to BMI-TECHKNOWLEDGE Group). Table 1.1 shows the projected compounded annual growth rate (CAGR) for telecommunications spending of the various sectors and is positive at an average of 10.5%. This indicates that there is strong potential for ICT products and services growth, across all industries. The projected telecommunications spend for all sectors was R63 838 million for 2002 and is projected to grow to R81 454 million by 2005, further strengthening the motivation for new ICT products and services investment.

Table 1.2 below shows the vertical market growth rates in the various industries. Particularly significant to this study are the projected average growth rates of 16% in 2003 for all sectors. The proportion contributed to ICT for banking, retail and manufacturing is 17%, 18% and 20%, respectively. This implies that these sectors offer the most growth opportunities for ICT product and service developments. However, with the exception of the building sector, all the other sectors have positive projected growth rates.

TABLE 1.2 VERTICAL MARKETS ANNUAL GROWTH RATES IN SOUTH AFRICA (1997-2003)

	1997	1998	1999	2000	2001	2002	2003	Proportion % Of ICT
Banking	23%	18%	11%	13%	15%	13%	13%	17%
Insurance	20%	19%	16%	16%	14%	14%	14%	5%
Retail	21%	18%	15%	16%	16%	17%	17%	18%
Manufacturing	23%	17%	15%	17%	18%	19%	18%	20%
Building	17%	15%	14%	14%	14%	16%	15%	0%
Local government	21%	16%	16%	17%	17%	17%	17%	2%
Utilities	21%	15%	16%	16%	17%	17%	17%	8%
Other public	21%	22%	17%	18%	18%	18%	18%	9%
Mining	17%	16%	14%	16%	16%	12%	13%	2%
Transport	18%	17%	16%	17%	17%	15%	14%	4%
Research	19%	16%	14%	17%	17%	15%	15%	2%
Other	16%	21%	15%	16%	16%	17%	17%	4%
Home Office	20%	47%	9%	14%	17%	18%	17%	8%
Total	21%	20%	14%	16%	17%	17%	16%	

Du Plessis (1999, p 20)

Table 1.2 indicates that the telecommunications industry sector is in the growth stage despite the general slowdown in the global economy and could point in favour of new opportunities for providing products and services to the various sectors. The changes transforming the telecommunications sector are discussed next.

1.3 HOW ICT IS TRANSFORMING THE BUSINESS SECTOR IN SOUTH AFRICA

By logging onto the Internet from a personal computer, customers are able to obtain information about a variety of products and services. It is no longer necessary for customers to perform transactions by physically being at a particular place. Today, customers can purchase goods, track mail items, review account balances, transfer money between accounts, set up debit orders and even request overdraft limits via the Internet. It is possible to buy insurance products, obtain product catalogues, monitor stock prices and even set up personalised stock portfolios that can be tracked on a minute-by-minute basis. Stockbrokers, retailers, banks, insurance companies, medical aid administrators, wholesalers and others in South Africa have real time electronic Internet sites. On-line shopping sites for various products and services such as those of

Woolworths, Old Mutual, Netflorist, Kalahari.net, and Pick and Pay are quickly being established. It is not only business to consumer (B2C) electronic transacting that is growing but also business-to-business (B2B) electronic transacting (Chaffey, Mayer, Johnston and Ellis-Chadwick, 2000).

As the marketplaces are brought closer through technological innovations, customers are faced with greater choices. Technological innovations have facilitated the development of electronic markets (e-market), such as Standard Bank's bluebean.com, megashopper, mweb.co.za, Interactive Investors iii.co.za, DigitalMall, First National bank's e-bucks, dinersclub, Amex, aucor.co.za, netflorist.co.za and Old Mutual's electronic services. These electronic markets have the power to transform the market into a competitive arena where the customer decides the forces of supply and demand. ICT is the force that drives the availability and speed of information to where communications and transactions transpire.

1.3.1 Information free flow

The key enabler that places decision-making at the customer's fingertips is information. Customers and their suppliers are provided with a platform that creates an unprecedented degree of information efficiency. This is achieved by using ICT to create closer links, increase two-way communication, enable easier transacting, and reduce non-productive time between the service provider and the customer, which is advantageous for both parties.

Consequently, the nature of information efficiencies promotes the commoditization of products and services at high speed thus making it a generic product. The ease with which the translocation of information takes place makes it easy for competitors to replicate new products (such as banks offering insurance products and stock broking services, insurance companies offering banking services and departmental stores selling cellphones). Customers in the market for all types of products and services have been given the opportunity to make selective purchasing decisions through the free flow of product and pricing information. With this newfound freedom of selective purchasing decision-making, the majority of products and

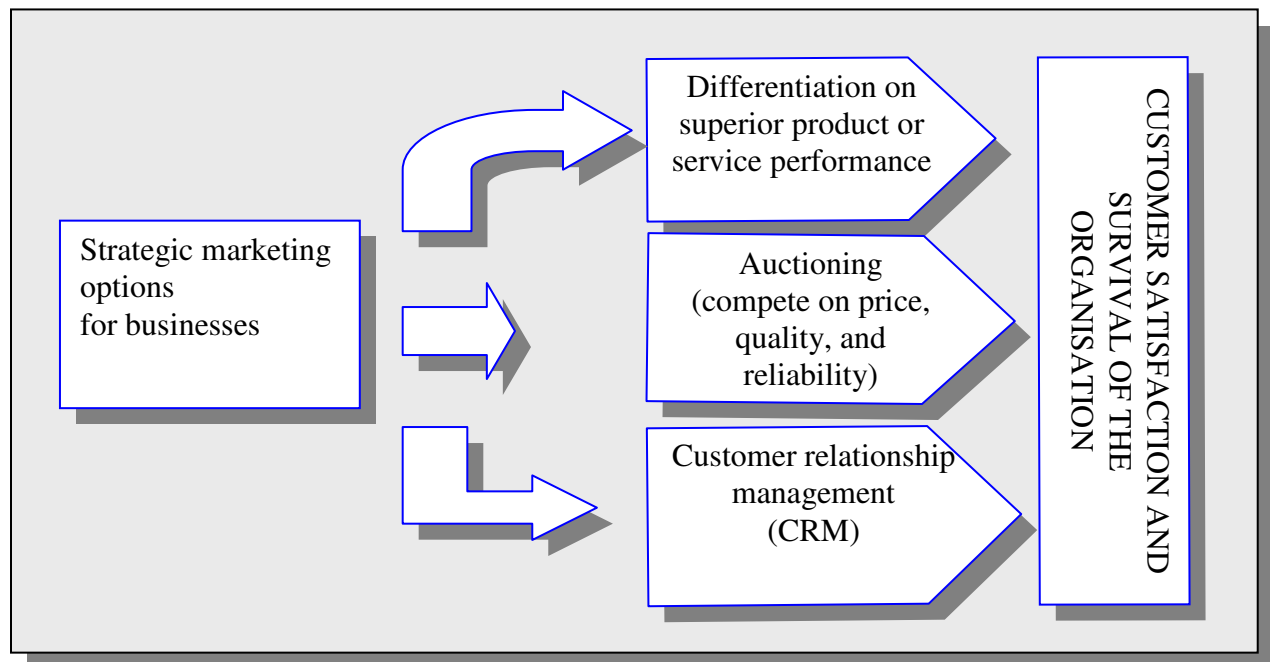
services have become commodities. Technological advances have freed information, resulting in a reduction in difference between buy and sell prices (The Economist, 1999).

In South Africa, product and services information is freely available on the Internet, but the rate at which it is being exploited is still in the early stages. Sharenet, the stock broking Internet site, Liberty Insurance, Standard Bank and Interactive Investor, for example, offer reduced brokerage charges for share transactions. This has led to a decline of share transaction costs and an aggregation of competition in the sector. As a result, business organizations need to develop a clearly defined strategy to accommodate the new electronic business economy.

1.3.2 New economy strategic marketing options

Given these fundamental shifts in customer behaviour, three strategic options are open to South African product and service providers that want to remain profitable in this e-enabled world. Figure 1.1 depicts the three options available to organizations.

FIGURE 1.1 OPTIONS AVAILABLE TO ORGANIZATIONS



(1) Differentiation on the basis of consistent superior performance and/or selecting Customer Relationship Management (CRM) as a differentiation strategy

Differentiating on the basis of superior product and service performance is a niche strategy that could be followed by niche players with the capability or resources, namely people, processes and technology to consistently outperform others in the market.

(2) Auctioning by focusing on price, quality and reliability

At this level, some companies may opt to compete on price, quality and the reliability of products.

Eventually the most sustainable way for organizations to distinguish themselves from competitors in the marketplace will be through their long-term customer relationships. Economic conditions and other developments directly affect (and change) customer needs.

1.3.3 Customer needs

Customer purchasing patterns are changing. In difficult economic conditions, both primary and secondary South African customers with access to ICT are turning to technology to secure products and services. In a survey conducted by Webchek a random sample of web users indicated the following trends (The E-commerce handbook, 2000, p 165):

- 31% of web purchases were transacted from home users, while less than 25% were work user purchases
- 95% of users in the sample indicated that they would buy via the Internet again
- 47% indicated that buying on-line was either convenient or saved time
- Surprisingly, only 15% indicated that it was less expensive to shop on-line
- The Internet purchase ratio of private users versus work users is 60:40

Electronic commerce is growing and more customers are turning to electronic channels for purchases. This means that there is a need for organizations to develop electronic commerce relationship management strategies using ICT.

1.3.4 E-commerce relationship marketing

Gordon (1998, p 9) defines customer relationship management (CRM) as “the ongoing process of identifying and *creating new value* with individual customers and then *sharing the benefits* from this over a lifetime of association”. Gordon (1998) points out that although relationship marketing draws from traditional marketing principles it is different. He goes on to say that marketing is a process of identifying and satisfying customers’ needs in a competitively superior way so that the organization’s objectives are met. Relationship marketing contributes to the traditional marketing definition by the addition of six more materially different dimensions. Employed together, these dimensions have the ability to redefine the way the organization uses marketing and everything else it employs from the organization, such as the work it performs, technology used, products and services it provides and even its organizational structure to achieve its objectives. Hence Gordon (1998) views relationship marketing as:

- Seeking to create new value for customers and then sharing it between the producer and consumer
- Acknowledging the customers’ role not only as purchasers of the product or service but also as a major contributor to defining the value they require
- Demanding that organizations align and design their processes, technology, communications and people in such a way that they support the value that customers require
- Viewing customers as lifetime investments to bond with more tightly
- Striving to establish a chain of relationships within the organization to create value that customers’ seek as well as between the organization and all its stakeholders

This is where ICT will have the greatest impact. In this new order of relationship management, the alignment of people, processes, technologies and resources will be fundamental to effectiveness and success. Nedcor Bank, Interactive Investor, Makro and Woolworths’, for example, have been investing heavily in IT for developing strong customer relationships with a select customer base. The South African Government is intent on using ICT to forge closer, more transparent relations with the people. Every government department has its own web site that makes Government information available to the public.

The task of aligning these options to transact with the acquisition, servicing and retention of customers by providing service and creating value for them raises the need for the correct balance of investment in ICT infrastructure. Typical projects for investment include sales force automation, intuitive analytical software tools and value chain integration. Technological innovation continues to revolutionize the way that organizations interact with customers as well as the potential of profiting from them.

According to Ernst and Young (1999) questions that appear to be uppermost in the minds of company executives are: How are customer relationships evolving in the face of e-commerce? What implications do these changes have for business? What e-services do customers want? What information can business organizations harvest from customers using ICT? How can organizations use this information to generate long-term profits? These questions are directed at final consumers as well as secondary consumers, such as businesses. South African companies are beginning to realise the potential of using the Internet and e-commerce to form closer relations not only with their customers but also with their suppliers to streamline their supply chains. For example Trade Centre, Firstrand, Nedcor, Sanlam, Macro, and Standard Bank, have implemented intranets (internal company private networks) and extranets (wide area secure network) that allow them to connect directly with their suppliers for quicker product ordering, tracking and control.

1.3.5 Business-to-business e-commerce

In the area of business-to-business (B2B) commerce, South African companies have come to realise that B2B solutions are a cost for business today. Many South African businesses are considering independent trading exchanges (ITEs). These ITEs are also known as B2B portals and vertical hubs. ITEs are networks for trading that bring buyers, suppliers and providers into a trading community thereby creating a value chain (Herman, 2000). Two of the best-known South African independent trading exchanges is the Johannesburg Stock Exchange (JSE) and Gauteng Economic Development Agency's (GEDA) businessweb. Another major factor transforming the business sector is convergence.

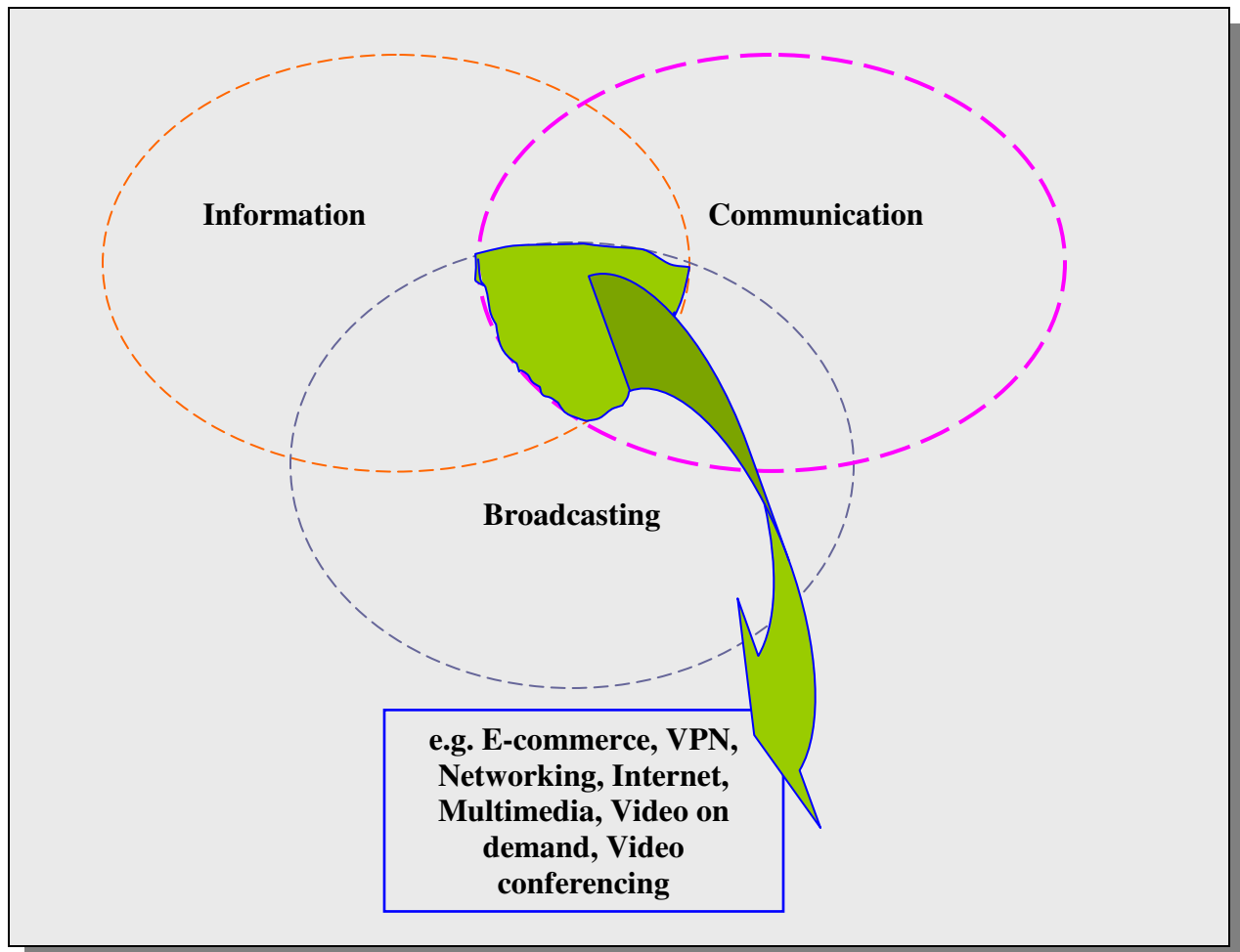
In the area of resource sourcing, many organizations have discovered that reducing the supplier base is the key to reducing complexity and borrowed spending. These organizations have developed and loaded approved vendor lists onto electronic procurement (e-procurement) systems. An e-procurement system is a company extranet that is linked electronically with suppliers. This makes supplier interaction with their customers easy and flexible. E-procurement also facilitates partnerships with critical suppliers. The real time availability of information between supplier and purchaser allows purchasers to assess the supplier's performance and includes costs, flexibility, quality of service and other supply chain measurements (Van Niekerk, 2000, p 48).

1.4 CHANGES TRANSFORMING THE TELECOMMUNICATIONS SECTOR

The telecommunications field has changed dramatically. The convergence of IT with telecommunications and broadcasting has shifted the traditional role of telecommunications operators into a new dimension. At the same time, telecommunications operators worldwide are facing increasing deregulation, consolidation and technological innovations giving rise to dynamic new market conditions (Christensen, Anthony and Roth, 2001).

Figure 1.2 depicts the convergence of information, broadcasting and communication technology and the new converged voice, data and image products that are created, and the sector trend of ICT convergence. New ICT converged voice, data and image products and services include video streaming, video conferencing and multimedia services.

FIGURE 1.2 ICT CONVERGENCE



1.4.1 Convergence of voice, data and image

The converging of IT, broadcasting and communication technology creates a new dimension of combined voice, data and image products and service offerings. The enabling platform for this revolution lies in the capability of the technology. Converged services require high bandwidth, transmission and faster processing speeds. New services and products in these areas have generated wide interest from new market entrants as well as from established South African organizations (e.g., Sentech, Multichoice, Dimension Data, Comparex and Datatec) and international organizations (e.g. Worldcom), who have been quick to identify and capitalize on the new opportunities being created. Typical products and services include the following:

- video conferencing

- multimedia services (e.g. on-line training, picture messaging and entertainment)
- networking solutions (linking the back office with the front office and linking organizations' supply chains with their suppliers and customers thus enabling faster throughput times)
- intranets, extranets and supranets (providing secure internal networks for customers to facilitate the exchange of information internally between company employees, customers, suppliers and other stakeholders)
- Virtual Private Networks (VPN) (establishing private networks that operate over the public switched network that customers can use to provide a variety of value-added services, such as share transacting, stock requisitioning and transfers)
- electronic commerce solutions, such as website development, hosting web sites on behalf of the customer and data storage (storing large amounts of data in electronic format for customers)

Convergence is changing the nature of telecommunication network traffic. The future composition of telecommunication network traffic will be discussed in the following section.

1.4.2 Future composition of network traffic

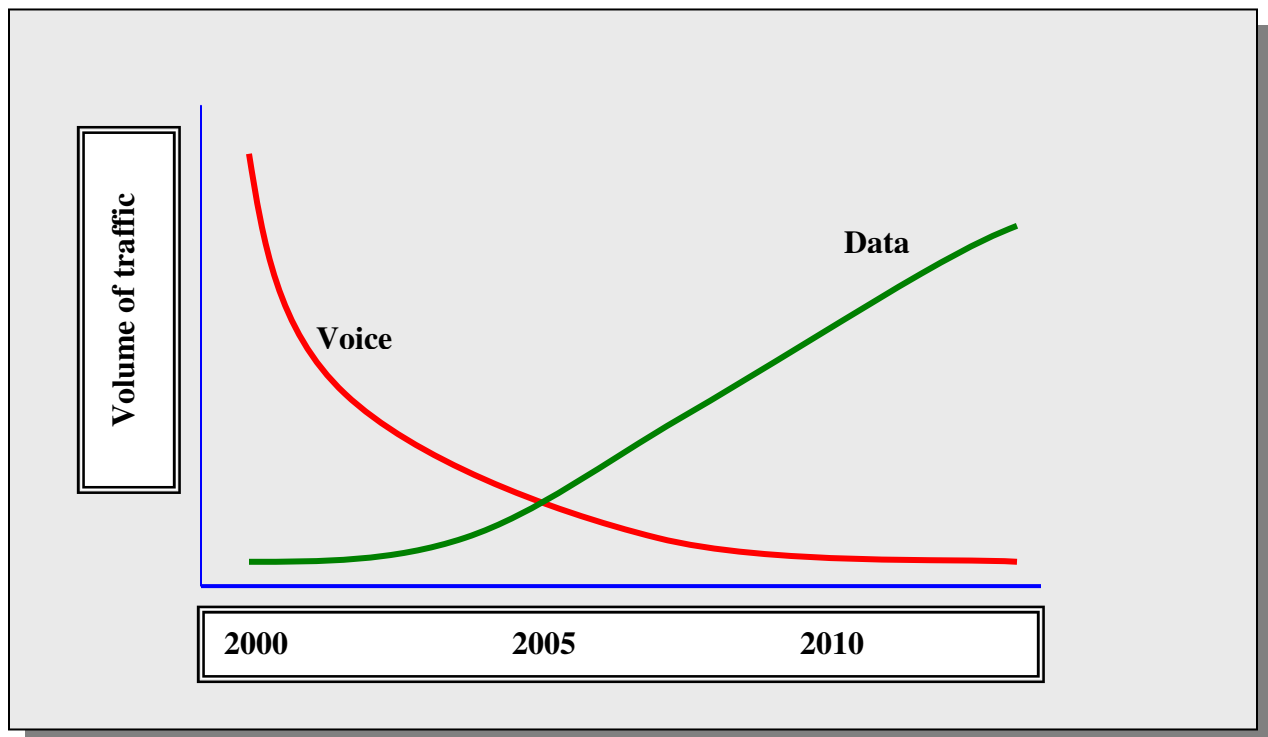
A major problem confronting fixed line network operators worldwide is the shift in network traffic generated away from voice to data services. As convergence gains momentum and new competitors enter the telecommunications market, the supply of bandwidth is increasing, reducing telephony to a commodity. Kelley (1997, p 9) cites Gilder's law, which maintains that although the total bandwidth of communication systems will triple every twelve months, for the foreseeable future the price charged for bandwidth will decrease to almost zero but will never be zero as there will always be a charge for bandwidth. Challenging questions now being asked by the telephone network operators are:

- Where does the future value for network operators lie?
- What changes taking place in the telecommunications business environment globally and in South Africa, have a direct impact on ICT services and products?
- What are the drivers of change in the telecommunications industry?
- How are these changes affecting the organizations in this industry?

- What IT products and services are needed?
- How is ICT changing? What are the global and national trends?
- What implications does this have for telecommunications service providers and businesses?
- Is there alignment between the business needs and telecommunications products and services supplied?
- What ICT product and service opportunities do these changes bring about for telecommunications operators?
- What new strategic marketing models can be developed for telecommunications service providers to provide products and services to the different sectors?
- Why should telecommunications service providers look for new business models?
- How can these models be implemented?

Figure 1.3 below illustrates a projected comparison between voice and data volume over time.

FIGURE 1.3 VOICE AND DATA GROWTH COMPARISON



Adapted from: Halberstadt (2000, p 34)

From figure 1.3, it is clear that between 2000 and 2010 the volume of voice traffic will decrease whilst data traffic will increase. Current telecommunication trends justify this prediction as the demand for fixed line data exceeds voice demand. Besides fixed line telecommunication services, communication technology has brought about great changes in mobile telephony (or conventional cellular telephone services).

1.4.3 Mobile telephony

Mobile telephony has enormous potential because “the portability of mobile phones not only turns them into wonderful instruments of personal liberation. But it also turns them into powerful tools for businesses that want to catch people’s attention” (Wooldridge, 1999, p 6). Mobile telephony evolved in four main stages or waves (see figure 1.4, page 17). The first wave of mobile telephony was largely restricted by analogue technology and set the pace for further developments in this technology. The second wave developed and implemented more advanced digital technology that enhanced reception and triggered the sophisticated mobile services such as short message services (SMS) and text messaging.

The second wave lasted up to the end of 1998. In South Africa, second generation level is currently in place. Japan (NTT DoCoMo) has advanced to third generation level. The third wave makes Internet services at high speeds available. NTT DoCoMo, Japan’s largest mobile phone company, released its best product to date in 1999, namely i-Mode. DoCoMo has been a phenomenal success in Japan, having acquired more than 32.99 million subscribers (Foong, 2002).

This product allows the user to surf the Internet and make calls. Customers of DoCoMo use the phone to check news headlines, track stock prices and download digital positioning maps. Mobile phones are rapidly replacing traditional phones. As we move towards the fourth wave of evolution, mobile phones are becoming multi purpose and offering Internet access and other organizational features and functions. The rapid growth of mobile telephony explains why it is an exciting area of telecommunications (Wooldridge, 1999). Figure 1.4 illustrates the development of mobile phones.

FIGURE 1.4 EVOLUTION OF MOBILE PHONES

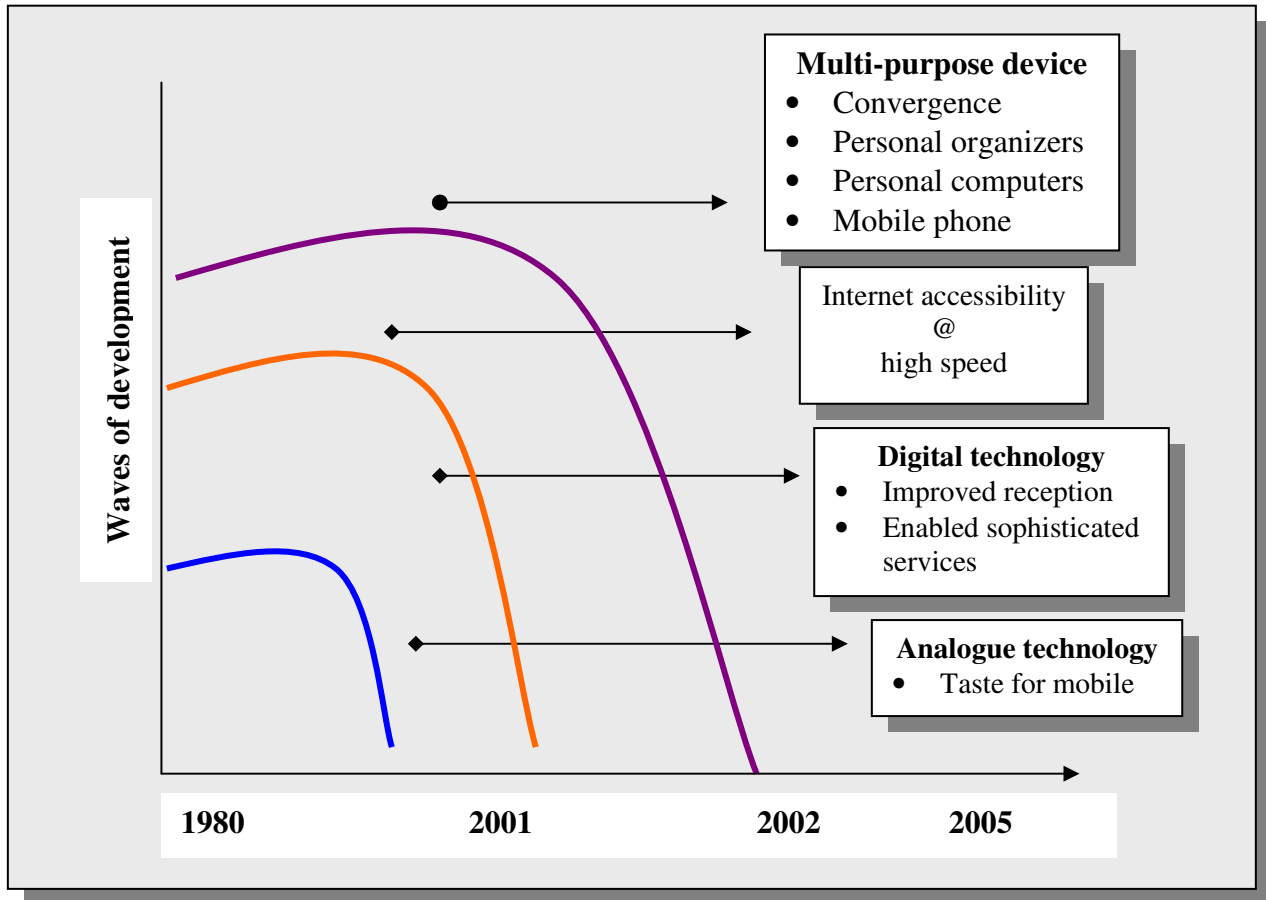
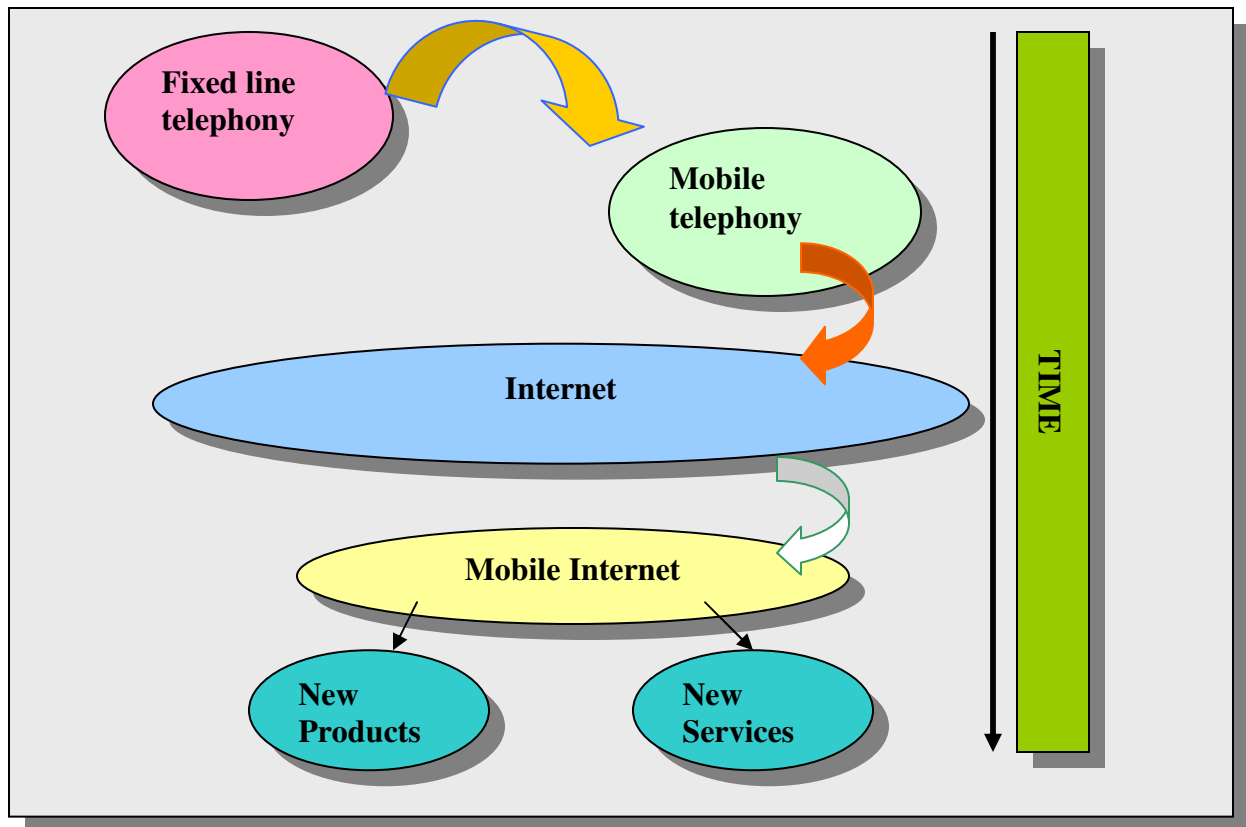


Figure 1.5 below is based on the NTT DoCoMo scenario and represents customer migration away from fixed line telephony to the more robust and versatile mobile telephony. Of significance is the mobility that cellular phones provide for the Internet. Sawhney and Parikh (2001) point out that the mobility of intelligence makes it very valuable to customers. For example, customers will be able to access a variety of information, such as finding directions, searching for a particular store, checking account balances, tracking stock portfolios and making payment for purchases.

FIGURE 1.5 FIXED LINE TO MOBILE EVOLUTION



In December 2002, South Africa's cellular subscribers totalled 14 million of whom 80% were active users, and the number of cellular subscribers is expected to increase to 20 million by 2005 (Cellular in South Africa, 2002). Subscribers who prefer pre-paid cellular services are aggressively driving the cellular growth in South Africa. Table 1.3 provides an overview of the cellular telecommunications market in South Africa as at the end of December 2002.

TABLE 1.3 SOUTH AFRICAN CELLULAR TELECOMMUNICATIONS MARKET AS AT THE END OF DECEMBER 2002

<ul style="list-style-type: none"> Market size as of 12/2002 =14 million users (<i>Note: 80% of these are active users.</i>)
<ul style="list-style-type: none"> Potential by 2006: 21 million users
<ul style="list-style-type: none"> It is dominated by Vodacom and MTN who operate at GSM 900 Mhz.
<ul style="list-style-type: none"> A license was awarded in June 2001 to the <u>Cell C</u> Consortium (live from Nov 17 2001). It operates at GSM 900 and 1800 Mhz. Cell C has 1m users (925, 000 prepaid users and 75, 000 contract users)
<ul style="list-style-type: none"> Vodacom 60% (7.2 million), MTN (5.22 million) 40% market share ; Cell C (1million) - as of December 2002
<ul style="list-style-type: none"> More than 90% of all new connections are prepaid customers.
<ul style="list-style-type: none"> Over 9 000 users sign up per day (mostly prepaid).
<ul style="list-style-type: none"> The SA market is currently worth SA Rands 23 billion and will grow to around SAR 45 billion by 2004.
<ul style="list-style-type: none"> More than 5 500 Vodacom base stations are in place to provide coverage to 60% of the geographical area of the country.
<ul style="list-style-type: none"> Together the three GSM networks cover more than 71% of the population.
<ul style="list-style-type: none"> People in previously underserved areas are making over 35 million calls (65 million minutes) per month from Vodacom's 2 135 community phoneshops.
<ul style="list-style-type: none"> Vodago is Vodacom's prepaid package and was launched in November 1996 and now accounts for more than 90% of all new connections to the Vodacom network.
<ul style="list-style-type: none"> Vodacom's network currently switches 30% of telephone volumes in South Africa and 10% of Africa's.
<ul style="list-style-type: none"> Most of the urban areas and national roads in South Africa have GSM 900 coverage.

Cellular in South Africa (2002)

Halberstadt (2000) cites Jacobs, Chief Executive Officer of Qualcomm in San Diego, who maintains that by 2005 most customers will be accessing the Internet and using wireless telephony for voice and communications. According to Jacobs, the traditional telephone will become obsolete. At the world's largest telecommunications show, CeBIT, held in Hanover, Germany in 2000, both analysts and exhibitors alike were of the opinion that the Internet will go mobile and that e-commerce will gravitate towards m-commerce. This has major implications for

telecommunications service providers. The move migration towards wireless will mean that a host of new devices, products and services will be needed. There will also be a need for high-speed data networks to facilitate mobile commerce (Halberstadt, 2000). At the same time fixed line operators will find it increasingly difficult to be competitive.

1.4.4 Internet

Lightfoot, Bertoldi and Heydenrych, 2000, p 7) defined the Internet as a “TCP/IP (Transfer Control Protocol/Internet Protocol)-based interconnection of servers worldwide that provides communications and application services to an international base of business, consumers, education, research, Government, and other organizations”. The Internet is one of the greatest inventions of the information revolution and makes possible the accessibility of information anywhere, anytime and at any place. According to BMI-TECHKNOWLEDGE (2001¹, p 529), the total South African market for Internet and e-commerce, excluding electronic data interchange (EDI), grew by approximately 68% between 1999 and 2000 when this market reached R2 848 million. The growth for 2001 was about 48%.

Table 1.4, illustrates the growth in the Internet and e-commerce services market in South Africa for the period 1999 to 2004. The e-commerce and Internet services have been divided into access and non-access services. Access services refer to those physical services that enable the customer to connect to the Internet, for example, the telephone line and computer hardware. Non-access services refer to services such as providing Internet and e-commerce services that add value to the customer by broadening sales and marketing channels, improving customer service, streamlining business processes between the front office and back office and generally improving communication and efficiency in the organization. In the period 1999 to 2004, non-access services showed a growth of 64% while access services grew by 54%. These growth figures indicate enormous opportunities for telecommunication operators in the access part of the network as well as for providing non-access services.

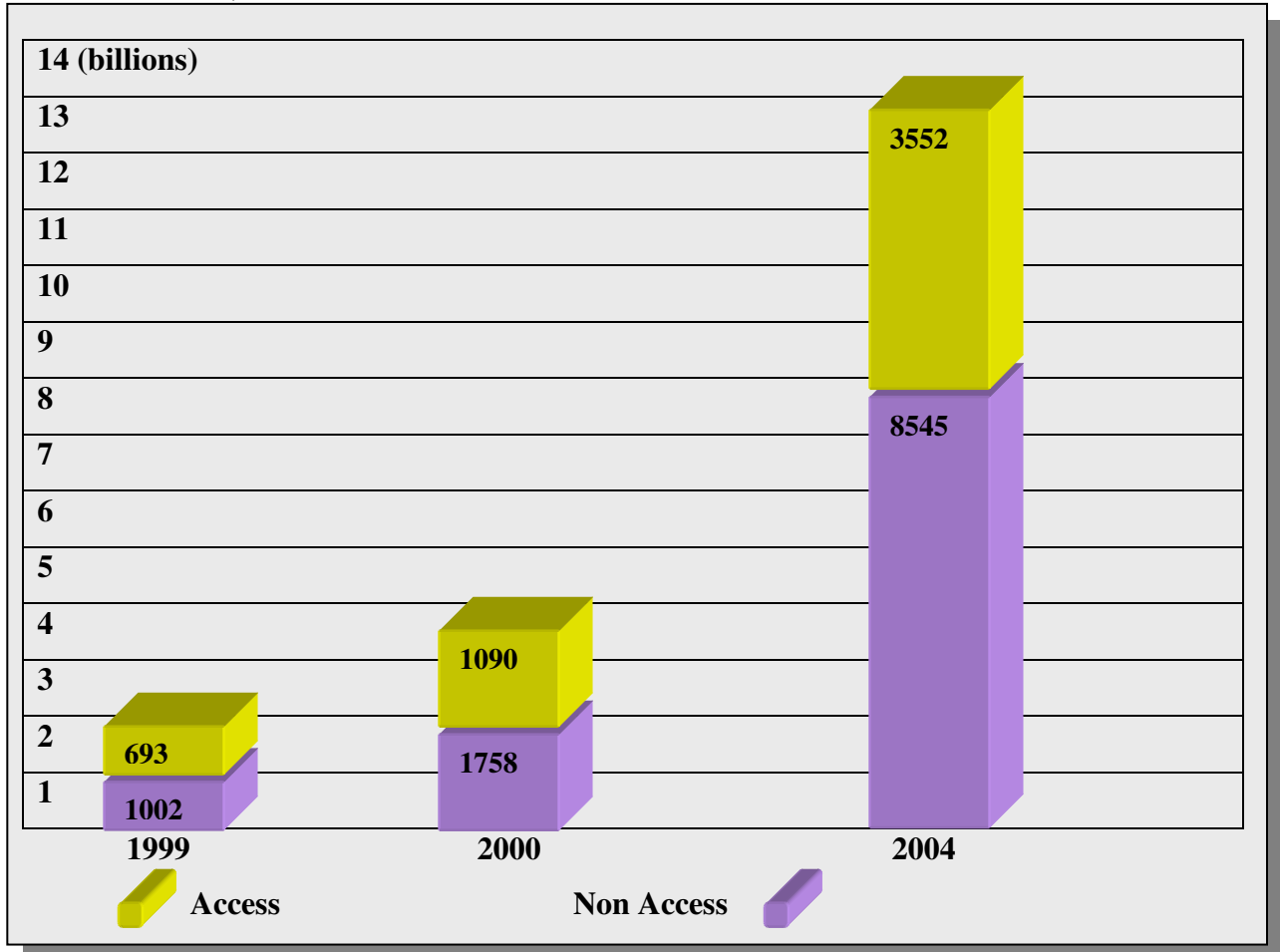
TABLE 1.4 SOUTH AFRICAN INTERNET MARKET AND E-COMMERCE SERVICES MARKET, 1999-2004

R billions	1999	2004	Growth (%)
Non access services	672	1102	64%
Consulting	124	192	54%
Application Development and Integration	305	475	56%
Network and Systems migration	27	74	176%
Operational services and outsourcing	215	360	67%
Other internet and e-commerce Services	0	0	40%
Other related Services	477	557	17%
Product Sales	253	391	54%
Access Services (as sold to customers)	581	897	54%
Leased line access	249	368	48%
Dial up access	331	529	60%
Total	1983	2948	49%

Adapted from: Lightfoot, Bertoldi and Heydenrych, 2000, p 9)

Figure 1.6 below, shows the projected size and growth of the South African Internet and e-commerce service market for the period 1999 to 2004. From figure 1.6 it is clear that revenue from non-access services will grow faster than access revenues.

FIGURE 1.6 PROJECTED SIZE AND GROWTH OF THE SOUTH AFRICAN INTERNET AND E-COMMERCE SERVICE MARKET, 1999-2004



BMI-TECHKNOWLEDGE (2001¹, p 530)

Pearce and Robinson (2000, p 93) view an industry as “a collection of firms that offer similar products or services”. The evolution of industries brings about new opportunities and threats and leads to the formation of new and emerging industries. Every industry undergoes change that is driven by factors such as competition, technology and customer demand (Pearce and Robinson, 2000). The telecommunications industry is among the industries experiencing the greatest amount of change at present, both locally and globally. The Internet is the technological force that is placing the most pressure on transforming industries across all sectors.

1.5 BRIEF OVERVIEW OF THE TELECOMMUNICATIONS MARKET FORCES IN SOUTH AFRICA

The primary driver of change in the ICT market sector is mainly convergence. New market entrants from the telecommunications industries are among the forces helping to shape the industry. According to Porter (in David, 1999), the major forces that shape all industries (including telecommunications) are:

- new market entrants
- the power of suppliers
- the bargaining power of buyers (customers)
- the threat of substitute products and services
- unforeseen events (e.g. earthquakes, terrorist attacks, and
- government policy (see figure 1.7 on page 24)

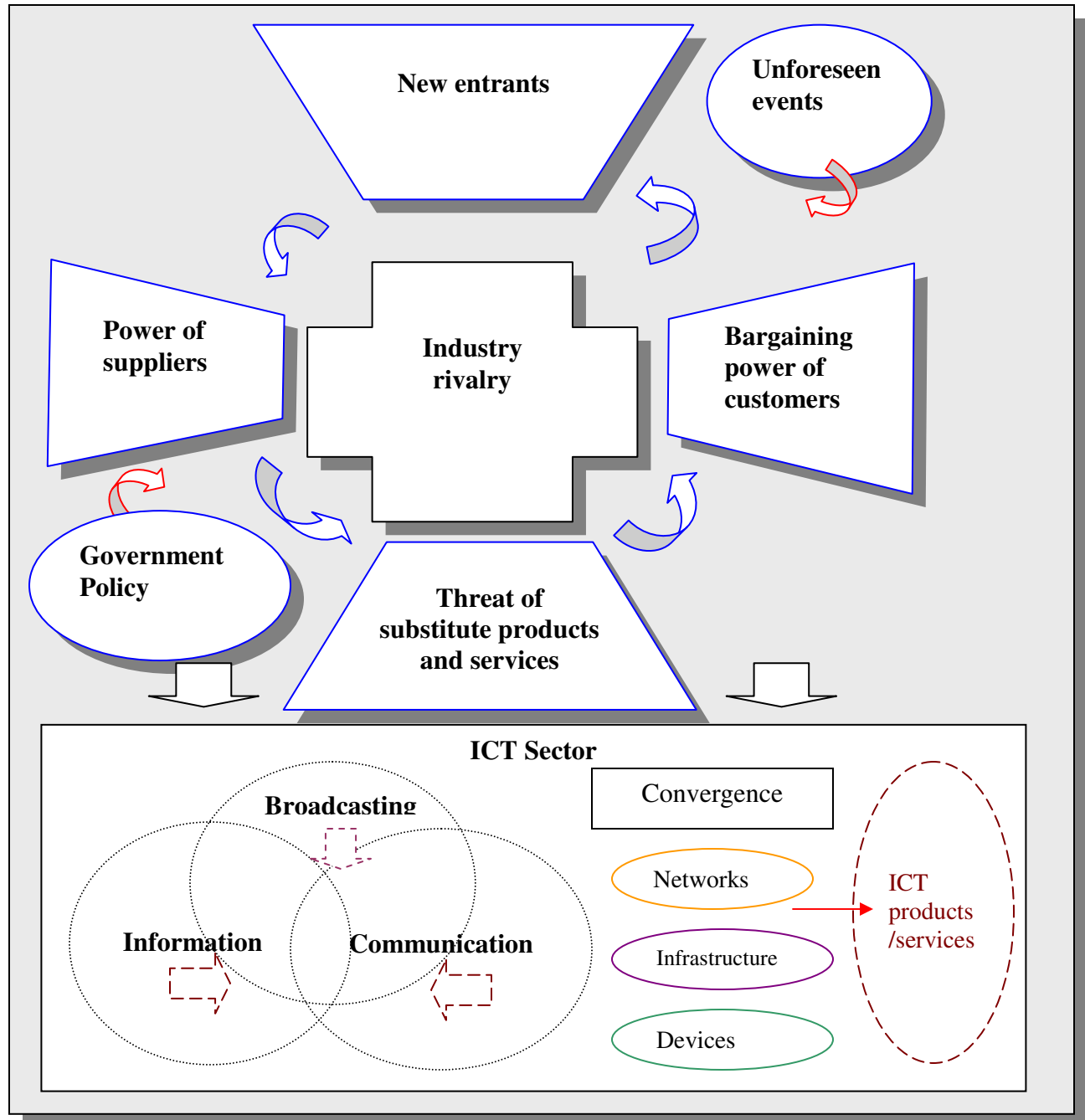
(1) New entrants. These are organizations that identify the opportunities for making a profit and then enter the respective market. An example of a new entrant to the financial services market sector in South Africa is Woolworth's from the retail sector. Woolworth's offer financial services products such as credit cards, unit trusts and savings plans to their customers. In the telecommunications sector, Transtel and Esi-tel the subsidiaries of Transnet and Eskom respectively, are new entrants.

(2) Power of suppliers. Suppliers have the ability to influence an industry by either raising prices or reducing the quality of their products or by withholding access to key technologies in the case of telecommunications.

(3) Bargaining power of buyers (customers). Customers can force prices down, demand increased quality at lower prices or ultimately engage competitors against each other. An example in the telecommunication sector is the corporate customers who have the power to negotiate tariff discounts of up to 40% with Telkom SA in exchange for long-term service level agreements (SLA). SLA's are agreements signed between the buyer and supplier that set out the terms and conditions of the service level. An example. Siemens offers a renowned packet

switching technology. Siemens has been able to sign contracts with both Telkom and Esi-tel to provide this technology solution even though it may represent a conflict of interest between the parties.

FIGURE 1.7 FORCES THAT IMPACT ON INDUSTRIES, INCLUDING THE TELECOMMUNICATIONS INDUSTRY



Adapted from: David (1999, p 127)

(4) Threat of substitute products. Substitute products provide similar utility to customers for their specific needs but place a cap on the prices charged for the product or service. Unit trusts and endowment policies with guaranteed returns on investment are examples of a substitute financial investment product. The price for unit trusts is inexpensive compared to the monthly charge for endowment products and the investment risk is borne by the unit trust investor as opposed to endowment products where the insurance company carries the risk. The best-known example of a substitute product for telecommunications is the fixed line phone and the cellular phone. Both satisfy the user's needs for communication, but cellular phones offer the user omnipresence, fashion, style and availability.

(5) Industry rivalry. The South African telecommunications industry although highly regulated is faced with a variety of industry participants such as the Value Added Network Service (VANS) providers, cellular service providers like MTN, Vodacom and Cell C, and fixed line service providers such as Telkom SA, Esi~tel, Transtel and Sentech. These industry players are competing against each other to capture market share.

(6) Unforeseen events. Unforeseen events that can have a serious impact on the industry include earthquakes, floods and terrorist attacks (like the September 11 2001 terror attack on the World Trade Centre).

(7) Government policy. Government policy plays a critical role in any industry. Regulatory policy in the telecommunications environments has a major effect on the industry. For example in South Africa, the 1996 Telecommunications Act, No. 103 and 2001 telecommunications policy directives make provision for major restructuring and liberalisation of the telecommunications sector.

1.6 STATEMENT OF THE PROBLEM

Cronjè, Du Toit and Motlatla (2000) pointed out changes taking place in the macro and micro environment in South Africa and the world impact directly or indirectly on all business organizations and therefore includes telecommunications operators. One of the primary drivers

of change is ICT, convergence, which has redefined traditional business and brought with it a paradigm shift in the way value is created for customers. South Africa is in the process of deregulating the telecommunications environment. With the introduction of competition in the telecommunications sector, service providers are suffering from revenue decline and need to investigate new revenue opportunities. This study is important to telecommunications service providers because it explores new revenue opportunities and the emergent ICT trends, opportunities and threats. Little has been written about the new opportunities created through ICT convergence for businesses in South Africa. The literature review revealed that there is little available on the subject.

1.7. OBJECTIVES OF THE STUDY

The primary objective of this study was to determine new marketing opportunities for fixed line telecommunication operators in South Africa. The researcher further wished to state the following secondary objectives of the study:

- identify the changes taking place in the telecommunications business environment in South Africa
- analyse the major drivers of change that are creating new marketing opportunities in the telecommunications sector
- identify the new marketing opportunities that are arising for fixed line telecommunication operators in South Africa
- make recommendations for market strategy for South African fixed line telecommunication operators to take advantage of the new marketing opportunities
- make recommendations for future research in the area of strategic telecommunications marketing

1.8 LIMITS OF THE STUDY

Leedy, Newby and Ertmer (1997) state that every research endeavor should be manageable. Therefore the researcher limited the study to Telkom SA. The rationale for this was that the researcher has worked for Telkom SA since 1986 and the organization is the longest established

provider of fixed line telecommunication services in South Africa and has an enormous amount of credible and reliable resources that would add to the reliability and validity of this study. Furthermore, Telkom employs the highest number of telecommunication engineers, marketing managers, strategic planners and technologists in the South African telecommunications sector. On average, more than 80% of the managerial staff in the identified population had formal technical and/or business qualifications and are involved in the telecommunications industry evolution on a daily basis.

This study was limited to the South African telecommunications sector only, because of the availability of credible internal primary information resources. Only the potential new marketing opportunities for fixed line telecommunication operators were investigated and IT (that is, IT hardware and software and IT companies not directly involved in ICT) was excluded.

Finally it should be mentioned that during the course of this study, the South African telecommunications industry underwent constant change. The researcher updated the contents of the study on an ongoing basis but set 31 December 2002 as the cut-off date to conclude the study.

1.9. DEFINITION OF TERMS

For the purposes of this study, the following terms are defined as follows:

- **A new business opportunity** refers to Information Communications Technology opportunities that arise within the market beyond the normal service of basic telephony.
- **A telecommunication operator** refers to telecommunications network operators providing both fixed and wireless services.
- **ICT** refer to Information Communications Technology.
- **Convergence** refers to the integration of telecommunications, IT and broadcasting.
- **Broadband** means a technology solution, wireless and/or cable or both, that provides for the transmission of integrated voice, data and video service in a single logical channel between the network transmitter stations/lines and the subscriber.

- **WAN** refers to a wide area network connecting many computers over a wide geographic area or region that requires the crossing of public rights of way and relies partly on circuits that are provided “by a common carrier” (Stallings, 1997, p 7).
- **LAN** is a shared medium peer-to-peer communications network that broadcasts information that all stations connecting many computers within a close area and does not require any intermediate switching node (Stallings, 1997).
- **WLAN** refers to a wireless local area network connecting many computers without any physical links between them and may connect to a backbone distribution system via a shared medium (Stallings, 1997).
- **SDH** refers to synchronous digital hierarchy, which is a communication transport technology that increases bandwidth on fibre optic cables.
- **WDM** refers to wave division multiplexing which is a communication transport technology that increases bandwidth on fibre optic cables.
- **Diginet.** Diginet is a synchronous public data network (PDN). It provides reliable permanent point-to-point services over digital transmission facilities, rather than analogue lines – thereby offering improved performance and quality of service.
- **Frame relay.** Frame relay provides high-speed data transfer for applications such as LAN-to-LAN interconnectivity. The service provides users with the opportunity to have permanent virtual circuit (PVC) connections with other users. It provides features such as PVC end-to-end error detection, committed information rate (CIR), redundant infrastructure, international access and choice of access speeds.
- **ATM.** ATM is a high-performance, cell-oriented switching and multiplexing technology (Stallings, 1997). The service is most commonly used for a wide area network that can be designed to function as a secure, virtual private network. The service provides for different classes of service, depending on guarantees for speed that a customer’s applications require.
- **VPN.** A VPN is a private network that is configured within a public network. For years, common carriers have built VPNs that appear as private national or international networks to the customer, but physically share backbone trunks with other customers. VPNs enjoy the security of a private network via access control and encryption (e.g. IPsec), while taking

advantage of the economies of scale and built-in management facilities of large public networks. VPNs have been built over X.25, Switched 56, frame relay and ATM technologies.

- **IP VPN.** IP VPNs over a service provider network (not the public Internet) provide the same privacy as a frame relay or ATM-based VPN. Security features, like encryption, can be added as an option.
- **Fixed-mobile service** means a service that provided by the PSTN licensees by means of a communication device in a static or mobile environment, using fixed or mobile infrastructure or a combination, or any technology enabling such service to be provided.
- **Public switched telecommunications networks (PSTN)** means the telecommunications systems which are installed or otherwise provided, maintained and operated by a licence for the purpose of providing the public switched telecommunications services and fixed – mobile services as defined.
- **Second national operator (SNO)** means the holder of the second public switched telecommunications services (PSTS) licence.
- **Third national operator (TNO)** means the holder of the third public switched telecommunications services (PSTS) licence.
- **Extranet** is a virtual private network that uses the public switched telecommunication network and extends beyond the organizations network linking identified stakeholders to the organizations information resources.
- **Intranet** is a secure internal ICT network that allows secure information communication within a company and between internal company stakeholders such as employees.

1.10 RESEARCH METHODOLOGY

To fulfil the research objectives a number of research methods were used. The problem being experienced by Telkom is universal. Therefore, to broaden the depth of the research, the body of literature available that had relevance to the objectives of the study were consulted to identify key trends and changes taking place in telecommunications. In addition, a number of informal

discussions were held with senior persons involved in the telecommunications industry in South Africa. To validate the findings from the literature review and informal discussions, a purposive sampling method was used. Empirical research was conducted with management from five most strategically important Telkom SA service organizations. A survey questionnaire was sent to all managers in the five Telkom SA service organizations to collect data (see Appendix C and chapter 5 for more detail regarding the research methodology).

1.11 CHAPTER LAYOUT

This chapter described the telecommunications industry, the impact of ICT on South African businesses and the major change agents transforming the telecommunications industry. The problem that prompted the study and the objectives of the study were stated. Finally, the limits of the study were discussed and the terms defined.

Chapters 2 and 3 cover the global and South African telecommunications business environments, respectively. The micro, macro and market environments, political, economic, social and other variables that affect the telecommunications industry; the major industry players, the cellular service providers and potential opportunities and challenges to the industry are among the topics discussed.

Chapter 4 deals with strategic marketing. Strategy, strategic management and marketing, marketing's strategic role, as well as the strategies to build supplier and customer relationships are discussed. A strategic marketing model for fixed line telecommunication operators, a strategic marketing process plan, and strategic options available were discussed.

Chapter 5 describes the research methodology employed in the empirical phase.

Chapter 6 discusses the findings, while chapter 7 concludes the study and makes recommendations for future study.

CHAPTER 2

THE SOUTH AFRICAN TELECOMMUNICATIONS MACRO AND GLOBAL ENVIRONMENT

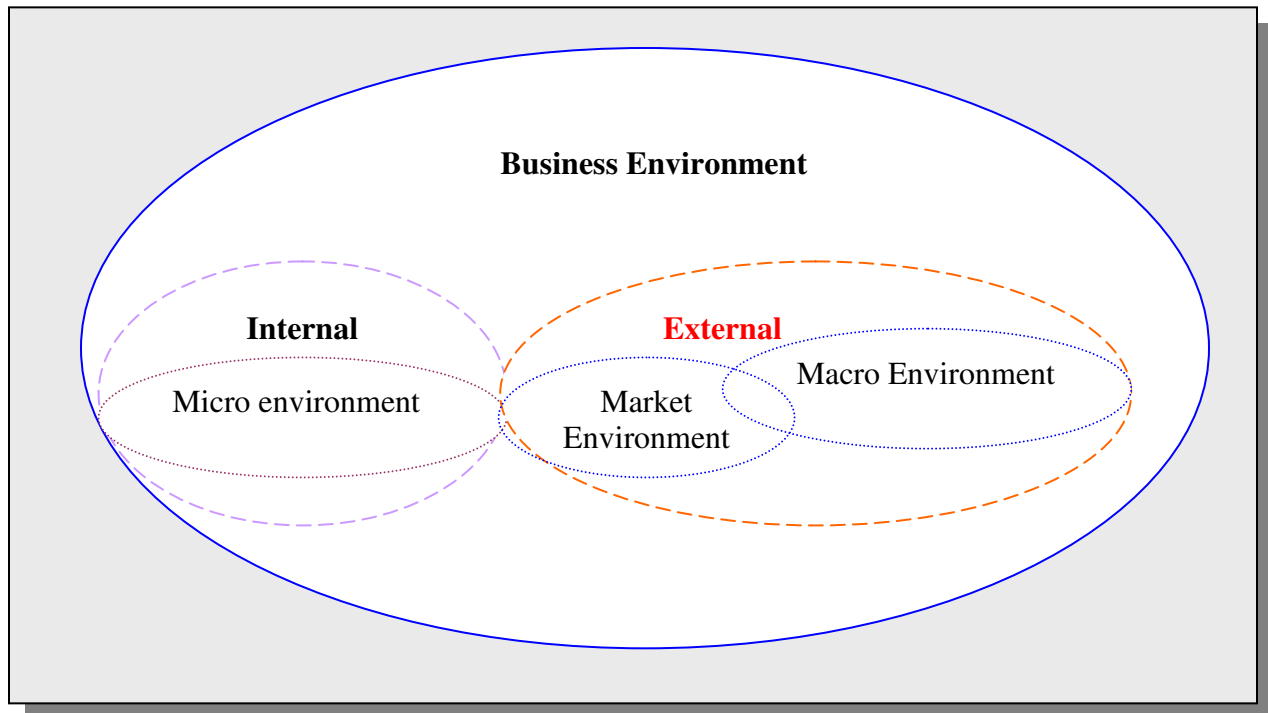
2.1 INTRODUCTION

The ability of telecommunications to transcend distance and space has had an enormous impact on economic, social, political, environmental, scientific, institutional and technological spheres. The global and South African telecommunications environments have been (and are) characterised by rapid and radical change. Kotler (1997) points out that in order to identify new marketing opportunities, the business environment has to be carefully analysed scanned and understood. This chapter discusses the variables that constitute the general business environment, business trends, macro and global environment and more specifically the South African telecommunications environment and how it influences new products and services developments in the telecommunications sector.

2.2 THE BUSINESS ENVIRONMENT

Marx, Van Rooyen, Bosch, and Reynders (1998, p 38) define the business environment as “the sum of all the variables or forces that have a positive or negative effect on the establishment, survival, growth and goal achievement of the enterprise”. They divide the business environment into the micro or internal environment (consisting of all the variables within the organization); the macro or external environment and the market or task environment. Figure 2.1 depicts the business environment.

FIGURE 2.1 BUSINESS ENVIRONMENT CONSTITUENTS



Adapted from: Cronjè, Du Toit and Motlatla (2000, p 64)

Pearce and Robinson (2000) state that the business environment can be segmented into three clearly defined sub categories, namely the remote, the industry and the operating environment. Cronjè, Du Toit and Motlatla (2000) and others such as Vorster (1999) and Marx et al (1998) refer to the business environment as the management environment and divide it into the micro, macro and market environment.

For the purpose of this study, the researcher used Cronjè, Du Toit and Motlatla (2000), Pearce and Robinson (2000) and Marx et al (1998) as a theoretical framework to evaluate the business environment.

2.2.1 The micro environment

The microenvironment comprises the variables within the enterprise itself and over which management has control, namely the enterprise's objectives, the managerial functions and the enterprise resources.

2.2.2 Market environment

The market environment comprises the organizations in an industry. The variables of the market environment determine the nature and strength of competition in the industry, and include the buyers, suppliers, intermediaries, competitors and new market entrants.

- **Buyers** are the consumers, with their needs, purchasing power and behaviour, who need a particular product or service that the industry provides. It encompasses their needs, purchasing power and behaviour.
- **Suppliers** are the businesses that supply or withhold supply of products, services, finances and raw materials to organizations of the industry.
- **Intermediaries** compete amongst themselves to distribute the products and or services of the organizations operating in the industry.
- **Competitors** are the organizations already established in the industry who compete against each other to maintain their positions.
- **New market entrants** are new organization that identify and want to take advantage of the potential opportunities in the industry by entering it.

Management has no control over the market environment, but may exercise indirect control over variables through business strategy.

2.2.3 The macro environment

The macro-environment comprises the technological, economic, sociological, physical, institutional or political, and international or global environments.

- The **technological** environment encompasses the technology responsible for innovation and introducing change.
- The **economic** environment encompasses inflation, recessions, exchange rates, monetary and fiscal policies, and the wealth and prosperity of a nation and its citizens.
- The **sociological** environment includes people's lifestyles, culture, values and habits that make demands on organizations.

- Physical environment includes the physical resources such as infrastructure, mineral and other natural resources.
- The **institutional/political** environment includes a country's economic (trade) policies and its standing in the international community.
- The **international/global** environment includes worldwide market trends and policies.

From the brief description above it is clear that the economic, political and global environments are especially closely interwoven. Cronjè, Du Toit and Motlatla (2000) points out that although management has no control over the macro environment, it should be noted that they can manoeuvre and steer the organization successfully by scanning the business environment, understanding changing trends and then developing and selecting appropriate strategies.

2.3 THE TELECOMMUNICATIONS BUSINESS ENVIRONMENT

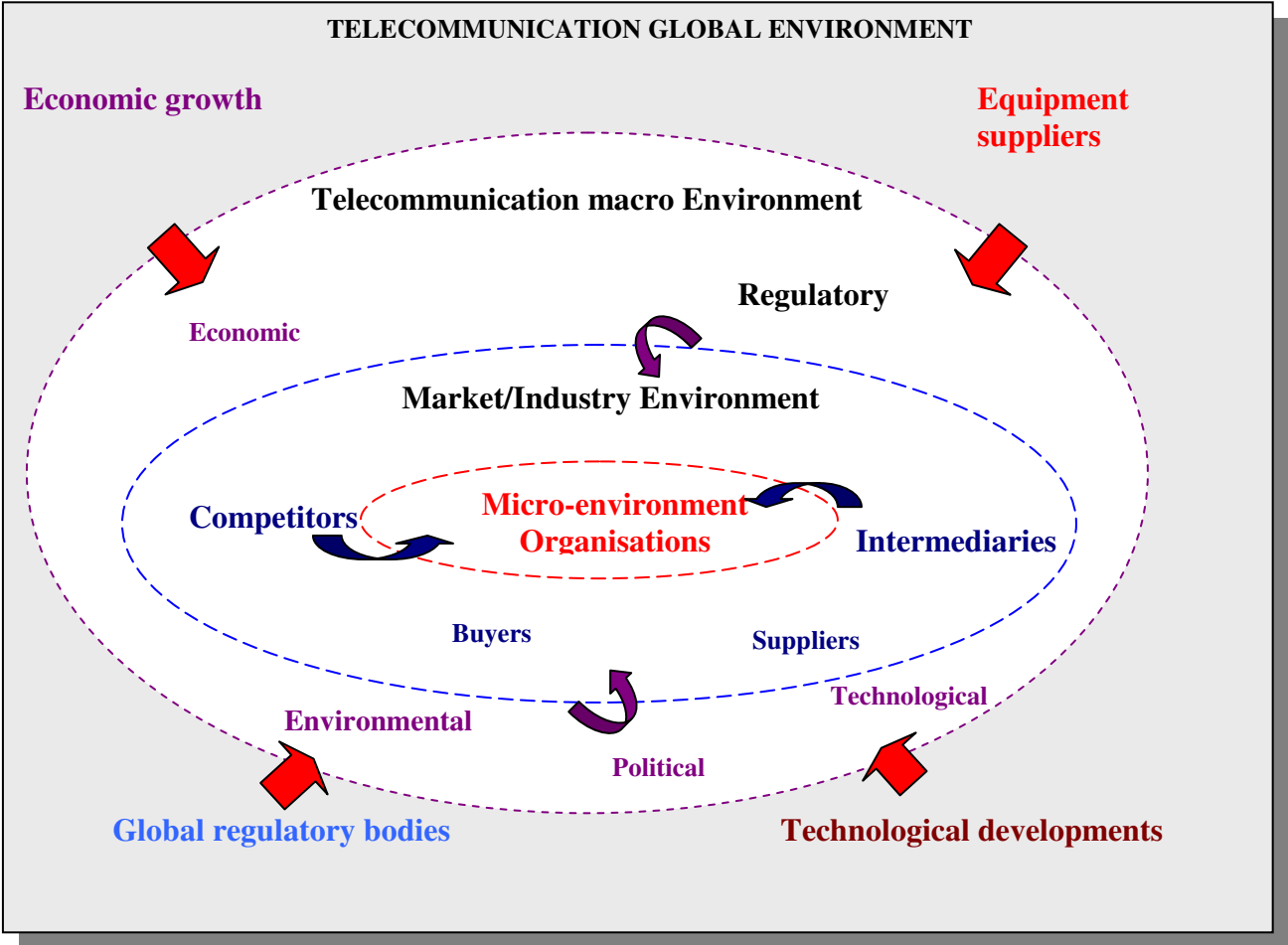
The telecommunications business environment is a complex environment. The micro environment includes the variables within the diverse organizations that operate in this environment, such as Telkom, Esi-tel, Transtel, MTN, Vodacom and Cell C and Sentech. However the focus here is on the macro environment.

Figure 2.2 below represents the telecommunications business environment. From figure 2.2 it is clear that the telecommunications business environment does not exist in isolation and is subject to the forces that operate within the micro and macro environments. Hence, organizations operating in this environment are subject to these forces of influence.

Telecommunications and IT are dependent on the external environment for their functionality (e.g., for a telephone line to link up with any national or international line it must comply with the operating standards of that line before it works). This means that the telecommunications business environment affects new products and services developments as these have to comply with the international norms and standards that allow interoperability on a national, regional and international level.

As indicated in figure 2.2, the telecommunications environment is subject to a variety of invisible forces that impact on the telecommunications industry. At a global level, which is discussed in this chapter the main forces that affect the telecommunications industry everywhere are, rapidly changing technologies, the level of world economic growth and the global regulatory forces that define the industry standards. At a national level, political, regulatory, economic, social, technological and environmental forces prejudice the telecommunications industry. Each of these forces, in turn, is subject to the global forces and impact on the various organizations that operate within the market environment, which will be discussed in the chapter 3.

FIGURE 2.2 THE TELECOMMUNICATIONS BUSINESS ENVIRONMENT COMPOSITION



Adapted from: Cronjè, Du Toit and Motlatla (2000, p 64)

Telecommunications is a strategic resource to governments because it can be used to control populations during a national crisis (e.g., war and riots) and is also a strategic enabler of

economic growth and prosperity. This makes it more susceptible than other sectors to government policies not only at national but also at regional and global level.

Since telecommunication is a global phenomenon with strategic significance, the telecommunications market in South Africa is dependent on the global environment for its survival. The South African economy is an open economy (i.e., it is both an importer and exporter of goods and services to other countries) and is seriously dependent on the global economy for its long-term survival. The South African telecommunications global environment is discussed next.

2.4 THE SOUTH AFRICAN TELECOMMUNICATIONS GLOBAL ENVIRONMENT

The four factors in the global environment that have a major impact on telecommunications products and services in South Africa are technology, global telecommunications equipment suppliers, global regulatory bodies and economic growth.

2.4.1 Technology

Technology is the one factor that exerts the most direct pressure on the telecommunications sector. Telecommunications is highly dependent on technology for its continued survival. Telecommunications enables communication between people (telephony) and computers (data) and between people and computers combined (multimedia). Its purpose is to bridge the geographical divide between people, organizations and countries. The sector's dependence on telecommunication technology makes it extremely vulnerable to the countries and organizations that produce and develop the technology.

Telecommunication innovation is driven by the manufacturing sector, which because of the high barriers to entry, is dominated by a few industry players. Developing countries are highly dependent on these organizations for the supply of first world telecommunication technology. New telecommunication products and services have to comply with the compatibility standards of these equipment suppliers to ensure that they are interoperable.

South Africa has a small telecommunication equipment industry that is highly dependent on global telecommunication equipment supply from international equipment manufacturers. With its minor telecommunications technology development segment, South Africa can be labelled a buyer of telecommunication technology. This is a serious weakness because international vendors set the standards for technology equipment and once their equipment is used, South African telecommunications organizations are locked into buying all future equipment from these suppliers to ensure that the existing equipment is compatible. This enforces South Africa's dependence on the global telecommunications manufacturers for new telecommunication technology. These manufacturers have the power to exert varying degrees of influence over the telecommunications sectors of dependent countries throughout the world.

2.4.2 Global telecommunications equipment suppliers

Table 2.1 depicts the world's top twenty telecommunications equipment vendors by company, headquarters location and telecom equipment revenue.

TABLE 2.1: TOP 20 GLOBAL TELECOMMUNICATIONS EQUIPMENT SUPPLIERS, 1998

Position	Company	Country	US \$billion
1	Lucent	USA	26.8
2	Ericsson	Sweden	21.5
3	Alcatel	France	20.9
4	Motorola	USA	20.5
5	Nortel	Canada	17.3
6	Siemens	Germany	16.8
7	Nokia	Finland	14.7
8	NEC	Japan	12.6
9	Cisco	USA	8.4
10	Hughes	USA	5.7
11	Fujitsu	Japan	5.7
12	Samsung Elec.	Korea (Rep.)	5.5
13	3Com	USA	5.4
14	IBM	USA	5.1
15	Matsushita Comm.	Japan	4.3
16	HP	USA	3.2
17	GEC	UK	3.1
18	Qualcomm	USA	2.9
19	Bosch	Germany	2.8
20	Italtel	Italy	2.2

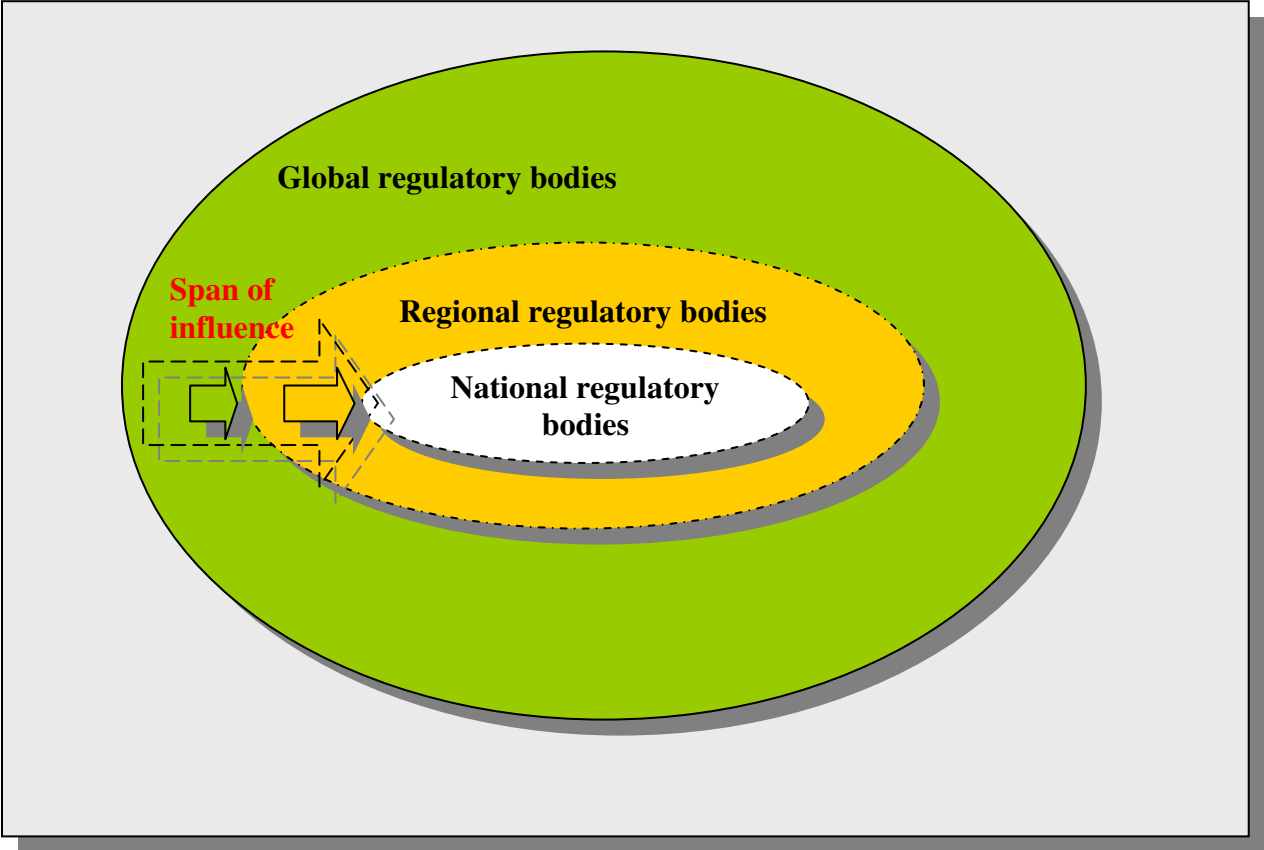
International Telecommunication Union (2002)

As depicted in Table 2.1 telecommunications equipment manufacture is controlled by the developed economies of the USA, Japan, Germany, UK, Sweden, and France. Secondly, it is clear that the flow of funds for telecommunication infrastructure investments is moving in favour of the developed economies. Telecommunications equipment supply is dominated by a few organizations (viz. Lucent, Ericsson, Alcatel, Motorola, Nortel, Siemens, Nokia and NEC) in the developed economies.

2.4.3 Global regulatory bodies

Global telecommunications development has come a long way since Alexander Graham Bell invented the telephone in 1876. Figure 2.3 below illustrates the regulatory span of influence for the global telecommunications sector on a global, regional and national level.

FIGURE 2.3 GLOBAL TELECOMMUNICATIONS REGULATORY SPAN OF INFLUENCE



The global telecommunications regulatory environment affects regional telecommunications regulation by setting international telecommunications standards for all equipment, products and services. Likewise, national telecommunications standards are set by the regional telecommunications standards. For example, South African telecommunications policies must adhere to the standards that are set by the South African Development Commission (SADC). The SADC, in turn, must comply with the international standards set by the European Telecommunications Standards Institute (ETSI), the International Telecommunications Union (ITU), the American National Standards Institute (ANSI), Intelsat and Inmarsat.

Khumalo and Sibanda (1998, p 88) point out that telecommunications development depends on the international cooperation of countries all over the world. They go on to say that international cooperation is based on “political and economic principles” and directed at ensuring that uniform technical standards apply to universal telecommunications.

From figure 2.3, it is evident that global regulation of the telecommunications sector takes place on three levels: global, regional and national. The complexity of the telecommunications sector is exacerbated by its integral dependence on international and regional regulating bodies. According to Khumalo and Sibanda (1998), the International Telecommunications Union (ITU) Intelsat, Inmarsat and other organizations were the result of the international politico-economic cooperation. A number of telecommunication regulatory bodies exist at regional and global level. To understand the role of these bodies in the global telecommunications context, the main ones will be discussed briefly. A discussion of the global telecommunications regulatory bodies is outside the scope of this study. One of the main global telecommunications regulatory bodies is the International Telecommunications Union (ITU). The ITU and some of the other regulatory bodies at global and regional level will be discussed next.

2.4.3.1 International Telecommunications Union (ITU)

Nine countries established the International Telecommunications Union with its headquarters in Geneva on 17 May 1865 to facilitate mounting cross-border communications. The name of the organization changed to the International Telecommunications Union (ITU) in 1934. By 1990, it

had increased its membership to over one hundred and sixty countries. The ITU comprises the following segments:

- **ITU-T** is responsible for coordinating international technical standards. Standards are maintained by equipment manufacturers to ensure that their products are compatible with other products. Compatibility is critical to allow different equipment to communicate with each other.
- **ITU-R** deals mainly with regulating and coordinating wireless telecommunications regarding spectrum. Radio communication works on the principle of frequency bands. The bands are divided into segments of frequencies called spectrum that are allocated for different uses such as radio, cell phones, paging services and emergency bands. The ITU-R is tasked with ensuring that the frequency spectrum allocation between countries is carefully coordinated. In addition the ITU-R also maintains a record of all the satellites in orbit as well as any new ones to be launched;
- **Bureau for Development of Telecommunication (BDT)** is responsible for issues such as the development of worldwide telecommunication (Khumalo and Sibanda, 1998).

2.4.3.2 Intelsat

Intelsat is the acronym for the International Satellite Consortium, created by an international treaty between eleven countries signed in Washington, USA, on 20 August 1964. The eleven signatories became members of the Intelsat assembly. The role of Intelsat is to deal with telecommunications operators and private players. Intelsat is a pioneer in satellite communications and a leading global communications provider, using its global satellite network to connect people and businesses. The company offers wholesale satellite communications services, such as voice and data communications, corporate networks, Internet access and video services to customers in about two hundred countries and territories. Their customer base includes leading telecommunications carriers, Internet service providers, network integrators and broadcasting companies. In 2001, the revenue generated was US\$ 1.084 billion. In the same year a major nine-satellite programme was launched to increase the flexibility and capabilities of their global satellite network.

The Intelsat business strategy is to expand by offering satellite capacity to provide for the demands of its customers. It intends to create a global, integrated communications network, comprising satellites, earth station facilities, and terrestrial cable and network termination elements, for the delivery of new connectivity solutions to the worldwide marketplace thereby securing a leadership position in the global satellite market. A major objective of Intelsat is to assist customers to succeed in their own markets, thereby igniting global connectivity.

2.4.3.3 Inmarsat

Inmarsat was one of the first global mobile satellite communications operators, and the only mobile communications satellite organization to offer an established range of modern communications services to maritime, land-mobile, aeronautical and other users. Inmarsat was created as a maritime-focused intergovernmental organization for a customer base of nine hundred ships in the 1980's. In 1999 it became a limited company serving a wide range of markets and now supports links for phone, fax and data communications at up to 64kbit/s to more than 210,000 customer segments including ship, aircraft, vehicles and portable terminals. There is a steady demand for these services.

Inmarsat provides phone, fax and data communications all over the world through a network of satellites. The satellite network uses five third-generation satellites supported by four spacecraft. Satellite control is carried out from Inmarsat's headquarters in London. Global Maritime and Safety System, a small international government organization (IGO) was established to supervise the company's public service duties for the maritime community and aviation (air traffic control communications) also operates at the headquarters.

Inmarsat has offices in Dubai, Singapore and India. Independent service providers that offer a range of voice and multimedia communications use today's Inmarsat system. Users include ship owners and managers, journalists and broadcasters, health and disaster relief workers, land transport fleet operators, airlines, airline passengers and air traffic controllers, Government workers, national emergency and civil defence agencies, and peacekeeping forces.

The Inmarsat business strategy is to establish market dominance through new product and service opportunities created by the convergence of ICT, and mobility while continuing to serve traditional maritime, aeronautical, land-mobile and distant markets. A cornerstone of this strategy is the newly developed Inmarsat I-4 satellite system, which from 2004 will provide support to the Inmarsat Broadband Global Area Network (B-GAN), thereby promoting mobile data communications (m-commerce) at transmission speeds of up to 432kbit/s for Internet access, mobile multimedia and a host of other advanced applications such as mobile Internet.

2.4.3.4 The American National Standards Institute (ANSI)

For over eighty years, the American National Standards Institute (ANSI) has served in its capacity as administrator and coordinator of the United States private sector voluntary standardization system. Founded in 1918 by five engineering societies and three Government agencies, the Institute remains a private, nonprofit membership organization supported by a diverse constituency of private and public sector organizations.

Throughout its history, the ANSI Federation has maintained as its primary goal the enhancement of global competitiveness of US business and the American quality of life by promoting and facilitating voluntary consensus standards and conformity assessment systems, and their integrity. The Institute represents the interests of its nearly one thousand company, organization, Government agency, institutional and international members through its office in New York City, and its headquarters in Washington, D.C.

2.4.3.5 The European telecommunications Standards Institute (ETSI)

The European Telecommunications Standards Institute (ETSI) is a non-profit organization whose mission is to produce the telecommunications standards that will be used for the foreseeable future throughout Europe and elsewhere. Based in Sophia Antipolis, south of France, ETSI unites over eight hundred members from fifty-four countries inside and outside Europe, and represents administrations, network operators, manufacturers, service providers, research bodies and users. Its members, who are also responsible for approving its deliverables, determine the

Institute's work programme. As a result, ETSI's activities are maintained in close alignment with the market needs expressed by members. ETSI plays a major role in developing a wide range of standards and other technical documentation as Europe's contribution to worldwide standardization in telecommunications, broadcasting and information technology. ETSI's prime objective is to support global harmonization by providing a forum in which all the key players can contribute actively. The European Commission and the EFTA secretariat officially recognize ETSI.

2.4.4 Regional telecommunications organizations

Besides the organizations that operate in the global telecommunications environment, various telecommunications organizations operate on a regional level. The regional telecommunications organizations will be discussed according to continent.

2.4.4.1 Africa

The following are the main organizations involved in the telecommunications industry throughout Africa:

- the ITU;
- the Pan African telecommunications Union (PATU);
- the Organization of African Unity (OAU);
- the African Advanced Level telecommunications Institute;
- the Economic Commission for Africa (ECA);
- the Common Market for Eastern and Southern Africa (COMESA);
- the Southern African Transport and Communications Commission (SATCC), which forms part of
 - the Southern African Development Commission (SADC);
 - the Southern African telecommunication Association (SATA)
 - the Telecommunications Regulators Association of Southern Africa (TRASA)
 - the Economic Organization of West African States (ECOWAS)

Each of these organizations influences telecommunications development in some way in Africa.

2.4.4.2 North America

In North America, the following American and Canadian regulators dominate:

- the Federal Communications Commission (FCC) (USA)
- the Canadian Radio and Telecommunications Commission (CRCT) (Canada)

Besides their North American influence these organizations also affect global telecommunications.

2.4.4.3 Europe

Europe is influenced two main organizations namely

- the European Union (EU)
- the European telecommunications Standard Institute (ETSI).

These European organizations are very important for the South African telecommunications sector because South Africa has adopted the European technical standards.

2.4.4.4 Asia

Khumalo and Jabulani (1998) state that no regional organizations influence the Asian telecommunications sectors instead, the Asian telecommunications sector is influenced at a national level, because like China and India have huge markets. The two regional organizations with limited involvement on the national level are

- the Association of South East Asian Nations (ASEAN); and
- the South Asia Regional Cooperation (SARC).

2.4.4.5 The Middle East

In the Middle East, three organizations regulate telecommunications, namely

- Arabsat
- The Arab league
- The Gulf Consultative Council

The above regulatory bodies have an impact on the telecommunications business environment either regionally or globally. For instance international telecommunications policies established by the ITU have a significant impact on telecommunications in all countries. This in turn, impacts, on the telecommunications products and services that are developed for telecommunications operators. Any new product and service developments are restricted by national, regional and international regulatory policies.

2.5 THE GLOBAL ECONOMY

As an enabler of economic development, telecommunications is dependent on the global economy for its development and growth. Telecommunications products and services, in turn, are dependent on customer needs for voice, data and image communication. For example, a financial service organization that has twenty branch offices throughout South Africa will require the use of telecommunications to communicate with each of these branches. However, this need will only exist if the organization's business is performing well; in other words customers are buying financial services products from the organization's branches. If customers do not buy financial service products, the organization will fail to meet its financial objectives and will close down. Similarly global telecommunications depends on the world economy for its growth and development. This study is to determine the new product and service opportunities that exist for fixed line telecommunication operators and that any new telecommunication product and services developments is dependent on the state of the global economy, this section aims to explore the global economy to determine its current health and future prospects.

2.5.1 The health of the global economy

The ABSA Bank quarterly economic indicators report (2002) uses three general measures to determine the health of the global economy, namely Gross Domestic Product (GDP) (measures the growth of the economy), the Consumer Price Index (CPI) (measures the increases in prices of goods and services) and the price of crude Brent oil (any increase in the price of Brent crude oil will result in a general increase in the prices of goods and services; likewise a decrease in the price of Brent crude oil will generally cause the prices of goods and services to come down). Table 2.2 below depicts the quarterly international indicators for these three measures for the period September 2000 to December 2001.

TABLE 2.2 QUARTERLY INTERNATIONAL INDICATORS

International Indicators	Sep-00	Dec-00	Mar-01	Jun-01	Sep-01	Dec-01
US real GDP (q/q % annum)	1.3	1.9	1.3	0.3	-1.3	1.4
Euro real GDP (q/q % ann.)	1.6	2.4	9.7	0.3	0.6	-
UK real GDP (q/q % ann.)	3.5	2.2	3.0	1.8	1.9	-
Japan real GDP (q/q % ann.)	-2.9	1.1	4.1	-4.8	-2.1	-
US CPI (q/q % ann.)	3.5	3.4	3.4	3.4	2.7	1.9
Euro 11 CPI (q/q % ann.)	2.5	2.7	2.5	3.1	2.7	2.2
UK CPI (q/q % ann.)	3.2	3.1	2.5	1.9	1.8	1.0
Japan CPI (q/q % ann.)	-0.7	-0.5	-0.1	-0.5	-0.7	-0.9
Brent crude oil (\$/barrel)	30.4	29.8	25.8	27.3	25.3	19.4

Adapted from ABSA (2002)

From Table 2.2, it is clear that in the US economy, real GDP bottomed out during September 2001, possibly because of the September 11 2001 terrorist attacks. However, in the final quarter between September 2001 and December 2001, real GDP increased from -1.3% to positive 1.4%, indicating a shift towards more favourable growth during 2002. In contrast, the US CPI showed a reduction from 2.7% to 1.9%, indicating a slowing down in consumer demand in the US. The European, United Kingdom (UK) and Japanese economies showed a similar trend. Between June

2001 and September 2001, the Japanese economy registered a negative growth of -4.8 % and -2.1%, respectively.

Table 2.2 indicates that global growth had slowed between September 2000 and September 2001. The CPI also decreased steadily, reflecting the general lack of consumer demand in the developed economies. Brent crude oil showed a reduction in price from December 2000 to December 2001 from \$30.4 dollars to \$19.4 dollars per barrel and this trend supported the general economic slowdown of the global economy.

A general slowdown of the global economy has serious implications for telecommunications operators and especially for any new product and service developments. A slowdown in the global economy means that business activity is slowing and consequently decreased telecommunications spending. Such a situation adversely affects any new products or services introduced into the market because product developments are not likely to be recovered in a short time. Moreover, it could be catastrophic for telecommunications organizations if the new products and services failed to meet customer expectations, resulting in total failure of the product and service.

Telecommunications spending decreases for two reasons (1) because of a slowdown in economic activity and (2) because most organizations try to scale down on their expenses by cutting their short-term variable expenses first. At the same time a global slowdown introduces new opportunities for telecommunications services providers. Organizations that reduce their short-term expenses resort to using ICT more efficiently to overcome other expenditures. For example, organizations strive to decrease their travel expenses by using technology applications like video conferencing and electronic mail (e-mail). Organizations change their working habits by changing over to virtual mobile offices. Instead of having permanent offices, employees can operate virtual mobile offices from home, using computers (PC's). By logging onto the organization's Intranet (private information network) through the Internet, employees are able to send and receive information from the organization (see chapter 1, section 1.2.1 for the projected growth in ICT spending for the various industries).

An economic slump could also force consumers to become more selective in their product and service choices. More and more customers might begin to explore alternative purchasing channels, which in turn, could result in an expansion of the electronic commerce market and an explosion in electronic commerce activity. *Telkom management perceptions on the effects of the global economic slowdown on the telecommunications business environment were investigated empirically by means of a questionnaire (see questionnaire in Appendix C).*

2.5.2 Future prospects for the global economy

Table 2.3 represents the Absa Group's (2002¹) sectoral outlook on the key variables and projections for four of the major international economies.

TABLE 2.3 KEY VARIABLES AND PROJECTIONS FOR MAJOR INTERNATIONAL ECONOMIES

International Real Output (GDP % change)	1998	1999	2000	2001	2002	2003
USA	4.3	4.1	4.2	1.2	1.8	2.8
Japan	-1.0	0.7	2.2	-0.4	-1.9	1.0
Germany	1.7	1.7	3.2	0.7	0.7	2.5
UK	3.0	2.1	3.0	2.4	1.9	2.9
International Inflation (CPI % change)						
USA	3.4	1.6	2.9	1,8	1.9	2.3
Japan	0.7	-0.3	-0.6	-0.8	-0.3	1.3
Germany	0.9	0.6	1.9	2.5	1.3	2.5
UK	3.4	1.6	2.9	2.0	1.6	2.4

Adapted from: Absa Group (2002¹)

The sustained efforts of the United States Federal Reserve (Fed) to boost the US economy by its continued interest rate manipulation were a significant factor in the global economy at the end of 2001. In December 2001, the Fed Funds rate (the rate that the federal reserve charges commercial banks) was reduced by 25 basis points to 1,75%. The US year-on-year CPI October 2001 was 2.1% implying a negative real Fed Fund rate of 0.35%, indicating that the Fed was

desperate to uplift the economy in a short period. General speculation was that the Fed would continue to cut rates by a further twenty-five basis points, which would have a positive impact on the US economy by encouraging corporate lending and increased consumer spending. However, the danger of quickly reducing interest rates lies in inflation. Such rapid interest rate cuts could lead to the US economy heating up quickly through consumer spending and inflation spiralling out of control. The Fed's concerns were driven by real GDP that has fallen by 0.4% on a quarter on quarter annualised basis compared to a 0.3% rise in the previous quarter.

In 2002, the US was knocked by a spate of poor corporate results and corporate failures such as Enron. The majority of corporates reporting poor results came from the tech heavy Nasdaq, suggesting that the technology sector was more seriously affected by the economic slump. At the same time many economists were concerned about when the US economy could expect an upturn. According to Absa Group (2002², pp 1-2), there appeared to be a “widely held view” that an economic upturn would occur in the second half of 2002. This view was based on the interest rate cuts and fiscal stimulation measures that many believed would support a quick economic recovery. However, at the end of 2002 the global economy was still in a recession.

The series of interest rate cuts in the US changed the interest rate differentials between the US and the Eurozone. In the US three-month money market, rates were about 150 basis points higher than Eurozone rates in the final quarter of 2000. However, in the first quarter of 2002, the Eurozone rates were 150 basis points higher than the US, a situation created by the European Central Bank's conservative approach to inflation. In October 2001, the Eurozone CPI measured 2.4% compared to 2.7% in 2000. This was a relatively small decline compared to the US where CPI measured 3.5% in October 2000 and 2.1% in October 2001. According to the Absa Group (2002²), the Eurozone inflation decline could be attributed to much stronger economic growth in the Eurozone compared to the US. The Eurozone GDP at the end of the third quarter was positive, measuring 0.4% on a quarterly annualised basis. Although the Eurozone had experienced declining growth, the decline had been much less than in the US.

Despite the stronger growth in the Eurozone, the US growth was expected to pick up in the second half of 2002 and outstrip the Eurozone largely because of the Fed's stimulatory macro

economic initiatives such as reducing interest rates. There were indications of a possible recovery in the economies of the countries in Europe and the US (see table 2.3). Such a recovery would bode well for the world economy and lead to growing demand for goods and services from the first quarter of 2003. Any such recovery would normally lead to a stimulation of the global ICT industry as global organizations rallied to become more competitive by using ICT to achieve greater effectiveness and efficiencies.

This could have a major impact on the telecommunications sector because as global growth is experienced, the demand for telecommunications generally increases. Increased demand could lead to increasing profits and consequently the entry of new players into the telecommunications sector. This could promote aggressive rivalry in the telecommunications market as new entrants tried to capture market share, which might mean that ICT organizations worldwide will race to capture market share among customers, leading to aggressive tactics in new product and services development to ensure longer-term survival. This would also impact on the South African telecommunications industry. *A question formulated to determine if an improvement in the global economy will lead to an increase in demand for new telecommunication products and services was asked to Telkom management during the empirical research phase.*

2.6 THE SOUTH AFRICAN TELECOMMUNICATIONS MACRO ENVIRONMENT

The political, economic, social, technological and regulatory environments affect the telecommunications industry as it does in all other industries. As the provider of communications and information technology products and services, the South African telecommunications industry has a major effect over all other South African industries and economic activity.

Table 2.4 illustrates the BMI-TECHKNOWLEDGE (2001¹) forecast revenues for the South African telecommunications sector for the period 2000 to 2005. The telecommunications business environment in South Africa is characterised by brisk change and development, with a variety of opportunities and potential threats for service providers. According to the BMI-TECHKNOWLEDGE (2001¹), revenues generated for the telecommunications market in South Africa were estimated to have been R48 billion (US\$ 4 billion) in 2000 (see table 2.4). The

report estimates that at a growth rate of 10.5%, the market would exceed R82 billion (US\$ 7 billion) by the end of 2005.

Table 2.4 indicates that all the telecommunications sub segments with the exception of paging services are projected to achieve positive compounded annual growth rates (CAGR) between 2000 and 2005. Data services are projected to show a compounded annual growth rate of 27%, making it the telecommunications sub segment with the highest growth. The BMI-TECHKNOWLEDGE forecasts data revenue exceeding voice revenues in the future with paging services showing negative growth for the same period (see table 2.4).

TABLE 2.4 SA TELECOMMUNICATIONS SERVICES MARKET REVENUE FORECASTS (RM), 2001-2005

SA telecommunications Sub-Segments	2000	2001	2002	2003	2004	2005	CAGR
Fixed line	25 235	30 618	35 319	39 738	42 537	45 286	11.5%
Cellular	18 054	21 704	24 150	27 638	30 372	32 330	12.4%
Data Services	4 563	7 263	10 096	13 027	15 545	17 965	27.3%
Mobile satellite	54	59	69	86	91	98	12.3%
Paging services	62	56	69	86	91	26	-16.4%
Radio trunkingand Public mobile radio	45	49	52	54	55	56	4.2%
Niche market services	80	100	120	130	150	170	16.3%
Total	48 093	59 849	69 858	80 717	95 931	95 931	12.2%

Source: BMI-TECHKNOWLEDGE (2001¹, p 494)

The negative growth rate for paging services could be due to redundancy or cellular phones (that provide more advanced services) replacing paging services. It is significant that the telecommunications sector is projected to grow at a total CAGR 12,2%, which emphasises the future revenue potential of this sector.

2.6.1 Telecommunications political and regulatory environments

Local and international governments play a major role in regulating the industry (David, 1999). Political, regulatory and legal forces have a serious impact on the South African ICT industry. These forces can represent key opportunities and/or threats for the industry. For example, the South African Government's attempts to promote the growth of IT in the Western Province (e.g., Cape IT Initiative - CITI), to boost employment and ICT cluster development poses a serious threat to existing industry operators because of new market entrants who are drawn to new opportunities. (An ICT cluster is a group or collection of businesses that provide similar products and services in a confined geographic area.)

All the major players in the South African ICT industry are dependent to some extent on the parastatal Telkom, for major contracts to provide telecommunications hardware. The South African Government's objective of providing telecommunication services to historically disadvantaged communities created opportunities for organizations in the ICT industry, both locally and internationally. The Government itself is a major buyer of ICT solutions. Political issues like environmental and heritage preservation affect the ICT industry as well. The erection of microwave masts and satellite dishes are a contentious issue for the industry at present. The present international drive to create a new world order through globalisation (global village) creates vast opportunities for the ICT industry. The telecommunications industry in South Africa is highly regulated and falls under the regulation of the Independent Communications Authority of South Africa (ICASA) at present. The Government's protectionist refusal to deregulate the telecommunications industry in the past was also responsible for unfair competition in the ICT industry. Although not involved in all the activities of the ICT industry Telkom monopolised the telecommunications market. The liberalisation of the ICT industries in the developed economies and some parts of Africa by Governments fundamentally altered what used to be a highly regulated industry. The opening up of the industry provided enormous opportunities and threats for existing and new organizations in the ICT industry. For example, the total deregulation of the Customer Premises Equipment (CPE) market telephone manufacture and supply opened up opportunities for phone and switchboard manufacture to Hymax, and other organizations.

In South Africa, as in other countries the political and regulatory environments for telecommunications are intertwined, perhaps because telecommunications is a strategic resource that facilitates economic growth and enhances social well-being. It is important to note that the South African telecommunications regulatory environment has been structured to compensate for the past imbalances in telecommunications distribution among the different racial groups under the previous apartheid government.

2.6.1.1 An overview of the South African political environment

In 1948 the Afrikaans-speaking Nationalist Party (NP) came into power in South Africa. The NP introduced a policy of “apartheid” or racial segregation, which it called separate development. To enforce racial segregation, the NP introduced the Group Areas Act No. 41 of 1950 and the Bantu Authorities Act No. 68 of 1951. Indians (Asians), Coloureds and Blacks were all classified as Blacks. The Bantu Authorities Act made provision for African ethnic “homelands”, which were “independent” states in rural areas of the country. Blacks who were allowed to work in the cities and mines lived in “locations” (townships) outside towns and cities. The rationale was that when they retired, they would return to the “homelands” and receive a pension there. Education, recreational facilities, transport and religion (worship) were all subject to segregation by law.

Among other things telecommunications penetration was extremely limited in the “homelands” and segregated rural areas. In 1994, in South Africa’s first democratic election, the black majority African National Congress (ANC) came to power. Among its first responsibilities were the drafting and introduction of the Constitution with its Bill of Human Rights, and Reconstruction and Development Plan (RDP). One of the biggest challenges facing the Government in the reconstruction and development of the country and its economy was the critical shortage (backlog) of telecommunications infrastructure, mainly in the rural areas and former “homelands”, which was a legacy of apartheid.

The ANC Government recognised the economic, social and political importance of telecommunications. The Government’s vision for the telecommunications sector was to create a balance between “the provision of basic universal service to disadvantaged rural and urban

communities with the delivery of high-level services capable of meeting the needs of a growing South Africa” (White Paper on Telecommunications, 2002, pp 5-8).

Telecommunications plays a critical role in modern Government. It serves as an instrument to deliver basic services in healthcare, education and other areas, is an important driver in stimulating small business, and enables a communication channel that makes possible social participation in democratic processes at community, provincial and national levels.

2.6.1.2 The role of the South African Government in telecommunications

The South African Government has been key in shaping the telecommunications industry. The telecommunications sector was highly regulated in the past. Up to the end of 1990 the state controlled department of Posts and telecommunications (PTT) was the sole provider of telecommunication services. After 1991, the Government embarked on deregulation, by separating the Department of Post and Telecommunications into two separate commercial entities, namely, Telkom SA and the South African Post Office (SAPOS).

The rapid pace of globalisation, brought about by ICT innovations steered Government focus towards gradually liberalising this sector by the launch of the Green Paper on Telecommunications Policy, on 7 July 1995, after extensive consultation within the telecommunications sector (including network operators, labour, civic and black business groupings, the Electronic Industries Federation and National Telecommunications Forum). Consequently, a new market structure, involving a five-year exclusivity period for the parastatal, Telkom after which liberalisation would be phased in and closely monitored by an independent regulator, was implemented.

The 1996 Telecommunications Act made provision for future development in the South African telecommunication sector. The major objectives of this Act according to Naidoo (1997) were to

- create a Universal Service Fund and Human Resource Fund
- promote affordable telecommunications services

- ensure the promotion of universal affordable telecommunications services that were responsive to the needs of users and consumers and of fair competition within the telecommunications industry.

In South Africa the Government has been at the center of telecommunications development and reform. The Telecommunications Act No. 103 of 1996 was extremely significant in that it introduced the concept of liberalisation (freeing the sector from unnecessary rules and regulations) and phased competition (introduce competition into the telecommunications sector in phases). This Act was very important to the growth of the telecommunications sector and posed a serious threat to the incumbent Telkom. Provision was made for a market growth strategy that would expand telecommunications penetration to areas that had no access to telecommunications services before and new market spaces for business organizations that could benefit by using technology to reach a larger mass market. The Department of Communications is responsible the implementation of the Act and for the telecommunications sector.

2.6.1.3 The Department of Communications (DoC)

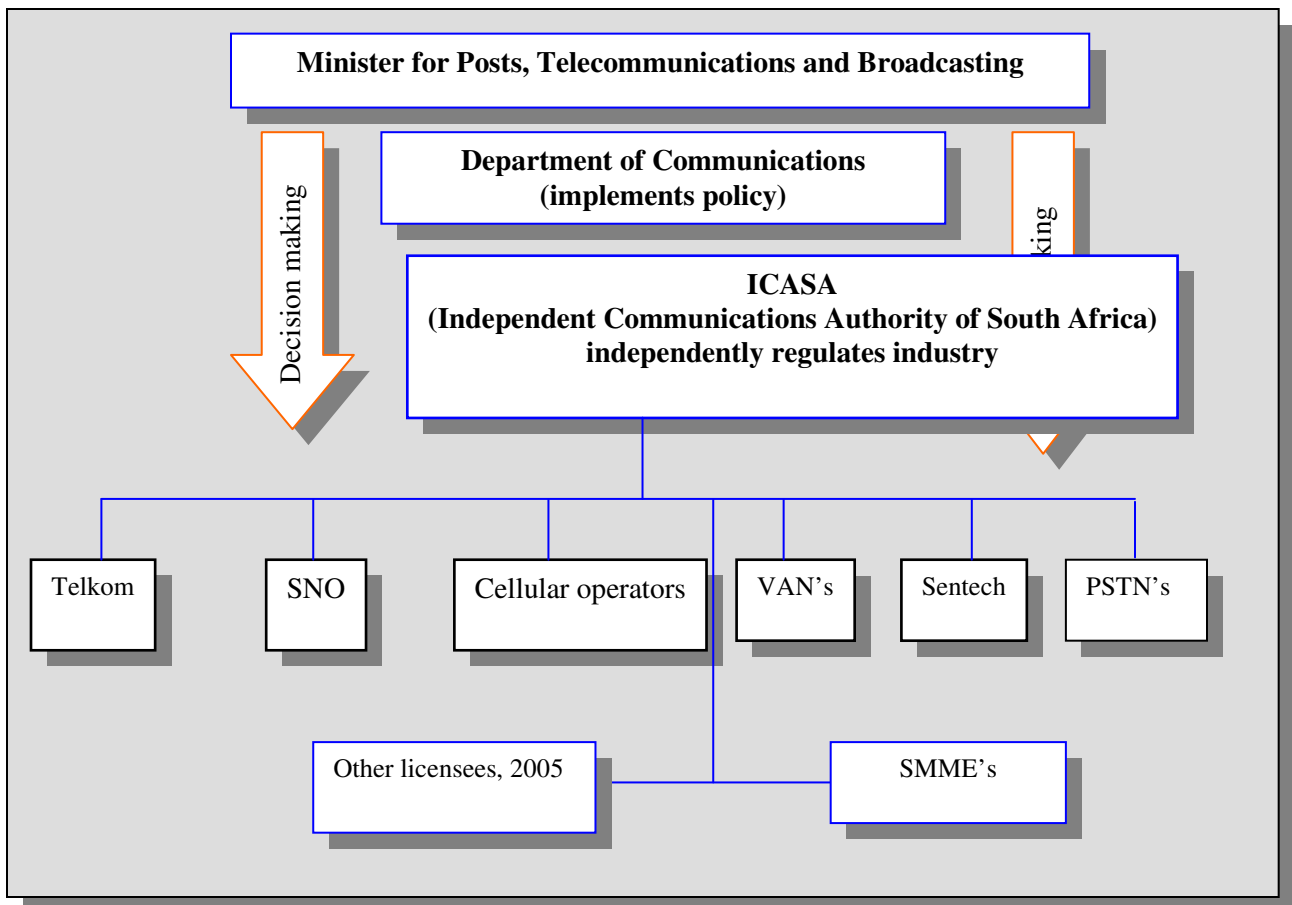
Figure 2.4 shows the structure for telecommunications policy making in South Africa. The Department of Communications is the executive body of the South African Ministry for Posts, Telecommunications and Broadcasting, and is responsible for policymaking and policy review for the posts, telecommunications and broadcasting sectors in the country, including policy on state-owned enterprises, such as Telkom SA Limited, the South African Post Office (Pty) Ltd, Sentech, the South African Broadcasting Corporation (SABC), and regulators like the Independent Communications Authority of South Africa (ICASA).

One of the main objectives of the Department of Communications is to enable all South African citizens to have access to both traditional media and information technology. The Department's initiatives include the following:

- **Telemedicine**, which uses ICT to enable clinics situated in the rural areas to obtain specialised medical diagnoses from specialists working at urban medical centres.

- **Tele-education, which** aims to contribute to increasing literacy by using telecommunications technology to provide distance education to remote communities.
- **Teleshopping**, which enables online shopping.
- **Televoting, which enables** communities in remote areas to cast their ballots using telecommunications.
- **Telebanking, which** enables banking to be conducted through ICT.
- **Public Information Terminals**, which provide access to electronic government information (to obtain information about government, government Acts, contact details, new policies, and electronic commerce (to conduct financial and commercial services transactions using ICT).

FIGURE 2.4 STRUCTURE FOR TELECOMMUNICATIONS POLICY MAKING IN SA



The Telecommunications Act, No. 103 of 1996 altered both the role and functions of the Department of Communications. The name of the Department of Posts and Telecommunications was changed to the Department of Communications, the head of the Department changed from Postmaster General to Director-General. These developments changed the role of the Department substantially. Accordingly, the Department was restructured to mirror the changed priorities in the telecommunications sector and the new policy needs of broadcasting and postal services. To deliver on the policy mandates, the Department established three policy units for posts, telecommunications and broadcasting. Their functions included the following:

- the development of telecommunications, broadcast and postal networks and services that advances translucent two way communication between the Government and all South-African communities
- facilitating east/west/north/south regional interaction
- developing a national standards policy to promote South Africa's interest in the development of international technology standards and to ensure the maintenance of these standards in Africa
- developing policy and regulations that encourage infrastructure development
- the creation of national policy

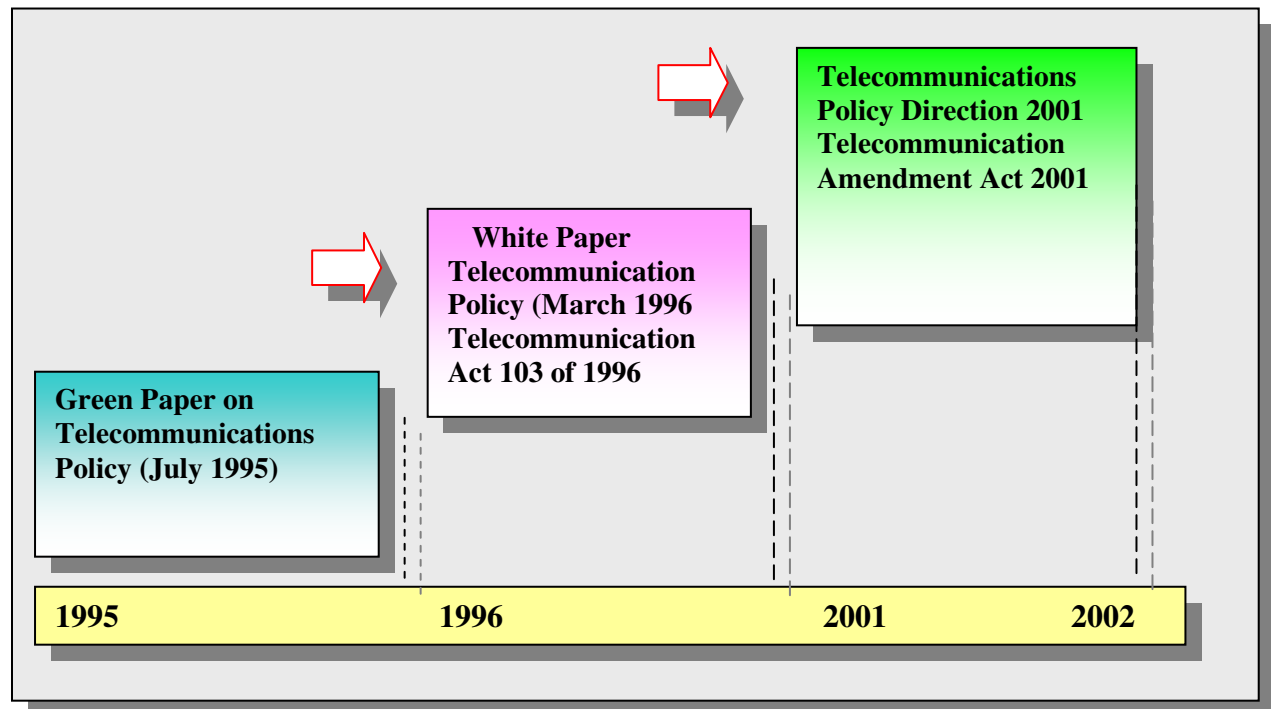
In the past decade, South African telecommunications policy has evolved in a number of stages.

2.6.1.4 South African telecommunications policy evolution

Between 1996 and 2001 South African telecommunications policy underwent major reforms through the introduction of various policy initiatives. Regulatory reforms have been and are important drivers of change in the South African telecommunications sector. In order to understand the South African telecommunications environment, the telecommunication policies introduced since 1995 need to be discussed. Figure 2.5 depicts the developments of telecommunications policy from 1995 to 2002. The birth of a new telecommunications regulatory environment was set in motion during the strategic consultations that resulted in the

formation of the Green Paper on Telecommunications Policy in 1995. This was followed by the White Paper on Telecommunications Policy in March 1996 and the Telecommunications Act No. 103 of 1996 in the same year. In 2001 the Telecommunications Policy Directives were issued followed by the Amended Telecommunications Bill No. 65 of 2001.

FIGURE 2.5 DEVELOPMENTS OF SOUTH AFRICAN TELECOMMUNICATION POLICY



(1) The Green Paper on Telecommunications Policy, March 1995

The first telecommunications policy initiative that was introduced by the Ministry was the Green Paper on Telecommunications Policy in July 1995. The purpose of this paper was to consult industry and other interested parties on issues such as

- how the telecommunications market in South Africa should be structured;
- ownership, Investment and financing of the sector;
- regulation for the sector;
- affordability and the setting of tariffs for telecommunications.

The Green paper introduced consultation on telecommunications regulation to the formal White Paper on Telecommunications policy.

(2) The White Paper on Telecommunications Policy, March 1996

The purpose of the White Paper on Telecommunications Policy was to introduce proposed telecommunications legislation, on several key issues including:

- increasing the accessibility of telephony through the provision of universal service
- changing the South African telecommunications market structure by introducing a phased in approach to competition
- partially privatising the state monopoly, Telkom and finding a strategic equity partner for the company
- providing for an exclusivity period (an agreed upon timeframe for the Parastatal to continue enjoying a monopoly) for Telkom to prepare for competition before introducing full-scale competition into the sector.

(3) Telecommunications Act No. 103 of 1996

The Telecommunications Act No. 103 of 1996 in principle opened the way for the deregulation and revision of the entire telecommunications sector in South Africa. The main objectives of this Act were

- to promote universal and affordable telecommunications services
- to encourage investment in the telecommunications sector
- to empower women and promote their advancement in the telecommunications sector
- to encourage the provision of a wide range of telecommunications services that promotes economic well being and growth of South Africa
- to ensure the welfare of communities and the disabled by providing for their telecommunications needs
- to ensure technical standards compliance
- to promote SMME's participation in the sector
- to support telecommunication ownership by historically disadvantaged groups
- to protect end users of telecommunications
- to support investment, innovation and competitive telecommunications manufacture
- to encourage of telecommunications products and services that satisfies the needs of users

- to provide for the formal introduction of telecommunications industry competition
- to ensure the efficient allocation and use of spectrum

The main provisions of the telecommunications Act were

- the establishment of the South African Telecommunications Regulatory Authority (SATRA) now called ICASA (Independent Communications Authority Of South Africa)
- the licensing of Telkom and other operators
- the establishment of the Universal Service Agency, Universal Service Fund and Human Resource Development Fund

The Act also proclaimed the functions of ICASA to

- issue telecommunications licences in terms of the Act
- manage the frequency spectrum
- make regulations on telecommunication issues
- prescribe how fees and charges are to be levied
- type approve telecommunication and radio equipment
- institute remedial action on licence violations
- administration of a numbering scheme. At the same time, Telkom was licensed by the Act to provide, Public Switched Telecommunication Network Services (PSTN); Value Added Network (VAN) services; frequency spectrum and radio station license

The Act provided for the issue of other telecommunication licences. Other licences that were issued were

- Mobile cellular telecommunication licences to Vodacom and MTN
- Value Added Network Services licences Private telecommunication networks licences
- PTN's (Private Telecommunication Networks) interconnected to Telkom.

(4) Policy directions of August 2001

During August 2001, the Ministry for Posts and Telecommunications issued the policy directives as guidelines on the introduction of competition into the telecommunications sector. In terms of the policy directives the SNO would be licensed in 2002, a feasibility study would be undertaken to determine the feasibility of another fixed line national operator into the South African telecommunications market, both Telkom and the SNO would be licensed to provide fixed mobile services. The definition of fixed mobile needed to be clarified in the sector. According to Ngcaba (2001), fixed mobile services refers to a “knocked down Global Services Mobile (GSM) handset that has been knocked down to provide fixed and mobile services in the same geographic location” This meant that a fixed line Telephone could be used like a mobile phone within a limited geographic area (e.g., Pretoria or Johannesburg.), but would not be able to work outside this geographic location.

A significant new development introduced by the policy directives was the licensing of Sentech as a major player in the South African telecommunications sector. Sentech was licensed to provide international gateway (an international gateway service provider provides international telecommunications traffic facilities) and multimedia services. In terms of the policy directives, Sentech would become a “carrier of carrier” (carry telecommunication voice and data traffic on behalf of the other licensed operators). Sentech’s licence to provide full multimedia services opened up a host of new product and service opportunities for the organization.

The policy directives also defined carrier select and preselection and number portability and the date for its implementation. Carrier select refers to the facility that customers have to select their service provider. Customers would be able to select their service provider by dialling a fixed prefix number that would allow the telephone exchange switch to identify which service provider to route the call to. Both Telkom and the SNO would have predefined prefix numbers. Customer’s would be able select their service provider on a call-by-call basis. This meant that each call would be dialled using either the SNO or Telkom prefix. Carrier preselection would allow customers to choose their network service provider when they subscribe for a service. The

customer's equipment would automatically default to the service provider selected at the start of the contract.

To facilitate one of the key objectives of the Telecommunications Act No. 103 of 1996, the policy directives made provision for the licensing of SMME's in the telecommunications sector. In accordance with the directives, SMME's were allowed to provide full telecommunications services, including using Internet Protocol (IP) technology to under serviced areas. The Government defined under service as any area that had less than 5% teledensity.

Private Telecommunications Networks (PTN's) were also recognised if they were licensed by ICASA.

Although entrenched in the developed economies of Europe and North America, the concept of resale introduced by the directives was new to South African telecommunications. Resale is more commonly referred to as wholesale in this market. Wholesale allows the incumbent operator, who owns the entire established telecommunications infrastructure, to sell telecommunications services at wholesale prices to the new entrant. The new entrant, in turn, retails the service to customers. This means that from the beginning the new entrant is able to operate a telecommunications business without having to incur expenses for infrastructure development.

The Telecommunications Act's prohibition of Value Added Network services and voice over the Internet was endorsed. VAN providers were allowed the right to operate Virtual Private Networks (VPN) to offer telecommunications services, but voice services were excluded.

(5) Telecommunications Amendment Bill No. 65 of 2001

The Telecommunications Amendment Bill No. 65 of 2001 was a major milestone for the telecommunications sector in South Africa, and redefining the telecommunications market paved the way for introducing competition into the telecommunications sector.

The purpose of the Telecommunication Amendment Bill No. 65 of 2001 was to create the legal framework for the South African telecommunications sector after the Telkom exclusivity period had ended. The main provisions for the Bill was to amend the telecommunications Act No. 103 of 1996 and to update it to reflect the changed technological, regulatory and sector developments of the previous five years in South Africa and internationally. The Bill made provision for the following changes in the telecommunications sector:

- The managed liberalisation of the telecommunications sector in which the SNO would become operational in 2002 and a shareholding be reserved for Esi-tel, Transtel and black economic empowerment. The Bill formalised the awarding to Sentech of an international and multimedia licence and made provision for the introduction in 2005 of a third national service based operator (TNO) and for the SNO to use Telkom facilities for a two-year period subject to a sharing agreement between the two organizations. At the end of the two-year period the SNO would have to make use of its own facilities. However, any new service-based operators would be allowed the choice of using both the SNO and Telkom facilities.
- The Bill also recognised the developments of converged communication, information technology and broadcasting, by allowing Telkom and the SNO to use wireless technologies and by issuing a multimedia licence to Sentech.
- Development of ICT strategy for the Republic of South Africa to bridge the digital divide and licensing of 1800MHz spectrum. The Bill made provision for mobile cellular operators (MCO's) and the, SNO to apply for the 1800MHz spectrum. This was important to telecommunication operators because the 900MHZ band at the time was saturated and affecting their quality of service. Section 30B of the Bill also opened the way for all participants in the industry to apply licensing of third generation (3G) frequencies. In addition, MCO's the SNO and Telkom could apply for 3G spectrum.
- Public Switched Telecommunication System (PSTS) licensees and future licensing. The SNO was allowed to provide resale telecommunication services. Sentech's licence was endorsed, giving Sentech the right to become an international telecommunications gateway service (carrier of carriers) and to provide multimedia services to any person who requests such service. However, multimedia services would not include voice services until such time a date was set by Minister of Telecommunications.

- Section 40 dealt with the VANs. VAN's could only lease telecommunications facilities from Telkom or the SNO. VAN's were restricted from carrying voice over their networks. Further, the VAN's could not sell, relinquish control or sublet leased facilities. Section 40A set out the terms for SMME's. Licensed SMME's were mandated by the Bill to provide telecommunications services to under-serviced areas that had a teledensity of less than 5%. SMME telecommunications licences would be issued to small businesses that could provide any telecommunication service in a specific geographic area that had been allocated to them. SMME's could also interconnect to any PSTN or mobile network as well as to Sentech's international gateway (through a PSTN operator). The interconnection terms and conditions were to be prescribed by ICASA. Section 41 provided for PTNs. PTN's required a licence to interconnect to the PSTN and were required to obtain telecommunications facilities from a PSTS operator (SNO or Telkom).
- Allowance was also made for the introduction of Edunet (Educational network for primary, secondary and tertiary institutions) and maritime (navy and sea) and aeronautical (air) radio services PTNs.
- Section 43 of the Bill dealt with interconnection. PSTS operators were required to interconnect with other operators such as the SMME's when they received a request that was reasonable and technically feasible. Any disputes arising out of interconnection agreements would be referred to ICASA. All agreements were to be lodged with ICASA to determine if it conformed to guidelines set. Renegotiation of interconnect agreements could be renegotiated after 5 years.
- Section 44 established the rules for telecommunications facilities leasing. PSTS operators were obliged to lease facilities when requested, and facility-leasing agreements were to be lodged with ICASA for review in accordance with set guidelines. The Bill prescribed that where a PSTS operator was unable or unwilling to provide facilities the matter would be referred to ICASA for mediation. Furthermore, the Bill proclaimed there would be no local loop (the portion between the exchange and subscriber would not be separated) unbundling for 2 years. Section 45 made provision for the rate regime. ICASA would prescribe a determination of fees and charges for Telkom SA. All public schools and educational institutions were entitled to receive 50% discount on all calls made to ISPs as well as on rates charged by ISP's.

- Universal Service Agency (USA) and universal access to telecommunications. In terms of the Bill the Minister would appoint a board of seven members to oversee the USA. A Universal Service Fund would be used to assist needy communities to acquire telecommunication services. The USA would also be used to assist public education institutions to obtain Internet facilities, to establish telecentres and to facilitate multimedia services. The USA would be funded from telecommunications licensee contributions to the universal service fund (USF). The licence contributions would not exceed 0.5% of their annual turnover.
- “112” Emergency Centres. The public were required to use code 112 for police, ambulance, fire and the traffic authorities. All calls made to the 112 Emergency centres were to be free of charge. The Bill provided for reasonable costs of carrying traffic from 112 centres to be recovered by telecommunication operators and for 112 centres to have their own radio networks.
- Number Portability. Number portability was to be introduced in 2005. ICASA would create a national number portability database and would determine the methods of cost allocation and recovery.
- Carrier Preselection. This regulation was intended to allow subscribers to access competing networks for long distance and international calls using carriers of choice. The Bill prescribed that carrier pre-selection be implemented by 31 December 2003.

2.6.1.5 Implications of telecommunications regulation for the telecommunications sector

The regulatory amendments to the telecommunications sector had a major impact on telecommunications in South Africa. One of the most far-reaching changes that the new legislation introduced was the implementation of competition into the sector. Competition transformed the South African telecommunications sector by ensuring that the end users of telecommunications products and services receive the best value for money; opening up the market to new service providers; creating opportunities for new entrants, and promoting innovation and creativity in the sector for new product and service developments.

The Telecommunications Amendment Bill No. 65 of 2001 put an end to Telkom's monopoly of the telecommunications sector, placing Telkom under pressure to adopt a competitive approach to ICT. The end of the Telkom monopoly could have a material impact on the organization's future revenue streams as the SNO and other new entrants such as Sentech and the SMME's lobby to take market share away from the incumbent. Competition might force market players to look for new ways to create value for customers by using ICT. The entry of new entrants to the South African telecommunications market environment has brought an infusion of powerful market contenders such as Esi-tel (a subsidiary company of the electricity utility Eskom Enterprises) and Transtel (a subsidiary company of the state transport utility of Transnet) into the sector. Both these organizations have a powerful base of developed capabilities in providing telecommunication products and services to the market in South Africa and particularly in Africa. For example Transtel has a point of presence in sixteen African countries (Socikwa, 2001).

Another important element legislation introduced into the telecommunications sector was universal services access. Telecommunications is an enabler of economic growth and social transformation. The Act allows for the provision of telecommunications services by prescribing additional line rollouts as part of the telecommunications license requirements for all participants. The somewhat forced promotion of telecommunication access will be beneficial to the growth of e-commerce and the Internet in South Africa in the mainly rural areas, as more end consumers use the Internet. This could speed up the adoption of e-commerce technology strategies to take advantage of new markets that the technology creates. However, technology affordability (such as the costs of personal computers and telephone line rental costs) could be a major stumbling block to the mass-market adoption of e-commerce. Nevertheless, given the trends in other parts of the world, the charges for telecommunications in South Africa should come down as the competition between the various industry players intensifies. Other possible impediments to e-commerce market development are the low computer, mathematic and science literacy levels in South Africa, especially in remote areas.

The introduction of telecommunications wholesale products and services that the network operators (Telkom and SNO) have to provide could force the burgeoning of new market models,

creating the retail sale of the full spectrum of telecommunication products and services to end users. This was been the experience of British Telecom and Deutsche Telecom (Uglove and Ghambir, 2000). Both these organizations operate a dedicated wholesale division that specialises in the sale of wholesale telecommunications.

2.6.2 South African telecommunications economic environment

The economic environment plays a crucial role in the South African telecommunications sector's success. The telecommunications sector is dependent on consumer demand to input, process, transport and store information. When the economy is in recession the demand for ICT decreases and vice versa. The current state of the economy (high interest rates, low GDP growth, the devaluation of the Rand against the dollar) has affected the ICT industry by reducing demand and increasing the costs of imported components. Globalisation has led to enormous cost reductions because of international competition. New and creative ways to trade are being explored by organizations throughout the world (Business Week, March 20 2001, p 112). *Globalisation as a factor of change in the telecommunications business environment was investigated with Telkom management in the empirical research phase to evaluate their perceptions.*

This represents a major opportunity for the telecommunications sector. The Internet, e-commerce, enterprise resource planning (ERP) systems and m-commerce, all aim to maximize cost reductions. *These new marketing opportunities were tested with Telkom management in the empirical research phase to observe the level of importance they place on these opportunities for Telkom to adopt.* A serious threat to the South African industry players is the growing strength of the dollar and the quickly depreciating value of the Rand. As most of the ICT components are bought overseas, this has very serious cost implications for the industry. All the industry players also compete in the international ICT market. Increased costs will threaten their survival and ability to compete against international competitors unless they can find some way to leverage their other competitive advantages.

Another major threat that the industry faces is increased interest rates by the South African Reserve Bank. In 2002, for example there were three rate increases. In November 2002, the prime interest rate was 17%. Any increase in the interest rate would have a dampening effect on the economy that is already in recession. This could reduce the demand for ICT products/services and consequently affect the ICT enterprises negatively. According to Pearce and Robinson (2000, p 71), "Economic factors concern the nature and direction of the economy". Vorster (2000) states that the economic environment is made up of variables such as consumer income, economic cycles (booms and recessions), the rate of inflation and monetary and fiscal policy. Each of these variables relates to economic activity. Telecommunications growth is dependent on the level of economic activity of a country. New telecommunications service and product developments depend directly on economic developments. Accordingly, the current state of the South African economy and the future prospects will be discussed in order to assess the viability of undertaking new product and service developments in the telecommunications sector. To assess the South African economy, the following factors need to be considered:

- the growth of the economy (is the economy growing? How fast is the economy growing?)
- consumption (is consumption taking place? Is consumption increasing or decreasing?)
- investment (is national investment increasing or decreasing?)
- capital formation (is new capital such as land labour, machinery, etc being created?)
- inventories (is inventory increasing or decreasing?)
- expenditure (is the population spending money?)
- international trade (How does imports and exports appear? Is the country importing more than it is exporting? Which is growing more quickly?)
- disposable income (is there a growth in disposable income?)

To evaluate the South African economy, a variety of economic measures such as GDP (measures the rate of growth of the national economy), household consumption expenditure (measures the growth of consumption for households), Government consumption (measures Government consumption growth), gross fixed capital formation (measures the gross increase in capital formed), change in inventories (measures the change in inventories), gross domestic expenditures (measures domestic expenditure growth), imports and export (measures

international trade) and real household disposable income (measures the growth in net available money that households have available to spend) were used.

Table 2.5 illustrates the South African quarterly national accounts for the period September 2000 to September 2001. The economic activity model used has been adopted from the ABSA Quarterly Indicators Report (2002). In table 2.5, each of the identified growth measures are presented for the period September 2000 to September 2001. Since economic activity trends can only be observed over a period, the most recently available data at the time, spread over four quarters was used. GDP growth decreased from 3.4% in September 2000 to 1.2% in September 2001. This indicated that South African economic growth is slowing following the same trend as the US economy.

TABLE 2.5 QUARTERLY SOUTH AFRICAN NATIONAL ACCOUNTS

National accounts (1995 prices) (quarter on quarter annualised) (%)	Sep-00	Dec-00	Mar-01	Jun-01	Sep-01	Dec-01
GDP	3.4	3.2	1.5	1.8	1.2	-
Household consumption Expenditure	2.9	3.3	2.5	2.3	2.6	-
Government Consumption	0.1	0.6	1.4	1.6	2.7	-
Gross Fixed capital formation	2.0	2.2	4.2	3.8	3.1	-
Change in Inventories (Rm.)	8676.0	3168.0	2616.0	-2348.0	5284.0	-
Gross Domestic Expenditures	3.1	0.6	2.0	-2.5	8.4	-
Exports goods and services	13.7	23.5	-4.6	11.6	-32.4	-
Imports Goods and Services	14.2	14.1	-3.5	-5.3	-15.4	-
Real household disposable income	3.0	2.8	2.6	2.3	2.1	-

Adapted from: ABSA (2002)

Household consumption moved in waves of ups and downs but the percentage differences between the quarters were not significant. No clear pattern could be established to draw any significant conclusions.

Government consumption growth showed a significant increase throughout the period, increasing from 0.1% in September 2000 to 2.7% in September 2001. This indicated that despite the weakened economic conditions Government consumption continued to increase. This could make the Government a good sales prospect to target. Gross domestic expenditure recorded positive increases for the period with the exception of June 2001 it when it was negative. September 2001 recorded the highest growth rate in domestic expenditure at 8.4%. Exports growth reflected a severe slump during September 2001 from 13.7% in September 2000 to negative 32.4% in September 2001, showing a serious decline in demand for South African exports. Imports growth also fell from 14.2% in September 2000 to -15.4% in September 2001. However, the reduced growth of imports was smaller than the reduced growth rate of exports. Thus, while exports had decreased significantly, imports had not decreased accordingly and would place a burden on the balance of payments in the longer term. Real household income fell 1% during the period, indicating that consumers had less money to spend. This has serious implications for telecommunication operators such as Telkom. Telkom spent R39 billion, in capital expenditure to upgrade its existing telecommunications network during the 1998 to 2001 period (Telkom, 2001).

Any reduction in consumer spending will impact negatively on South Africa's economic growth. A reduction in consumer spending (as is currently happening in South Africa) will cause a direct reduction of business spending and employment and cause the economy to be dragged into a recession. This could cause the demand for telecommunication products and services to fall. *The effects of changing economic factors on telecommunications were investigated with Telkom managers during the empirical research phase.*

2.6.2.1 Future outlook for the South African economy

The South African economy is currently suffering from weaker growth and higher inflationary pressure. Faced with the prospects of higher inflation, the South African monetary authorities have opted to increase interest rates by increasing the prime overdraft interest rate from 13% to 17% since the beginning of 2002. According to the Absa Group first quarter report (2002², p 2-7), the increased interest rates were not required and any further rate cuts would also not be

desirable as this could create an inflationary environment. However, because of the poor economic climate and growing unemployment it can generally be expected that fiscal policy will favour lower interest rates in 2003.

During the first quarter of 2002, the South African economy seemed to be weathering the global recession, although domestic economic growth was almost dormant. The South African currency devaluation in January 2002 was beneficial to the country's export sectors as more was exported than imported, resulting in a surplus in its balance of payments. However, a stronger dollar in the first quarter placed enormous strain on imported necessities such as oil imports. This resulted in import inflation and consequently forced the hand of the South African Reserve bank in deciding interest rates.

In March 2002, in an attempt to revive the South African economy the Minister of Finance announced liberal reductions in personal income tax, placing about R8 billion in the hands of the South African public. However, the price of fuel increased shortly afterwards and wiped out most of the benefits of the tax cuts. Political problems in Zimbabwe, caused by the controversial land reforms of and re-election of President Robert Mugabe, looks set to sink the Southern African region into further turmoil. The possibility of war in Iraq is also having a major influence on global economic markets. The outlook for 2003 and beyond is relatively bleak. Any future economic growth will depend on a number of factors such as the revival in the global economy, especially of Europe and the US, events in Zimbabwe, the strength of the South African currency against the US dollar, the rate of inflation and a quick end to the developing tensions between the United States, United Kingdom, United Nations and Iraq.

2.6.3 South African telecommunications sociological environment

Telecommunications facilitates communication by transcending distance, time and space. Through its enabling capability of connecting people, organizations and countries separated by time and geographic space, telecommunications is able to promote economic growth and social well-being. By its ability to lower the information acquisition costs, communication infrastructure enables "new markets to emerge or existing ones to function more efficiently (Heymans and Thorne-Erasmus, 1998, p 46). According to Gordon (2002, p 21) "Telecoms

technology is recognized as one of the fundamental platforms for economic growth". For example, a man living in a rural community in Mpumalanga where there are no phones available wishes to establish a retail grocery outlet. His efforts to secure goods for the outlet are retarded because he has to travel many kilometres to the wholesale outlet to find out prices, return home and after deciding to buy travel back. The sheer effort involved in the exercise is demotivating and discourages economic growth. However, if a telephone is available in his village, the man simply picks up the phone and for a small fee calls the wholesaler, finds out the prices, reaches a decision to buy, phones the wholesaler and places the order. All this is achieved in a short space of time. By placing a telephone at the disposal of a community, the whole world is opened up to them through telecommunications technology.

Cant, Strydom and Jooste (1999, p 60) state that the one environment perhaps most subject "to the influence of the other environmental variables, especially technology and economy, is social change". Changes in technology in the ICT environment have had a profound effect on society. The ICT revolution threatens to change the way people work, live and do things in general.

Wireless networks combined with easy access recording and storing of information have brought new ways of working. It is no longer necessary for instance for sales personnel to be in the office. Instead any information they require, say information about customers can be directly accessed using a cell phone and logging on to their organization's network from a remote destination.

The ICT revolution could have a major impact on society. Major transformations in the way people study (distance learning over the Internet), work (virtual office), obtain health treatment (telemedicine at remote clinics), shop (electronic commerce and mobile commerce) are taking place in the social environment. The growth and success of the ICT industry is dependent on the acceptance of these changes. There is some concern that telecommunications as a facilitator of social interaction could be used strategically to establish control over society and nations, assisting the wealthy nations to establish economic and then social control over poor nations.

Verzola (2002) maintains that the World Trade Organization (WTO) is furthering the aims of what he refers to as the “cyberlords” and draws a comparison between the propertied class whom he calls “rentiers” (french for individuals who derive an annuity income from investments made in property and other classes of assets) of the industrial economy and the “cyberlords” of the post-industrial economy. He contends that the information economy is being controlled by a few global organizations (“cyberlords”) intent on controlling this economy and deriving benefit from the rental and fees that they collect, such as intellectual property right and telephone line rental. In his view, this new form of colonialism would moreover make the developing and underdeveloped economies of the world subservient to the developed economies, such as the United States and United Kingdom. The high initial costs of being part of the information economy would widen the gap between rich and poor countries and between the rich and poor sectors in all countries.

Globalisation has recently come under the scrutiny of labour organizations, who have began lobbying their Governments to discourage globalisation because they feel that it is harming the labour industry by killing the demand for labour. Consumer action groups throughout the world have been lobbying against the explosion in e-commerce. Many feel that the proper security measures are not in place to protect consumers against fraudulent activities by unscrupulous vendors. Privacy, too, has recently come under the spotlight from both an organizational and individual perspective. There is concern that unless proper security measures are in place and supplemented with legal rules, privacy will be seriously threatened. Other issues like the content that is transported over the networks will not be proprietary and therefore none can be prosecuted for poor content (pornography, etc). However, there are many who see the benefits that can be derived from the Internet (Gillwald, 1998).

Social pressure could have a catastrophic effect on new telecommunications products and services. In South Africa, sentiments such as those expressed by Verzola (2002) are high on the agenda of social pressure groups, especially because of the strong lines of division between the information rich and information poor, more commonly referred to as the digital divide. *The power of social pressure groups as a factor of change were investigated with Telkom management during the empirical research phase to determine the degree of influence they*

perceive social power groups have on the South African telecommunications business environment. Government initiatives such as Gauteng online (an initiative by the Gauteng Department of education to provide two thousand five hundred primary and secondary schools in South Africa with computer laboratories and Internet access), Cape Information Technology Initiative (CITI- Cluster development for ICT companies in the Western Cape) and a number of other ICT initiatives that fall under the auspices of the Department of Communications Info.com 2025 ICT development projects indicate that South Africa will adopt ICT as the way to address poverty, poor education, democratic reform and unemployment. These developments in South Africa hold promise for telecommunication operators through the opportunities that they create for new telecommunication products and services.

2.6.4 South African telecommunications technological environment

In the telecommunications industry, the one variable that has the greatest impact on the sector is the technological environment. The blurring of boundaries between the IT and communications technology areas together with the convergence of voice, data and image has created a host of threats and opportunities for the South African telecommunications sector. *The influence of changing technology on fixed and mobile communications was assessed with Telkom management during the empirical research phase.*

In South Africa, the demand for multimedia applications such as video on demand and videoconferencing, data transport, high-speed communications networks and data storage has escalated beyond our expectation. These new demands have led to the development of a variety of new telecommunication products and services that are constantly being refined or replaced. Product life cycles have been shortened substantially. The speed of capital velocity (rate at which fixed capital becomes obsolete) for the ICT industry is much faster than in any other industry. *Telkom management during the empirical research phase were given a list of new products and services and they were asked to rate the importance for Telkom to provide these products and services.*

Technology plays a critical role in determining the success of an organization in the knowledge economy. Organizations that compete in the telecommunications and IT industries have a high degree of research and development expenditure because of the rapid rate at which products and services become obsolete. These organizations have to be innovative and develop better products all the time. Industry players are always under threat of competitors developing new technologies and making existing technologies redundant, such as development of the “Bluetooth” technology for wireless ICT applications. However, technology also has the inherent capability to conceive and give birth to new opportunities. Wireless application technologies such as “Bluetooth” and “WiFi” have opened up other opportunities for the ICT industry. Examples of such opportunities are mobile data retrieval, mobile multimedia applications such as mobile portable television and mobile voice recognition systems (e.g. open your garage door by talking to your home PC using a cellphone). According to Kruger (1999, p 30), organizations that are the first to develop new products from new technology often “lock up distribution channels making the way difficult for its competitors”. Technology can also be used to establish competitive advantage (Kruger, 1999). *Telkom management (during the empirical research phase) were asked to rate various macro environment variables identified in the literature, acting on the telecommunications industry (fixed line and mobile) in terms of its influence on the telecommunications industry in South Africa.*

2.7 DEDUCTIONS FROM THE GLOBAL MACRO ENVIRONMENT

The general business environment is divided into three distinct sub environments, namely the macro, micro and market environments. Furthermore, the theoretical paradigm highlights that each of these sub environments consists of distinct elements that impact the various industries. The South African telecommunications business environment is surrounded and influenced by these variables, some of which have a greater impact on the telecommunications sector than other industry sectors. Significant to the telecommunications business environment is the exclusive influence that telecommunication regulation has on a global, regional and national level. Global and national economic conditions are critical factors for new product and service developments in the telecommunications sector. South African telecommunications regulation is the underpinning basis of telecommunication development in the country.

Currently, the South African telecommunications sector is being restructured to align with international best practices, including deregulating the industry by removing anticompetitive legislation and gradually liberalising the sector and moving towards full competition. The introduction of new entrants to the telecommunications market will have serious consequences for fixed line telecommunication operators because of the threat of potential market share losses and the subsequent reduction in profits. Socially, telecommunications in South Africa has a major role to play in transforming the South African society by using ICT technology to initiate social changes such as providing distance education, tele-health, tele-banking and information sharing especially among disadvantaged communities residing in the predominantly rural areas of the country. This could have a major impact on new telecommunications products and services by increasing the telecommunications market. Many organizations might resort to ICT such as electronic commerce to reach new markets. These political, economic, social and technological changes are creating many opportunities and threats for fixed line telecommunication services providers while at the same time opening up various avenues for new product development to create greater profits for the sector.

2.8 CONCLUSION

This chapter discussed the business environment and its composition from a general perspective and presented the South Africa telecommunications global and macro environments. The business environment is made up of a number of unique key variables that control and influence the participants in an industry. It was found that the telecommunications macro environment is influenced by the same key variables and that they exert dynamic influence over the telecommunications sector in a uniquely different way. Telecommunications development, for example, is subject to a high degree of regulation at a global, regional and national level. The special nature of South African telecommunication products and services makes it particularly vulnerable to the influences of the global economic and technological environments, notwithstanding the pressures exerted by a rapidly transforming global society. Furthermore, the South African political, economic, social and technological sub environments highlight a number

of potential opportunities and threats for the telecommunications sector. Chapter 3 discusses the South African telecommunications market environment.

CHAPTER 3

THE SOUTH AFRICAN TELECOMMUNICATIONS MARKET ENVIRONMENT

3.1 INTRODUCTION

The South African telecommunications market environment is distinctive to Africa. The convergence of voice, data and image and the enormous bifurcation in the global telecommunications environment has shifted the momentum of the South African telecommunications market. Chapter 2 described the South African telecommunications macro environment and the various changes taking place.

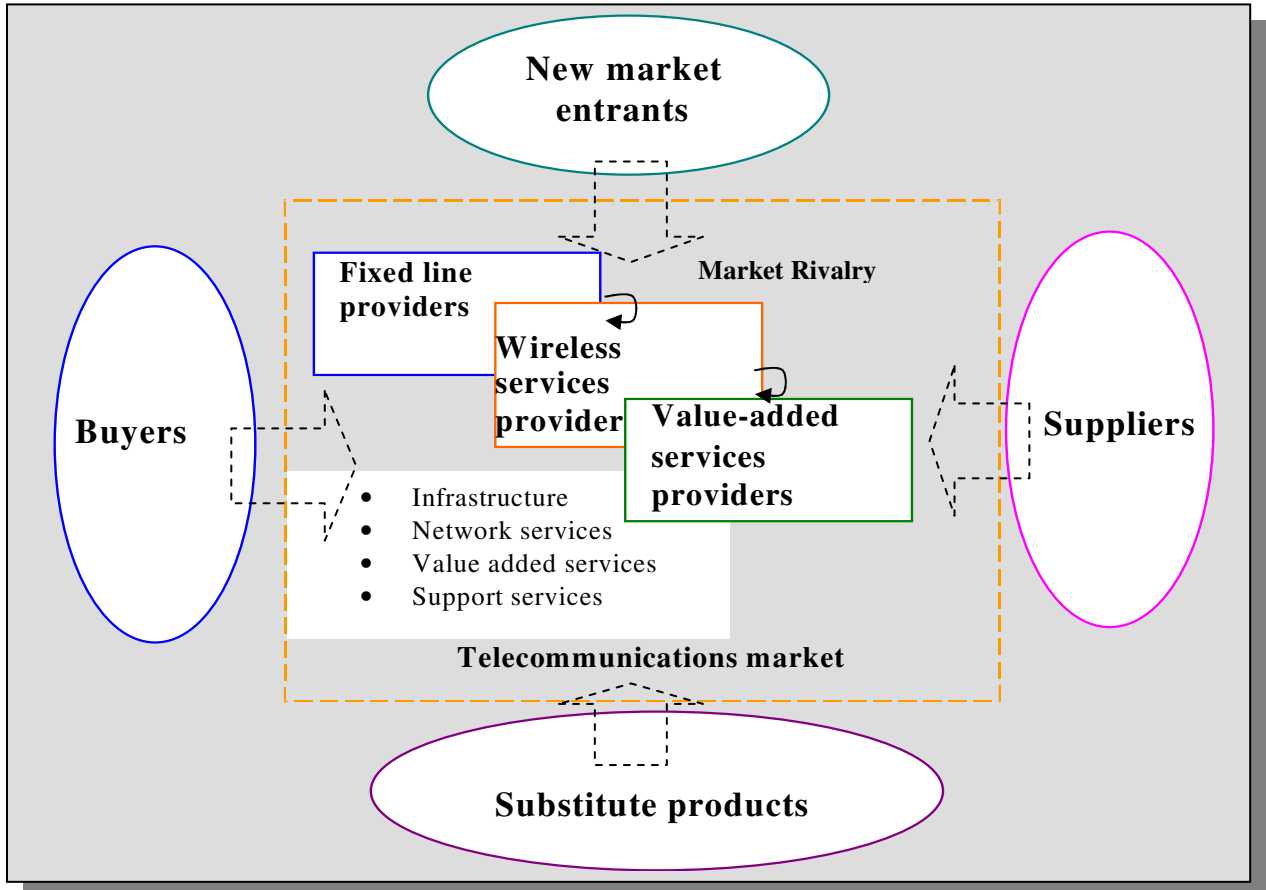
This chapter discusses the South African telecommunications market environment. To understand the South African telecommunications market environment, the researcher further developed the analytic model from Porter's (in David 1999, p 127) five forces model, depicting the major elements, including the different kinds of providers of telecommunications products and services. This chapter then, covers the forces that impact directly on the South African telecommunications market environment, the categories of providers of telecommunication products and services and the most prominent organizations operating in these categories, the changing trends in the South African telecommunications sector as well as and implications for new telecommunications products and services.

3.2 SA TELECOMMUNICATIONS MARKET ENVIRONMENT ANALYTIC MODEL

Characterised by a variety of market forces that apply pressure on the market environment, the South African telecommunications market environment is constantly being transformed. Figure 3.1 below illustrates the components of the South African telecommunications market environment, the various telecommunications service provider types and elements that lead to the many telecommunications products and services that customers value. There are four general

categories of telecommunication elements that make up the wide variety of telecommunication products and services available.

FIGURE 3.1 SA TELECOMMUNICATIONS MARKET ENVIRONMENT MODEL



Adapted from Porter (in David, 1999, p 127)

The four categories are infrastructure, network services, value added services and support services.

3.2.1 Infrastructure

Telecommunications infrastructure refers to the physical infrastructure that enables telecommunications; such as the physical copper lines and cables that link different geographic locations, the super switches (exchanges) called DSSUs (digital subscriber switching unit) that facilitate the cross connection between different locations and the multiple routers that route

network traffic along the digital highways. Figure 3.2 depicts some of the physical infrastructure of a typical fixed line telecommunications network. From figure 3.2 it is clear that the telecommunications infrastructure is made up of physical cables as well as wireless systems such as microwave radio links. The telecommunications infrastructure is a critical requirement to provide telecommunications products and services.

FIGURE 3.2 SIMPLIFIED PUBLIC SWITCHED TELECOMMUNICATION NETWORK OUTLAY IN SOUTH AFRICA

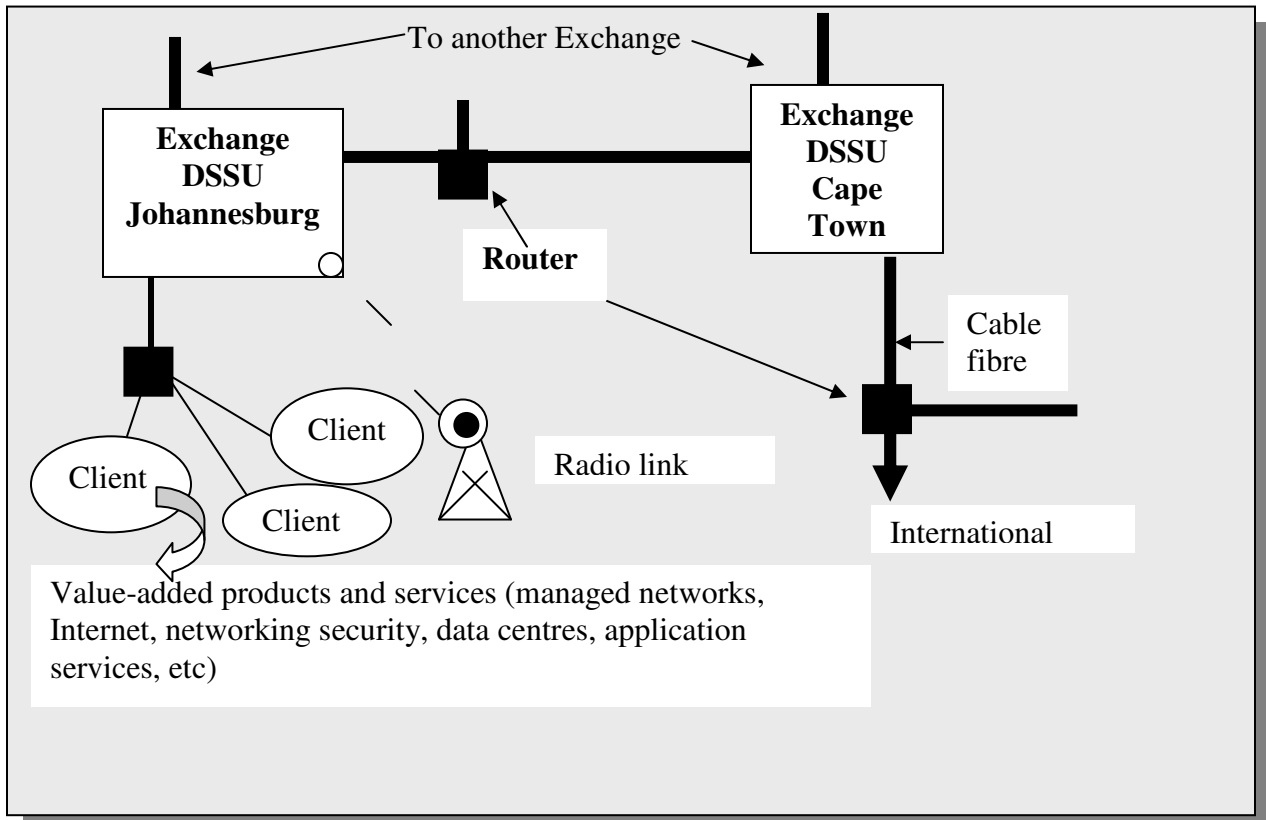


Figure 3.2 demonstrates how customers are linked to the public switched telecommunications network (PSTN) through the access portion of the network. This means that linkages are created between the customer premises and the exchanges (switches that switch traffic between the customer, telecommunications network service provider and other customers) by means of copper or fibre optic cables. Sometimes wireless microwave or other wireless technology, such as digital enhanced cordless telecommunication (DECT), is used (this is an expensive option in the case of microwave or the quality is inferior compared to fixed line in the case of DECT). Major traffic routes (junction routes) have been established between the exchanges of the

different cities in the country. These junction routes carry huge network traffic between the cities and are the most profitable. Network traffic is routed to the intended destinations by means of routers that read the message destination instructions and forwards the data to the correct destination. International traffic is carried via satellite or undersea cable to foreign destinations, where they terminate on the telecommunication networks of other telecommunication operators (these could be fixed or wireless service providers).

3.2.2 Network services

Within the public switched telecommunications network (PSTN) there are multiple private networks, which facilitate intercommunication between different nodes (computers) owned by both the private and public sectors. The automated teller machine (ATM) network, for instance, is a private network that is owned and managed by the multinational banks. The ATM network is a virtual network because it makes use of the PSTN infrastructure. At the end of the telecommunications infrastructure the banks have their own network infrastructure, such as the computer servers and nodes. The PSTN infrastructure portion of their networks is leased from the telecommunication operators. Value-added products and services are provided over the virtual networks.

3.2.3 Value-added products and services

Telecommunication value-added services and products refer to those products and services that VANs such as the IT companies and ISPs, provide to their customers. Examples of these products and services are LANs (local area networks within a limited geographic area such as a building or campus), WANs (wide area networks dispersed over a wide geographic area, such as between various regions and cities and countries), network security (provision of security to protect information from falling into the wrong hands and protecting the integrity of network data and information), Internet services (providing Internet services like Internet access), application services provision (ASP) (providing computer applications software to customers), disaster recovery (maintaining duplicate information databases to ensure timeous recovery of information in the event of an information system failure), electronic bill presentment (EBP)

(providing bills electronically to customers on behalf of organizations) and data centres (maintaining customer data in a secure location on behalf of customers and ensuring security and conducive conditions such as adequate air conditioning and data availability twenty-four hours per day seven days a week).

3.2.4 Support services

Support services are the services required to build and maintain private networks, including:

- project consultancy (identifying the customer's needs and finding ICT solutions to improve efficiency and effectiveness in the customer's business)
- project management (managing the ICT project on behalf of customers so that the customers are free to concentrate on their core business)
- IT support services (providing remote IT network management and support)
- network management (Managing the network for customers so that they do not have to maintain staff and departments outside their line of business)
- web development (developing web sites and web content for customers)
- web hosting (hosting web sites on behalf of customers to prevent them from incurring computer hardware expenses)
- web management (managing the web site on behalf of customers by updating web sites on an ongoing basis)

The importance for Telkom of providing these products and services to customers was investigated during the empirical research phase.

Porter (1979) states that five forces define the nature of competition in an industry, namely the threat of new market entrants, the bargaining power of buyers (consumers of telecommunication products and services), the bargaining power of suppliers (equipment suppliers that supply the equipment, software and technology for ICT products and services), the threat of substitute products and/or services, and the intense rivalry between existing market contestants (competitors). From this, then, it may be concluded that the provision of the different South African telecommunications services by the South African telecommunication industry, is

affected by buyers' bargaining power, suppliers' bargaining power, the threat of substitute products and services, new market entrants and the internal market rivalry.

In order to analyse the South African telecommunications market environment, the researcher adapted and applied Porter's five forces model as a framework to gain further insight into the new telecommunications product and services needs emerging in the South African market.

3.2.5 Buyers (consumers of ICT products and services)

People are social beings and depend on communication for long-term interaction and survival. Society's communication needs are fragmented and clearly divided into social and business requirements (Ericsson, 2001). On this basis the buyers of telecommunications products and services in the South African market environment can be divided into two broad categories: wholesale and retail (see table 3.1).

TABLE 3.1 CATEGORIES OF TELECOMMUNICATIONS BUYERS

RETAIL	WHOLESALE
<ul style="list-style-type: none"> • Residential customers • Business customers • Corporate customers • Government 	<ul style="list-style-type: none"> • Internet service providers (ISP's) • Corporates • Value-added network service providers (VAN's) • Small, medium, micro enterprises • Resellers (telecommunication business exchanges) • International and special markets

Table 3.1 illustrates the two major categories of telecommunications products and services buyers as well as the two broad telecommunications markets, namely, retail and wholesale, for telecommunications products and services. Each of these markets reflects that telecommunications products and services are purchased at two levels. At the first or retail level, end users such as residential customers, businesses, government departments and corporations

purchase the products and services directly in small quantities. At the second or wholesale level, telecommunications products and services are purchased in bulk at wholesale prices, value is added to the product mix and resold to endusers: ISP's, VAN's, resellers, small, medium, micro enterprises and international telecommunication operators, like British Telecom and Deutsche Telecom at retail prices.

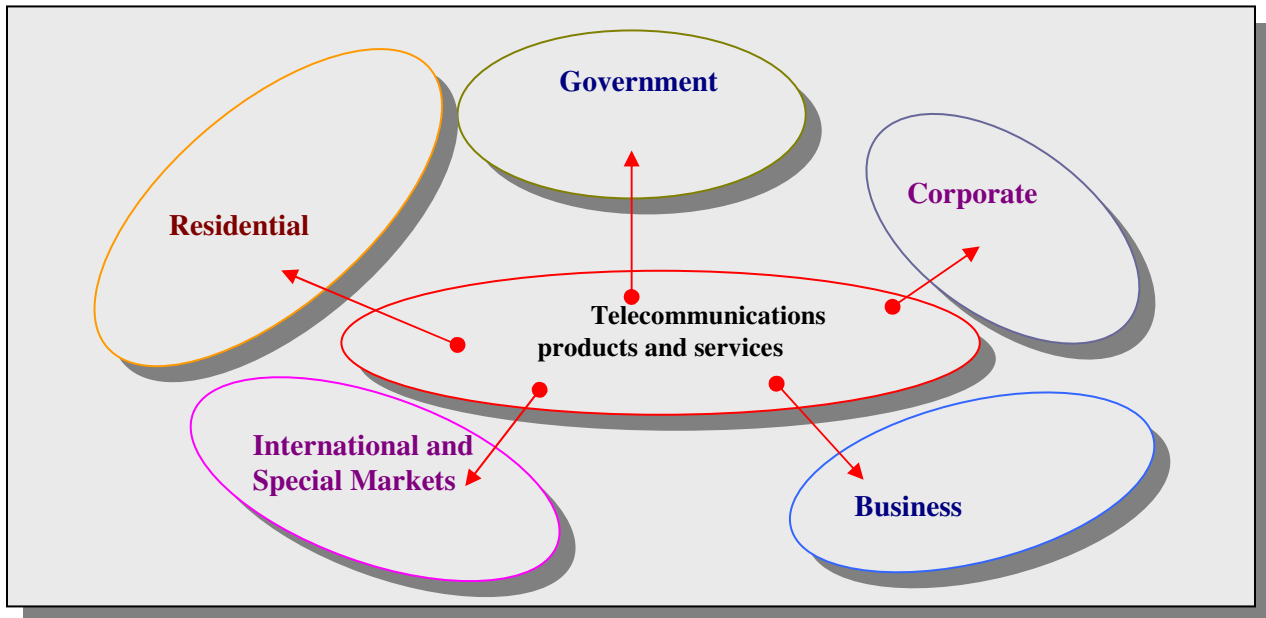
The consumers of telecommunications products and services play a critical role in shaping the telecommunications market environment. The different market segments of buyers each have their own unique needs for telecommunications. As indicated in table 3.1 in South Africa there are two buyer groups of telecommunication products and services: retail buyers (the final end users) and wholesale buyers (the secondary consumers).

3.2.5.1 Retailers

Retail buyers of telecommunications products and services are the final consumers of the end product and services. They are the last in the consumption value chain. As the telecommunication needs of buyers evolve, their requirements from telecommunications operators become increasingly complex and sophisticated. Telecommunications buyers have a great influence on the South African telecommunications market environment. Various key performance factors affect their purchasing decisions. According to Baker and Hart (1999), factors such as pricing, performance in operation, technical sophistication, reliability, features, packaging, styling, speed/production rate, flexibility and perceived benefits play a role in buyer decision making. Furthermore, according to Ericsson (2001, p 4) and Hee Lee (2002), the improved standards of living of consumers have created a demand for "personalization", "convenience" and "freedom" from the limits of time and distance to access information and entertainment, or to communicate, anytime anywhere.

Figure 3.3 represents the retail telecommunications buyers (consumers) that affect the South African telecommunications market environment. As indicated in figure 3.3, retail telecommunications buyers can be segmented into government, corporate, business, international and special markets and residential segments.

FIGURE 3.3 TELECOMMUNICATIONS MARKET SEGMENTS IN SOUTH AFRICA



These South African retail telecommunications market segments have unique requirements for telecommunications products and services.

(1) Residential customers

Residential customers in South Africa wish (and need) to interact with family and friends, and to carry out transactions like arranging business and personal appointments, placing orders and obtaining information about product availability, pricing, substitute products, services and security.

As more and more residential customers become sophisticated, they are joining the Internet and a need is developing for Internet services and faster telecommunication products, such as, integrated services digital network (ISDN) and digital subscriber line (DSL) technology. The poor global economic conditions and the high retrenchment rate among the public and private sectors a characteristic of the 1990's, 2000, 2001 and 2002 in South Africa, are driving the growth of small, medium and micro enterprises (Tustin, 2001). The majority of SMMEs are

residentially based and this could lead to an increase in the demand for ICT products and services.

In South Africa, teleworking growth has been very slow. According to Bennett (2002), the growth in teleworking (remote working away from the office using ICT technology) did not take off as expected although more people are moving towards teleworking. Bennett (2002) also points out that 64% of Business Times Work in Life Survey respondents' indicated that they would be willing to downgrade their jobs for a better quality of life. Tillet (in Bennett, 2002) states that teleworking has not been adopted widely in South Africa and Telkom is not considering it because of the difficulty involved in determining the growth between ISDN applications for Small Office Home Office (SOHO) and teleworking. However, Deuchar (in Bennett, 2002) states that many women are opting to work remotely to improve the quality of their lives.

These different views may be due to the way teleworking is defined. Many take teleworking to mean that workers work strictly from a remote base and do not come to the office at all. Deuchar (in Bennett, 2002) contends that the term "teleworking" should be changed to "telecommuting", which implies that workers work between the office and remote locations away from the office. *To determine how long it would take for "Teleworking" to become a norm in South Africa Telkom management were provided with a list of possible timeframes and asked to select a timespan from this list during the empirical research phase.* According to Bennett (2002), an International Telework Association and Council (ITAC) study found that telework employees in the United States increased to 28 800 million in 2001 and recorded an almost 17% growth compared to 2000. The ITAC study reported the following telecommuting worker trends in the US: 24.1% work on the road; 21.7% work from home; 7.5% work at telework centres and 4.2% work at satellite offices. Moreover, the ITAC study revealed that two thirds of teleworkers expressed greater job satisfaction, 80% were more committed to their organizations and the majority confirmed that they would stay with their current employers.

There is no reason why South African trends should not follow the United States model. The South African Government through the Ministry for Trade and Industry has been promoting the

development of SMMEs as a means of job creation and sustainable development (Tustin, 2002). These trends could provide new products and services opportunities for fixed line telecommunication operators. Possible new products and services that could be provided to SMMEs would be Internet services, LAN's, wireless LANs, web site development and maintenance, application services provision (ASP), fixed wireless communication services (same handset is used for home and mobile telephony) as well as data storage and security. *In the empirical research phase, Telkom management were asked for their opinions about possible new telecommunication products and services that Telkom could offer to small, medium and micro enterprises.*

(2) Corporate and business customers

Telecommunications business customers' communication requirements are based on their transacting relationships with customers. Business customers use telecommunications products and services to enhance the value-creating relationships between themselves and their customers. The communication tools that businesses use, such as telephone, e-mail, facsimile, Internet, broadcasting, and short message services (SMS), are an expense but are used because of the value they create for both the business and the customer. These communication tools enable the businesses to develop an invisible communication web with customers in an ongoing value relationship that creates and shares value between the two groups.

The growing number of IT companies using the telecommunications infrastructure to provide value-added services to business customers by creating value-added networks are a serious threat to fixed line telecommunication operators. *Questions were asked during the empirical research phase to determine what precisely Telkom's management perceived to be the major challenges/threats that Telkom would face in the future.* These organizations lease network infrastructure (leased lines) from telecommunication operators and operate a number of value-adding products and services, such as network software application programmes, WAN management, LAN management, remote information system management (managing information services remotely), data disaster recovery (backup data systems that mirror customers' existing database and used to recover data in the event of a system failure), Internet

service provision and web site development and maintenance. In this way they are able to charge for all the additional peripheral products and services provided over and above the fixed line rental charges. *Possible new telecommunication products and services opportunities identified from the literature review were listed and Telkom management were asked to rate them in terms of importance for Telkom to provide them.*

The communication needs of businesses are not only changing but also increasing. The Internet is major driver of change in the economy, society and individuals. *Telkom management's views were asked on the main causes of change affecting South African businesses as well as a list of drivers of change identified in the literature.* The disruptive ability of the Internet to free information and make it inexpensively available has changed the traditional rules of business. According to IBM (2001, p 1), “the ability to acquire and withhold information shifts advantage” to the one acquiring and holding the information. Ericsson (2001) contends that the vigour of the Internet, including mobile Internet, has accelerated development and change. In the business context, these societal and individual changes that impact on business and the telecommunications sector can be categorised into three distinct areas, namely globalisation, restructuring, outsourcing and clustering and knowledge economy.

- **Globalisation.** Businesses now have to operate in a global environment that demands that, in order to survive, the best mix of resources has to be sourced from anywhere in the world where it can add value to the organization. For example, many Japanese and American companies source cheap labour from China where they have established manufacturing plants. Raw material and other resources are shipped to China where they are processed into finished goods using the inexpensive labour provided by the Chinese. Having an international presence means that many businesses today require secure communication networks that facilitate the coordination of international resources across international borders between suppliers and customers. South African businesses, too, are faced with the same challenges.

- **Restructuring, outsourcing and clustering.** The intensification of competition between organizations has forced them to become focused on their core business. Simultaneously, minimizing capital costs through “just in time” (JIT) procurement methods is critical to all

organizations. In order for organizations to comply with JIT principles, the number of communication links between the various divisions in the value chain is increased. This brings about an increased need for “personal and system communication that is rapid, efficient, reliable and information heavy” (Ericsson, 2001, p 4 and Lord, 2001, pp 10-11).

- **Knowledge economy.** In the knowledge economy, uplifting and enhancing the knowledge capital of employees is important for success. Decentralised decision-making processes normally follow increased employee knowledge and internal communication between employees becomes strategically crucial. In South Africa, where skills development is a national priority, many organizations are turning to using ICT to enhance the knowledge and skills of their labour force. Typical applications required are on-line conferencing, web casting, internal TV channels, electronic newsletters, multi-location workshops and electronic distance learning. Additional improvements to individual productivity will require local and wide area mobility, with secure, anytime/anywhere access to information and applications (Ericsson, 2001). *The importance of globalisation as a factor of South African business environmental change was investigated with Telkom management in the empirical research phase.*

To cope with and fulfil these requirements, organizations in South Africa require communications solutions to improve and support productivity through facilitating better supplier business relations and customer interaction. Hence employees will need devices for communication, such as laptops, mobile phones, application packages that are customised for the users’ job and duties, and remote access for mobility (Ericsson, 2001). *Mobile communication opportunities/threats for fixed line service providers were checked with Telkom management during the research phase.*

Corporate customers are the largest spenders on communications. Corporate customers have a communication need to forge closer more valuable value relations between the corporation and its customers, intermediaries and internal business processes. To a large degree, corporate telecommunications needs are centred on the decentralised movement of network intelligence. For example, corporate customers have large computer servers that store huge volumes of business data (intelligence) such as customer, product, company financial and logistic

information. To facilitate organizational synergies and quick response times, data stored on these servers can be downloaded to individual branches or persons that require the information, using the telecommunications network. Corporate telecommunications needs are both wide and varied.

(3) Government

The Government market segment is another major buyer of telecommunications services. Governments need to be accessible to the people. This accessibility is facilitated by means of the communication tools that they employ. Intergovernmental communication is also an important requirement for successful governance. All government departments need to be connected to each other in order to communicate with one another. The Police, for example, need to be connected to the Department of Home Affairs in order to identify a suspected criminal or corpse and Social Welfare also has to be able to communicate with Home Affairs to ensure that welfare pensions are not paid out to disqualified citizens. The citizens of the country also want to be able to communicate with Government whenever they require assistance. *Telkom management were provided with a list of new telecommunications products and services in the questionnaire and asked to rate these in terms of importance for application in government.*

3.2.5.2 Wholesalers

Uglove and Ghambir (2001, p 6) define wholesale telecommunications as “the provision of communications infrastructure, facilities and services to intermediaries for sale to other parties, which may include other resellers or end-users”. Furthermore, Uglove and Ghambir (2001) state that as the telecommunications sector increasingly falls under direct pressure from regulatory authorities, the telecommunications market environment will open up to new buyer groups such as resellers, who buy telecommunications products and services from telecommunications network operators at wholesale prices and resell to end users. In South Africa at present, the following secondary user groups purchase wholesale telecommunications from fixed line telecommunications operators: ISPs, VAN’s and SMMEs. *Telkom management were asked to rate the probability of the telecommunications market opening up to resellers and estimate the number of future resellers they thought would exist in South Africa.*

(1) **ISPs.** Like VANs, ISPs require huge amounts of bandwidth to provide Internet and other value-added services to their customers and therefore buy bandwidth from Telkom and the SNO at wholesale prices.

(2) **VANs.** VANs buy network infrastructure and bandwidth from the SNO and Telkom. These are used to provide value-added services to customers.

(3) **SMMEs.** SMME's buy network capacity and infrastructure from Telkom and the SNO at wholesale prices.

(4) **Resellers (telecommunication business exchanges).** In the United Kingdom, Australia, the United States and other countries, the deregulation of the telecommunications sector saw the development of organizations that buy telecommunication minutes at wholesale prices from telecommunication operators to resell to end users. In South Africa, both the incumbent Telkom and the SNO resell to each other and to the SMMEs. Telkom has to provide wholesale services to the SNO. The SNO, Sentech and Telkom will sell spare international transport capacity to each other. The SNO and SMMEs also buy infrastructure from Telkom at wholesale prices. *In the empirical research phase, Telkom management were asked for their opinion on providing wholesale products and services to select the products and services they felt Telkom should offer from a list.*

(5) **International and special markets.** The international and special markets also need telecommunications services. "International markets" refer to the international telecommunications operators that want to connect their customers to a particular country. In order for a telecommunications service provider in country A to connect its customers with customers of a telecommunications service provider in country B, there has to be an interconnection agreement between the two telecommunications operators. "Special markets" refer to those user groups that buy telecommunications products and services in bulk and at wholesale prices, add additional value to the products and services and resell directly to end users. For example, traditional IT companies buy infrastructure (leased lines) from

telecommunications operators, use this infrastructure to create a private network inside the public network (virtual network) and provide various value-added services, such as software programs, security, Internet services, network management and support services, to their customers and charge for these products and services.

3.2.6 Suppliers

The South African telecommunications market environment is also subject to supplier power. Technology is central to the development of competitive advantages in the telecommunications macro environment (see chapter 2, section 2.11).

Telecommunications operators with access to advanced or newer technologies are able to establish strategic competitive advantages over their competitors in the telecommunications market and could eliminate competition by creating barriers to entry by collaborating with suppliers and locking out competitors by denying them access to the advanced technology. *In the empirical research phase, Telkom management were asked to rank the most important suppliers for Telkom.*

Although small by global standards, the South African telecommunications equipment-manufacturing sector is not only the largest in Africa but also one of the most advanced. It is part of the South African manufacturing industry that diversified into consumer electronics during the 1990's. The telecommunications sub-sector provides employment for thirteen thousand people and boasts an annual turnover of R3bn. This industry is dominated by a number of large manufacturing organizations such as Siemens SA, Telephone Manufacturers SA (Pty) Ltd, (TEMSA), Altech Telecoms (AAT) and Grintek Telekom (Grinaker). These organizations have foreign owners or are of foreign origin (World Markets Research Centre, 2002).

Telkom has considerable control over the telecommunications industry equipment supply because its expansion and modernisation programme is the major driving force of growth in the industry (can be seen as the channel captain). Because the South African Government has a controlling interest in Telkom, all its equipment is procured on a tender basis, applying a strict

philosophy of black economic empowerment (BEE). About 38% of Telkom's total procurement, amounting to R10.184 billion in March 2001 was allocated to BEE. In 2001, Telkom allocated R1.437 billion to BEE SMMEs and R2.433 billion on black equipment manufacturing organizations with at least a 51% shareholding (Telkom, 2001). Some of the leading telecommunications equipment sector players are:

(1) Alcatel Altech Telecoms (AAT). AAT is a joint venture strategic alliance company formed between the French company, Alcatel, and the South African telecommunications group of companies, Altech. AAT's manufacturing facilities are located in Boksburg. In 1999, it employed 1 200 employees. AAT manufactures a large range of fixed and wireless telecommunications equipment, such as global services mobile (GSM), base stations for wireless cellular transmission, synchronous digital hierarchy (SDH), wave division multiplexing (WDM) network transport technology, intelligent network (IN) and digital enhanced cordless telephony (DECT). AAT is a major supplier to Telkom and Vodacom. In 2001, Alcatel Altech Telecom's revenue increased by 21% from R3,059 billion to R3,691 billion; operating income increased by 32% from R216 million to R284 million, and the export of telecommunications equipment to more than thirty countries amounted to R485 million (World markets research centre, 2002).

(2) Ericsson SA. Ericsson first started operations in South Africa in December 1993. It was awarded the mobile telephone networks (MTN) contract to supply GSM network infrastructure. In 1995, Ericsson established the local company called Ericsson SA and at the same time acquired Automatic Systems Manufacturing (ASM) that manufactures telephone power supply equipment. In 1977, Ericsson SA, opened its mobile phone division after winning several contracts from MTN during the MTN network rollout. In 1997, Ericsson accounted for almost half of all Sweden's exports to South Africa. Ericsson SA has been a key supplier of transmission links to Telkom. In 1998, signed a contract valued at US \$ 200 million (SEK1,520 million) with (MTN) for the further expansion of their GSM network in South Africa, including the supply of switching, radio base stations, new service features and IN services, including prepaid services (World markets research centre, 2002). The company has also expanded its growth following close on the heels of MTN as it expands throughout the African continent.

Ericsson SA has won multiple contracts to provide GSM to countries such as Uganda, Rwanda, Swaziland and other African countries where MTN has positioned its subsidiary companies.

In October 2001, Ericsson SA was awarded the Telkom contract to provide mini-link microwave transmission links as part of the Telkom drive to expand and modernise its infrastructure. This contract was valued at about R200 million and followed earlier contracts to provide transmission terminals. At the same time Transtel, a shareholder in the SNO, awarded Ericsson SA a contract to plan, design and implement a next generation network (NGN). Other important developments for Ericsson SA have been the appointment of five BEE technology partners: Ikwezi Telecommunications, Ingoma, Mergent (owned by Ubambo Investment Holdings and CIE Group), Plessey and Thabela Technologies. In 2001, Ericsson SA signed a contract with Transtel valued at US \$ 22 million to roll out its ENGINE multi-service network in South Africa. Transtel is a strategic partner in South Africa's second fixed-line network. The first stage of the contract included business consulting, design, implementation and infrastructure (World markets research centre, 2002 and Ericsson, 2002).

(3) Grintek Telekom (Grinaker). Grintek turnover in the financial year ending June 2000 surpassed R1 billion. Its telecommunications division contributed 72% to this turnover. The organization is the sole South African distributor for Innowave fixed wireless access products. Innowave is a fully owned subsidiary of ECI Telecom Ltd that won a contract from Telkom in 2002 (World markets research centre, 2002).

(4) Marconi Communications SA. Marconi has positioned itself favourably in the South African telecommunications equipment industry. Since 1999, Marconi has been developing its synchronous digital hierarchy (SDH) multiplexing equipment. SDH is a communication transport technology that increases bandwidth on fibre optic cables. Through Siemens, Telkom awarded Marconi a follow-on contract to supply 1.4 million telephone handsets in 1999 in addition to the three million handsets that Marconi had already supplied to Telkom.

Marconi Communications Africa (Pty) Ltd, consists of the following subsidiary organizations:

- Telephone Equipment Manufacturers of South Africa (TEMSA). TEMSA is the largest manufacturer of telephones, key systems and payphones on the African continent, as well as a key producer of transmission and access solutions.
- ATC Pty Ltd. Marconi holds a 51% majority stake in African Telephone Cables (ATC Pty Ltd.). Other shareholders are Reunert (38.5%) and Pirelli (10.5%). This division is the only manufacturer of optical fibre cable in South Africa. Its main competitor Aberdare imports fibre optic cable. The organization manufactures about 400 000km of fibre optic cable per annum and is intending on increasing this to 1 000 000 kilometres by April 2002 at a cost of R80 million;
- Communication Accessories. Communication accessories is a subsidiary company of ATC, and the largest manufacturer and distributor of connectorised optical fibre assemblies and cable jointing products. It recently won a two-year contract from Telkom to provide connectorised assemblies for Telkom's transmission networks.

Transtel, a partner in the SNO awarded an SDH network to Marconi, valued at R2.6 million. In terms of this contract, the first microwave radio included a long distance link that operates using 8 GHz band from the Isando communications building to Sundra as well as a short distance link in Cape Town (World markets research centre, 2002).

(5) Cisco. Founded in 1984 by a group of computer scientists from Stanford University, in California, USA, Cisco has been prominent in advancing the development of Internet Protocol (IP), which is the basic language used to communicate over the Internet and in private networks. Cisco products and key technologies, including advanced routing and switching, voice and video over IP, optical networking, wireless, storage networking, security, broadband, and content networking, are used to make the Internet more useful and dynamic, (Cisco, 2002).

Cisco Systems, Inc. is a worldwide leader in networking for the Internet. Cisco provides state-of-the-art IP based networking solutions that have grown to become the standard foundation of the Internet and the majority of corporate, education, and government customers globally rely on its networking products. It supplies the widest range of LAN and WAN solutions for transporting data, voice and video traffic in buildings, across campuses and around the globe (Cisco, 2002).

The Internet and computer networking are a critical component of business operations, distance learning and personal communication and entertainment. Most of the information traffic moving across the Internet is transported speedily and securely, using Cisco equipment. Cisco solutions are the standard for most large, complex networks used by corporations, public institutions, and telecommunications operators and are increasingly found in medium-sized commercial enterprises.

(6) Nortel Networks sub Saharan Africa (SSA). Nortel Networks sub Saharan Africa (SSA) provides communication infrastructure development equipment to the African continent. Nortel Networks African operations are involved in the facilitation of change from traditional telecommunication and enterprise technologies to multi-functional broadband solutions and offer a range of ICT value-added applications and services. Nortel Networks solutions are focused on creating the core communications infrastructure and the provision of support to the developing economies of Africa, to enable the region to participate fully in the new economy. The organization claims to be becoming a global leader in the provision of e-business solutions. Nortel has acquired strong capability in the e-business application software market that has enabled it to offer an end-to-end solution to its customers that will transform the enterprises in Africa into potential global players. Currently, Nortel Networks Sub Saharan Africa is involved in some large projects in ten African countries, including Nigeria, Mauritania, Ghana, Kenya, and Ivory Coast. In the South African equipment industry, Nortel Networks is working closely with its channel partners Dimension Data, Grintek, and PQ Networks. It is also directly involved in working closely with large enterprise customers and South Africa's main carrier companies that includes Telkom and Vodacom (Nortel, 2002).

(7) Siemens SA. Siemens SA is a subsidiary company of Siemens Germany. Siemens SA has been operating in South Africa since the 1920's. Having won its first contract with the then Department of Posts and Telecommunications in the 1950's, Siemens Germany set up the first telecommunication equipment manufacturing plant in the country. In 1979, Siemens was given a contract to provide digital switching equipment together with TEMSA and Altech. In 1993

Siemens Telecommunications was officially set up as the telecommunications division of Siemens SA (World markets research centre, 2002).

In late 1998, Siemens owned the second largest market share of all African cellular infrastructure contracts (27.4%). Siemens won contracts to supply Cell C with GSM cellular infrastructure at a value of about US \$ 221 million. In January 2000, Siemens announced that it was conducting general packet radio services (GPRS) technology trials in conjunction with the cellular operator, Vodacom. The announcement came shortly after Alcatel announced that Siemens had developed a GSM prepaid phone called "Sigi". This phone can be deployed in rural and peri-urban areas and helped to bolster the South African cellular provider's obligation of fulfilling its universal service level agreement with the South African Government, which was a core requirement of their licence agreement. There are two "Sigi" variants: IN "Sigi" (only for voice) and "Sigi" pro, which includes voice, data and fax capabilities. A major advantage of "Sigi" is its ability to use both GSM 900 and GSM 1800MHz bands. About 10 500 "Sigi" units have been sold locally and the product has been sold to Cel Tel in Uganda (World markets research centre, 2002).

Telkom procured SDH from Siemens. In 1995, Siemens provided Telkom with the world's longest SDH fibre optic backbone at the time, spanning 1,623 km from Cape Town in the south to Pretoria in the north of South Africa. Telkom awarded Siemens a contract valued at R100 million to upgrade its transmission capacity along all its fibre optic routes. Siemens has also been a key supplier to Eskom Enterprises: Esi~tel, a major partner in the SNO, to install a fibre optic backbone across South Africa (World markets research centre, 2002).

(8) 3Com. This US-based network equipment maker provides network equipment to the telecommunications sector. 3Com's turnover for 2001 amounted to \$2 820 881. In July 2000, 3Com and Telkom formed a strategic partnership to jointly develop products and solutions for the PSTN. On August 7 2000, 3Com formed a partnership with a Black company called Choice Technologies that produces networking solutions. Again in August 2000 3Com launched a new LAN switch that uses Voice over Internet Protocol technology (VoIP) (World markets research centre, 2002).

(9) Spescom. Spescom is an ICT company that provides products and solutions to connect to the networked economy, and electronic software solutions to manage information and knowledge. In 2001 Spescom's turnover amounted to R489 387 000. Spescom is the major supplier of e-Business solutions that aim to capture, control and manage information, including voice, data, documents and images. Furthermore, Spescom Limited is an investment holding company listed on the Johannesburg Securities Exchange South Africa (JSE) and has operations in the USA, the UK and SA. Spescom's main focus is on developing and marketing software solutions for the world market that enable e-Business and focus on the convergence of knowledge, document, product data and voice transaction management. Spescom is the major shareholder in Spescom Software previously known as Altris Software Inc. Spescom South Africa in partnership with Cisco Systems, Avaya Communications and other leading companies provides a full range of e-Business solutions, including customer contact centres, VoIP and Internet business solutions. Spescom's customer base includes blue chip customers such as Telkom (Spescom, 2002). *In the empirical research phase Telkom management were asked to rate the most important suppliers to Telkom.*

3.2.7 Substitute products

Fixed line telecommunication operators like Telkom provide fixed line voice and data services to their customers. The introduction of wireless cellular telephony in South Africa has been a major substitute for fixed line voice telephony. A serious problem that Telkom experienced was the high cost and the time needed to develop fixed line infrastructure, especially in the rural areas. Furthermore, the lack of fixed line facilities, such as additional copper lines in highly congested metropolitan areas of South Africa, together with Telkom's history of poor service delivery has been a major cause of customer dissatisfaction.

Cellular phone technology although more expensive has been a major reprieve for customers seeking instant connection to the global telecommunication network. According to cellular in South Africa, cellular telephony, proved so successful in South Africa that at 31 December 2002 fourteen million customers were using cellular phones (see section 1.4.3). The quality of cellular telephony over fixed line services is generally poor but a major strength that favours cellular

telephony in South Africa, the US, the UK, Sweden, France, Nigeria, and elsewhere is the mobility that it allows. Another advantage of cellular telephony over fixed line services is the robust innovation displayed by the cellular telecommunications service providers in their approach to value creation for customers. For example, the introduction and widespread adoption of prepaid airtime, as a means to creating affordable telecommunication that is accessible to the majority of South Africans.

The per unit costs, quality of functional service and lack of inexpensive technology applications to enable multimedia and data applications are major disadvantages of cellular telephony over fixed line telephony. *Cellular telephony was listed as an opportunity and Telkom management were asked for their view on whether it is an opportunity that fixed line service providers should pursue.* Nevertheless, cellular telecommunication subscribers far exceed fixed line telecommunication subscribers by a ratio of more than 2:1. Cellular subscribers number about 14 million and fixed line subscribers about 5 million.

Major enhancements to cellular handsets and network technology were set to make their debut on the South African market in the latter part of 2002 and in 2003. These improvements included upgrading the intelligence of existing mobile handsets to enable them to perform as personal management tools and simultaneously developing enhanced cellular network technologies such as GPRS that would enable fully functional multimedia and Internet capability. Typical new user applications that would be created for the South African market included remote video conferencing, high resolution picture messaging (send high quality colour pictures like electronic photos over the cellular network to other users), Internet browsing (surfing the Internet while being mobile), geographic positioning (finding places and determining exact position in a place) and quick information downloads (obtaining information about various things such as goods and services).

Another major substitute for fixed line telecommunication services in South Africa is the emergence of wireless satellite telephony. Wireless telephony refers to telecommunication networks that use radio and satellite equipment as the chief component of their infrastructure, to provide telecommunication services. Innovative organizations such as satellite digital networks

(SDN) provide wireless satellite communication solutions to large businesses and corporates. Major businesses and corporate organizations (such as financial institutions and Government departments) have a critical need for service quality. This means that they require twenty-four hour access, seven days a week to the telecommunications networks. These institutions cannot run the business risk of their networks going down for even a short time as this could cause the loss of millions of Rands in lost revenue and time. As a direct result, such organizations are willing to pay a premium for enhanced quality services and service level agreements that guarantee the required service availability.

Initially introduced as a substitute service offering to telecommunication customers, cellular telecommunications and wireless looks set to overtake fixed line telecommunications in South Africa in the near future. Through diverse product and service offerings motivated by an innovative approach to telecommunications provisioning and promptly changing technological landscapes, the cellular telecommunication service and wireless providers are disrupting the rules of the traditional fixed line operators in South Africa and elsewhere. As one of the relatively new entrants to the South African telecommunications sector, the cellular service providers and wireless service providers are challenging the market status quo. *The threat that cellular service providers present to fixed line service providers was investigated in the empirical research phase by testing Telkom management on whether they perceive cellular as a threat.*

3.2.8 New market entrants

New market entrants in the South African telecommunications market environment are a serious threat to existing fixed line telecommunication operators like Telkom. The Telecommunications Bill No. 65 of 2001, (see chapter 2, section 2.8.1.5) makes provision for new entrants such as Sentech, SMMEs and an SNO (Esi-tel, Transtel, Nexus and strategic partner) to enter the South African telecommunications market. Sentech was issued with a telecommunications licence to provide international gateway and multimedia services from May 7 2002, the date on which Telkom's exclusivity ended. According to the Cape Argus (May 7 2002), the introduction of Sentech's multimedia services could take corporate market share for broadband and multimedia services away from the incumbent Telkom.

Another new South African market entrant is Multichoice. Multichoice offers digital satellite television to a niche market segment. Multichoice has made made strong inroads since the introduction of digital satellite television in South Africa and the African continent, through the brand DSTv since November 1995. The DSTv brand is made up of 108 local and international channels (53 video; 48 audio and 7 data) and is broadcast directly, using satellite, to subscribers in their homes twenty-four hours a day. Multichoice has a subscriber base of 600 000 on the African continent. South African subscribers account for 500 000 of these. DSTv has also been exploring providing interactive Internet services and providing interactive services to corporates such as the Standard Bank for home banking applications (Multichoice, 2002).

These new market entrants have accelerated competition in the South African telecommunications sector. Each of the South African telecommunications industry players is now aggressively competing to capture and defend market share by a variety of strategic marketing tactics.

3.2.9 Market rivalry (competition)

Market rivalry refers to the aggressive competition between ICT service providers in the South African telecommunications market environment. The ever-changing technological landscape and blurring of traditional sector boundaries of IT and telecommunications and even broadcasting has distorted the traditional boundaries that once surrounded these previously separated industries in South Africa and led to a new ICT industry. These changes confirm Pearce and Robinson (2000), David (1999) and Kotler's (1997) view that an industry is a collection of firms that offer similar products and/or services to fulfil some customer need and that the very nature of an industry is evolutionary. In other words, industries evolve over time. Pearce and Robinson (2000) maintain that the industry must be defined because defining the boundaries:

- helps to determine the area that the various organizations are competing in
- enables the competitors in the industry to be identified
- identifies key success factors for survival in the industry

Pearce and Robinson (2000) go on to say that it is difficult to define an industry mainly because of its changing nature. They point out that new and emergent opportunities and threats are characteristic of changing industries and often lead to the creation of industries within industries, such as the electronics industries that has evolved into multiple industries (for example, semi conductor, television sets, transistor radios). These transformations make it possible for some organizations to specialise in certain areas while others can compete in different correlated industries.

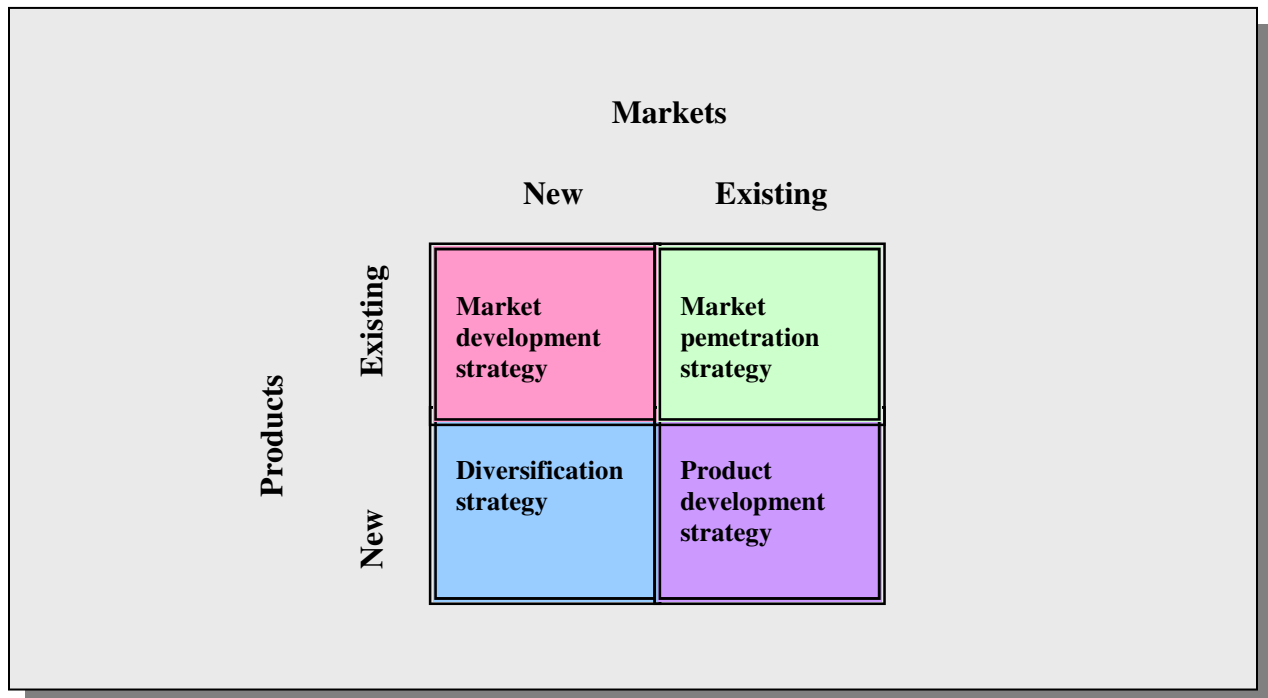
The South African telecommunications industry has been redefined because of the change in the nature of the product and service offerings (convergence) of telecommunications operators. The global commoditisation trends of bandwidth have resulted in price drops and a consequent reduction in service provider revenue streams (see section 1.4). As a result, the core product (telecommunications fixed line) is yielding less and lesser value to customers, as they no longer look for communication connectivity alone but also for the increased business value that they can derive from the total ICT product and service offerings. For example, many South African banks, insurance companies, retailers, wholesalers and manufacturing enterprises are turning to ICT technology to provide them with increased efficiency and effectiveness and to streamline their businesses. (Banks and insurance use ICT to create new distribution channels and manufacturers, wholesalers, retailers are linking the front office to the back office seamlessly, using enterprise resource planning software systems that are connected through communications lines that facilitate the mobility of organizational intelligence to the periphery of the network.)

The changing telecommunications market environment in South Africa is characterised by intense rivalry between service providers. These service providers are competing against each other to outthink and outwit one another for survival in a market that is itself struggling to make its presence felt in a world increasingly dominated by globalisation. To survive and succeed in this highly competitive market, industry participants have developed key strategic marketing positions. Therefore it is important to understand the market positioning of each of the key players in the ICT market.

According to Dillon, Madden and Firtle (1994, p 33) a situation analysis involves analysing the organizations market strategy past and current, the competitive landscape, conditions of the market, competitors and customer reactions. These factors play an important role in assisting managers to recognise and identify potential problems and opportunities to assist in the development of new strategies. The situation analysis involves scanning the business environment, reviewing the organizations product markets, scanning the organizations customers, determining their needs and evaluating competitors products and strategies. Aaker, Kumar and Day (1998) also point out that effective market strategies are crafted from an in dept understanding of the market environment and specific characteristics that exist in the market. This includes understanding the different market strategies that the various players in the market are using to compete. In chapter four, the theoretical foundations of strategic marketing for fixed line telecommunication operators are developed and discussed in detail. However, it is important to note that although the theoretical foundations of strategic marketing are laid in chapter four, presenting a complete picture of the South African telecommunications market environment required the researcher to briefly discuss the market strategies of the different ICT organizations as part of the discussions of each organization in this chapter. Therefore, in the discussions of each of the identified ICT organizations their market strategy is briefly discussed.

Kotler (1997) introduced the product/market expansion grid to assess an organization's strategic positioning in relation to the overall market. This matrix is briefly discussed here, to facilitate its use in this chapter as a tool for evaluating the market positioning strategies of the selected industry participants. The product/market expansion grid highlights two strategic marketing positioning dimensions namely markets and products. In a competitive market an organization can position itself strategically in the markets in which it participates by careful selection of the markets it serves and the products and services it offers. Figure 3.4 represents an adapted version of Kotler's (1997) products/markets expansion grid.

FIGURE 3.4 PRODUCT/MARKET EXPANSION GRID



Adapted from Kotler (1997, p 79)

As indicated in figure 3.4 above, any organization actively participating in a competitive growth market has a number of strategic positioning choices such as providing existing products to existing markets and/or providing new products to existing markets. Both market positioning strategies increase the organizations market share in existing markets through market penetration. A market growth strategy providing existing products to new markets and/or new products to new markets aims to grow the market base. This strategy focuses on developing the market for the organization's products and/or services.

The rivalry in the South African telecommunications market is created by the existence of a diversity of ICT service providers using technological innovation and smart strategic market positioning to establish strategic competitive advantages in the South African telecommunications market environment. The different South African ICT market participants are

- fixed line service providers, such as Telkom, Esi~tel and Transtel
- cellular service providers, such as Vodacom, MTN and Cell C

- VANs such as Arivia.kom, Datatec, MGX, AST and UuNet
- ISPs such as Mweb, SDN's, IS and CyTec
- international “carrier of carriers” and multimedia service providers, such as Sentech

The most prominent providers of the various ICT products/services in the South African telecommunications market environment will be discussed next. It is (and was) beyond the scope of this study to discuss all the ICT providers. The purpose of discussing the various industry participants is to indicate how new value is being created for customers through the changing nature of telecommunications product and service offerings, towards new ICT ones.

The organizations were selected according to the following criteria:

- ICT type of organization
- main focus of products and services (determining from the product and service offerings where the organization sees the industry moving)
- revenue generated (the highest revenue generators indicate exploiting marketing opportunities)
- reputation (only organizations with an established reputation)

Table 3.2 represents the most prominent ICT industry participants in the South African ICT industry by ICT type, main focus of product/service offering, revenue generated and reputation.

TABLE 3.2 MOST PROMINENT ICT ORGANIZATIONS IN SOUTH AFRICA

Organization	ICT type	Main focus of products/services	Revenue generated (2001)	Reputation
Telkom SA	Fixed Line	Voice/Data	R32 billion	Established
Transtel	Fixed Line	Voice/Data/Internet	R1 billion	Established
Esi~tel	Fixed Line	Voice/Data	R1 billion	Established
Sentech	Wireless	Multimedia	R1 billion	Established
MTN	Cellular	Voice/Data	R8, 3 billion	Established
Vodacom	Cellular	Voice/Data	R16 billion	Established
Cell C	Cellular	Voice/Data	Not Available	Established
Uunet	Value-added network services	Value-added network services	Not available	Established
Arivia.kom	Value-added network services	Value-added network services	Not available	Established
AST	Value-added network services	Value-added network services	R1 billion	Established
Dimension Data	Value-added network services	Value-added network services	R12, 3 billion	Established

The selected market participants in table 3.2 were clustered into the following groups:

- fixed line service providers (Telkom, Esi~tel, Transtel)
- wireless service providers (Sentech, MTN, Vodacom)
- value-added network service providers (Uunet Africa, Arivia.kom, AST, DiData)

The fixed line telecommunication operators, wireless service providers, including the cellular service providers, and finally value added network service providers are discussed next. Generally, the telecommunications sector classifies the ISPs as VANs therefore they will be discussed as part of the value-added network service providers.

3.3 SOUTH AFRICAN FIXED LINE SERVICE PROVIDERS

By 2002, the South African telecommunications market was still highly regulated. The only organization licensed to provide public fixed line telecommunication services was Telkom SA. However, the Department of Communications would offer an additional fixed line licence in December 2002. The other fixed line operators in the country are Esi~tel, the telecommunications subsidiary of Eskom enterprises, and Transtel, the telecommunications subsidiary of Transnet.

In terms of the 2001 telecommunications policy directives, both these organizations would participate in a 30% joint shareholding of the new fixed line telecommunication service provider licence. According to the White Paper on Telecommunications of 1996 (see chapter 2, section 2.8.1.4.), the Government would seek a strategic equity partner to participate in the shareholding together with empowerment groups. The shareholding for the foreign strategic equity partner would amount to 51% and industry analysts expected the foreign strategic partner for the SNO to come from either India, China or Singapore. However, in December 2002, two foreign consortiums, Goldleaf and Optis, were the only bids that ICASA received for the 51% foreign equity stake.

The most prominent telecommunication operators operating in the South African telecommunications market environment will be discussed next. The best-known fixed line telecommunication service provider operating in the South African telecommunications market environment is Telkom SA.

3.3.1 Telkom SA

From its inception in 1991 Telkom SA endeavoured to become the leading communications operator in South Africa, and both enhanced and entrenched its market position by rapidly modernising and expanding its national telecommunications network. The strategic rationale for Telkom's network modernisation and expansion programmes supplemented and supported by

internal drives aimed at creating the future capability for world class customer service and performance levels within the company.

The South African Government, a major shareholder of Telkom, aimed to raise about R12 billion from the partial flotation of approximately 20% of Telkom's equity, subject to market conditions prevailing at the time. Many analysts viewed the successful listing of Telkom as largely dependent on the parastatal's ability to secure a controlling interest over one of the wireless network operators. In 2002 Telkom owned a 50% share in the cellular operator, Vodacom.

3.3.1.1 Products and services

A wide range of new products, services and integrated network solutions have been made available to business and residential customers, coupled to new and emergent broadband technologies that support Telkom's strategic initiatives, including the following:

- Voice value-added products and services such as *Block call* (allows customers to bar all or some outgoing calls), *Call answer* (answers the call automatically when the telephone is engaged or is not answered after a certain time limit), *Waiting call* (informs the call recipient that an incoming call is waiting to be answered), *Identicall* (allows the user to identify the incoming call using an added display unit), *Call Catcher* (a bundled service that combines Waiting Call and Identicall), *Conference Call* (allows a three-party conference call to be made), *Fax Answer*, *Forward call* (forwards incoming calls when the user is not away), *Multi call* (a packaged product offering Call Answer, Identicall, Forward call and Block Call at a reduced package price), *Urgent Call* (allows the user to make pre-programmed calls by simply lifting the handset and waiting a few seconds to activate the pre-programme number);
- New product introductions, such as World Call charge cards (a prepaid calling card that allows the user to make domestic and international calls from any tone dial phone both locally and internationally), ATM Express and Megaline Plus service (provides broadband communications), Telkom Internet (provides Internet services to customers), Televoting (vote by phone service that enables voting to take place telephonically), Competition lines (used for collecting information from respondents' using Interactive Voice Reponse), Information services (provides information such as news, sport, Government, legal, to

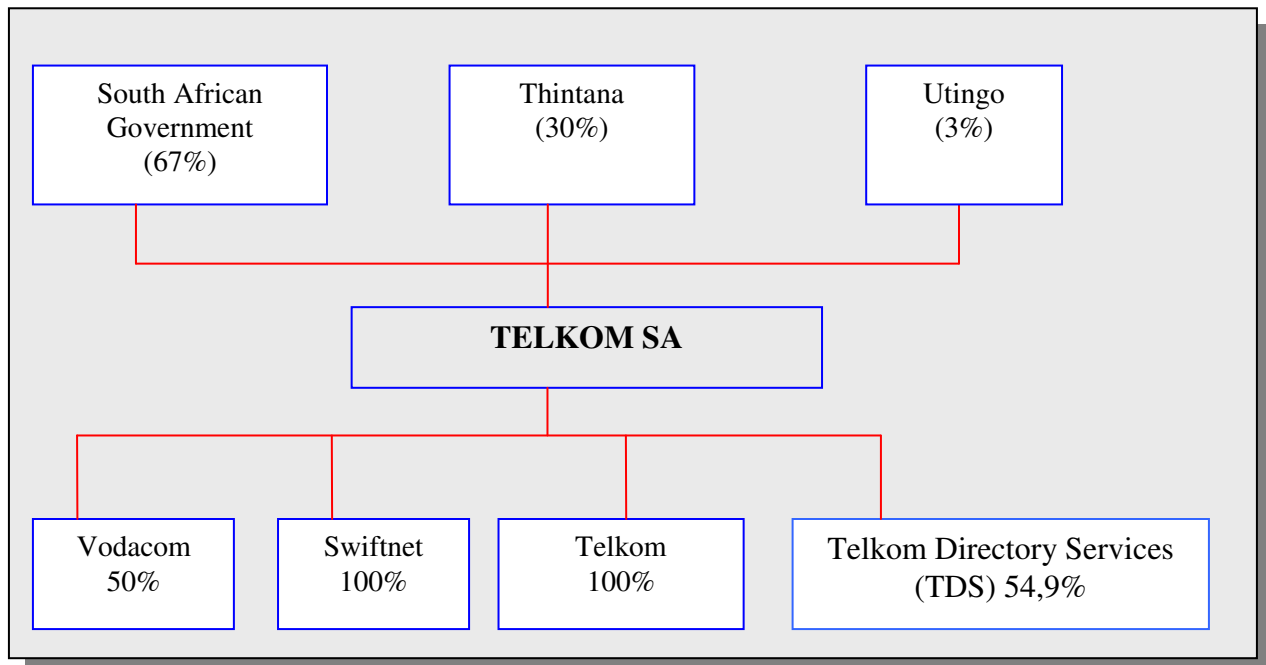
customers), Multi-conferencing (allows different video conferencing equipment to connect) and LAN PBX (product converges voice and data on a single platform and enables private branch exchange functions over a LAN);

- X25 (a slow network transport technology used to transport data for business and corporate markets)
- Frame relay (FR) (network technology that transports data in frames or packets)
- Asynchronous transmission mode (ATM) (network transport technology that is fast and transports data in cells)
- Leased lines (a dedicated line to the customers premises) (*Telkom Annual Report, 2001*).

3.3.1.2 Ownership structure

Figure 3.5 depicts the ownership structure of Telkom SA. The South African Government and Thintana and Uthingo own Telkom in the following proportions 67:30:3. Thintana consists of US SBC communications (who holds 18%) and Telekom Malaysia Berhad (who owns 12%). Thintana is frequently referred to as the strategic partner within Telkom.

FIGURE 3.5 OWNERSHIP STRUCTURE OF TELKOM SA



Adapted from: *Telkom Annual Report (2002)*

3.3.1.3 Turnover

Operating revenue performance achieved for the 2002 financial year was R33 972 billion. Earnings Before Interest Tax and Depreciation and Amortisation (EBITDA) during the same period amounted to R10.493 billion. Telkom earning per share grew 17% from 294.6 cents to 343.8 cents (*Telkom Annual Report, 2002*).

3.3.1.4 Competitive positioning

As the only provider of fixed line telecommunications services in South Africa, Telkom SA monopolised the South African telecommunications market before May 7 2002. However, the Telecommunications Act No. 103 of 1996 and the Telecommunications Amendment Bill No. 65 of 2001 seriously undermined and threatened Telkom's strategic market positioning. The introduction of an SNO, SMMEs and Sentech into the telecommunications market environment by the Minister of communications could have a draining effect on Telkom's revenues. Industry analyst estimate Telkom's market share loss to the SNO to be as high as 20%, which would allow the SNO to break even. If these estimates are correct, such a loss could be catastrophic to Telkom. At the same time about 60% of the telecommunications industry's big spenders from the corporate market segment had contracted long term to Telkom SA, who at the time was offering between 20% and 40% discounts for products and services offered. Furthermore, corporates were likely to continue their business relationships with Telkom largely because they were familiar with Telkom's services rather than out of loyalty. *Determining whether competition would be positive for Telkom was investigated with Telkom management in the empirical research phase.*

Telkom was and is very well placed strategically to take advantage of its customer ownership positioning. Telkom's ownership of the access network infrastructure (that is, the part of the telecommunications network that extends from the exchange to the customers premises) (see section 3.2.1) places the organization in a position of strength in the telecommunications market for a number of reasons. *Telkom's network as a sustainable competitive advantage was investigated in the primary research phase by asking Telkom management to rate this advantage*

against competitors. Ownership of the telecommunication access network means that Telkom owns the customer because it has established infrastructure (telecommunication lines) going to the subscriber's premises. The new market entrants do not have this advantage and will have to lease facilities such as the lines and collocation space (space in the Telkom exchange to place their network equipment) from Telkom to provide service. Furthermore, the access portion of the telecommunications network is the most expensive and accounts for about 80% of the network costs (Ericsson, 2002). Establishing wireless technology systems to bypass Telkom's network is a possibility for new entrants but the quality of wireless systems in comparison to fixed line technology wavers and is generally more expensive. However, new opportunities for new market entrants are emerging because of the range of new alternate technologies being developed in electricity power lines, radio and stratospheric balloons. In 2002, as the incumbent fixed line telecommunication service provider, Telkom was well positioned to defend and grow its market share.

3.3.1.5 Markets served

Telkom provides voice, video and data communication, employing a full range of broadband and narrow band network technology to approximately 550 000 customers located throughout South Africa. Telkom's current market offerings are made to residential, business, corporate, government and special and international markets (*Telkom Annual Report, 2002*).

3.3.1.6 Number of employees

The total number of employees at Telkom in June 2002 was 39 900 (*Telkom Annual Report, 2002*).

3.3.1.7 Market strategy

Telkom's direct competitors in the fixed line telecommunication market would be the SNO due to begin active operations in December 2003. As mandated by the telecommunications policy directives, the SNO, would be formed through a joint venture consortium comprising Transtel, Esi-tel, a BEE group (which could be Johnnic Communications) and a foreign strategic equity

partner such as Optus or Goldleaf who had tendered for the SNO licence being deliberated in ICASA.

By following a market penetration strategy, Telkom's strategic objectives were to increase shareholder value and to position it favourably to handle competition in the South African market. In order to achieve these strategic objectives, Telkom aimed to maintain its market leadership position by leveraging its current market position fully. A market leader is an organization that is acknowledged as the leader in an industry. As the market leader in fixed line telecommunications in South Africa, Telkom's focus was on defending and growing its market share by improving customer service and satisfaction by offering the best products and services. Telkom's business strategy was moving towards differentiation on the basis of improving customer services and satisfaction and new product and service developments (*Telkom Annual Report, 2002*).

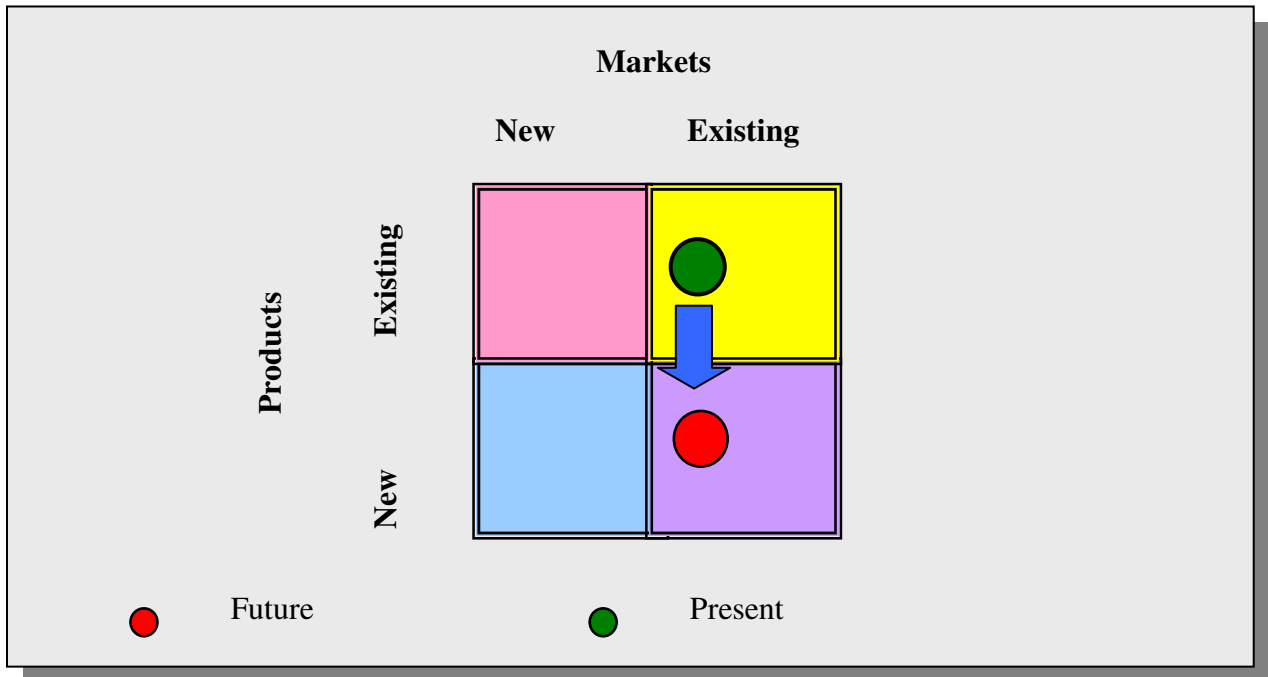
Telkom's focus on business customers involved several core strategic marketing steps, such as establishing long-term customer contracts to lock customers in for a certain period, offering a variety of voice, data and multimedia products and offering residential customers communication packages that enhance their lifestyles (*Telkom Annual Report, 2001*). Telkom relied on its existing voice and data connectivity products and services as a cash cow to generate cash for further new investment. Telkom's raising of telecommunications tariffs in early 2002, had a negative impact on its standing as a responsible corporate citizen and could seriously undermine its competitive positioning, although this issue was resolved with the regulator (ICASA) in June 2002.

Up to early 2002, Telkom's international strategy was limited to South Africa. However, during 2002 Telkom was exploring fixed line and wireless telecommunications opportunities on the African continent (Nxasana, in *Telkom Annual Report, 2002*). In May 2002, the SAT-1/WASC (West African Sea Cable) connecting South Africa to African countries along the Western coast of Africa and terminating in Senegal was completed. Telkom's strategy was to carry all Internet traffic from the African continent to Europe and the West through Telkom. As a partner in the SAT-1/WASC project, Telkom would benefit substantially as African demand for data and

Internet services increased. Telkom was aware that competition in the South African telecommunications market would take market share away from it and therefore like Transtel and Esi-tel was trying to strategically retain its market leadership position, by growing its markets by seeking new growth opportunities in Africa.

Figure 3.6 illustrates Telkom’s strategic marketing positioning.

FIGURE 3.6 TELKOM SA’S STRATEGIC MARKETING POSITIONING



From figure 3.6 it is evident that Telkom’s current strategic market positioning is to penetrate existing markets with existing products and services. Telkom’s new converged ICT products and services, such as, WAN, LAN, network management and Internet services, were introduced in reaction to the actions of other ICT players in the market and the rapidly declining revenues expected once the SNO started commercial operations. Telkom’s future strategic market positioning was moving towards a product development strategy, using new products and services in existing markets, thereby protecting its leadership position in existing markets.

Telkom’s strategic still focus on maintaining its dominance in the South African telecommunications market and aggressively trying to penetrate the existing South African

corporate and business markets with its new value-added converged products and service offerings. Telkom is also looking at developing its market by expanding further into the African continent. However, Telkom's market expansion strategy suffers from marketing myopia and strategic paralysis because its new market development strategy is behind MTN, Vodacom, Transtel and Esi-tel, who have used a pre-emptive move strategy by developing new marketing opportunities on the African continent. A pre-emptive move strategy refers to being the first to move into developing a new product or service or geographic area. Telkom's lack of initiative in developing new markets could be due to the burden placed on the organization by its universal service licensing obligation agreements to roll out new fixed lines in under-serviced areas at great capital cost, a possible misalignment in shared vision between Telkom's foreign owners and the South African Government (major shareholder) or a lack of the required leadership to take the organization forward in the new dynamic business environment.

3.3.2 Transnet-Transtel

Transtel was created from the telecommunications department of the South African Railways and Harbours and initially provided simple local telephone services for the management and the running of the railway services throughout South Africa. In 1990, Transnet became a registered company which subsequently led to Transtel obtaining its own identity. The Transtel network supports data communications, private telephone exchange junctions, trunked radio systems, train control, and remote control systems for electrical substations and pipeline pump stations (Transtel, 2001).

Transtel's engineers and technical staff plan, install, commission and maintain a wide variety of telecommunications systems. A variety of technologies are employed, ranging from virtually obsolete to the most recently released. Projects are internally managed. Transtel technicians receive advanced training at Transnet's own college, which also accepts international students (Telkom Competitive Intelligence Files, 2001).

Transtel is committed to the development of its personnel by delivering quality, people-orientated career and organizational development and establishing a culture of democracy, non-

racism and non-sexism through integrated programmes. Resources are allocated to corporate social investments, such as arts and culture, sport. Transnet has customer services, technical expertise, support services, and a countrywide presence. They also have existing right-of-way, equipment buildings and an international satellite port (Transtel, 2002).

3.3.2.1 Network

Transtel operates a public automated branch exchange (PABX) network with internal direct dialling and over one hundred connections to the South African PSTN. The network boasts 60 000 digital ports and is larger than some African countries' national PSTN. The network has also been extended to London and is connected to a variety of global operators as well, thereby ensuring that it is strategically positioned to capture Africa's voice traffic market that is destined for the world. Transtel voice networks recently introduced automatic call distribution management systems, high tech video conferencing equipment, three Lucent digital audio conferencing bridges and a new centralised metering system (Telkom Competitive Intelligence Files, 2001).

Frame relay (FR) and asynchronous transfer mode (ATM) networks form the backbone that supporting the multi-protocol Internet Protocol (IP) networks of Datavia (now Arivia.kom) (see section 3.6.2), South African Airways, Portnet and Petronet. These networks are nationally managed and provide the main users with virtual private networks (VPN). A WAN linking hundreds of LAN's has also been rolled out for South African Airways and Galileo SA at a rate of forty LANs per month (Telkom Competitive Intelligence Files, 2001).

As a result of the communication needs, Transtel has developed advanced radio skills for the dynamic transport market and created a national network of radio repeaters for the maintenance of tracks and pipelines. The mobile communications solution has been successfully marketed internationally. Another recent achievement was the design and supply of a trunked radio network to a privately owned public operator in Taiwan. The Taiwanese were trained to do the installations, and Transtel commissioned the system. Repeat orders have since been placed. Transtel also installed and maintains MTN and Fleetcall's radio stations. Since 1994, 3 500 MTN base stations have been installed (World markets research centre, 2002).

Transtel Satellite Communications currently operate in sixteen countries in Africa and the Middle East. A significant amount of space has been leased on PanAmSat 4 and Intelsat 704. Transtel has also built an earth control station near Johannesburg. This means that South Africa's remote areas can be economically accessed with high quality 64-kilobits-per-second links (Telkom Competitive Intelligence Files, 2001), which is also one of the focus areas of Telkom's strategy.

These satellite networks can also be used to provide a disaster recovery solution. Although current South African legislation restricts this benefit to the Transnet group of businesses, internationally, Transtel earns valuable foreign revenue selling and operating satellite networks in other African countries. Transtel makes use of teleports in London and Amsterdam, which allow it to transport the international traffic on behalf of its African clients (Telkom Competitive Intelligence Files, 2001).

By mounting a satellite terminal on a truck or trailer, a communications centre can be set up almost anywhere in Africa. These systems have already been utilised by the South African Police Services and certain military organizations have also shown an interest. It is a practical solution to the restoration of services should a disaster occur (Telkom Competitive Intelligence Files, 2001).

The integration of technologies and associated expertise is well demonstrated in the basket of services provided to Phelophepa, Transnet's hospital train. The train is self-sufficient with PABX, LAN, remote X-ray diagnostics, TV, public address system, and many other technological facilities (Telkom Competitive Intelligence Files, 2001).

Transtel's investment in February 2002 in a state-of-the art telecommunications network has a total investment value expected to be worth more than R1billion. Ericsson SA together with its parent company, Ericsson (Sweden) will provide Transtel with its ENGINE network development solution. The first step consists of an ENGINE integral backbone network, including telephony servers, media gateways, multi-service core switches, routers and related network management operating system software (NM-OSS). According to Klinteskog (2002),

one of the main success factors is the synergies created through the cooperation between the project team in Stockholm and the Ericsson team based in Johannesburg.

Transtel's telecommunications network will transform Transtel into one of the most technologically advanced operators on the African continent, and provide it with superior capabilities to introduce new telecommunications services to the South African market. The new network will allow Transtel to implement the latest telecommunication technology, and offer customers new services and applications in a quick and efficient way. According to Embro (2002), flexibility and adaptability are critical for any new telecommunications provider at the time of entering a new market to allow the operator to provide for any demands, irrespective of whether it is for corporate or rural services. The differentiating factor, however, will be that it will be done at a lower cost than an incumbent operator such as Telkom.

3.3.2.2 Products and services

Transtel operates a number of networks in Africa and provides a wide variety of IT-related products and services to the telecommunications industry. It developed some unique techniques in order to solve the wide range of requirements of its prime client, the Transnet Group (transportation and telecommunications). Furthermore, Transtel could secure a longer-term relationship with Arivia.com that specialises in the provision of value-added products and services, such as software and communication converged solutions for its customers. In this way Transtel provides value-added ICT products and services to its customers. Further exploitation of Transtel's VAN licence is a priority in the provision of a value-added, one-stop connectivity for data, voice and multi-media. Here the provision of a VPN will be the central point with facilities such as e-mail, Internet browsing, voice or video conferencing, data services and e-commerce capabilities.

Transtel offers customers some of the following products and services:

- **Leased lines.** Traditionally, a leased line is a pair of copper lines that has been leased for private use. In some contexts, it is called a dedicated line. These analogue point-to-point and point-to-multi point circuits (Modem) utilise modems. A digital point-to-point can also be

provisioned through a state-of-the-art multiplexing network, providing efficient and reliable data links, at high speeds and low cost.

- **ATM.** Asynchronous Transfer Mode (ATM) is a dedicated connection-switching technology that organizes digital data into 53-byte cell units and transmits them over a physical medium using digital signal technology. Individually, a cell is processed asynchronously relative to other related cells and is queued before being multiplexed over the transmission path. The pre-specified bit rates are either 155 Mbps or 622 Mbps. Speeds on ATM networks can reach up to 10 Gbps. Currently, Data services provide CES (Circuit Emulation Services), which is E1 over ATM and VLANs (Virtual Local Area Networks) over ATM.
- **Frame Relay.** Frame relay is based on the older X.25 packet-switching technology, which was designed for transmitting analog data such as batch processes. Unlike X.25, which was designed for analogue signals, frame relay is a fast packet technology, which means that the protocol does not attempt to correct errors. When an error is detected in a frame, it is simply "dropped" (thrown away). The end points are responsible for detecting and retransmitting dropped frames. Frame relay is used in conjunction with routers to build VPNs for its client.
- **X.25.** X.25 is a packet-switching technology designed for transmitting analogue data over low speed lines. This technology is slower because it attempts to correct errors on the packets in-transit. X.25 is the smallest data network of all, and is currently being scaled down, hence the X.25 service will not be offered in the near future. Clients are encouraged to utilize the more modern and faster frame relay service.
 - Internet services
 - Internet security
 - Hosting
 - E-mail enabling
 - E-mail virus protection
 - IP services
 - Remote access solutions
 - LAN
- **Newbridge.** Narrowband multi-services that support fixed bandwidth, frame-relay and voice compression services. Transtel deploys this service in South Africa, Namibia, Botswana,

Lesotho and Swaziland. The network is fully managed via an implementation of the Newbridge 46020 network management platform.

- **Virtual Private Networks.** Transtel PVN offers services such as e-mail, Internet browsing, voice or video conferencing, data services and e-commerce capabilities, providing clients with one-stop connectivity for data, voice and multi-media (Transtel, 2002).

3.3.2.3 Company structure and ownership

Transnet is the owner of Transtel. The Legal Succession to the South African Transport Services Act, 1989, transformed the Government Department of South African Transport Services into a public company. The Group consists of the holding company, Transnet, Transtel and seven transport businesses (Spoornet, Metrorail, Autonet, Fast Forward {sold to SA Post Office from 1 January 2001}, South African Airways, Portnet and Petronet) as well as a number of related and support businesses. Transnet has an annual turnover in excess of R40 billion per year (Telkom Competitive Intelligence Files, 2001).

In 1990, the South African Transport Services were incorporated to form Transnet Limited. Since becoming a corporate, Transnet has constantly improved its system of corporate governance. The corporate transition has been difficult, but today the company boasts a new organizational culture characterised by improved efficiency levels and a living spirit of entrepreneurship, displayed by its employees and commitment to value creation for all its stakeholders (Telkom Competitive Intelligence Files, 2001).

For the first five years, Transnet's operations were organised into semi-autonomous divisions and business units, each operating in niche markets within the broader transport sector. In 1996, the Board was restructured in line with the tenets of good governance expounded in the *King Report* (1994) on corporate governance. Transtel's articles of association were amended to reflect a board that comprises seven executive directors and eight non-executive directors.

Since July 2000 Transtel has a 24% share in M-Cell Ltd after Transnet sold its 23% share in MTN to Johnnic Communications Ltd. Transtel is a major shareholder in Fleetcall, a trunked

radio network. Transtel is part of a consortium that involves the Dutch operator, KPN, Econet Wireless of Zimbabwe and local parastatal Eskom Enterprises to buy a 49% stake in Telkom Kenya. Transtel has entered in a joint agreement with Lebone, whereby Transtel will transmit all its data via Lebone's teleport in the UK. Lebone focuses mainly on international data and voice communications systems and is active in a number of African countries (Transtel, 2002).

In January 2001, Transtel made a submission to the Department of Communications on the new telecommunications policy for South Africa. Transtel was of the opinion that competition should be introduced through the issue of one additional full spectrum licence that would include a cellular telephony capability. Other recommendations made by Transtel, were that a consortium consisting of an international partner/operator and state-owned enterprises (SOE's) with telecommunications interests (Transtel, Eskom and Sentech), including BEE partners should be involved in the SNO licence (Telkom Competitive Intelligence Files, 2001).

Transtel viewed its ownership of certain general rights of way and its existing telecommunications infrastructure and knowledge as a major asset that would be very highly valued in the Government's strategy of creating a viable competitor within a relatively short time.

3.3.2.4 Competitive positioning

Transtel has positioned itself by joining the International Telecommunications Union (ITU) and been listed as a recognised operating agency. Transtel operates the largest PTN in South Africa and Europe and currently provides services to the Transnet Group, banking institutions and corporate clients in sixteen African countries.

Transtel has formed a strategic alliance with Esi-tel as part of a consortium that will own 30% of the SNO. With an established point of presence in sixteen African countries and a technological partnership with Ericsson to plan, build and implement a third generation telecommunication network in South Africa, Transtel is positioning itself as a serious contender in the South African

and African telecommunications market environment. However, with its history and state organizational culture, Transtel will have to work hard to compete against Telkom.

Transtel's relationship with Esi~tel and Arivia.kom also enhances its strategic position to provide value-added services and solutions to its diverse customer base. Furthermore, its experience in doing business successfully on the African continent will add to its strategic competitive capability.

3.3.2.5 Markets served

Through its transformation to an independent business unit and its technological involvement in high-tech projects initiated by the South African Railways and the South African Transport Services, Transtel built up considerable skills and resources in the areas of radio, telecommunications and IT. It has grown to provide complete telecommunications networks for Transnet, comprising over 40 000 telephones with national dialling, 30 000 radios, 20 000 computer terminals, marine radio and radar systems. There is an extensive linking infrastructure comprising countrywide coaxial cable, fibre optic, microwave and satellite transmission systems which are largely confined to rail routes. Transtel provides telecommunication services to its parent Transnet as well as many business customers in South Africa and Africa. Transtel is the telecommunications division of Transnet and provides a wide range of services to Spoornet, SAA, the National Port Authority and other Transnet divisions, as well as to private clients in South Africa and across sixteen African countries. Transtel employs approximately 1700 staff, representing the majority of skilled telecommunications professionals outside of the public operators. Among Transtel's milestones in the period 1999 to 2000 are the following:

- MTN SA Roll out
- 582 Radio base stations installed and commissioned
- 168 Base station transceivers rolled out
- Swazi MTN
- RwandaCel
- Botswana Telecom Company
- SARCC Elsburg - Katlehong OF Transmission

- RSIS USAID
- COALLink Signal multipliers (R9m)
- Bayhead - Pietermaritzburg multiplexers (R1.9m)
- COALLink Wonderfontein OF transmission system
- Optic fibre transmission system Witbank-Richards Bay 800 Km (R26m)
- Optic fibre transmission system Kimberley-Sishen 270 Km (R10.99m)
- Optic fibre transmission gateway for Eskom and MTN (R2m)
- SABRE Phase 1 and 2 implementation (R3m)
- Remedy fault handling system (R10m)
- Carlton call centre telecommunications infrastructure (R8m)

These achievements are an indication of Transtel's strategic competitive capabilities in the telecommunications market environment (Telkom, Competitive Intelligence Files, 2001 and Transtel, 2001).

The following are some of the major projects that Transtel has implemented:

- Achieving full operational capability of the 15 MB SDH microwave system on the Sishen-Saldanha line and selling significant services to Eskom
- Installation of 668 LAN's for the South African Airways IP network
- Rolling out previously unavailable frame relay services in Namibia
- Installation and commissioning of Transtel's network management centre providing an integrated view of events at all levels on the various networks
- Securing a R2.7 million order from BUTEL in Taiwan for the provision of Trunked Mobile Radio equipment
- Providing a satellite earth station for MTN Uganda in the capital, Kampala (contract worth R25 million);
- Being contracted by Alcatel Altech Telecomms (AAT) for the world's biggest rollout of digital enhanced cordless telecommunications (DECT) systems in under-serviced communities

- A recent venture into wholesale “carrier’s carrier” business has been the leasing of transmission capacity to the incumbent carrier, Telkom SA, in a sparsely populated area. Several 2Mbit/s circuits are sub-leased to Eskom (Telkom Competitive Intelligence Files, 2001).

3.3.2.6 Turnover

Approximate annual turnover of R578 million was achieved in 1998/99 and R622 million in 1999/2000. Reported operating losses of more than R 30 million in 1998/1999. In July 2000 Johnnic bought 75 million M-Cell shares for R2 475 billion from Transnet. Transtel’s 2001 turnover amounted to R1 billion (Moalusi, 2002).

3.3.2.7 Number of employees

In 2000, Transtel reduced its staff from 2843 to 2100 as a result of operating losses amounting to more than R30 million in 1998/99. In 2002, Transtel employed 1800 employees (World markets research centre, 2002).

3.3.2.8 Market strategy

Transtel is a market challenger. A market challenger is an organization that directly challenges the market leader (see section 4.8.2). Transtel’s strategy is to establish itself as a major player in the South African and African telecommunications sector by building up a third generation network that will enhance its capabilities to provide all telecommunication products and services to fulfil the needs of business customers, SMMEs and residential customers. However, Transtel is intent on taking market share away from Telkom by picking the most lucrative business and corporate market segments.

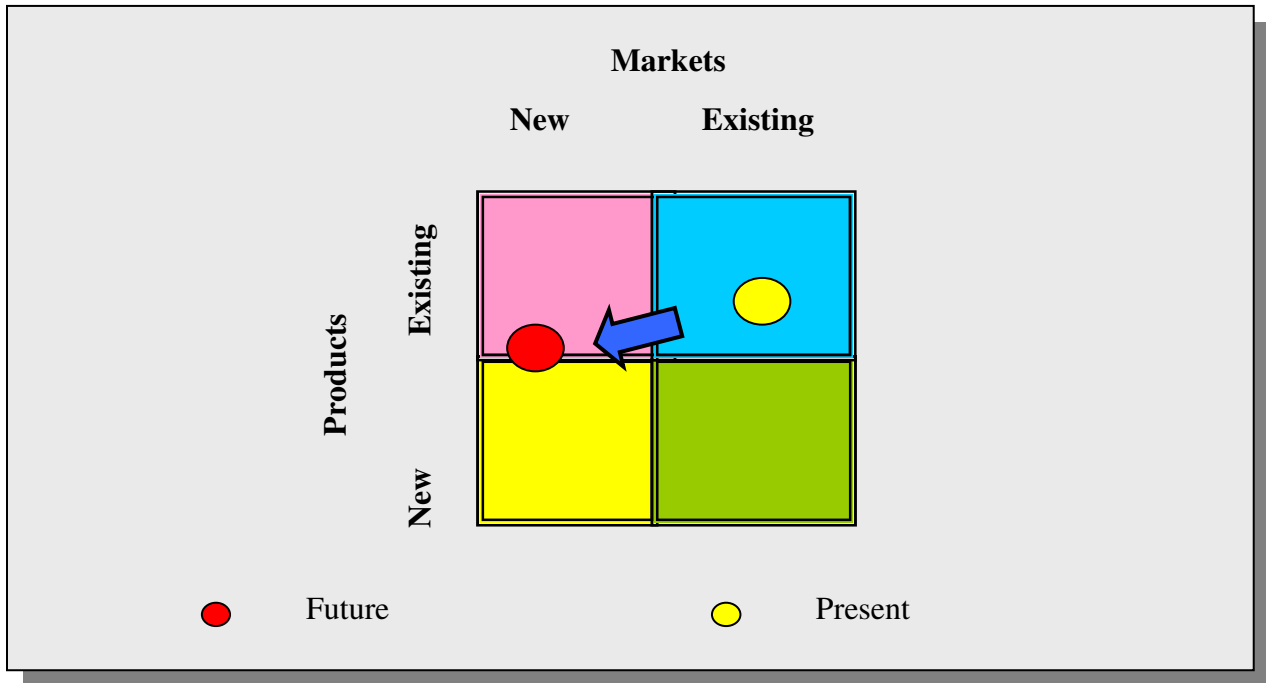
Transtel’s strategy appears to be to differentiate its products and service offerings while building sound customer relationship management with its customer base and at the same time offering its products and services at lower cost. This strategy does not concur with Porter’s (1979) view that an organization can only compete in one of three areas: cost leadership, differentiation or focus.

Gilbert and Strebel (in Mintzberg and Quinn, 1998), however, maintain that it is possible to use all three-strategic positions as many Japanese firms did. Gilbert and Strebel refer to this as “outpacing strategies”. This strategy is more aligned to the Transtel strategy because Transtel would first want to use certain manoeuvres (such as low prices or differentiated offerings) to capture market share in important market segments such as the corporate market to position itself in the South African telecommunications market.

Transtel’s international strategy is to become an African telecommunications operator with the emphasis on providing quality services, uncompromising ethical and professional standards, the development and maintenance of lasting client relationships and the creation of an innovative, participative and supportive working environment where personnel can develop to their maximum potential. Transtel provides consultancy, installations and maintenance service to South African and international businesses, operates satellite networks outside South Africa’s borders, has established infrastructures in many African and Middle Eastern countries and has a direct link to the UK and Europe. By doing so, Transtel’s international marketing strategy is positioning itself for growing its markets outside South Africa.

Figure 3.7 depicts the Transtel strategic market positioning indicating a market penetration strategy focus.

FIGURE 3.7 TRANSTEL STRATEGIC MARKET POSITIONING



As a key partner in the SNO, Transtel’s positioning strategy will be to develop the market by offering existing products and services to the South African corporate and business market segments. From the market-positioning grid in figure 3.7, Transtel appears to be positioning itself for a product development strategy by offering new products and services such as multimedia, network management, Internet and other value-added services to its existing customer base in Africa. A product development strategy would be to form a strategic partnership with Arivia.com, its ICT value-added product and services partner.

3.3.3 ESKOM ENTERPRISES - Esi~tel

Eskom Enterprises Pty Ltd was established as a fully registered company and officially launched to coincide with the opening of the Seventh All Africa Games held in Johannesburg on September 11, 1999. Eskom Enterprises is part of the Eskom Group and is the holding company for telecommunications business unit, Esi~tel, TSI, Rotek, and other subsidiaries, which provide products and services related to the power industry in Africa and around the world. In March 2000, the Electricity Council took a decision to move all communications functions from the Eskom Transmission and Distribution Groups into Eskom Enterprises. Esi~tel was created to

accommodate all Eskom's telecommunications assets, employees and functions. Esi-tel's values are to maximise the value of existing and future telecommunications opportunities and to focus on the development of new businesses opportunities in the telecommunications sector (Eskomenterprises, 2002).

3.3.3.1 Network and technology

Eskom has developed the capability to operate a capable national private utility telecommunications network that could compete directly with Telkom and others. Esi-tel has aggressively upgraded its backbone network to a broadband synchronous digital hierarchy (SDH) network. This network makes use of microwave radio and fibre optic technologies supplemented by state-of-the-art infrastructure consisting of more than 900 kilometers of fibre optic cable installed on power lines (using its subsidiary HEM-KOM's Ad-lash technique) and equipped with SDH terminals. Esi-tel has access to its own modern network management centre that operates on a 24-hour basis, seven days a week and ensures that the operation of the telecommunications network meets the availability requirements of a safe and efficient supply of electricity (Telkom Competitive Intelligence Files, 2001).

The telecommunications modernisation programme has ensured that Esi-tel employees are equipped with the latest knowledge and skills of the current telecommunications technology. This has extended Esi-tel's capability to undertake complex telecommunication network projects. *In the empirical research phase, Telkom management were asked to identify what they perceived as competitors sustainable competitive advantages.*

3.3.3.2 Products and services

Esi-tel offers of the following products and services: microwave links, fibre optic networks, bandwidth leasing, systems engineering, consulting on telecommunications-related issues, and Hem-Kom (turnkey telecoms infrastructure projects, project management, materials and equipment procurement, airborne laser solutions for surveys, optic micro-cable) (EsiteL, 2002).

3.3.3.3 Ownership structure

Esi~tel is wholly owned by Eskom Enterprises.

3.3.3.4 Markets served

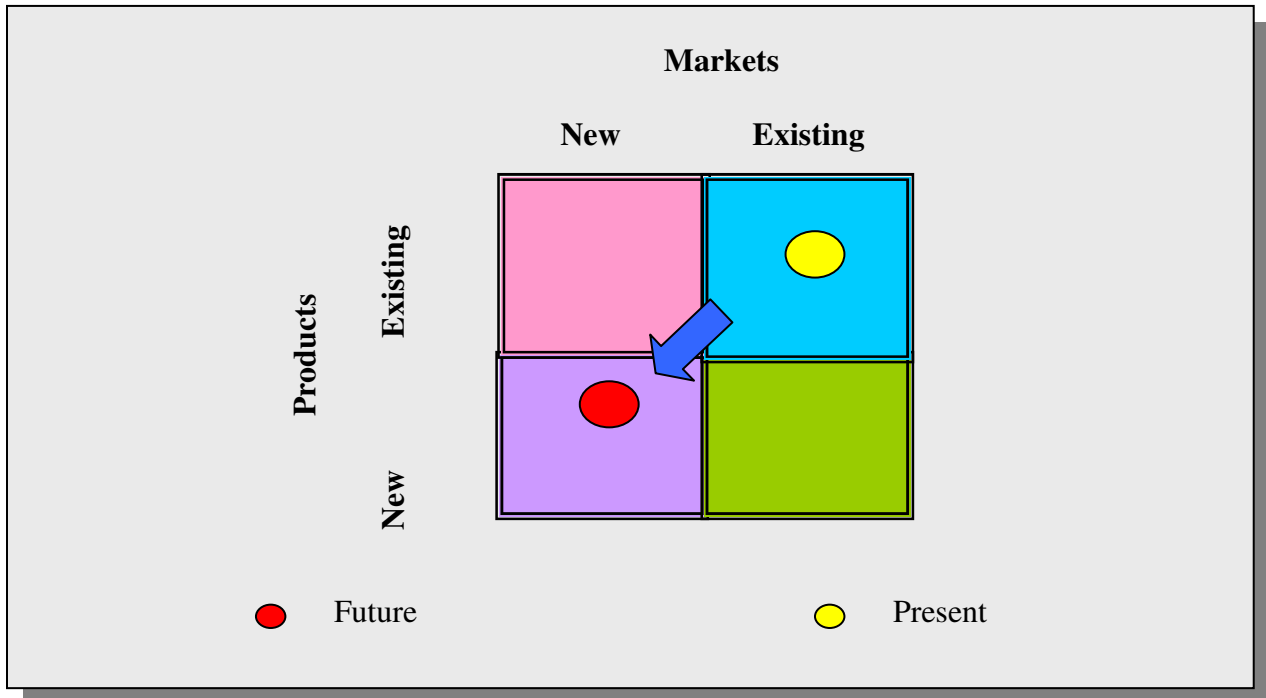
Esi~tel currently services the telecommunication needs of the Eskom Enterprises Group, Telecommunications operators, Utilities (for example, electricity, water and gas), ISPs, broadcasters and corporate clients (Esite1, 2002).

3.3.3.5 Market strategy

Esite1 aims to be a market leader in Africa. The Esi~tel commitment to provide quality services to targeted markets, such as businesses and corporates, displays the organization's strategy of achieving the highest standards of customer service. Esi~tel aims to maximize the value of existing and future telecommunications opportunities and to develop viable new business opportunities related to the telecommunications industry. In a drive to secure the highest standards of customer service levels, employees at the most senior level have committed to ensuring service excellence. Like Telkom, Esi~tel's customer-focused attitude is portrayed in its organizational structure. Six dedicated regional and portfolio Account Managers have been appointed to ensure that existing and prospective customers receive attention, and that their needs are responded to promptly. Although equally important, the marketing and customer services functions have been separated. Dedicated teams of professionals attend to the marketing and post-sales customer services functions (Esite1, 2002).

The main thrust of Eskom's business strategy is to become a global player by maximizing value from existing non-regulated subsidiaries and to develop profitable and sustainable new businesses related to the electrical energy and telecommunications sectors both in Africa and, ultimately, around the world. Eskom Enterprises has been involved in investigating new opportunities in South Africa as well as elsewhere in Africa and on the African continent (Eskom Enterprises, 2002). Figure 3.8 illustrates Esi~tel's strategic marketing positioning.

FIGURE 3.8 ESI~TEL'S STRATEGIC MARKETING POSITIONING



Eskom's business strategy is to create capability to provide value-added ICT services such as e-commerce, networking application and other services, at the periphery of the network for its customers and the Government. In this regard Esi-tel will probably form strategic alliances and partnerships with dominant players in the IT field such as Arivia.kom (Arivia.kom was created by merging the IT divisions of Eskom, Transtel and Denel). Arivia.kom secured a major contract with the Department of Transport for the provision of an end-to-end national transportation information system called NATIS (Arivia.kom, 2002). In order to concentrate on developing its strategic interests Eskom opted to reposition its core and non-regulated businesses thereby freeing the core business from the constraints of the electricity supply industry regulation. This strategy also provides the organization with the flexibility to become commercially viable (Eskom Enterprises, 2002). Esi-tel operates according to commercial principles and therefore has to operate profitably and to the satisfaction of Eskom's shareholders. Eskom Enterprises is mandated by Eskom, the parent, for the management and development of all subsidiaries with core activities outside the regulated business of electricity generation, transmission and distribution (Telkom Competitive Intelligence Files, 2001). Besides developing and expanding its strategic capability to provide telecommunication services through Esi-tel, Eskom Enterprises appears to be preparing to compete on a differentiated basis. The organization is concentrating

on building up its capability to offer value-added products and services and developing firm customer relationship management strategies. From its African initiatives, it is evident that Eskom wishes to acquire a large portion of the electricity and telecommunications market in Africa thereby seeking to develop and grow its markets in the region. From figure 3.8 it is clear that Esi-tel's strategic market positioning is similar to Transtel's. As partners in the SNO, the marketing positioning of both organizations is the same and indicates the synergies the two service providers are developing between themselves.

3.4 SOUTH AFRICAN WIRELESS SERVICE PROVIDERS

The present wireless communications market in South Africa is dominated by a few major players (e.g. Sentech, MTN and Vodacom). Wireless service providers, including the South African VANs and cellular service providers, do not own the fixed line network and offer ICT products and services, such as mobile data services, multimedia services and other value-added services.

3.4.1 Sentech

Sentech is the only licensed carrier and multimedia service provider. With its head office located in Honeydew, Johannesburg, and with regional offices in Cape Town, Durban, Port Elizabeth, Bloemfontein, Pietersburg, Ermelo, Vryheid, East London, Kroonstad, Middelburg (Cape), Vryburg, George, Vredendal and Upington, Sentech has been the only broadcasting signal distributor in South Africa. The company operates as an independent, commercial organization. Sentech's signal distribution network forms the core of all broadcasting in South Africa. Since 1992, Sentech has been at the forefront of providing specialised signal distribution services to the broadcasting community in Southern Africa. In an effort to differentiate itself in the communications market, Sentech creates value for customers by providing them with the choice of both terrestrial and satellite communication systems. Sentech's signal distribution solutions are cost effective (Sentech, 2002).

3.4.1.1 Customer profile

Among Sentech's customers are local and international broadcasters such as the South African Broadcasting Corporation (SABC). Sentech has many well-equipped systems, such as the transmission networks that serve the SABC TV and radio channels, M-Net, e.tv, Radio 702 and other new commercial, community and business broadcasters in South Africa. In addition, Sentech provides shortwave services for international broadcasters (Sentech, 2002).

3.4.1.2 Network

The deregulation of the South African broadcasting and telecommunications industries heralded an exciting period for the Sentech. To enhance its competitive positioning, Sentech updates its existing infrastructure regularly and develops new infrastructure to broaden its current market offerings. Sentech's current technological infrastructure incorporates seven hundred and twenty three (723) FM radio transmitters and five hundred (500) television transmitters. Also included are a number of satellite services. The organization operates medium wave (MW) and short-wave (SW) transmitters ranging from fifty to five hundred kilowatts, and offers a full basket of signal distribution technologies using satellite and terrestrial systems. Services offered in other radio communication fields include radio paging, data casting, multi media figital satellite (MMDS) and digital audio broadcast (DAB) (Sentech, 2002).

Some of the other services that Sentech offers are turnkey network design and establishment, including planning (planning of networks), coverage prediction, and site construction as well as transmitter, mast and antenna installation. Furthermore, the organization provides equipment upgrades and emergency maintenance in South Africa and in various African countries. Sentech's communication arm SENCOM (Sentech Communication Services) provides support to other organizations wishing to take advantage of the latest satellite-based communications tools, such as interactive TV like DSTv, learning technologies like distance learning and on-line knowledge bases. SENCOM's progressive solutions include business television (BTV), interactive distance learning (IDL), data casting, Internetworking and multimedia applications (Sentech, 2002).

3.4.1.3 Products and services

Sentech provides the following technology products and services (Sentech, 2002):

- Distribution of signal for terrestrial sound broadcasting on short-wave, medium wave and (Very High Frequency/Medium Frequency) VHF/FM. Test transmissions have started on DAB (Digital Audio Broadcasting);
- Distribution of signal for terrestrial television broadcasting in analogue PAL I format in VHF, (Ultra High Frequency) UHF and MMDS (2,5GHz) frequency bands. Digital MPEG 2/DVB-T (Digital Video Broadcasting-Terrestrial) was introduced in 1999;
- Satellite distribution for linking both sound and television terrestrial transmission networks, and backhauling programme material or channels to assembly points;
- Direct-to-home (DTH) and businesses satellite transmission in digital MPEG 2/DVB-S formats, with or without conditional access;
- Sentech's infrastructure provides economical solutions and optimum receiving conditions for the public, including
 - high sites with access roads
 - power supply lines
 - high steel masts
 - accommodation with heating, ventilation and air conditioning;
 - standby power generation
 - telemetry and control systems
 - common transmitting antennas
 - receiving facilities for input signals
 - nationwide service centres, manned by staff with specialist competencies
 - high-tech measuring instrumentation
 - extensive stockholding of spare parts and equipment modules
 - communication system and a network management information database
- Sentech owns and operates digital satellite transmission systems that use Intelsat and PanAmSat capacity to provide connectivity for terrestrial transmitter networks (such as

microwave and very small aperture terminal [VSAT] dishes) and direct satellite broadcasting services.

- Direct-to-user satellite transmission reception, for example, digital satellite TV (Dstv), is provided for public broadcasting services. It is also used to provide communication channels for business and public enterprises for uses such as wireless video conferencing, communication broadcasts, information distribution, data casting and distance education/training;
- Sentech participates actively in the promotion of social investment projects, including
 - Providing free advisory and investigative service directly to the public on technical matters associated with the reception of broadcasting signals
 - Giving advice and assistance to communities and private organizations operating self-help transmitting stations
 - Free services for signal distribution planning, involving the most sophisticated computer and expert human resources
 - Accepting commercial risk in providing services to broadcasters that have short duration broadcasting licences, such as community broadcasters (e.g. Radio Islam) where investment is amortised over normal equipment lifetime and exceeds the contract periods without any provision for continuous use

Sentech has a diverse range of products and services offerings that transcend across broadcasting and communications, including the following:

- **Direct-to-home (DTH) on ku-band.** Satellite transmission for direct-to-user reception for public, private, community, and international broadcasters for example, Digital satellite television (Dstv).
- **Communication linking and distribution using, satellite technology.** Providing communication links to businesses, using an extensive C-band and Ku-band satellite transmission infrastructure that uses digital technology.
- **Business Television (narrowcasting).** Provision of digital networks to business users for internal communication applications, for example company specific business broadcasts.
- **Interactive distance learning.** Wireless network services for distance learning networks – such as schools and higher education institutions.

- **Data casting and Internet working via satellite.** Wireless, multimedia services for transporting high volumes of video and audio data at high transmission speeds.
- **Professional services.** Provision of consultancy services in specialized areas such as in the satellite-based broadcast signal distribution field.
- **Broadcasting services.** For the SABC such as television broadcasts.
- **Signal distribution products.** Providing signal distribution equipment and infrastructure.
- **Television.** Flexible solutions for television broadcasting needs, including both open and encrypted (secure information by coding) services, teletext, data distribution and NICAM stereo/multi-language facilities.
- **FM radio.** Provision and maintenance of terrestrial FM radio transmitter network.
- **Medium Frequency (MF).** Broadcasting to a select target population group.
- **Shortwave (SW).** Provision of relay services that enables international broadcasters to reach into Africa, Europe, North and South America.
- **Multimedia digital services (MMDS).** These are private television networks that link to specific reception points within a local coverage area. It is used for education, corporate communications (Sentech, 2002).

Sentech also provides a diverse range of services such as:

- **Client systems.** This includes the design, construction, installation, management, training and maintenance services for facilities owned by Sentech clients.

Sentech has the potential to become a major role player in the South African telecommunications sector. The telecommunications policy directives of 2001, make provision for Sentech to become “a carrier of carriers” and to provide multimedia services direct to customers (Sentech, 2002).

3.4.1.4 Employees

In June 2002, Sentech employed 500 employees (Sentech, 2002).

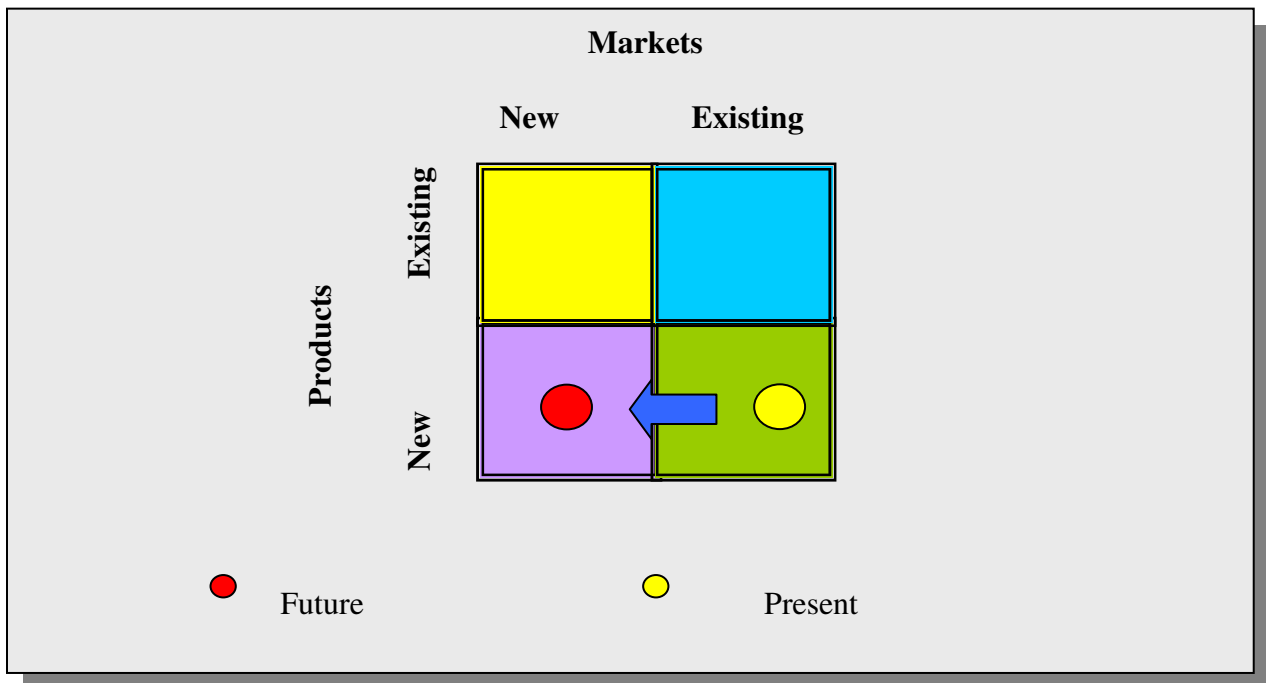
3.4.1.5 Turnover

Sentech's turnover for 2001 amounted to R582 116 000, an 18-month period (Sentech, 2002).

3.4.1.6 Market strategy

The Sentech marketing strategy is to establish itself as a full multimedia organization in South Africa, to provide multimedia services directly to end-users (Sentech Company Profile, 2001). Figure 3.9 depicts Sentech's strategic marketing position. Sentech is positioning itself in the ICT market environment.

FIGURE 3.9 SENTECH STRATEGIC MARKETING POSITIONING



By introducing new products and services in the market Sentech is following a product development strategy. The introduction of new products and services such as multimedia in existing markets could provide Sentech with a strategic competitive advantage that it could use to exploit new opportunities in future. As a provider of converged information, communication and broadcasting technology products and services, Sentech appears to be well positioned for growth in the existing market with relatively few competitors.

However, should its strategy be successful, many of the ICT service providers might be drawn into this niche area to increase their revenue streams. *Broadcasting opportunities such as video on demand and multimedia services using telecommunication fixed lines and coaxial cable as new business opportunities for fixed line service providers were investigated in the empirical research phase, by eliciting Telkom management's views on whether this could be a profitable area for Telkom in future.* Sentech is moving towards a future diversification strategy by introducing new products, such as video on demand and services to new markets.

3.4.2 MOBILE TELECOMMUNICATION NETWORKS (MTN)

MTN has established itself as a leading innovative cellular network operator both in South Africa and Africa. MTN holds approximately 40% of the South African mobile market by subscribers (World Telecoms Markets, 2002). MTN's network coverage in South Africa is one of the most extensive in the world, and covers close to 880 000sq kms (including ocean). MTN provides telecommunications access to 92% of the population (MTN, 2002). Table 3.3 highlights the number of MTN subscribers per country as at 31 August 2000 and 30 September 2001.

TABLE 3.3 MTN MOBILE SUBSCRIBERS

Country	31 Aug 2000	31 March 2001	30 Sept 2001
South Africa	3,000,000	3,200,000	3,540,000
Swaziland	22,000	33,000	40,000
Uganda	117,000	150,000	190,000
Rwanda	19,000	39,000	53,000
Cameroon	7,800	67,000	137,000
Nigeria	-		32,000

World markets research centre (2002)

As indicated in Table 3.3, MTN's African operations in Africa extend to Uganda, Swaziland, Rwanda, Cameroon and recently Nigeria. MTN is known for its product and services innovation in the mobile telecommunications field as well as its standards of excellence in customer services. MTN was the first African telecommunications network service provider to be awarded ISO 9001 quality standards qualifications, for its Network and IS divisions. MTN was also awarded

ISO 9002 qualifications for its Customer Services Department and ISO 14001 for its Environmental Management System (MTN, 2002).

In August 1999, MTN announced a further investment of US \$ 200m in rolling out its domestic network, expanding coverage in both rural and urban areas. MTN entered into a strategic partnership with Ericsson, the exclusive supplier of GSM infrastructure to MTN, in South Africa as well as in its other subsidiaries. The operator is also launching mobile data services. In October 1999, the mobile e@MTN division was created inside MTN to develop value-added services that can be delivered using mobile data. This unit has now been renamed Airborne Wired and Wireless, and is being restructured into a wholly owned subsidiary of MTN's parent company, M-Cell. MTN also acquired CiTEC, a leading ISP, in conjunction with Johnnic, effective from 1 April 2001 (MTN, 2002).

3.4.2.1 Products and services

MTN provides mainly voice services to its customers. Recently, MTN was highly innovative in developing new products and services for its customers. For example, in 2001, MTN introduced ICE (Information, Commerce and Entertainment), that is available on the Internet at www.mtnice.co.za and through the use of wireless application protocol (WAP) phone, interactive voice response (IVR) on cellular at 083 123 6000 and with SMS using a technology developed by MTN called RIVR (Remote Interactive Voice Recognition). MTN is constantly aware of the need to provide customers with efficient service and value-added products. MTN has been highly proactive in leading the field of new product and service developments in the cellular telephony marketplace. Many in the industry view its introduction of prepaid cards to the South African cellular market as revolutionary. The MTN brand has become a household name in South Africa and is remembered for having brought cellular telephony accessibility to millions of South Africans (MTN, 2002).

3.4.2.2 Network

On the technology side, MTN is preparing to deploy the latest packet switching technology, GPRS that will allow permanent network connectivity (cellphone will be connected constantly to

the network like DoCoMo's 'i-mode' referred to in chapter 1). In 2002, MTN concentrated on developing its WAP (Wireless Application Protocol) activities. This second generation service will transport news and transactional services to the cellphone. Cellular base stations are being injected with intelligence to allow MTN to provide its subscribers with more sophisticated service offerings. MTN'S major challenge in the future will be to move from being a predominantly voice to a data network. According to MTN (2001), approximately 60% of MTN's revenue base between 2002 and 2006 will be from non-voice services.

3.4.2.3 Social investment

MTN's corporate social investment policy is strongly focused on developing closer relationships with its customer base by actively engaging in a variety of social development programmes, such as the SUNSTEP project initiated through a strategic partnering alliance with Stellenbosch University. This project involved more than 320 000 learners and their educators. In another strategic partnership to enhance its social image, MTN and the Peninsular Technikon are involved in training electrical engineers through the PENTECH programme. The SciTech Centre opening held in Cape Town in October 2001 introduced the youth to hands-on experience of scientific principles (MTN, 2002).

3.4.2.4 MTN Shareholding

M-Cell is the major shareholder in MTN. M-Cell's ownership structure is: Johnnies Industrial Corp (Johnnic) (72%) and Transnet (28%). In August 1998, M-Cell increased its holdings in MTN from 29.5% to 34.7%; then to 41% in March 1999, and April 1999 to 72%. At the end of March 2000, M-Cell had obtained a further 4.9% from an unidentified BEE group, in return for the issue of 77.5 million ordinary shares, thereby increasing its total holding in the organization from 72.1% to 77%. In July 2000, M-Cell succeeded in obtaining the outstanding 23% of MTN from state-controlled Transnet. In July 1998, the US firm SBC was required to divest its 15.5% shareholding in MTN because of a conflict of interest through its indirect holdings in rival operator, Vodacom. SBC owns an 18% stake in Telkom (see section 3.4.1.4), which in turn, holds a 50% stake in Vodacom. With a market capitalisation of

R18bn (US \$ 2.9bn), M-Cell is one of the top twenty companies listed on the JSE. It moved from the industrial development sector to the industrial telecommunications sector of the JSE on January 10, 2000 (Telkom Competitive Intelligence Files, 2001).

3.4.2.5 Number of employees

Not known.

3.4.2.6 Turnover

Turnover for the M-Cell group in 2001 amounted to R8, 337 billion (World markets research centre, 2002).

3.4.2.7 Market Strategy

As a leading provider of cellular services, MTN has set several world records in performance and product innovation. Many of its self-developed software planning and monitoring tools are marketed abroad. Preparing for the convergence of mobile telephony, Internet and satellite technology is a major strategic objective for MTN. According to MTN (2002), people will turn to mobile Internet services on cellular networks in the near future. MTN (2002) maintains that this will alter the way the cellular networks are used. In October 1999, MTN created the division Mobile e@MTN as a subsidiary to MTN. This division was renamed, Airborne and Wireless and is being restructured to become a fully-owned subsidiary of MTN's holding company, M-Cell. The objective of this unit is to develop value-added products and services that can be provided using wireless telephony.

MTN has won many prestigious awards that have established it as a major cellular telephony brand in South Africa and Africa. For example, MTN was awarded the Gold Assegai for having the overall best Relationship Marketing Programme. The organization's innovative 'Call Award' programme that recognises customer loyalty, also received special acclaim. In March 2000, *Professional Management Review* (PMR) rated MTN as having the best network. *PMR* also voted M-Tel, an MTN subsidiary, as the best cellular service company in an annual survey.

These prestigious awards led to MTN securing two Golden Arrow Awards in recognition for its superior quality and excellent service levels. MTN's 'Call Awards' programme has been extended with the launch of a credit card branding partnership with Nedcor Bank.

In February 1998, MTN won the licence to operate a cellular network in Rwanda. The estimated bid costs were \$5.6million. The consortium included MTN (26%), Tristar (46%), and the state-owned operator, Rwandatel (28%). MTN holds 30% of the shares, with the Swaziland Posts and Telecoms Corporation holding 51% and Swazi Empowerment Ltd, the remaining 19%. Both contracts and pre-paid options are provided. The official launch took place on October 21 1998. MTN Uganda is licensed to offer mobile telephony, fixed line communications, data transmission and international gateway access in their cellular licence agreement. The licence is estimated to be worth approximately US \$ 100 million annually.

Initially, MTN's international expansion strategy was to be focused on the Southern African region. Later it turned to areas in Sub-Saharan, the Sub-Saharan Equatorial region, including certain areas in West Africa, as well as Kenya and Cameroon. The South African telecommunications market is considered a saturated market and MTN developed a clear market development and expansion strategy in other areas of Africa. *In the empirical research phase Telkom management were asked whether they considered Africa as an opportunity to grow new telecommunications markets and whether these markets should be fixed, wireless or both.*

The MTN new market development strategy hoped to develop sub-regional networks that could capture the critical mass not normally available in individual African countries. MTN's new market development strategy concentrated on the following three regions:

Southern African region. Besides South Africa, MTN also operates in Swaziland, which is engulfed by South Africa.

Swaziland. In 1997, MTN obtained the licence to operate in Swaziland and subsequently introduced commercial services in December 1998. On September 30, 2001, MTN (Swaziland) had 40,000 subscribers (World markets research centre, 2002). The number of cellular subscribers in Swaziland overtook fixed-line subscribers (30,569 in 1999; ITU in World Telecoms, 2002) by the end of 2000. MTN exceeded its licence obligations nine months in advance.

East Africa. MTN has operations in both Uganda as well as Rwanda. It has also taken part in a bid for the privatisation of Telkom (Kenya), the fixed-line operator.

Uganda. The Ugandan SNO license was awarded to MTN in 1997. On September 30, 2001, MTN (Uganda) had 190,000 subscribers (MTN, 2002).

Rwanda. MTN partnered with state-owned PTO, Rwanda Telecommunications Ltd (Rwandatel SA), and Tristar, called MTN RwandaCell. According to MTN (2002) the operator, in which MTN holds 27%, signed a mobile cellular licence in July 1998 and launched services in December 1998. On August 31, 2000, MTN had 19,000 subscribers and this had risen to 53,000 by September 30, 2001 (M-Cell, 2001).

West Africa. MTN's major thrust in West Africa is in Cameroon and Nigeria.

Cameroon. At the beginning of February 2000, MTN secured the bid for the privatisation of Camtel-Mobile, the cellular division of the state-owned Cameroon Telecommunications (CAMTEL). The participating consortium consisted of MTN (70%) and a local organization, Broadband Ltd (30%). Camtel-Mobile is fully owned by MTN and had acquired a subscriber base of 10,000 by September 2000 (MTN, 2002). On September 30, 2001, MTN Cameroon was a market leader with 43% of the market share and 137,000 subscribers.

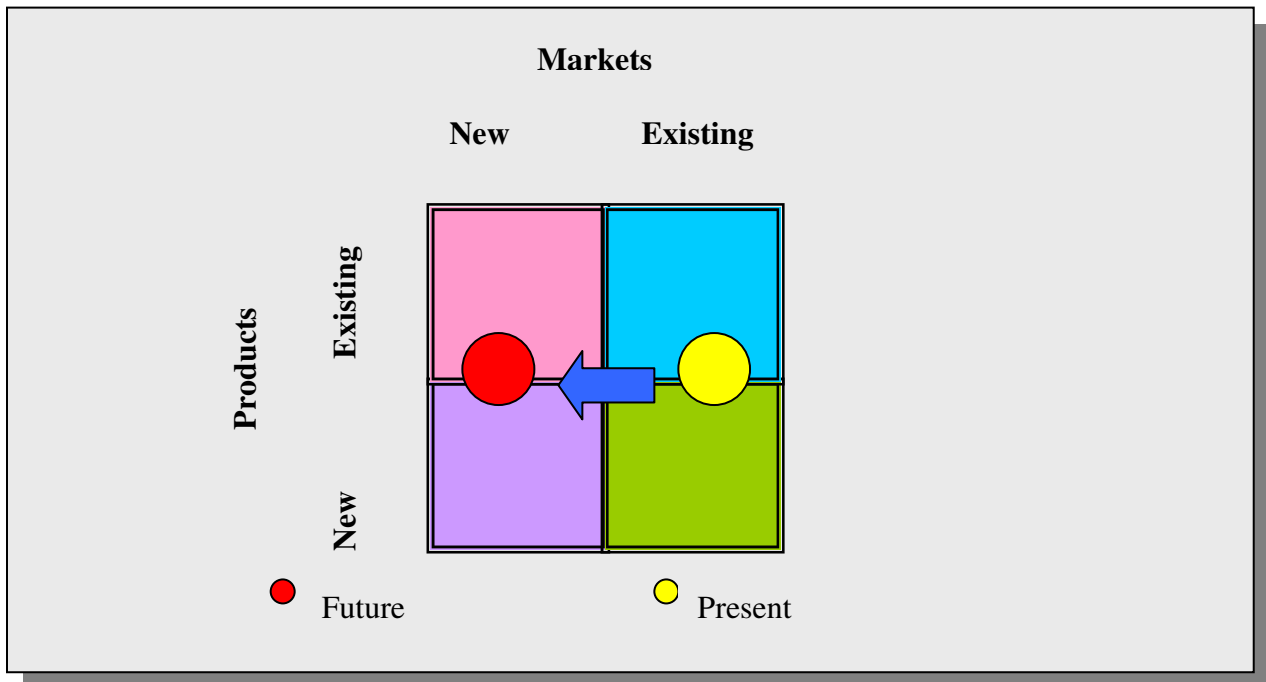
Nigeria. MTN obtained one of the four GSM (Global Services Mobile) licences auctioned in February 2001. MTN Holdings (through MTN International) has a majority shareholding of 94%, with local partners owning 6%. By 30 September 2001, MTN had 32,000 subscribers and

expected the number to increase to 100,000 towards the end of 2002 (World markets research centre, 2002).

MTN are also preparing to offer satellite-based services in South Africa through the satellite communications company, Iridium. MTN and Iridium formed a strategic partnership that could see satellite being used to provide services over cellular networks much more in the future. It is expected that users will have to invest in dual-mode phones that can communicate via conventional cellular networks or satellites. Iridium services became commercially available from November 1, 1998, although South Africa is still in the process of discussions on how to regulate and monitor Global Mobile Personal Communication Services (GMPCS) more equitably. At the beginning of 2002, the South African Telecommunications Regulatory Authority (SATRA) issued an interim test licence to Iridium.

Figure 3.10 depicts MTN’s strategic marketing positioning.

FIGURE 3.10 MTN STRATEGIC MARKETING POSITIONING



MTN’s market position strategy is a hybrid between market penetration and product development. MTN has been penetrating the Southern African market fiercely and

simultaneously developing product innovations in information, commerce and entertainment (see section 3.5.2.2 below), the existing cellular voice market in South Africa is nearing saturation. To increase revenues and establish sustainable competitive advantages, MTN aims to develop new innovative value-added products and services for its existing markets through a product development strategy. At the same time it seems to be trying to milk revenue from its existing customer base by penetrating the market through advertising (e.g. MTN Gladiators) that constantly reminds customers to increase MTN product usage.

3.4.3 Vodacom

Vodacom is one of South Africa's leading cellular network service providers, and has established itself as a major player in the cellular telephony market in South Africa. Vodacom's 1997/98 financial year-end saw its revenue rise by 76%, from R2.5 billion to R4.4 billion and its profits increased to R460 million, representing a growth of over 78%. Table 3.4 represents the Vodacom Mobile Subscribers per country at August 31 and Sept 30, 2001.

TABLE 3.4 VODACOM MOBILE SUBSCRIBERS

Country	31 Aug 2000	30 Sept 2001
South Africa	3,700,000	5,657,000
Lesotho	12,000	NA
(Kenya)	54,000	250,000
Tanzania	11,000	NA

World markets reseach centre (2002)

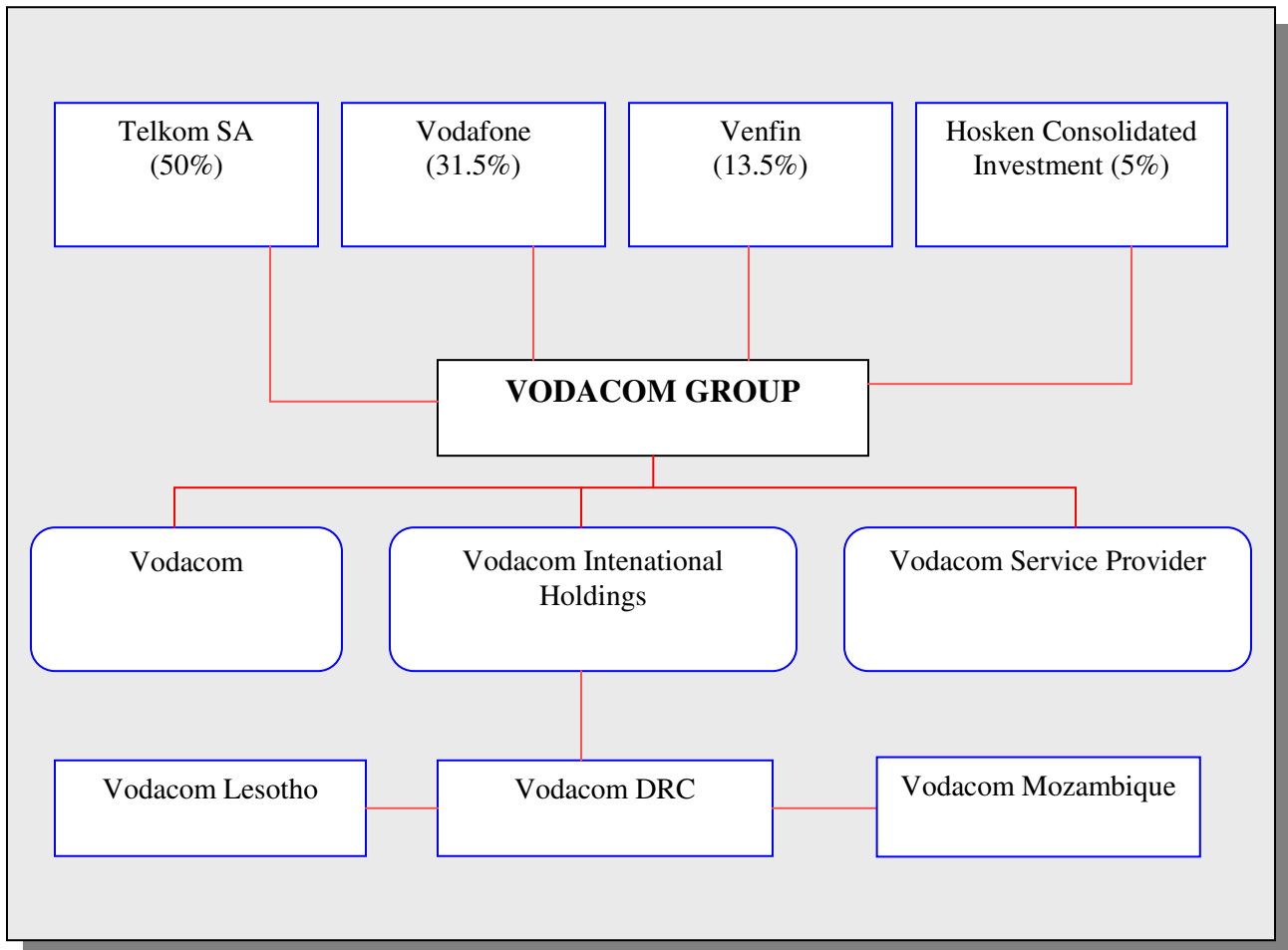
With 5.657 million South African subscribers in September 2001 (Vodafone cited in World Telecoms Markets, 2002), Vodacom is the largest mobile cellular operator in sub-Saharan Africa. On 15 October 2000, Vodacom had acquired four million subscribers and, with this, the total number of mobile subscriptions in South Africa overtook that of fixed-line operators such as Telkom SA. Vodacom holds 60% of the current subscriber market share in South Africa. Alan Knott-Craig has headed the company since 1993. Vodacom invested R11.4 billion in its network from 1994 onwards and, according to Andrew Mthembu, Managing Director of Vodacom (Pty)

Ltd, would invest a further R3.7 billion during 2001. Vodacom has three suppliers of GSM infrastructure: Siemens, Motorola and Alcatel (World markets research centre, 2002).

3.4.3.1 Ownership structure

Figure 3.11 illustrates an overview of Vodacom’s group shareholding. The company's ownership structure is: Telkom (50%), Vodafone/Airtouch (31.5%), Venfin (13.5%) and Hosken Consolidated Investments (5%). The Vodacom Group, in turn, own Vodacom (100%), Vodacom service provider (100%) and Vodacom International Holdings (100%).

FIGURE 3.11 VODACOM OWNERSHIP STRUCTURE



Adapted from: Vodacom (2002)

3.4.3.2 Products and services

Vodacom offers nine cellular packages to users: two standard packages, five bundled packages and two prepaid packages. As indicated in table 3.5 and table 3.6, Vodacom offers a range of network and information services.

TABLE 3.5 VODACOM NETWORK SERVICES

Service	Vodago	Description
International roaming	No	A service whereby Vodacom subscribers may make and receive calls on their cellphones while outside the borders of South Africa. The service is limited to countries that have roaming agreements with Vodacom.
Call Back	Yes	Vodacom's new Callback service enables subscribers to return a call from their voice mailbox by simply pressing 3 after a particular voicemail message has been played in full. Once finished with the call, the subscriber can either wait for the other party to end the call or press ## to return to the voice mailbox to continue listening to the rest of the voice messages.
Call Barring	Yes	This service prevents certain types of calls (usually international calls) from being made.
Call Forwarding	Yes	Subscribers can forward calls to any national destination including voicemail (forwarding calls to voicemail is not charged).
Call Hold	Yes	A service whereby a subscriber may place a call on hold and make or receive another call.
Call Waiting	Yes	Lets a subscriber know that there is another incoming call that may either be answered or terminated.
CLIP	Yes	Calling Line Identity Presentation. If activated, this service will display the calling party's number on the phone's display screen Note that if the calling party has restricted this information, it cannot be displayed.
CLIR	Yes	Calling Line Identity Restriction. Restricts the called party from seeing CLI information. Note that if CLIR is active, CLIP is inactive.
Mobile data	No	The ability to make and receive data calls on a data capable handset (together with the necessary computer hardware). Note that the your service provider must activate the service and that additional data numbers will be issued. Data speeds available are 2400 and 9600 bps.
Mobile fax	No	The ability to make and receive fax calls on a fax capable handset (together with the necessary computer hardware). Note that the service provider must activate the service and that an additional fax number will be issued. The standard is Group 3 fax at 9600 BPS.
Vodacom SMS	Yes	The ability to send short text messages (also called SMS – Short Message Service) The service must be activated by the service provider and the handset programmed with the Vodacom message centre number (+27829129 or +27829119).
Twincall	No	A subscriber may apply for a second SIM card yet keep the same cellular number. Normally used in a fixed car phone and mobile phone arrangement. The Twincall service is now available to all contract subscribers, including those on talktime contract packages. This service carries no additional monthly subscription, but subscribers are charged for two connections. The monthly subscription depends on the tariff plan subscribed to.

Adapted from: Vodacom (2002)

TABLE 3.6 VODACOM INFORMATION SERVICES

Service	Access number	Description
Funky Fone	082 288 8888	The latest in ringtones, picture messaging, operator logos and group graphics giving you a wide choice of cellular downloadables
Newsbreak	082 152	Information service that provides callers from any phone (mobile or Telkom) with the latest news headlines
Shareline	082 232 6000	Financial information service which provides real-time share prices, currency and financial indicators
Standard Bank	150 – Eng 151 – Afr	Subscriber bank account information (statements, balance etc) via any phone (mobile, Telkom or fax)
Teleflorist	082 16000	By simply quoting thier credit card details, clients may order flowers for delivery anywhere in the world through over 500 teleflorist outlets locally and 130000 internationally
Travelphone	082 232 5600	Information fax request service
Weatherline	082 162	Daily national weather forecasts

Adapted from: Vodacom (2002)

3.4.3.3 Network

In 1999, Vodacom allocated R5 billion, for network expansion, to increase capacity to two million users. The core focus of this expansionary process was to improve Vodacom's existing services in rural areas. Vodacom announced a further expenditure of R2.3 billion in the financial year ending March 31 2000 on increasing its network capacity and enhancing quality and coverage. The investment included six new switches, voicemail platforms, transmission equipment and home location registers. The main suppliers were Siemens, Alcatel and Motorola. Local content represented more than 20% of the total capital expenditure.

In 2002, Vodacom's network consisted of 4 400 base stations and covered almost 13 000 kms of national roads, approximately 80% of the country's population and 52% of the total land surface. Vodacom's national network extends to bring coverage to 600,000 sq km. Vodacom's network is valued at R6 billion and switches 30% of telephone traffic in South Africa and 10% of Africa's. Vodacom has implemented two network upgrades to increase network capacity from its present capacity allocation that exists on the 900MHz band. By 2002, Vodacom had made the following improvements to its network:

- **Network synchronization**

In October 2000, Vodacom contracted with the US firm, Symmetricom, and Grintek Telecom, to deliver, install and provide follow-up support for the network system. The contract brings a clocking solution to synchronise more than 1,000 cells in the Johannesburg region more accurately. Principally, Vodacom has extended its capacity in this region by dividing cells through installing micro and pico base stations and the synchronisation technology will reduce the risk of calls being dropped when they are handed over from one cell to another.

- **Intelligent optimisation service**

In 2000, Vodacom installed a system supplied by US vendor Motorola, in a contract worth R67m (US \$ 9.3m). This system has allowed the operator to rework its frequency and network planning in the Gauteng province (including Johannesburg) in order to increase network capacity. According to the operator, this has seen a 25% reduction in dropped calls. The optimisation process meant that Vodacom had to replace most of its base station antennae in Gauteng. Given its success, the programme has been extended to KwaZulu Natal and Vodacom has also implemented smaller scale optimisation projects in the North-West Province, Mpumalanga and the Northern Province (World markets research centre, 2002; Telkom Competitive Intelligence Files and Vodacom, 2002).

3.4.3.4 Turnover

Vodacom's unofficial turnover for the 2002 financial year amounted to R16 billion.

3.4.3.5 Employees

Unknown.

3.4.3.6 Market strategy

Up to the end of 2001, Vodacom's marketing strategy in South Africa was one of growth and consolidation. According to World markets research centre (2002), Vodacom views the South African market as the region's largest and most profitable cellular market. Vodacom International has started to expand an international growth strategy in search of new opportunities in Africa. New competitors in the cellular market, such as Cell C, appear to have forced Vodacom to seek outside domestic marketing opportunities to maintain its revenue streams and replicate its domestic success. Vodacom marketing strategy was limited mainly to the South African Development Community (SADC) region although Vodacom made investments in Kenya. As part of its African growth strategy, Vodacom has secured network rollouts in Lesotho, followed by Tanzania and in December 2001 it entered the Democratic Republic of Congo (DRC).

Vodacom is exploring new licence opportunities in Namibia and Mozambique. Opportunities for growing market share on the African continent are steadily decreasing. Consequently, and other operators are exploring the formation of strategic alliances and partnering with established African operators as a means to grow market share in Africa. In pursuance of this marketing strategy, Vodacom seems interested in obtaining an 80% stake in the multinational operator, Telecel International from Orascom Telecom. Some of the other strategic marketing initiatives that Vodacom has embarked on are:

Lesotho. Vodacom obtained a GSM licence to operate in June 1995. After establishing a joint venture with the Lesotho Telecommunications Corporation (LTC), the organization commenced business in May 1996. Vodacom had 12 000 subscribers by September, 2000. Vodacom holds the major shareholding (88%) in Vodacom Lesotho Communications (Pty) Ltd (VLC), and LTC holds the remaining 12% shareholding.

Tanzania. In July 1999, Vodacom obtained a licence to operate Tanzania's fourth cellular network. In this market Vodacom upturned a bid by MTN for the licence and in a partnership

with Tanzania's Planetel Communications (50% shareholding) launched the new GSM service. At the end of September, 2000, Vodacom Tanzania had 11,000 subscribers on its network.

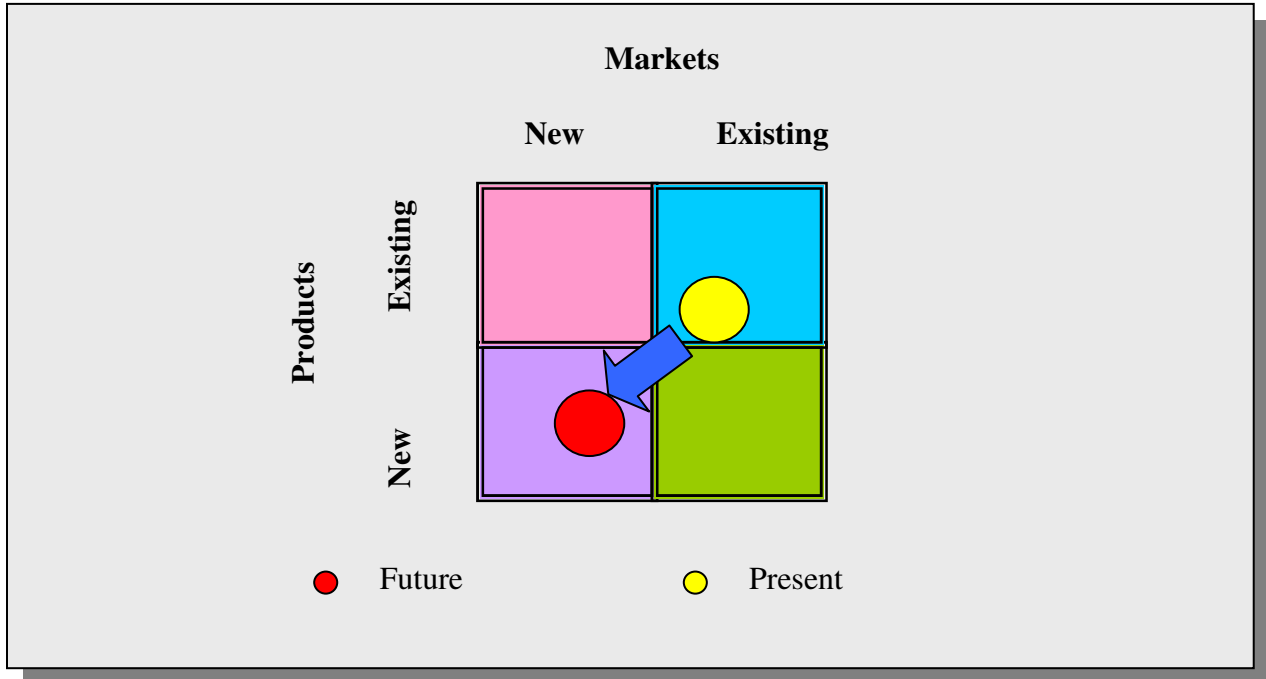
Kenya. Vodacom's parent company, Vodafone/AirTouch obtained a foothold in the Kenyan market by purchasing 40% of Safaricom, which was the only cellular operator operating in the Kenyan market.

Democratic Republic of Congo. In a joint partnership with Congolais Wireless Network (CWN), Vodacom penetrated the market in the Democratic Republic of Congo (DRC). Vodacom invested US \$ 39 million in this joint venture, called Vodacom Congo (DRC) SPRL, for which it secured a 51% stake and CWN obtained 49%. This investment will give Vodacom access to new markets as it expands CWN's coverage of the DRC beyond Kinshasha and Lubumbassi and into the potentially profitable mining areas where people are demanding access to reliable telecommunications. According to Joffe (2002), the DRC was high on Vodacom's market expansion agenda because the country has a telephony penetration of only 100,000 phones for more than 60 million people. Joffe (2002) stated that the challenges for Vodacom might be high, but at the same time in a country with a teledensity of about 1.6 telephones per 1,000 people, the opportunities for GSM operators in Africa's third biggest country were enormous.

Zambia. In partnership with a Zambian consortium, Vodacom was awarded the fourth cellular licence in December 2001.

From Vodacom's strategies to entrench its position in Africa, it is evident that its marketing strategy is one of prospecting and developing new markets for its products and services. In the South African market environment, Vodacom was of the opinion that its market is saturated (World Market Telcoms, 2002). Figure 3.12 Vodacom's illustrates strategic market positioning.

FIGURE 3.12 VODACOM STRATEGIC MARKET POSITIONING



3.4.4 Cell C

Cell C successfully launched its network on 17 November 2001. By December 2002, Cell C had signed up more than 900,000 subscribers (Swart, 2002). The Minister of Communications, Ivy Matsepe-Casaburri, conditionally awarded the third cellular licence to the Cell C consortium on February 16, 2001.

3.4.4.1 Network

Cell C signed a 15-year agreement with Vodacom in July 2001 that will allow it to roam on Vodacom's network (piggyback on Vodacom's network). Until its network was completed, the roaming deal allowed Cell C to offer nationwide coverage as soon as it launched commercial service. The operator was awarded a licence to use the 1800MHz band, making it the first dual band operator in South Africa. Under the new telecommunications policy, the incumbents MTN and Vodacom, as well as fixed-line operator, Telkom and the SNO, would also be granted the right to apply for access to the 1800MHz spectrum, as well as third generation (3G) mobile licences.

- Coverage at launch: nationwide (using own network and GSM900 network of Vodacom)
- GSM 900 technology: and 1800
- Dual band base stations at launch: 500
- Base stations by fourth quarter of 2002 should be 1800
- Technology partners: Detecon (Germany) and Verizon (USA)
- Siemens was recently awarded the Cell C network contract worth US \$ 221 million
- Accenture awarded contract for billing, customer care and IT solutions worth \$ 25 million
- PQ Africa awarded contracts for R4.5m for LANs and WANs

3.4.4.2 Products and services

Cell C's market offerings are aimed at corporate, business, consumer and youth markets. The organization offer two groups of products to their customers, namely Prepaid (paid for in advance) and Contract (paid on a period basis, such as monthly).

- **Prepaid**

Easy Chat Prepaid offers two pricing options, All-day and Standard, allowing the consumer to choose between a flat rate for all calls, or variable billing based on peak and off-peak periods. Additional Easy Chat benefits include per second billing after the first minute as a standard feature on both tariff options. Easy Chat Standard rates are R2.70 per minute during peak periods, and R1.35 off-peak, for calls to fixed line or other cellular numbers. Calls within the Cell C network are R2.40 and R1.20, respectively.

The Easy Chat All-day package is based on a flat rate of R2.00 per minute. Selecting either of the Easy Chat options is made via the user's handset, using USSD hash commands, and does not require any vouchers. Cell C also offers its users discount call rates to regularly dialled numbers. The Easy Chat 'Friends and Family' feature gives customers an additional 10% discount on all

calls to two pre-determined numbers, allowing users a lower rate for the calls they make most often, which means calls will be around R1.80/min.

Cell C also simplified the recharge process by offering longer airtime windows and eliminating the need for vouchers that only allow for incoming calls. Easy Chat gives consumers a six-month grace period once the airtime window has expired. During this period consumers can receive incoming calls, and make calls to toll-free and emergency service numbers.

- **Contract**

Table 3.7 illustrates the various contract products that Cell C offers its customers.

TABLE 3.7 CELL C CONTRACT PRODUCTS

Product	Market Segment
Club Chat	Youth
Casual Chat	Youth
Active Chat	Business
Business Chat	Business

Cell C (2002)

Cell C offers four variations of the contract product. Each of these is directed at specific market segments as indicated in Table 3.7. The market segments targeted are youth and business.

3.4.4.3 Ownership structure

The Cell C consortium is wholly owned by 3C Telecommunications. The consortium's technology partner is the US firm, GTE Corp, which has an option to buy 15% of Oger's holdings within two years. 3C telecommunications comprises (World markets research centre, 2002):

- **Saudi Oger group (60%)**, which is wholly owned by the Hariri family of Saudi Arabia. The group set up a branch called OGERTELECOM, which invests in regional

telecommunications and Internet markets, including one of the first Internet service providers (ISPs) in Saudi Arabia;

- **Cellsaf SA (40%)** Cellsaf SA is a grouping of 33 local BEE groups.

3.4.4.4 Number of employees

Cell C has 600+ employees (BMI-TECHKNOWLEDGE, 2002).

3.4.4.5 Turnover

Not known.

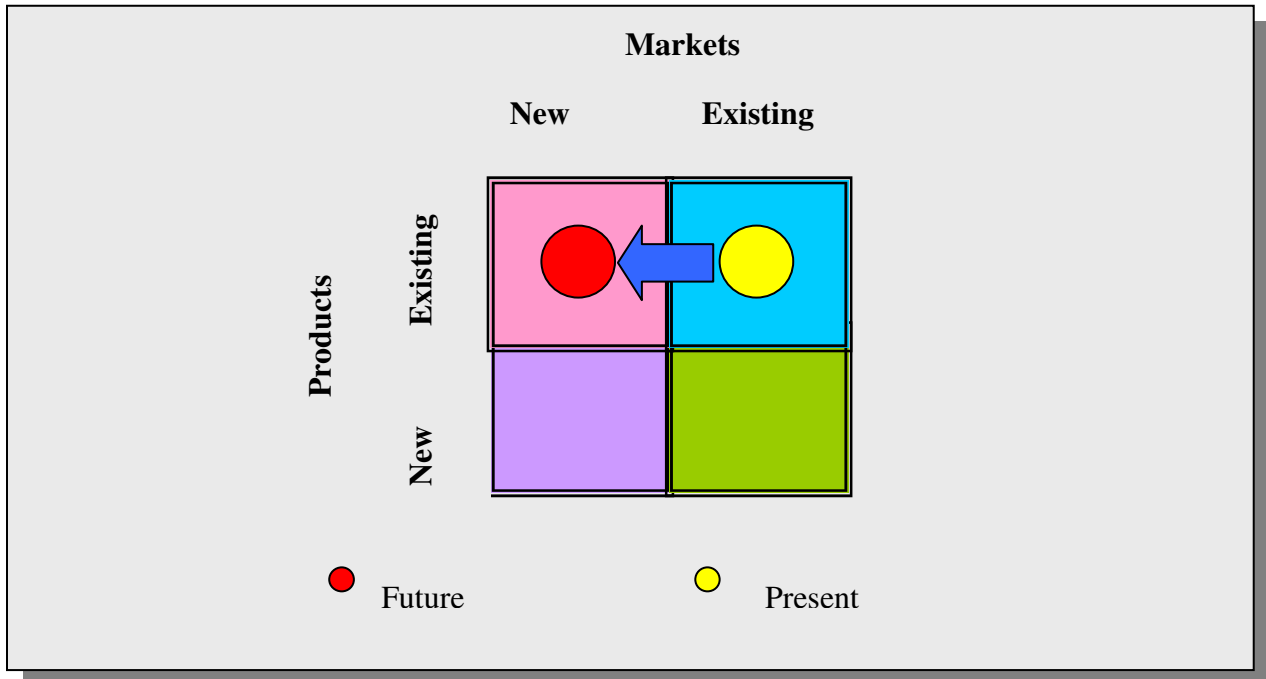
3.4.4.6 Market strategy

As a newcomer to the cellular market in South Africa, Cell C is following a market penetration strategy aimed at capturing market share from MTN and Vodacom and building brand awareness. In this regard, World markets research centre (2002), the company's objective is to secure a market share of 15% to 20% by 2006. According to Cell C's projections, this will translate into between 2.5 and 3 million subscribers. As a latecomer to the market, the company is working hard to provide innovative cellular products and services to the lower prepaid end of the market. The organization has been slow to introduce cellular contract products into the market perhaps because it fears starting a war with its two rivals MTN and Vodacom. However, the company has been offering contract packages but has not been pursuing it aggressively. In the early part of 2002, Cell C announced that it had acquired 500 000 subscribers and had beat its forecast expectations.

An important milestone in its strategy to becoming independent and self-reliant was the establishment of its own network. To achieve this, Cell C issued a swift equipment tender for its network, which closed on March 12, 2001. This contract was valued at US \$ 221 million and was awarded to Siemens in June 2001. The tender included the network infrastructure required for the dual band (900MHz and 1800MHz) GSM network and consisted of a minimum 3,500 base

stations, as well as the information technology (IT) requirements for billing, customer care and business operation support systems. The systems integration contract, valued at US \$ 28 million was awarded to Accenture (World markets research centre, 2002). Figure 3.13 below illustrates the Cell C strategic market positioning.

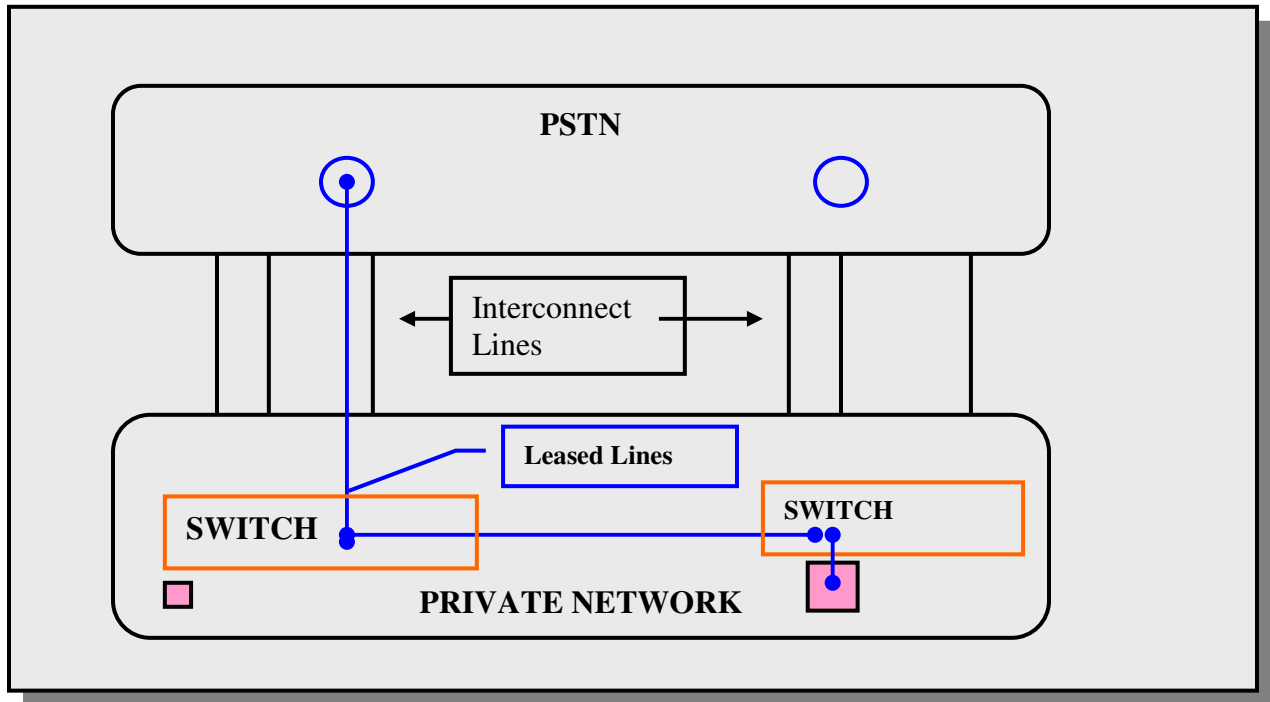
FIGURE 3.13 CELL C STRATEGIC MARKET POSITIONING



3.5 VALUE-ADDED NETWORK SERVICE PROVIDERS

Figure 3.12 below illustrates the structure of a private network. As indicated in Figure 3.12, a private network works through the public switched telecommunication network (PSTN). Private networks are created when users lease capacity from a common carrier and configure it in a way that satisfies their needs, which includes providing the necessary switching capabilities that may be required. Private networks are predominantly used by businesses that have branches or units that are geographically separated. The use of private networks in such businesses is to connect the dispersed units or branches by carrying telecommunications traffic (voice and data) using the leasing organizations' own terminating equipment.

FIGURE 3.14 PRIVATE VIRTUAL NETWORK



Before the introduction of the Telecommunications Act 103 of 1996, private networks were forbidden from carrying both voice and data traffic over their private network. They were only allowed to carry either voice or data but not both. The White Paper on Telecommunications Policy (1996) introduced a new definition for private networks. The White Paper on Telecommunications Policy (1996) defines private networks as follows:

A private network shall be allowed to carry traffic ‘principally or integrally’ related to the business of the company operating the private network. No other traffic is allowed. Thus, private networks now distinguished as being devoted either to voice or data cannot continue to be so distinguished. If a private network is used for purposes principally or integrally related to the business of the company, it does not matter whether voice or data pass over it. Private networks can engage in adding value to facilities within the private network. Private networks need to interconnect with the public networks (PSTN and PSDN).

The VANS were one of the sub-sectors where Telkom lost its monopoly first. The value-added network services business has grown rapidly since it started in 1991. According to ICASA, there were 166 licensees at the end of March 2001 (for a list of names of licensed VANs operating in South Africa, see table 3.8). The licence to provide value added network services includes all Internet service providers (ISPs) as well as providers of managed bandwidth services.

Apart from Telkom, there are two major leased line service providers in South Africa (even though both organizations must use Telkom's infrastructure), namely the Internet Solution (IS) and Uunet Africa. Furthermore, there are a number of foreign carriers that provide international managed data services through the VANS, including ATandT (frame relay), Cable and Wireless (frame relay service with local VANS partner, Syrinx Communications), Equant (including X.25 and frame relay), and MCI WorldCom (ISDN) (World markets research centre, 2002).

In July 1999, Telkom issued warning notifications to VANS requesting them to ensure that they were not infringing the telecommunications policy by providing voice services to Telkom's corporate customers. Under the 1996 Telecommunications Act, (see chapter 2, section 2.8.1.4) transporting voice and data, providing private networks to customers and reselling spare capacity were legal infringements. However, data-networking services are the central business of VANS.

TABLE 3.8 LICENCED VANS OPERATORS (166), MARCH 2001

Abaphansi Consulting Holdings (Pty) Ltd	Global One	Phefo telecommunications CC
ACA Computer Services	Grammand Communications CC	PinTec Network Consulting
Accronym (Pty) Ltd	Greytown Office Machine CC	Pioneer Foods (Pty) Ltd
Acenet (Pty) Ltd	Grintek Ltd	Prizetrade (2) (Pty) Ltd
Advanced Computer Technology	Hitech Internet Technologies (Pty) Ltd	Pro Systems Solutions
African Legend Net (Pty) Ltd	Hotelnet CC	Progress Network (Pty) Ltd
Afripa telecommunications	Hyperbyte CC trading as Compute	Purple Solutions (Pty) Ltd
AST Holdings (Pty) Ltd	Idata Holdings (Pty) Ltd	Q DATA Internet
ATandT Global Networks Services SA (Pty) Ltd	I-Fusion Holdings Ltd	Quest Net Corp SA (Pty) Ltd
Atala International CC	IIT ONTRACK	Reklaw Six (Pty) Ltd
Atio Corporation (Pty) Ltd	Imagine Internet Services (Pty) Ltd	RS Internet (Pty) Ltd
Axiom Systems Africa (Pty) Ltd	IncrediNet CC	SaberTex Consulting
BCS Computer Services (Pty) Ltd	Inforstorm Internet CC	Sanlam
BitWise Systems CC	Injestrade 9 (Pty) Ltd	Scientific Resource Management Holdings (Pty) Ltd
BJ Technologies (Pty) Ltd	Integrated Ineractive Designs	SecureData Solutions
Brainware Networking (Pty) Ltd	Intelligent Services Properties (Pty) Ltd	SENTRAOES Beperk
Bucwyn Trading 006 (Pty) Ltd	Interat (Pty) Ltd	Sight Technologies
Business System Group (Africa) Pty Ltd	Internet Solution	Siltek Holdings (Pty) Ltd
Bytz (Pty) Ltd	Interworkx (Pty) Ltd	Skysoft CC
Cadnet KSH	InTouch Information Systems (Pty) Ltd	Skyway Management Ltd
Cathay Link Business Consultants (Pty) Ltd	Investurs Dream 7	SMARTNET
Compu Clearing Outsourcing Ltd	ITC-Works (Pty) Ltd	SMC Software (Pty) Ltd
Cronel Systems CC	IXNET SA (Pty) Ltd	Softline Holdings (Pty) Ltd
CSIR	Kunene Solutions and Services	South African Computer Industry CC
Cyber Perk CC	Labat Multi-Media (Pty) Ltd trading as	South African Post Office Ltd
Cyberfax SA (Pty) Ltd	Sky Telcom Holdings	Southern African Access
Cybernex (Pty) Ltd	Lebone Information Technologies	SPG Internet Service CC
CyberService CC	Litmus Computer Solutions CC trading as CNS	Storm Telecom (Pty) Ltd
Cyberstate (Pty) Ltd	Logistic Technology (Pty) Ltd	Sunesi Clinical System (Pty) Ltd
D@L Solutions	LuK Africa (Pty) Ltd	Sunshine Networks CC
Dannhauser de Wet Consulting (Pty) Ltd	M Business Solutions CC	Synthesis Informatics Holdings (Pty) Ltd
Dataatec Ltd	Malaika Int Con (Pty) Ltd	TCM Networks (Pty) Ltd
DATAVIA	Maxtin Corporation	Teba Savings Fund
Dedicated Application Digital Security Systems	Maxxess Solutions (Pty) Ltd	Telecom Africa Corporation
Denwa Direct (Pty) Ltd	MB Worksoft e-Connect (Pty) Ltd	Telepassport SA (Pty) Ltd
DexData Ltd	MCI Telecomms SA (Pty) Ltd	Terrace Projects (Pty) Ltd
Dial Thru International (Pty) Ltd	Medi@Post	The Mohudi telecommunications Company
Digital Dynamix CC	MegaWeb Internet Services CC	Theron du Plessis Management Services (Pty) Ltd
Digital Express Network (Pty) Ltd	Metasoft Investment Holdings (Pty) Ltd	TouchFone SA (Pty) Ltd
Direct-Shelf 37 (Pty) Ltd	Mobile Telephone Network (Pty) Ltd	TradePage CC.
Diretlo Solutions CC	Mullah Investments CC T/A Internet and Computer Solutions	Transtel
DJA Computer Services CC	Nationale Media	Trustemail.Com CC.
D-One Media (Pty) Ltd	Nazo and Associates (Pty) Ltd	Universal Computer Services (Pty) Ltd
Eastcom LLC CC	Networkd IT Solutions	USKO Ltd
Ebonynet.co.za	Nexus Online	UTHINGO Management (Pty) Ltd
Ecnet (Pty) Ltd	NISSAN SA (Pty) Ltd	UUNET Internet Africa (Pty) Ltd
EDS South Africa (Pty) Ltd	n-Time (Pty) Ltd	Valuecom (Pty) Ltd
Elankor Twee (Pty) Ltd	Obigate CC	Vantage Computer CC
Evertrade (Pty) Ltd	ORBICOM (PTY) LTD	Virtual Alliance (Pty) Ltd
ExecuPrime	Orion Cell 2 Cell Ltd	Virtual Reality Marketing Concepts (Pty) Ltd
FFG Connections CC	Paradigm Interactive Media Limited	Vod Net (Pty) Ltd
First In Business Solutions (Pty) Ltd	Peer-Point Solution	Vodacom (Pty) Ltd
FLABAYE Marketing No.5	Xnet Internet Services CC	Webteq
Formprops184 (Pty) Ltd	XPLite Systems (Pty) Ltd	WorldCom Solutions (Pty) Ltd
Getronics SA (Pty) Ltd	Xpress Business Networks	
	Gladiator Technology (Pty) Ltd	

ICASA (2002)

Many organizations in South Africa exploited the opening in the regulations and this led to the growth of the VANS as major ICT service providers to corporate customers to satisfy their data transmission requirements (World markets research centre, 2002).

In February 2001, ICASA put forward a number of regulatory proposals to resolve a long-standing disagreement between VANS and the incumbent, Telkom. These proposals included VANS could share resources leased from Telkom and at the same time provide value-added services to customers; a distinction should be made between ISP and access providers (see chapter 1, section 1.4.4 for an explanation of access and non access services), and organizations making application for a networking licence would need to have at least 15% BEE shareholding.

Although there were about 166 licensed VANS providers in South Africa in 2002, (see Section 3.3.5), only a select few prominent organizations that were operating in the South African value-added network services telecommunications market environment at the time will be discussed. These organizations were selected according to the criteria discussed in section 3.3.5.

3.5.1 Uunet SA

Uunet SA is a WorldCom company and a leading Internet-based network service provider in Southern Africa. The organization aims to provide reliable and cost-effective network services, both nationally and internationally. WorldCom, Uunet's parent company, is a well-known global communications company that offers a variety of comprehensive data, Internet and international services, including, Web hosting, IP VPN (Internet Protocol Virtual Private Network), web centre and IP communications. WorldCom operates in over sixty-five countries and has approximately 22 million customers worldwide, including businesses, consumers and Government agencies.

3.5.1.1 Network

Uunet was the first commercial ISP in South Africa. It has developed technology that provides for the highest levels of networking manageability, scalability and control. Network security and

continuous Web access are guaranteed by its built-in redundancy technology. Uunet SA's network covers South Africa and extends into Africa and internationally. Its advanced Network Management Systems and 24-hour Network Operations Centre (NOC) constantly monitor and maintain the vast network, ensuring that their customers receive consistent, high-quality, reliable service (Uunet, 2002).

Uunet SA has as its objective the delivery of highest quality services. To achieve this objective, Uunet's South African network was upgraded enabling them to rapidly provide bandwidth to meet demand. Internationally, more circuits to the USA have been installed. The network uses multi-protocol label switching (MPLS) across the entire network backbone, enhancing their broadband capability. MPLS traffic engineering allows Uunet to optimise its network resources as well as its network traffic performance and gives Uunet the ability to control specific routes across the network, reduce congestion and improve the cost and efficiency of carrying IP traffic. MPLS gives the organization the capability to deliver third generation network services to customers that may require a specific quality of service (QoS) based on cost of service, to IP application service requirements (Uunet, 2002).

Uunet's network has been built on a layered principle, consisting of a transmission, core, gateway and access layer. The transmission layer has been built using Telkom SA's ATM network. By using Telkom's ATM network, bandwidth availability is guaranteed and this allows Uunet SA to ensure quick delivery of bandwidth in order to meet any unexpected growth in demand that may occur. Furthermore, Uunet commissioned a new international E3 circuit in November 2001, giving Uunet SA four high capacity transport paths into the global Internet. Each of these high capacity transport routes terminates at different points in South Africa and the USA thereby eliminating any risk to Internet service provision. Uunet SA piggybacks on WorldCom's global data transport network and this network includes terrestrial and undersea cable. This network covers over 93,000 route miles and extends to extensive networks in North America, Latin America, Europe, and the Asia-Pacific region. Uunet SA's network is finely crafted to deliver world-class performance and is kept under surveillance twenty-four hours a day, seven days a week. This ensures that Uunet has the capabilities to provide its customers with fast, reliable and customized electronic communications (Uunet, 2002).

3.5.1.2 Products and services

Uunet provides the following value-added products and services (Uunet, 2002):

- Internet services
- dedicated access to the Internet from 64 Kbps, guaranteed international bandwidth, router-based security, management and redundancy through ISDN backup
- network security and management
- customisable services, this allowing businesses with huge investments in the Internet economy to tailor-make Internet connectivity to suit their sophisticated needs by customising their service to suit their individual needs
- data hosting
- web hosting
- infrastructure solutions
- data centres
- speech mail (ability to check and reply to e-mail over the telephone).

3.5.1.3 Turnover

The annual turnover for Uunet SA is not available because it forms part of the WorldCom Group. The turnover for the WorldCom Group' amounted to US \$ 38 908 million (WorldCom, Annual Report, 2001).

3.5.1.4 Employees

Uunet SA had an employment figure of 191 in 2000 (Uunet, 2002).

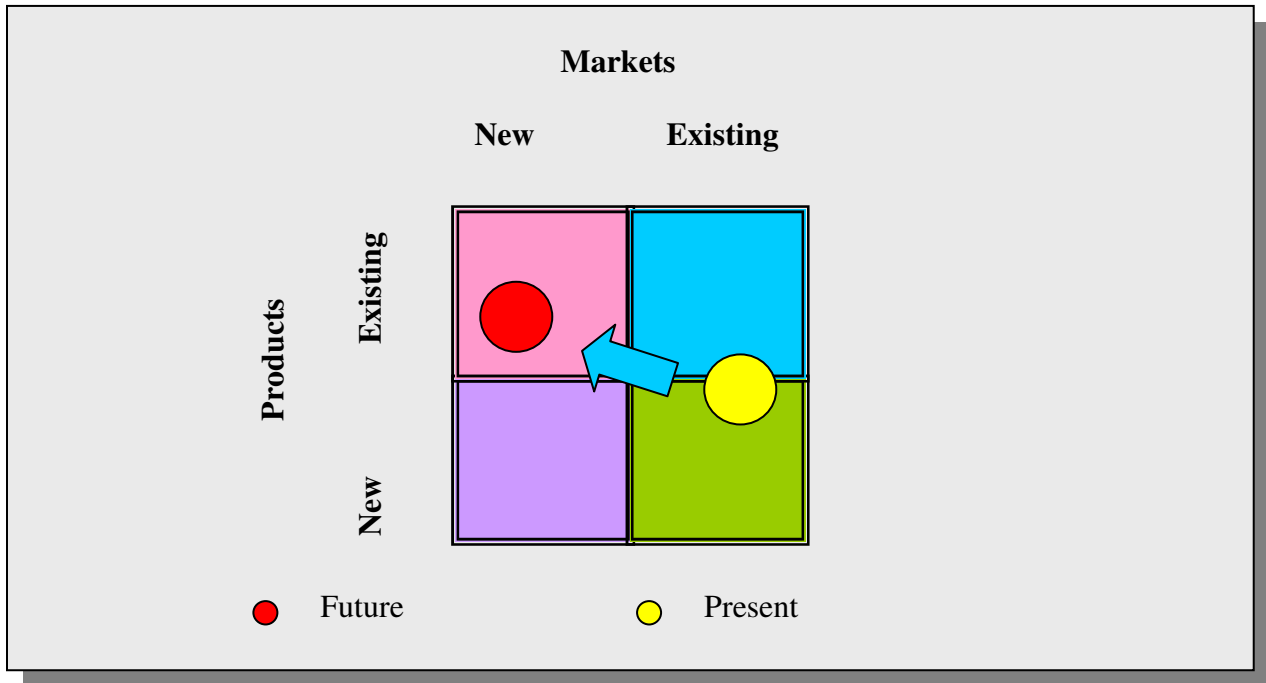
3.5.1.5 Market strategy

The Uunet SA marketing strategy is developed along focused differentiation. Uunet provides value-added products and services to a niche market of business and corporate customers. The marketing strategy focuses on a select niche market and differentiates its products and services

by providing end-to-end ICT solutions to this market that relies heavily on using the Internet to conduct business. Uunet's products and services are geared to providing fast, efficient and effective services to their customers by ensuring zero networks down time, fast and reliable service and optimal network security and integrity. This offering would appeal to customers in the corporate and business market segments, such as the financial services sector (banks, insurance, stockbrokers and asset management organizations), that have a high need for efficient, effective and secure Internet access and support.

Uunet SA's strategic alliance with parent company WorldCom places the company in a sound position to compete very effectively in the South African ICT market using Worldcom's vast resources. By picking a select niche market, the South African organization is able to grow its profit base and establish its brand by providing customised ICT solutions to its customers. Uunet's strategic geographical position could also be viewed as part of a longer-term market development strategy for parent WorldCom. Africa (excluding Southern Africa) is seriously lagging behind the rest of the world in Internet and ICT penetration. Political and economic developments, such as the new partnership for Africa development (NEPAD), could be viewed as attempts by leading nations in Africa to initiate economic growth, prosperity and cooperation on the African continent. This would mean that Africa would need to leapfrog its information development to catch up with the rest of the developed world. Accordingly, then, growth opportunities for ICT and especially Internet services would abound in Africa. *Africa as a potential opportunity was investigated with Telkom management in the empirical research phase.* Figure 3.15 illustrates Uunet SA's strategic marketing positioning.

FIGURE 3.15: UUNET SA'S STRATEGIC MARKET POSITIONING



By strategically establishing a base in South Africa through UUNET SA, the first half of 2002, WorldCom appeared to be positioning itself to take advantage of the fertile new opportunities appearing on the Africa continent. However in the latter half of 2002, WorldCom experienced serious financial problems.

Figure 3.15 indicates that the UUNET SA market positioning strategy appears to be part of a larger parent Worldcom strategy directed at market penetration and product development in South Africa and moving towards future market development and diversification in Africa.

3.5.2 Arivia.kom

Arivia.kom was established in January 2001 through the merger of Ariel technologies, Datavia and Eskom IT services. These three organizations had formerly provided IT services to Transnet, Eskom and Denel. Their convergence resulted in the formation of an IT giant in South Africa which when partnered with the SNO, will provide a host of ICT products and services. Arivia.kom is structured to provide products and services in four areas of business, namely infrastructure business, focused business solutions, eVentures and niche markets.

These distinctive areas of expertise allow Arivia.kom to integrate their services to provide total business solutions in local, regional and global IT markets (Arivia.kom, 2002).

3.5.2.1 Products and services

Arivia.kom offers a variety of ICT products and services that can be grouped into four groups totally integrated business solutions, support services, connectivity and focused business solutions.

(1) Totally integrated business solutions

Arivia.kom provides totally integrated business solutions with a range of business solution options such as

- complete end-to-end network outsourcing
- integrated applications
- niche applications for specific customer needs
- infrastructure hosting and management services
- advice and consulting on e-commerce opportunities
- hosting
- provision of services across the large (mainframe), medium (e.g. Unix) and small (e.g. NT server) environments.

Included in these services are design, architecture, acquisition, build and installation as well as the management, maintenance and operation of ICT networks. Hosting services provide secure and monitored environments for hosting crucial applications through Arivia.kom's enterprise system management and enterprise risk management processes.

(2) Support services

These services include the operation and management of helpdesk and call centre applications and desktop related services such as IT support, configuration and monitoring. These services are available nationally at all major centres.

(3) Connectivity

Arivia.kom provides total network services to customers by giving them access to a national backbone infrastructure that is fully monitored and managed by Arivia.kom for handling network faults and troubleshooting. Full connectivity to the Internet is provided and includes bandwidth and Internet management as well remote access services and security services. The organization also provides complete messaging services that include mail and directory services (Arivia.kom, 2002).

(4) Focused business solutions

Having access to a variety of technical and business skills and niche market offerings, Arivia.kom's focused business solutions offer customers network development, integration and deployment. Arivia.kom's employees provide professional expertise across a broad spectrum of business functions, including the following (Arivia.kom, 2002):

- ICT system development and support capability
- human resources solutions
- customer facing solutions
- financial and commercial solutions
- engineering plant management and technical solutions
- GIS (geographic information solutions)

By blending business and IT skills Arivia.kom is able to develop and integrate complex business solutions. This gives the organization the capability to use the best technology and standards thus ensuring the provision of value added services and solutions. Consulting services are provided to

customers individually or packaged to provide total end-to-end ICT solutions. To optimise its product and service offerings, Arivia.kom gives customers the choice of obtaining comprehensive professional advice and support on their strategies, design, planning, business process re-engineering, change management, project and programme management. In this way, Arivia.kom is able to build value onto the core product and service offering.

3.5.2.2 Employees

Arivia.kom employed more than 1000 employees in the infrastructure business division and over 400 employees in their focused business solutions division (Arivia. kom, 2002).

3.5.2.3 Market strategy

Arivia.kom's strategy is to be a competitive player in the local, regional and global ICT markets by concentrating and growing its market in strategically identified niche market areas (Arivia.kom, 2002). Its strategy focuses on the following main areas:

- leveraging its capability and scale in the IT infrastructure market;
- using its niche capability in providing focused IT business solutions in the local, regional and global market;
- harnessing its eVentures business to support its longer-term growth strategy;
- providing IT consulting services;
- providing enterprise solutions.

Arivia.kom's marketing strategy is to develop its market by becoming the dominant ICT solutions company in Africa, through the provision of innovative and applicable ICT solutions. Arivia.kom's niche market strategy is clear from its customer base that includes the world's largest utilities and a wide range of industries and market sectors, such as

- electricity;
- transportation;
- government;
- financial sector;

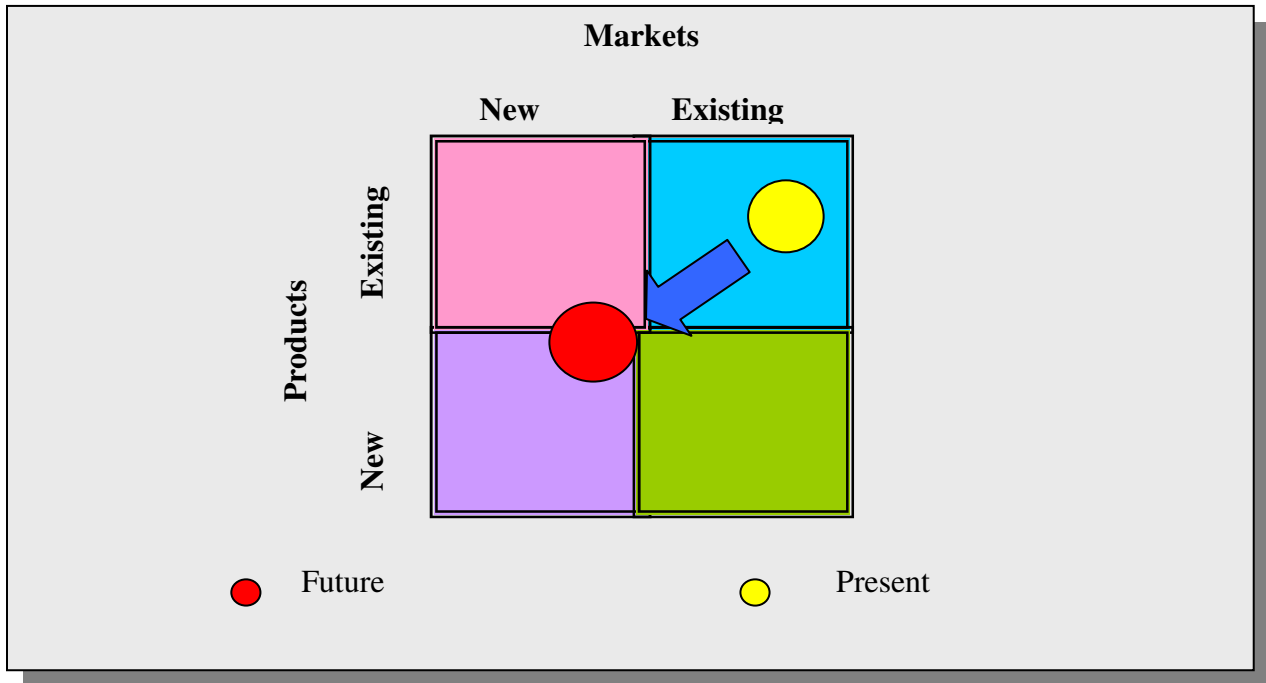
- retail;
- mining;
- utilities;
- logistics;
- healthcare;
- agriculture
- manufacturing

The following are some of the projects that Arivia.kom has completed (Arivia.kom, 2002):

- Eskom complete infrastructure outsource;
- Eskom SAP implementation;
- SpoorNet Sprint application;
- B2B Africa Partnership;
- SA national driver's licence;
- National transport information system (NATIS);
- Identification solutions: Egypt, Lesotho, Zambia, Zimbabwe, Zanzibar, Uganda;
- Healthcare solutions in the UK and Brazil;
- enterprise solutions: Farmland Industries, USA.

From this base, Arivia.kom is focused on expanding its markets both regionally and internationally. On the international front, Arivia.kom has actively followed a niche market penetration strategy by actively pursuing opportunities in a number of African countries and beyond, including the UK, the USA, Brazil and the Far East. Figure 3.16 represents Arivia.kom's Strategic present and future market positioning.

FIGURE 3.16 ARIVIA.KOM STRATEGIC MARKET POSITION



From figure 3.16, Arivia.kom seems to be positioning itself for penetrating the South African market through its niche Government market segment offerings, such as the national transportation information system it provided to the Department of Transport. At the same time, it is positioning itself in its existing markets where it has established a strong point of presence through its relationships with Transtel and Esi~tel. Given its present activities, Arivia.kom is positioning itself for a future diversification strategy by developing and introducing new products and services into both new and existing markets.

3.5.3 AST

The AST Group has established itself as one of the leading ICT organizations listed on the Johannesburg Securities Exchange (JSE). According to AST (2002), its monthly revenues exceed R100 million and AST is South Africa's largest ICT services organization that is not aligned to any vendor. AST's strategic drivers are providing quality of service, customer care and the development of its employees. Furthermore, AST is active in providing business services and harnessing its technological capability and capacity to extend value creation beyond the domain of ICT.

3.5.3.1 Network

In 2002, AST's technology infrastructure consisted of 14 mainframes, over 100 UNIX platforms and over 3 000 Intel-based client server platforms. This network is used to support more than 135 000 connected intelligent devices nationally. The network infrastructure supplies the capability for AST to provide hosting applications and e-commerce applications in a secure and reliable environment that encompasses disaster recovery and zero network downtime capabilities. The organization's capabilities are extended through its extensive branch network consisting of twenty-seven offices and over sixty geographic locations.

3.5.3.2 Products and services

AST provides the following products and services ICT consulting services, enterprise hosting, and network solutions and services.

(1) ICT Consulting Services

AST consulting services are divided into six main areas:

- service management;
- benchmarked IT user surveys;
- total cost of ownership;
- business continuity and disaster recovery planning;
- IT architecture and infrastructure design;
- training.

(2) Enterprise hosting

AST enterprise hosting provides complete ICT infrastructure and hosting services. Outsourcing refers to the end-to-end outsourcing solution for customers and encompasses the planning, building and maintaining of the whole ICT network on behalf of the customer. AST enterprise hosting focuses on fully managing the complete ICT infrastructure.

The AST model uses facilities management, total outsourcing and co-ownership as the pillars of its offering. Value is created for the customer by engaging continuous improvement methods, state-of-the-art technology, superior human resource skills and efficient and effective service delivery that are pre-agreed in service level agreements. Economies of scale are fully exploited and leveraged by increasing the customer base (as more customers join the AST network of hosting, its marginal costs per user decrease). AST enterprise hosting provides comprehensive network management to its customers by managing their ICT infrastructure during the operational phase.

Hosting is also provided by means of supplying the total ICT infrastructure to the customer and operating and maintaining it. Customers use this infrastructure on a leased basis to run their applications. AST enterprise hosting is able to offer customers the required ICT capacity, bundled with disaster recovery (backup in the event of a disaster) and business continuity (ensuring the systems remain operational) and support (providing support to maintain the network). To offer these services, AST enterprise hosting manages an extensive ICT infrastructure that contains multiple mainframes and UNIX customer server platforms. This enables AST to host software applications and e-commerce applications on its own network safely and securely on behalf of its customers.

(3) Network solutions

AST's network solutions and services business unit is responsible for network solutions. Typical services include network advice, planning, design and audit consulting, solution delivery and commissioning, as well as ongoing operational and management services. Network solutions provided span all platforms, including LANs and campus networks, WANs, voice, value-added services and applications, customer contact centres and the manufacture, deployment and maintenance of networks. Products and services offered include network consulting, network implementation and network operations.

3.5.3.3 Employees

AST employed more than 3 500 ICT professionals worldwide in 2002 (AST, 2002).

3.5.3.4 Turnover

AST turnover amounted to R1 billion in 2001 (AST, 2002).

3.5.3.5 Market strategy

AST has established itself as a focused differentiator and leading ICT company on the JSE Securities Exchange. The organization is quick to identify the areas of ICT value creation and has succeeded in establishing a global presence. Through consistent value creation for its shareholders, customers and employees, AST's monthly revenues exceed R100 million per month. AST is the fourth largest South African IT company by market capitalisation, and occupies third place in terms of physical infrastructure (mainframes, servers, desktops and networks under management). AST also has over sixty offices and service points.

AST's strategic drivers are customer service, satisfaction, and a strong commitment to people development. A key strategic area for competing on a differentiated basis is the development of critical skills in some niche market areas, such as middleware (software programs that enable different software to communicate with each other) development. The AST Group has developed specialised commercial knowledge and skills in six core industry areas: financial services, mining and manufacturing, telecommunications, Government, healthcare and some emerging sectors. This allows the group to provide comprehensive, integrated solutions to meet customer needs in these markets. A significant objective of the strategy encompasses customer service and the provision of total end-to-end ICT services to customers (AST, 2002).

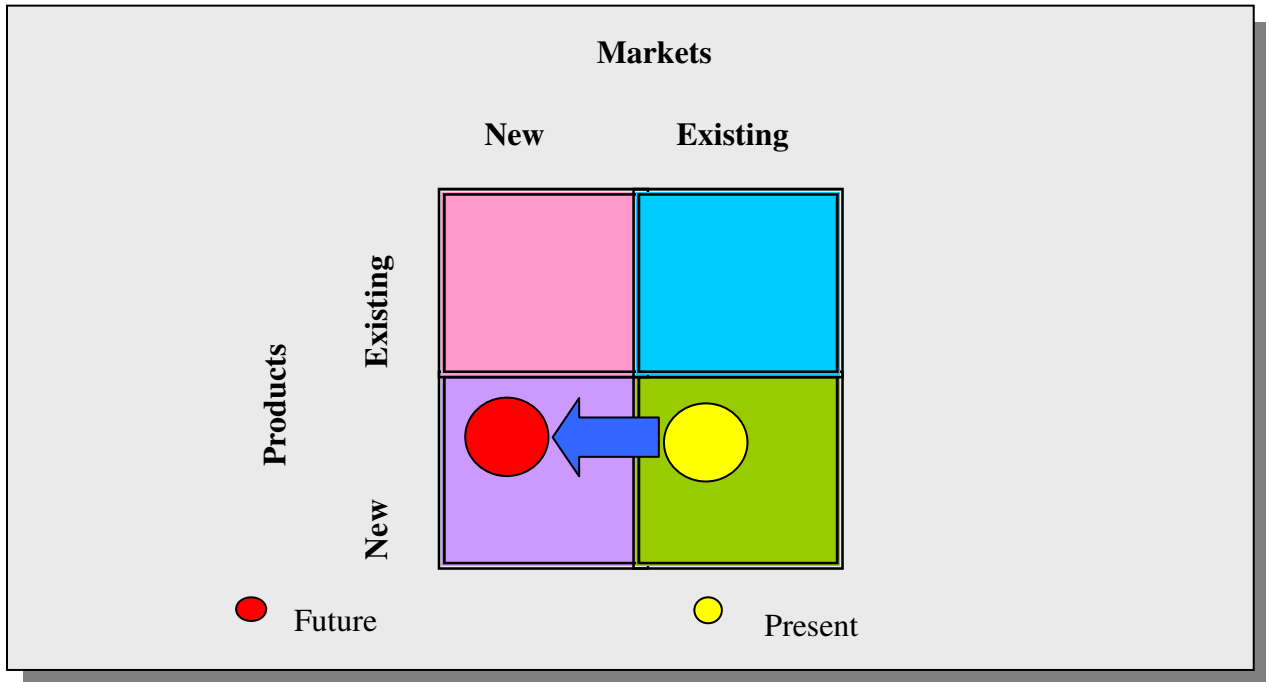
AST is organised along the lines of management consulting, technology consulting and ICT plan/build capabilities. A differentiating factor that AST uses to build value is the provision of consulting on a professional fee or fixed price basis. ICT-total solutions, hosting services and

complete business services are provided using service level agreements (SLAs) to entice customers to their service offering. AST also provides packaged software solutions that they make available to customers using appropriate licence fee structures. Application services are provided using the application service provider (ASP) or bureau model, and business process outsourcing (BPO) is provided by charging a transaction fee. AST also differentiates itself by sharing business risks, rewards and equity with its partners (AST, 2002).

In 2002, AST provided service to 90% of the top 100 JSE-listed companies. Customers were mainly large corporate and Government clients. However, AST also explored expanding its offerings to the small and medium enterprises (SMEs). AST established offices in Botswana and Namibia and was carefully growing new markets in other Southern African countries. In line with other South African organizations, such as DiData and Datatec, AST has been moving its focus to Australia and the UK which could be ascribed to the increasing competitiveness in the corporate market segment and the need to grow new markets and derive a bigger portion of earnings offshore (AST, 2002).

The critical success factor of AST's marketing strategy is its ability to optimise and reach critical mass in each of the generic IT services markets, such as its ability to manage the large-scale integration of people, process and services. The organization has also managed to differentiate itself by forming strategic partnerships and alliances with partners in South African commerce and industry. The organization's management also is skilled in securing major acquisitions and facilitating the integration challenges. Furthermore, AST appears to be differentiating itself by offering customers end-to-end ICT solutions that include business process reengineering, using the resources of its skilled business and IT employees. Additional complementary differentiating strengths are AST's established management methodologies, world-class best practices and mastery of technology. These capabilities give AST a strategic competitive advantage in the ICT market. Figure 3.14 shows AST's strategic market positioning.

FIGURE 3.17: AST STRATEGIC MARKET POSITION



From its activities discussed above, the present AST marketing strategy is to differentiate its product and service offerings by providing for the needs of the niche corporate market segment in South Africa. Furthermore the market strategy is to grow new markets for its product and service offerings by exploring new markets in Africa and internationally. This strategy appears to depend on using AST’s key success factors, such as its human resources skills base, innovative service packaging and experience in striking the right balance in forging strategic alliances and partnerships with major players in the ICT industry. From figure 3.17, it is clear that the current AST strategy is to provide new products and services to existing niche markets. Its future strategy appears to be to move towards differentiation by establishing strategic competitive advantages through new product and service offerings and broadening its market by a market development strategy.

3.5.4 Dimension Data (DiData)

Dimension Data Holdings (DiData) was founded in 1983 and is South Africa's largest IT company. DiData is involved in the design, implementation and maintenance of computer and communications networks. DiData has established strong relationships with Cisco Systems,

Nortel Networks, and other equipment other equipment suppliers. The organization is also involved in the provision of customer relationship management and procurement software through its i-Commerce division. More than 80% of Didata's sales are generated outside Africa. It specialises in the provision and management of shared IT infrastructures enabling businesses to couple their business processes together seamlessly. Dimension Data has branches in over thirty countries on six continents (Dimension Data, 2002).

3.6.4.1 Products and services

Dimension Data provides a variety of innovative product and service solutions to meet customer requirements, including the following (Dimension Data, 2002):

- wireless integration;
- supply chain optimisation;
- global reach IP;
- customer relationship management;
- supply chain;
- IP telephony;
- M-Commerce: mobile commerce across multiple channels;
- Customized IP telephony and voice over Internet protocol (VoIP) applications;
- WANs, LANs, campus area networks and metropolitan area networks;
- Government portals;
- E-commerce websites;
- reservation applications;
- portals;
- wireless and multi-channel technologies;
- transitioning transactional processing to the Internet;
- full service Lawson implementations, which leverage Didata's application, interface and infrastructure expertise;
- Internet security (IP and other);
- sales force automation.

Dimension Data provides customers with innovative ICT solutions that assist them to integrate their partners across collaborative infrastructures. Dimension Data works closely with communications and technology companies to create solutions that are available, secure and scalable. Typical solutions that DiData offers customers include customer interactive solutions/customer relationship management, supply chain management and portals. These enable customers to generate operational effectiveness and efficiencies and capture new customers while at the same time reducing churn. DiData's customers include companies such as Telkom S.A., Virgin Mobile and Ericsson as well as other telecommunications carriers, equipment manufacturers, broadband and satellite companies, wireless providers, and technology enablers (Dimension Data, 2002).

Dimension Data also specialises in providing value-added connectivity and network integration services. Previous customers include consumer goods and retail industries such as Black and Decker, Woolworth's and Pioneer Foods. Some of DiData's customised solutions include providing secure networking, managed services and enterprise-level e-business solutions for large financial institutions. Another opportune area in which DiData is active is the media and entertainment business. In this area it has developed a solution category called digital asset value chain (DAVC). DAVC is a specialised series of integrated business activities, applications, repositories, and delivery networks in which digital content (multimedia) is used to create value for its owners. For example, the DAVC model helps media and entertainment companies create, control, package, distribute, and recognize the value that they can unleash through their digital assets (Dimension data, 2002); for example, providing videos on demand and pay per view (customer pays to obtain videos or view information).

In addition, DiData specialises in providing integrated solutions by utilising the expertise it has developed in managed services, networking, application integration and business. Dimension Data provides and manages shared IT infrastructure. To this end, it provides reliable and secure applications, systems and networks to customers. Many of its customers are large corporations such as Citibank, Charles Schwab, Deutsche Bank, Fosters, Telewest, Toyota, and Cap Gemini Ernst and Young.

DiData's philosophy is that connectivity and integration are critical to becoming successful in the global market. DiData's integrated approach is to cover the whole spectrum of the ICT solution from local area networks to sales force automation, ensuring that they are connected and integrated to improve its customers success (Dimension data, 2002).

3.5.4.2 Network

Not known.

3.5.4.3 Employees

DiData employed more than 9000 employees in over 30 countries (Dimension Data, 2002).

3.5.4.4 Turnover

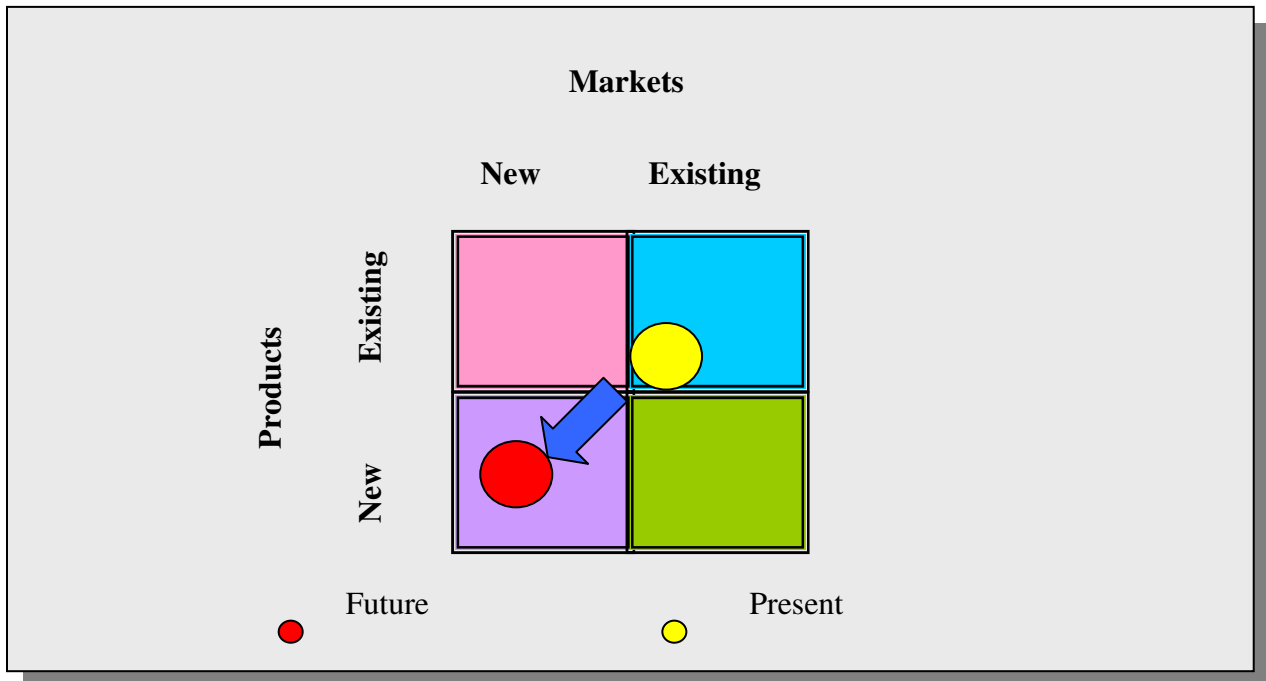
DiData's global revenues for 2002 amounted to US \$ 2.1 billion (Dimension Data, 2002).

3.5.4.5 Market strategy

Dimension Data's marketing strategy is to be to provide a niche market with complete end-to-end network products and services. The organization is distinguishing itself by providing superior networking products and services. It is able to provide these through the formation of strategic partnerships and alliances with organizations offering branded products.

The strategy is to differentiate itself in the market by delivering a wide range of ICT solutions that its customers require. Through its strategy of building strategic alliances and partnerships, DiData is able to provide its customers with global solutions that yield high returns. DiData's partners are industry leaders, dominant software and hardware companies, and prominent communications suppliers. DiData's strategic market positioning is reflected in Figure

FIGURE 3.18 DIMENSION DATA STRATEGIC MARKET POSITIONING



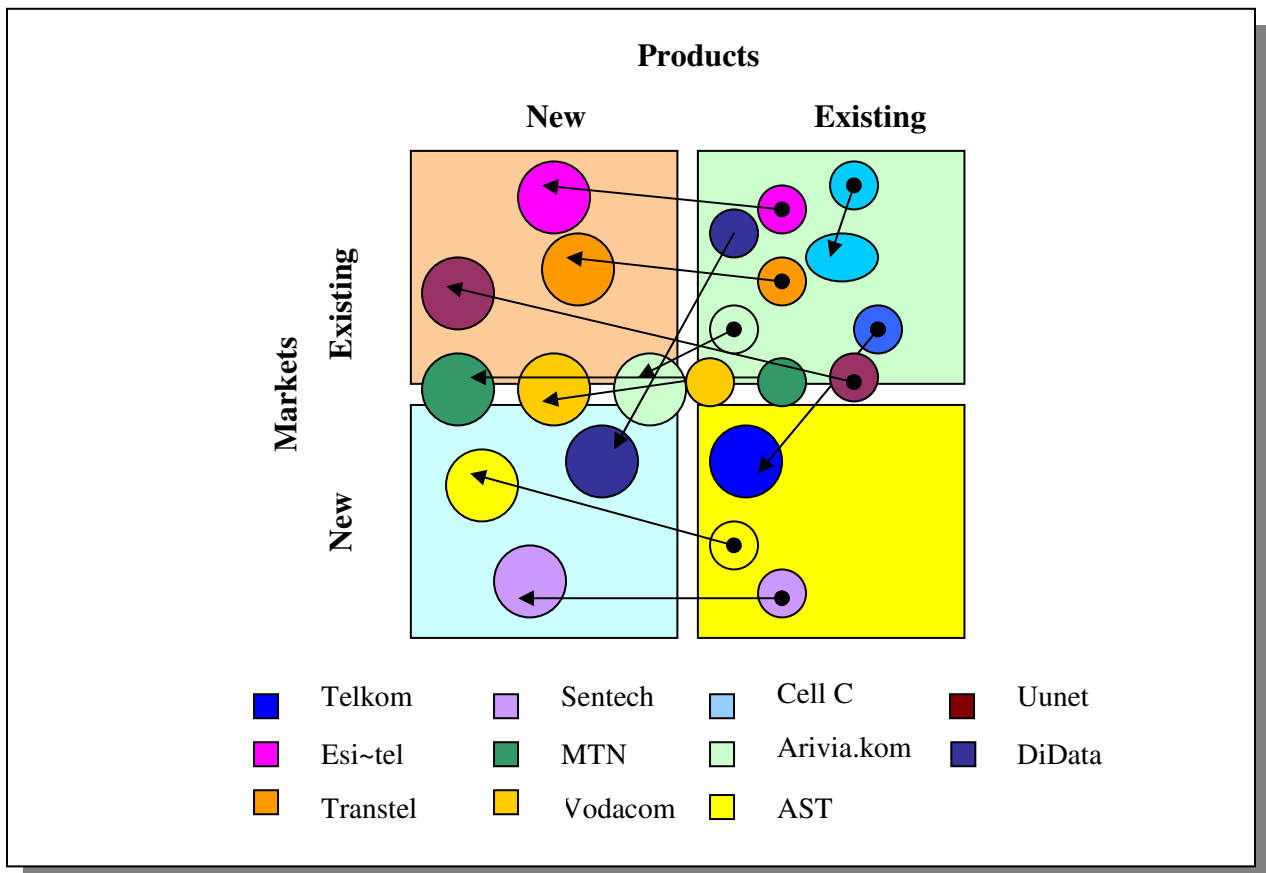
By establishing strategic partnership relationships, DiData gains access to the latest technologies, advanced training opportunities and co-marketing efforts, enabling it to give its customers the benefits of quick-to-market, innovative solutions. DiData holds Cisco certified Gold Partner status across five continents. Microsoft also selected DiData as Partner of the Year in 2001. By following a product diversification strategy, DiData is able to differentiate itself from competitors in the market and has built significant strategic competitive advantage through the art of managing supplier relationships.

As depicted in figure 3.18, DiData's current market positioning strategy is focused on concentric diversification. This means that the organization is constantly seeking new technical products and services that have synergy with its existing technical product lines. In this way, DiData is able to differentiate itself from its competitors, as well as by offering infrastructure and business integration services as a total solution.

3.6 A SUMMARY OF THE SOUTH AFRICAN TELECOMMUNICATIONS BUSINESS ENVIRONMENT

Figure 3.19 represents the present and future strategic market positioning of the selected competitors profiled in this study. From figure 3.19 it is clear that there is a movement away from existing markets and products (market penetration) towards new markets in which, in cases like Esi~tel, Transtel and Uunet, existing products are being offered.

FIGURE 3.19 SOUTH AFRICAN TELECOMMUNICATION MARKET COMPETITOR POSITIONING



The majority of organizations are moving towards a market development and diversification strategy that favours new market offerings. Possible reasons for such a move are the growing market competition in the South African telecommunication market, the gradual market regulatory liberalisation, the changing needs of customers, changing technological innovation, the opening up of new business opportunities in Africa and increasingly globalisation of business today. These changes in the strategic market positioning of the industry competitors explain how

they perceive their future survival in the sector, and the areas where they see the future value residing.

The strategic actions of the industry participants provide an insight into the future trends emerging in the South African telecommunications market sector.

3.6.1 South African telecommunications market trends

Aaker (1998) states that market trends are an important and useful constituent in external environmental analysis. According to Aaker (1998, p 89), from a strategic perspective, market trends are significantly useful because firstly, they tend to throw the spotlight on external changes themselves and secondly, “to identify what is important” for survival and prosperity in these changing environments. For example, through external environmental analysis, British Petroleum (BP) has identified that the scarce oil reserves of the world are being depleted faster and is currently engaged in exploring alternative energy sources like gas and electricity to substitute for oil. BP is exploring new gas reserves in Russia and other parts of the world to evaluate the feasibility of long-term investments in gas as an alternate energy source.

From the South African telecommunications business environment analysis in chapter 2 and in this chapter, the following market trends emerging in the South African telecommunications market environment can be isolated:

- Commercial processes are changing from centralisation to decentralisation, which is leading to an influx of new entrants to the market. (The way that organizations are conducting business in South Africa and worldwide is changing from having the front office in a fixed location to becoming remote.)
- Businesses are becoming reliant on focusing on their core businesses and are using ICT to improve efficiency and effectiveness with their stakeholders.
- Telecommunications is being liberalised worldwide and in South Africa, leading to an increase in the competitive pace of the sector and intensifying market rivalry.
- ICT innovation is becoming revolutionary in nature. (ICT organizations are positioning themselves in the market by being different.)

- Despite the global economic slowdown, ICT spending is still positive. (Although there is a general slowdown in the global economy, organizations are still spending money on ICT.)
- The South African ICT industry is moving towards developing new markets in new geographical areas and new products. (South Africa has the largest and most advanced telecommunication network in Africa and most of the telecommunications industry players are exploiting opportunities for growth and development in other African countries.)
- New players in the South African telecommunications sector are revolutionising the telecommunications industry by exploiting convergence to create new products and services. (The convergence of IT, broadcasting and telecommunications has broadened the sector's scope of telecommunications by including IT and broadcasting organizations.)
- The South African telecommunications industry is being redefined to include ICT through convergence.
- Cellular subscribers are more than double fixed line subscribers. (Cellular telephony has grown faster and larger than fixed line telephony with the cellular market being double that of the fixed line market.)
- Most market participants are leveraging partnerships and alliances to differentiate their product and service offerings in the market. (ICT companies are using strategic partnerships to develop capabilities to offer a diverse range of ICT products and services to customers where they do not have the capability.)
- Africa offers many opportunities for market growth since the majority of the industry players are actively engaging in commercial operations in various African countries and some organizations, such as DiData, have global operations.
- South African and African organizations have been absorbed into the global economy and have to compete on a global basis. (This creates an opportunity to provide a host of new ICT products and services, such as wide area networks, security, data hosting, and total network managed solutions, etc.)
- Customer communication and technology trends are moving away from fixed services to mobile services thereby posing a serious threat to fixed line telecommunication operators. (Fixed line telecommunications operators will have to rethink their marketing strategies if they want to survive in future.)

- Social pressures could force Governments to rely on local organizations to provide ICT products and services. (Social pressures created by local social pressure groups are lobbying for the use of local content in ICT product and service offerings.)

3.7 SWOT (STRENGTHS, WEAKNESSES, OPPORTUNITIES AND THREATS) ANALYSIS

According to Du Plessis, Jooste and Strydom (2001) and Pearce and Robinson (2000), a SWOT analysis provides a structured framework for evaluating the strategic positioning of an organization, by identifying the strengths, weaknesses, opportunities and threats it faces. Table 3.9 shows some of the main strengths, weaknesses, opportunities and threats that Telkom is faced with.

Barnes and Martin (1996, p10) recommend that the SWOT analysis be used for isolating the key issues involving the organization and industry so that the “future problems or difficulties” can be addressed before they materialise. Barnes and Martin point out that SWOTs change over time, depend on the business in which an organization operates, are conceptually simplistic and allow creativity. They contend that although the idea of identifying an organization’s weaknesses and strengths is simplistic, in practice, different managers perceive the strengths and weaknesses of the same organization differently. Pearce and Robinson (2000) concur, stating that what one manager might view as a threat, another may see as a strength.

Since Telkom SA is the most well-known fixed line service provider in South Africa and the current market leader, Telkom will be used as an example to highlight the strengths, weaknesses, opportunities and threats for fixed line telecommunications operators in South Africa. As indicated in Table 3.8, Telkom is faced with a number of potential strengths, weaknesses, opportunities and threats.

TABLE 3.9 TELKOM SA - SWOT ANALYSIS

POTENTIAL STRENGTHS	POTENTIAL OPPORTUNITIES
Infrastructure owner and manager Current customer base Established reputation Market leadership Quality of service Human and financial resources Dominant positioning in SA market Highly capable IT department 50% ownership of Vodacom	Convergence (new ICT products and services) Fixed/mobile Supplier relationships New markets in Africa
POTENTIAL WEAKNESSES	POTENTIAL THREATS
Fixed line limitations Reactive to market changes Network development costs Lack of innovation Low employee morale Organizational culture Reputation for poor service Low cross-functional synergy Network exposure to risk Capital investment decision making	Competitors (SNO, Sentech, Wireless operators, VAN's) Telecommunication regulations Global economic conditions

3.7.1 Strengths

Jain (1990, p 184) defines strengths as “competitive advantages and other distinctive competencies which an organization can exert in the marketplace.” Andrews (in Jain, 1990) contends that a distinctive competence implies more than what an organization is able to do; it refers to those things that an organization can do very well. As the market leader in fixed line telecommunication services in South Africa, Telkom has a number of strengths, which will be briefly discussed.

3.7.1.1 Infrastructure owner

Telkom's infrastructure can be viewed as a major competitive advantage for a fixed line telecommunications service provider. With over five million lines in operation, Telkom holds the key position of customer ownership since it is the owner of the access network (see section 3.2.1). The cost of establishing an access network is phenomenal (80% of the telecommunication network costs reside in the access portion of the network). The infrastructure ownership also creates a barrier to entry into the fixed line telecommunication market. Ownership of the fixed line infrastructure places Telkom in control over new market entrants, such as the SNO and the SMMEs since they are forced to lease network facilities from Telkom. For this reason, Telkom has a critical advantage over other market players in the fixed line market because Telkom can manipulate the market by employing strategic tactics such as delaying the provision of wholesale leased services to another operator or preventing them gaining access to Telkom's facilities e.g. the Telkom exchange). Such tactics would be catastrophic for other market players because they would seriously undermine their capability to provide services to their customers.

Although the infrastructure is listed as a potential strength, it could also be a serious weakness to Telkom because of legacy technology and separate networks for voice, data and Internet. A new entrant would have a major advantage over Telkom because it would have the option of deploying the latest technologies in the new network. For example, Transtel is working closely with Ericsson to implement a state-of-the-art multiservice ENGINE network that will greatly enhance the converged service capabilities of the SNO (see section 3.2.6).

Telkom's network has shown increased growth since 1998. The network has expanded by installing new access lines in under-serviced and rural areas. Furthermore, Telkom's network has been modernised by installing new exchange units, ports, optical fibre and transmission circuits. The network provides service to 5 million customers countrywide and includes a major prepaid and payphone network.

3.7.1.2 Current customer base

As the first mover in the fixed line telecommunication market in South Africa, Telkom has since the days of its monopoly had the competitive advantage of being strategically positioned with customers. Before deregulation, as the only provider of telecommunication services in South Africa, customers had no choice of service provider except to obtain services from Telkom. This enabled Telkom to build up a strong position with customers compared to its competitors. Among Telkom's customers are residential customers, SMME's, business, corporate and special and international markets. The corporate and business segments are the most profitable market. With the introduction of competition in the market, a new breed of customers has arisen, namely the wholesalers (see section 3.2.5.2). Telkom's strategic position as a fixed line telecommunications market leader gives it a powerful competitive advantage over its competitors.

3.7.1.3 Established reputation

Telkom's reputation as a reliable service provider is well established in the South African telecommunications market. During the five-year exclusivity period that the South African Government allowed Telkom, it strongly enhanced its reputation among its main corporate and business customers. It also resorted to using brilliant strategic marketing manoeuvres, such as promoting its image as a reliable service provider, offering discounts and price cuts in return for long-term service contracts. In this way it 'locked' some of its major customers into long-term agreements and ensured that the main contributors to its revenue remained intact. In 2001, Telkom was voted the most admired brand in South Africa by a Markinor survey.

3.7.1.4 Market leadership

Telkom has the major share of the South African fixed line market. As the market leader, Telkom is in a very favourable position to lead the industry.

3.7.1.5 Quality of service

As mentioned, Telkom used the exclusivity period to enhance its service levels and concentrated on improving customer services. All its exchanges in the country were upgraded from analogue to digital, allowing Telkom to provide improved telecommunications products and services. The mean time to repair and to install was drastically reduced with the main focus being on business and corporate customers. Although not as important, residential customer services also improved. According to a Telkom report (Telkom, 2001) 99% of residential customers have their lines installed in 120 days and 92% of all residential customer lines are installed in less than 28 days. According to the report, Telkom installs business lines faster suggesting that 97% of business lines are installed in under 28 days. The average time to install for commercial customers is 11 days and the average installation time for corporate customers is 5 days. The average installation time for residential customers is 18 days, showing a significant improvement of 14 % over the same period in 1999/2000. Apart from service installation, Telkom has also made strong inroads into fault repair time.

The qualities of Telkom's services are increased by its state-of-the-art national network operating centre (NNOC) situated in Centurion. This centre allows Telkom to monitor and implement remedial action in the national telecommunications network enabling Telkom to offer its data customers 99% operational reliability. This is a major strength because business and corporate customers (the most profitable market segments) depend on network reliability have always been with Telkom and having experienced Telkom's service reliability, will not switch to another fixed line operator.

3.7.1.6 Human and financial resources

Telkom's financial highlights for the 2001/2002 financial year were the following (Telkom, 2002):

- Group operating cash flow up by 16% to R11.3 billion;
- Earnings per share up by 17% to 343.8 cents;
- EBITDA margin maintained at 31%;

- Wireline data revenue up by 18% to R3.7 billion;
- Wireless revenue up by 25% to R6.6 billion.

From these financial results, it is clear that Telkom has a sound financial status. Fixed line revenue increased by 18% during a period of intense financial turmoil in the global economy. Revenue generated from its wireless division, Vodacom, outstripped its revenue growth from fixed line and amounted to 25%. Telkom's financial status is a major strength of the organization.

On the human resources side, Telkom is endowed with having the most telecommunications employees in the country, ranging from highly skilled telecommunication and IT engineers to well-trained and developed management. The organization has been doing well in fulfilling its employment equity targets and made good progress in populating the organization with women in management positions. At of its 2000/2001 financial year-end, Telkom spent R1.9 billion on employee training programmes. Each Telkom employee has received about 13.4 training days per annum. In total, over a four-year period, Telkom employees received 2.9 million days of training (Telkom, 2000).

3.7.1.7 Dominant positioning in SA market

Telkom's dominant position in the South African telecommunications market gives it a competitive advantage over its rivals.

3.7.1.8 Ownership of Vodacom

A major strength of Telkom is its 50% ownership of Vodacom (see section 3.4.3). A common theme in this study has been the convergence of voice, data and image and the decentralisation of network intelligence to the periphery of the network and the new marketing opportunities being created for fixed line service providers in South Africa. A definite trend in telecommunications is the mobility of intelligence via the cell phone (see chapter 1, section 1.4.3). From Telkom's financial highlights (see section 3.7.1.6), revenue growth for wireless is greater than for fixed

line, which indicates that there are greater revenue opportunities in wireless telecommunications than in fixed line telecommunications.

Through its 50% ownership of Vodacom, Telkom appears to be well positioned to take advantage of the new wireless opportunity trends emerging in South Africa. This is a pertinent strength for Telkom because it provides the organization with an avenue to exploit instead of having no point of entry, thereby running the risk of being left out of the wireless market entirely. As a 50% shareholder, Telkom can grow its mobile interests indefinitely. A major trend in Western Europe is for fixed line services providers to own their own mobile service providers so that they are able to keep voice traffic costs low within their own fixed mobile network because of interconnection charges (an interconnection charge is a charge that one network operator charges another for connecting to its network). *Telkom's mobile opportunities were investigated in the empirical research phase by asking Telkom management's views on the viability of mobile telecommunications against fixed line telecommunications and whether Telkom should focus on fixed and mobile communication. Telkom management were also asked to rank the strengths in order of importance in achieving Telkom's future objectives.*

3.7.2 Weaknesses

Pearce and Robinson (2000, p 203) define a weakness as “a limitation or deficiency in one or more resources or competencies relative to competitors that impedes a firm's effective performance.” Every organization has inherent weaknesses. In the researcher's view, Telkom has some serious weaknesses, which are discussed next.

3.7.2.1 Fixed line limitations

The fixed line is a serious weakness of Telkom's especially when it comes to expanding telecommunication market share. The installation of fixed lines is a capital and labour intensive process. Long time cycles are involved in developing new fixed line infrastructure and the initial capital outlay is high. Furthermore, high levels of risk are involved in some non-profitable areas where the penetration of customers for fixed line telecommunications is low. The payback period

accompanying high capital outlays for infrastructure development is too long to warrant profitable investment. In economically feasible areas, customers have become more sophisticated and seek increased value from the traditional fixed line. The increased value that they seek is vested in value-added products and services and no longer in pure voice telephony. Telkom's voice revenues are declining in line with this trend (Coetzee, 2002).

In a study for British Telecommunications (BT) on fixed mobile substitution in the UK, DotEcon (2001) found that fixed line residential subscribers were using the fixed line for Internet and fax services and resorted to using mobile for voice telecommunications. The main reason for this trend was not price (most of the respondents' surveyed indicated they did not know the prices) but rather convenience. The trend was the same for business customers, where it would generally be expected that price sensitivity would be a factor; the majority of calls made by businesses were mobile-to-mobile calls.

3.7.2.2 Reactive to market changes

In the past, Telkom has been very reactive to market changes. This is a critical weakness for the organization because in a rapidly changing environment, organizational innovation is a critical success factor (Hamel and Prahalad, 1994).

3.7.2.3 Network development cost

Telkom has spent billions on network infrastructure development. To expand its telecommunications network, Telkom required huge amounts of capital. In 1997, the amount required was R38 billion. To obtain funding for this, Telkom resorted to borrowing funds, issuing bonds and selling equity. Each of these financing options was accompanied by debt obligations that Telkom has to repay.

3.7.2.4 Lack of innovation

Fisher (2001), Hamel and Prahalad (1994) and Albrink, Hornery, Kletter and Neilson (2002) stress the importance of organizational innovation. Innovation can be defined as the creation of new value for customers by enhancing the value of existing products and services or creating new products and services that customer's value. Christensen (in Fisher, 2001, p 6) points out that when a product is not good enough, the best way to compete is to make better products and, in order to make better products, the "architecture of the product has to be interdependent and proprietary in character". Logan (2001, p 6) maintains that, the "hyperflow of information quickly renders today's innovation obsolete" and "creating processes for continuous innovation that leverage the enterprise's unique cultural strengths is the key to sustainable advantage".

Telkom's record of innovation is poor. To date, Telkom has not come up with a single unique market offering or created disruption in the industry. Telkom made the same error that caused the collapse of the railways in the US. Like the railways that failed to realise they were in the transportation industry and not only in the railway business, Telkom's vision until 2000 was to be the "leading telecommunications service provider in Africa". Telkom's vision has since changed to become the leading communications company.

3.7.2.5 Low employee morale

A problem that Telkom has had to contend with has been its high number of employees (total number of employees in 2002 was 39 900, see section 3.3.1.7). In the run up to its Initial Public Offering, Telkom unwittingly embarked on reengineering projects that resulted in job cuts and retrenchments and brought on an exodus of highly skilled and knowledgeable employees. Tapscott (1999) states that in the new economy, human capital is paramount. Tapscott (1999) and Logan (2001) maintain that innovation drives the business of today and that in the knowledge economy, what really counts are intellectual assets. The failure of Telkom's top management to realise that the future value in the knowledge economy resided in the human assets who opted to migrate to the competition created an environment of intense dissatisfaction

and fear among its employees. This, together with the uncertainty hanging over the global economy, resulted in the destruction of employee morale.

Low employee morale is a serious weakness of Telkom's because of the low productivity that arises from low morale. Heskett et al (1994) measure productivity according to value created. In their view, customer satisfaction is, to a large degree, influenced by the value of services created and *satisfied, loyal and productive employees create that value*. Employee satisfaction is the result of high quality support services, policies and processes that make it possible for them to deliver exceptional results to customers. Employee satisfaction is influenced by job satisfaction and Robbins (1998) defines job satisfaction as a general attitude towards one's work. This implies that if Telkom employees are not satisfied and have low morale, their general attitude to their work is influenced negatively and ultimately, will affect customer service and loyalty. This will be catastrophic for Telkom, especially because it intends differentiating itself from competitors on the basis of superior customer service (see 3.3.1.8 above).

3.7.2.6 Organizational culture

Gerber, Nel and Van Dyk (1997, p 51) define organizational culture as the "the manner in which things are done in the organization". Organizational culture is very important in any organization because it gives an indication of how employees feel about their work. It plays a fundamental role in measuring whether or not the organization will achieve success. The organizational culture consists of shared values towards achieving goals.

Telkom's organizational culture is a weakness to its ability to compete successfully. Decision-making is centralised and vested in the hands of top management, who appear to be overwhelmed with maintaining their power bases in their functional domains. Decision-making has not been filtered down to the lower management ranks where, as Hamel and Prahalad (1994) maintain, innovation proliferates. This trend supports Hamel's (1996) argument that no monarchy in history has ever orchestrated its own downfall. Foster and Kaplan (2001) recommend that the executive committee develop a new skill of learning to listen to mid-level management and customers, a skill that Telkom top management yet has to discover. Telkom's

organizational processes in areas such as new product development are long and tedious. The process cycle for new product development can sometimes take up to one year to get a product to market, an unacceptable benchmark against international standards.

3.7.2.7 Reputation for poor service

Telkom's past reputation for poor service is another major weakness of the organization. Although Telkom has taken giant strides in improving customer service and reducing service delivery cycle times, many still view Telkom as the "Post Office" with a civil service mentality that provides poor service with a uncompetitive attitude. Telkom's past reputation seriously undermines the organizations advances towards a competitive entity. In the eyes of some customers, Telkom will always remain a state enterprise incapable of providing excellent service, perhaps because until 2002, Telkom was the organization in South Africa providing fixed line telecommunication services and the South African public did not have another organization to benchmark Telkom against. Whatever the reasons, the customer is generally very unforgiving and it is unlikely that they will forget Telkom's past service delivery record. This could seriously weaken Telkom's competitive positioning in the South African telecommunications market.

3.7.2.8 Capital investment decision-making

Christensen and Overdorf (2000) maintain that because an organization's stock price is representative of the discounted present value of its projected revenues, the majority of managers feel that they must not only ensure that growth is maintained but that the constant rate at which growth occurs is also maintained. This means that for a R100 million organization to grow at 10%, it will require R10 million worth of new business, but for a R100 billion company to grow at 10%, it requires R10 billion worth of new business. According to Christensen and Overdorf (2000), then, a R100 million organization will be excited by opportunities that require lower returns on investment than the R100 billion organizations. As a result, projects with a return on investment lower than the one set by large organizations are rejected together with the possible future growth of the project, and in Telkom's case, this is true.

Telkom has established a set return on capital invested and all new projects are evaluated against this return. If they do not meet the minimum return, projects are rejected without regard for their potential future earnings capabilities. This is a serious weakness of Telkom's because it inhibits and frustrates the development of new initiatives that have the potential to become tomorrow's winners.

3.7.3 Opportunities

Kotler (1997, p 81) defines an opportunity as “ an area of buyer need in which a company can perform profitably”. Many new marketing opportunities are emerging in the South African telecommunications fixed line business environment. Some of these opportunities for Telkom will be discussed next.

3.7.3.1 Convergence (new ICT products and services)

A central theme of this study was the new marketing opportunities emerging for fixed line telecommunications operators in South Africa. The convergence of telecommunications with IT and broadcasting ushered in a host of new product and service opportunities for fixed line service providers. These present Telkom with a broad spectrum of new opportunities that it should exploit to create new revenue streams in future.

3.7.3.2 Fixed/mobile

Fixed mobile refers to the amalgamation of fixed line services with mobile services. The Telecommunications Act No. 103 of 2001 allows fixed line service providers to offer fixed mobile services (see section 2.8.1.4.4). It provides Telkom with an opportunity to establish fixed line mobility capabilities. This means that it would be possible to have a fixed line phone that could also be used as a mobile phone. This enables Telkom to compete with the cellular operators on cost, as it would not have to pay interconnection charges to the cellular operators if fixed line traffic is connected in its own network.

3.7.3.3 New markets in Africa

The low levels and simultaneous poor state of telecommunications in Africa provide very good opportunities for Telkom. Telkom is well established in South Africa and through its 50% partnership with Vodacom would be able to capture new telecommunication markets in Africa. South Africa's President Thabo Mbeki has been at the forefront of establishing the new partnership for Africa development (NEPAD) and promoting economic and developmental cooperation among nation states in Africa. This paves the way for Telkom to participate in Africa. *In order to determine the significance of the potential opportunities discussed above Telkom management were asked in the empirical research phase to state their opinion on whether Africa provides new opportunities for Telkom.*

3.7.4 Threats

According to Kotler (1997, p 81), "an environmental threat is a challenge posed by an unfavourable trend or development that would lead, in the absence of defensive marketing action, to deterioration in sales or profit." Telkom is plagued by threats that could seriously undermine Telkom's competitive positioning. An organization has to deal with many potential threats and these are not static but evolutionary in nature. However, some threats are more serious than others and, if left unchecked, can have a shattering effect on an organization. Some of the serious threats that threaten Telkom's longer-term well-being are identified in Table 3.8. *The possible threats that Telkom faces were presented to Telkom management during the research and they were asked for their opinion on whether these factors threaten Telkom.*

3.7.4.1 Competitors (SNO, Sentech, Wireless operators, VANs)

In a competitive market, competitors always pose a serious threat to an organization. Telecommunications deregulation, new technologies, convergence and the rapid pace of change and customer needs ushered in a flood of competitors into the South African telecommunications market for Telkom.

Suffice it to say that Telkom's competitors pose a very serious threat to the organization. The major danger of competition for an incumbent fixed line telecommunications service provider such as Telkom is that it has the effect of taking away market share. Shankar (2002) states that competition in Western Europe costs incumbent service providers between 25% and 30% market share losses. This suggests that if the same trend occurred in South Africa, Telkom could lose about a third of its current revenue base. An additional comment that must be made about competitor threats and particularly about a new market entrant is that competitors are not hindered by factors such as huge past capital investments in redundant technologies, poor service delivery reputation and debilitating size. Telkom, on the other hand, is beleaguered by its huge capital investments in network infrastructure (which in some places are not profitable), legacy technologies such as the traditional analogue fixed copper line that restricts its capability to be innovative (because some new product innovations require more advanced technologies, such as digital subscriber line) and the sheer magnitude of its structural size, which inhibits its ability for quick flexible decision making.

3.7.4.2 Telecommunication regulations

One of the most serious threats facing Telkom is new telecommunications regulations aimed at deregulating the South African telecommunication environment (see section 2.8.1). The constantly evolving telecommunication regulatory environment poses a serious threat to Telkom. As a previous monopoly it is obvious that Telkom has a lot to lose. One of the most important consequences of the South African telecommunications regulations was the introduction of direct competition into a market previously monopolised by Telkom. Telkom has seen its previously protected territory stripped away and opened to new market contestants eager to capture a slice of its market share.

3.7.4.3 Global economic conditions

Poor global economic conditions pose a threat to Telkom. In 2001 and 2002, global telecommunications were seriously threatened by the poor economic conditions that prevailed. The spate of corporate failures, such as Enron and WorldCom in the United States, created panic

in the world's largest economy, resulting in a general slowdown of the world economy. Although the South African economy was not seriously affected, it was nonetheless in recession. The slowdown in economic activity in South Africa is a threat to Telkom because spending on telecommunications will also be cut in line with organizations' reducing operation expenses.

3.8 ISSUES TO BE SURVEYED

Throughout the South African business environment analysis a number of key issues that require further research were identified and highlighted. These issues will be investigated further in the research survey questionnaire (see Appendix C). For the sake of completeness, they are mentioned here once again. The following issues identified in the South African business environment from the literature review were researched with Telkom management in the empirical phase of the study:

- *the impact of each macro environment variable on the telecommunications industry;*
- *a list of perceived threats facing Telkom to determine firstly whether there is consensus that these factors constitute threats and secondly the level of seriousness of these threats;*
- *the importance for Telkom of providing new telecommunications products and services to South African business customers;*
- *management's perceptions on how important the new telecommunications products and services would be for each of user group (retail and wholesale) and how these will impact on future Telkom revenues;*
- *possible new ICT products and services identified from the customer needs in the literature for Telkom management to rate in order of importance for Telkom to provide to retail and wholesale customers;*
- *management's views on the probability of the telecommunications market opening up to resellers and the estimated perceived number of resellers they think will exist in the future;*
- *A list of future ICT products and services for small, medium, micro enterprises which Telkom should offer SMMEs;*
- *Management's assessment future need for new ICT products and services among residential cutomers;*

- *obtain clarity on the meaning of the term ‘teleworking’ and how it is perceived by assessing management’s understanding of the term;*
- *management’s views on possible new telecommunications products and services that Telkom could offer to SMMEs;*
- *the major threats that Telkom will face in the future;*
- *A list of possible new telecommunications product and services opportunities that have been importance for Telkom to provide these new products and services;*
- *the major drivers of change that influencing South African businesses and their impact on South African business;*
- *The impact of globalisation on the business environment and the influence of this on new telecommunications products and services;*
- *The mobile communication needs of users and the possible opportunities for fixed line service providers;*
- *a list of new telecommunications products and services to be assessed in terms of importance for application in Government;*
- *the most important supplier to Telkom from a preselected list of Telkom suppliers;*
- *Telkom’s ownership of the customer via the access network as a sustainable competitive advantage;*
- *The meaning of the term ‘strategy’ and what marketing strategy Telkom is following and what strategy it should follow in future;*
- *Transtel’s strategic competitive capabilities;*
- *possible marketing strategies that each of the telecommunications market players could follow and management’s perception of each market player’s present and future marketing strategy;*
- *each of the market players’ sustainable competitive advantages;*
- *broadcasting opportunities, such as video on demand and multimedia services using telecommunication fixed lines and coaxial cable as new business opportunities for fixed line service providers as a profitable area for Telkom in future;*
- *Africa as an opportunity to grow new telecommunications markets;*
- *Management’s perceptions of potential opportunities;*

- *Telkom's mobile opportunities, the viability of mobile telecommunications against fixed line telecommunications and whether Telkom should focus on fixed and mobile communication.*

3.9 CONCLUSION

This chapter analysed the South African market environment and gathered information, using an adapted market model. It was found that the South African telecommunication market environment consisted of various customer market segments that could be grouped into two clearly defined groupings, namely wholesale and retail. Within each group the market is segmented into a number of customer segments that each have their own telecommunications needs and requirements. The literature review indicated that the needs of the various customer segments are evolving and creating new marketing opportunities for telecommunications operators.

At the same time, the South African telecommunication market also has a number of local and international telecommunication equipment manufacturers that impact on the market through the various telecommunication technology products and services that they offer. Like other industries, it was found that the South African telecommunication industry is characterised by a high degree of existing and new market players. Various types of organizations operating in the South African telecommunications market were identified and profiled. Typically, the convergence of IT, telecommunications and broadcasting has resulted in a redefinition of the sector and the introduction of new converged ICT product and service offerings.

The information gathered in chapter 2 and this chapter was used as background information for the development of a market strategy for fixed line telecommunication operators in chapter 4.

CHAPTER 4

STRATEGIC MARKETING

4.1 INTRODUCTION

Having identified the changes taking place in the South African telecommunications business environment (see chapter 2 and chapter 3) and emerging trends (see section 3.6.1) and analysed the telecommunications business environment as well as the constellation of ICT trends, the question arises of what fixed line telecommunication operators like Telkom should do to take advantage of the new marketing opportunities and counteract the threats inherent in the changing environment. This, in turn, raises the following questions: should they provide new telecommunications products and services? What new products and services should they provide? Why should they look for new marketing opportunities? How do they decide on what direction to take? Where should they position themselves in the telecommunications market? What does it mean to think “strategically”? What new ICT products and services should they offer? How do they offer new ICT products and services? What strategic marketing options do they have? How can they position themselves in a way that will ensure their survival and future prosperity?

This chapter concentrates on some of these questions and provides guidelines for answering them. The aim of this chapter is to clarify strategic marketing and to build a strategic marketing model for South African fixed line telecommunication operators. The strategic marketing model will be used to develop a market strategy for South African fixed line telecommunication operators. First, the concept of strategic management will be discussed and the term “strategy” defined. Then, in order to clarify the different strategy levels, each level will be outlined and discussed. Finally, market strategy will be defined and discussed. Pearce and Robinson’s (2000) generic strategic management model will be discussed. Market strategy will be discussed within

a theoretical framework developed from the literature review and a strategic marketing model developed for South African fixed line telecommunications operators.

4.2 STRATEGIC MANAGEMENT

Besides managing the organization's internal activities, managers today have a responsibility to respond to the challenges created by the organization's immediate and remote environment. This environment includes the organization's competitors, suppliers, scarce resources, government policies and regulations and constantly evolving customer preferences. The organization's remote environment, also called the macro environment, comprises economic, social and technological developments and various political priorities, amongst other things (see chapter 2). All these factors have to be "anticipated, monitored, assessed and incorporated into the executive's decision making" (Pearce and Robinson, 2000, p 3).

Sometimes, however, managers are forced to subordinate the organization's external and internal business demands to those of its stakeholders: shareholders, employees, top management, communities, customers and country. In order for them to deal competently with the multiple factors that impact on profitability and growth in their organizations, managers employ management processes to position their organization favourably in the competitive environment by maximising their chances of success through anticipating environmental change and detecting unexpected internal and competitive demands. A strategic management approach emphasises environmental scanning, analysis, forecasting and external considerations in the formulation and implementation of plans (Pearce and Robinson, 2000). Pearce and Robinson (2000) state that strategic management encompasses nine critical tasks, namely

- Formulating of the organization's mission, including broad general statements on its purpose, philosophy and goals
- Carrying out an internal analysis of the organization's internal capabilities and conditions
- Assessing of the organization's external business environment, including competitive and general factors
- Evaluating the organization's options, matching the organization's external environment with its internal capabilities and resources

- Identifying the options most desirable in terms of the organization's mission
- Selecting a list of long-term objectives and grand strategies suitable for achieving the desirable options
- Developing the annual short-term objectives and strategies most suitable for accomplishing the longer-term objectives and strategies
- Actioning the strategic choices through allocating budget resources that support the tasks, with the emphasis on people, structures, technologies and reward systems
- Evaluating the effectiveness and success of the strategic process in providing input for future decisions

Pearce and Robinson (2000, p 3) view strategic management as “the set of decisions and actions that result in the formulation and implementation of plans designed to achieve a company's objectives”. Hamel and Prahalad (1994, p 282) contend that strategic planning (that is strategic management) “fails to provoke deeper debates about who we are as a company or who we want to be in ten years' time”. They maintain that the traditional strategic management approach seldom “illuminates new white space opportunities. It seldom covers the unarticulated needs of customers. It seldom provides insight into how to rewrite the industry rules. It seldom stretches to encompass the threat from non-traditional competitors. It seldom forces managers to confront their potentially out of date conventions. Strategic planning almost always starts with ‘what is’. It seldom starts with what could be”. Hamel and Prahalad (1994) and Robert (1993) are of the opinion that incremental planning is very unlikely to add value in a world dominated by profound change. They insist that strategic planning functions well when the planning foundations and assumptions, such as what our “industry” is, what “business” we are in, who our competitors and customers are and what needs they have, remain intact. However, in industries such as IT, telecommunications and other industries these basic assumptions are being shattered. New competitors, who are not constrained by past paradigms, and technological, demographic and regulatory paradigm shifts are challenging (and changing) these assumptions. The traditional strategic management approach is no longer adequate to deal with today's challenges. This is probably one of the main reasons that conventional strategic planning is no longer regarded favourably in corporate circles.

Hamel and Prahalad (1994, p 282) point out that for executives to develop foresight and create supportive strategic management plans, organizations require a new approach to what it means to be “strategic”. Their strategy needs to shift (or switch) from questions about maximising profits and market share to ones like “who do we want to be as a corporation in ten years’ time? How can we reshape this industry to our advantage? What new functionalities do we want to create for customers? What new core competencies should we be building?” According to Hamel and Prahalad (1994, p 282), executives require a “new process for strategy making, one that is more exploratory and less ritualistic” and one that needs “to apply new and different resources to the task of strategy making” that involves all the organization’s managers and is not limited to a handful of planners. This is especially true for the South African fixed line telecommunication operators like Telkom.

Robert (2001), like Hamel and Prahalad (1994) points out that the best strategies do not imitate competitors but rather change the rules of the game. Robert (2001, p 2) is of the opinion that winning organizations are successful because they change “the rules of the game”. Robert (1993, p 27) also contends that strategic planning cannot replace “sound” strategic thinking. Lake (2002) concurs. Robert argued that strategic thinking is a process taking place in the minds of the Chief Executive Officer (CEO) and the “key people surrounding him or her that helps them determine the “look” of the organization at some point in future. And the look, or composition, of the business in future may be different than it is today”.

It follows from the above that no single approach is best and there is no such thing as “one size fits all”. Each approach to strategic management has its own merits. In this study then, the researcher’s approach was based on the work of Du Plessis et al (2001), Pearce and Robinson (2000), Cronjè, Du Toit, and Motlatla (2000), Marx et al (1998), Hamel and Prahalad (1994), Smit and Cronjè (1992) and Robert (1993). Accordingly, the researcher defined strategic management as the process that involves strategic thinking to outline an organization’s future and developing a set of decisions and actions that result in the formulation and implementation of plans designed to achieve a company’s objectives. Much has been written about strategic management and most corporate and business executives, planners, academics and strategy

consultants alike espouse the use of strategic principles in developing future plans to ensure organizational survival (Pascale, 1984). Strategy will therefore be examined and discussed next.

4.3 STRATEGY

Today, “strategy” has become a buzzword. Organizations and academics alike seem to use the word liberally without any real understanding of its meaning (Robert, 2001). Management texts, journals and magazines are filled with terms like “business strategy”, “organizational strategy”, “procurement strategy”, “financial strategy” and “marketing strategy”. However, despite its popularity and common usage, there is no consensus on the interpretation and definition of “strategy”. Therefore, at the outset, it is essential to define the term “strategy” in the context in which it is used in this study.

4.3.1 Defining strategy

Collins English Dictionary (1991, 1525) defines strategy as “2. A particular long-term plan for success, esp. in business or politics”. Pascale (1984, p 47) defined strategy in the business context as relating to a process in which an organization scans and analyses its environment and resources to achieve the following:

- Identify and select opportunities in terms of the market that it services and the products it uses to serve them with.
- Evaluate its internal resources and contrives decisions for resource investment to secure identified objectives.

Kroonz, O’Donell and Weihrich (1984) view strategy as a set of plans constructed in response to what adversaries might do. Anthony (in Kroonz et al, 1984, p 107) defines strategy as “deciding on objectives of the organization, and on the policies that are to govern the acquisition, use, and disposition of these long-term objectives of an enterprise”. According to Andrews (in Jain, 1990, p 10), strategy is “the pattern of major objectives, purposes, or goals and essential policies and plans for achieving those goals, stated in such a way as to define what business the company is in or is to be in and the kind of company it is or is to be”. Smit and Cronjè (1992, pp 107-108)

state that strategy is a process “involving planning, organising, directing and controlling of strategy-related decisions and actions of an enterprise”. Quinn (in Mintzberg and Quinn, 1998, p 3) defined strategy as “a pattern or plan that integrates an organization’s major goals, policies, and action sequences into a cohesive whole. A well-formulated strategy helps to marshal and allocate an organization’s resources into a unique and viable posture based on its relative internal competencies and shortcomings, anticipated changes in the environment, and contingent moves by intelligent opponents”.

Campbell and Yeung (in Mintzberg and Quinn, 1998) point out that strategy is required to achieve a competitive purpose and that strategy creates the business logic for organizational existence. Strategy is used, then, to explain the underlying principles for an organization’s existence. For Parnell, Lester and Menefee (2000, p 520), strategy is a “fit” with organizational or environmental factors and the psychological profile of its managers. In other words, the way that an organization’s managers think coupled with the limitations of its resources will determine the organization’s strategy.

These definitions describe the term “strategy”, but do not really get to grips with the concept of strategy. Although strategy does lead to planning, organising and leading organizational resources towards some goal, these are merely the outcomes of the concept and do not clarify the term. If strategy is the differentiating factor that promotes organizational survival and prosperity, what makes strategy different?

4.3.2 Strategy as being different

Kroon, O’Donnell and Wehrich (1984) state that the speed of change dictates managerial action. The faster the pace of change, the more important it becomes for management to think strategically, to steer the organization through the turbulence that engulfs it. Kroon et al (1984) state that where the momentum of change is rapid (such as in some industries like PC hardware development, microchip development, software development and ICT) there is a great tendency for management to sit back and do nothing, hoping the storm will pass. However, history has shown that a laid back approach to managing change can have disastrous consequences for

organizations and even whole industries. For example, at the time that Gutenberg invented the printing press, thousands of monks were employed in monasteries to write manuscripts. Manuscript writing was a thriving industry in Europe. Gutenberg's invention of the printing press (seen as disruptive change for that period) speeded the flow of information and opened its availability to the masses by driving down the cost of manufacturing and speedily replicating information. What happened to the handwriting industry is history.

Cronjè, Du Toit and Motlatla (2000), Pearce and Robinson (2000), De Wit and Meyer (2001) and others maintain that for organizations to succeed in a changing business environment, they must adopt the Darwinian principle of adapt or die of the living world. But it is critical to understand that believing in evolution itself is no guarantee for future success. Nature is fraught with examples of poor strategic selection and the mass of corporate failures bears testimony to corporate strategies that misunderstood the future and to poor strategic selection.

This contingent approach to strategy is fairly common among business managers, executives, academics and planners alike. A major weakness in this approach is the assumption that an organization can plan its survival by assessing its environment and taking the required action needed to identify potential opportunities and threats in the external environment. In this sense, it represents the organization as being reactive to its environmental circumstances, similar to the existence of the dinosaur many centuries ago.

The researcher is of the opinion that definitions of strategy based on merely reacting to changes identified in the external environment are simply another form of passive organizational planning and do not clarify what strategy is. Hamel (1996), however, advocates a new school of management thought by tackling the real issue of strategy definition. Hamel refers to three types of organizations that preside in any industry:

- the orthodox rule makers (organizations that built the industry such as Telkom, Coca Cola, Nestle, Standard Bank, Sears, Merrill Lynch);
- the subservient rule takers also called followers (organizations such as Fujitsu, Saambou, ABC, Cell C, Metair, Smit Barney and Cadbury's); and

- the rule breakers (organizations that have broken the traditional industry rules, the mavericks that challenge the basic rules set by the industry, such as Vodacom, MTN, Didata, IKEA and Amazon.com).

The orthodox rule makers are the organizations that created and now protect the industry. Hamel (1996) says these organizations are orthodox in their paradigm and are the “oligarchy”. The subservient rule takers according to Hamel are those organizations that always lag behind the industrial lords, no matter what they do. Finally, there are the rule breakers, the mavericks that create the future by disrupting the rules set by the traditional oligarchists. Whilst rule makers and rule takers operate in the industry, rule breakers deliberately set out to “redefine the industry, to invent the new by challenging the old” (Hamel, 1996, p 71). These rule breakers are the forces that disrupt industries.

According to Hamel (1996, p 70), the world has become hostile towards industry incumbents (the oligarchy) and view the mavericks with a sense of responsiveness and warm hospitality. He goes further to say that the barriers that once protected the “industrial oligarchy” were disintegrating from the forces of deregulation, technological disruptions, globalisation and social transformation.

Accordingly, Hamel (1996) contends that these forces of change are not the only ones fermenting the fortifications, but are being grazed by the actions of those organizations that have harnessed the basic principles of commercial revolution. According to Hamel (1996) these organizations are the revolutionaries because they see fit to challenge the industry status quo by adopting a far-sighted approach that actually creates the future. For example, Vodacom’s far-sighted vision of the future turned the voice telecommunications industry in South Africa on its back. Today, cellular subscribers outnumber fixed line subscribers. Amazon.com revolutionised the bookselling market by proving that it could sell books online through the Internet. Another example is Microsoft’s discovery of “Windows” as an interactive software operating system.

Hamel (1996) and Prahalad (in Kurtzman, 1996) define strategy as much more than the traditional planning process; strategy is revolution. Prahalad (in Kurtzman, 1996) challenges the

strategy concept by referring to the real meaning of strategy. According to Hamel (1998) and Prahalad (in Kurtzman, 1996), strategy as a concept means the following:

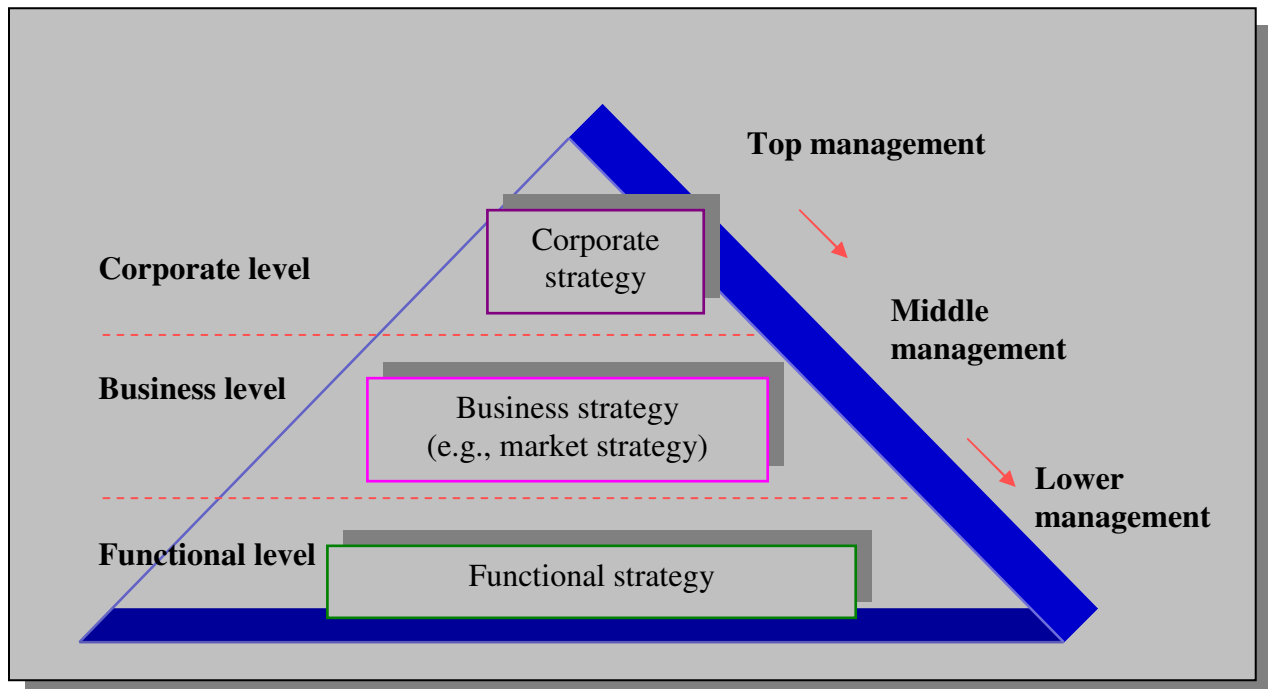
- Strategy is revolution.
- Strategy is discovery.
- Strategy is innovation.
- Strategy is changing the norms and rules of the industry.

Robert (2001) and Trout and Rivkin (2000) concur; stating that strategy as a concept is about being different. Thompson (1998) holds that strategy involves paradigms and implies thinking and behaving strategically, since strategy means much more than conventional tactic. Strategy as a concept means more than merely reacting to environmental changes. Instead, strategy may be defined as proactively thinking, engaging, shaping and crafting the organization's future by challenging the constructs of traditional paradigms and changing the rules of engagement. This definition of strategy articulates the development of strategic thinking as a pre-emptive step in the formulation of corporate strategy. Hence, Trout and Rivkin (2000), Thompson (1998) and others assert that in order to ensure that strategic plans are developed and implemented, strategy formulation and implementation take place at different levels. *In the empirical research phase, the whole question of what strategy is as well as the definition and understanding of strategy was investigated with Telkom managers.*

4.4 LEVELS OF STRATEGY

Du Plessis et al (2001) contend that it is extremely difficult, if not impossible, to separate and discuss individual strategies from each other at the different levels that they occur, because the different levels of strategy are very closely intertwined. Figure 4.1 illustrates the different levels at which strategy takes place in a large organization.

FIGURE 4.1 DIFFERENT LEVELS OF ORGANIZATIONAL STRATEGY



Adapted from: Marx et al (1998, p 355)

Corporate, business, market and functional strategy will be discussed next.

4.4.1 Corporate strategy

Smit and Cronjè (1992, p 110) view corporate strategy (also called grand strategy) as “the course chartered for an organization as a whole and specifies what set of businesses the organization should be in”. Hofer and Schendel (1978) regard corporate strategy as dealing with resource allocation between the different businesses or divisions within an organization. Du Plessis et al (2001) describes corporate strategy as an organization’s sense of purpose and as identifying the future opportunities and threats and matching them to the organization’s resources. Hamel and Prahalad (1994) regard corporate strategy as more than the amalgamation of the individual business unit strategies. They view corporate strategy as setting the future direction of the organization and developing the organization’s purpose in terms of establishing what the organization wants to be in the future, evaluating how it can reshape the industry to the organizations advantage and identifying what new value-creating functionalities it can create for

customers and determining what core competencies should be built by the organization. Ammer and Ammer (1984, p 445) refer to corporate strategic planning and define it as the “process of determining how a business may make the best possible use of its resources in the future. Whereas conventional planning concentrates on making the best of current resources (employees, capital, customers), strategic planning focuses on ways in which these resources can gradually be changed in order to permit the enterprise to become more successful in the future”.

Thus, the corporate strategy is the organization’s overarching strategy that spans across all business units or divisions and sets the future direction and purpose that establishes what the organization wants to be in future, evaluates how it can transform the industry to its advantage identifies new value-creating functionalities for customers and identifies new core competencies that it has to develop.

4.4.2 Business strategy

Business strategy establishes the best way for an organization to compete in a specific industry and is concerned with choosing the best strategies for each business or unit in an organization (Smit and Cronjè, 1992). Hofer and Schendel (1978) describe business strategy as existing at the individual business unit or divisional level and being concerned mainly with competitive positioning. Du Plessis et al (2001) state that business strategy is concerned with managing individual business units or specific divisions for the achievement of corporate objectives. In this regard Du Plessis et al (2001, p 4) state that marketing has the role of assisting in contributing to the development of the strategic perspectives of the business unit (strategic marketing). Therefore business strategy takes place at the business unit or divisional level of the organization and is involved with determining the best way for an organization to compete in an industry and managing the individual business units or divisions to achieve the organization’s objectives.

4.4.3 Market strategy

Market strategy refers to the contribution that marketing management makes to the development of the business strategy. It involves mainly top management inputs on the internal and external

marketing environment and is involved with shared competitive and financial decision-making. The market strategy is an element of the corporate strategy, is market orientated, and is representative of the marketing division's "total attack" on the market (Du Plessis et al, 2001).

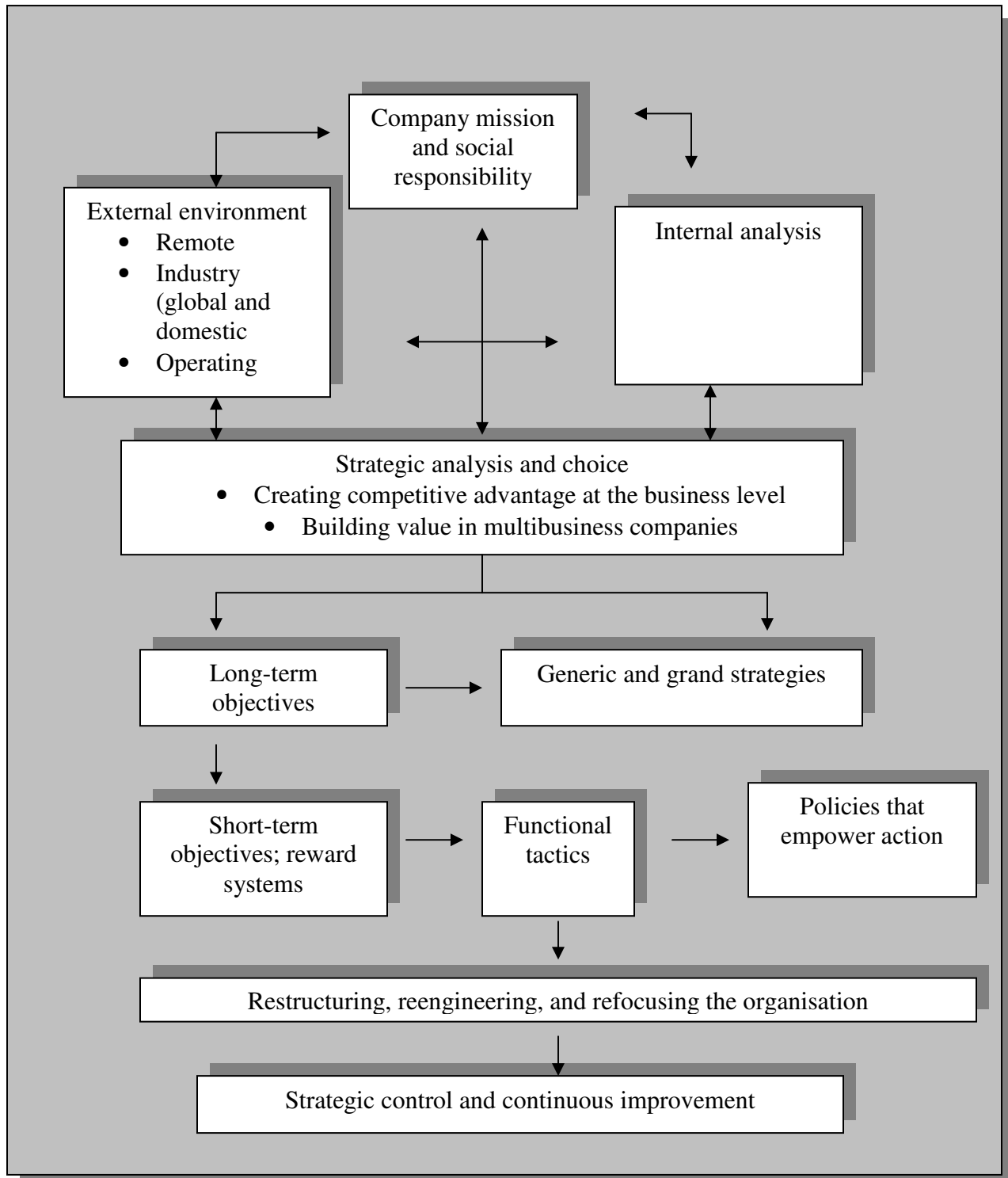
4.4.4 Functional strategy

The organization's functional strategy refers to the actions of the specific functions inside specific businesses (Hofer and Schendel, 1978). Marketing management's contribution to the formulation and implementation of the marketing programmes is a functional strategy. After having formulated the business strategy, the functional strategy executes, performs, puts the business strategy into action, and activates implements the business strategy. In marketing, for example, once the broad business strategy for marketing has been formulated, identified target markets have to be selected, the value propositions must be developed and the functional strategy mix (product, communication, distribution, service, and pricing) carried out. Having described the levels at which strategy takes place in the organization, Pearce and Robinson's (2000) generic strategic management model will be reviewed.

4.5 GENERIC STRATEGIC MANAGEMENT MODEL

The processes to formulate and direct strategic management activities vary from organization to organization. For example Coca-Cola, Procter and Gamble, Didata, Standard Bank, Firstrand, Old Mutual, Datatec and Microsoft have developed more processes than smaller organizations. Generally, organizations providing multiple products and services or technologies utilise more complex strategic management systems. Nonetheless, the basic components in the strategic management process remain very much the same. The similarity of strategic management models makes it possible to develop a generic strategic management model that is representative of the general strategic management process (Pearce and Robinson, 2000). Figure 4.2 represents Pearce and Robinson's (2000), generic strategic management model.

FIGURE 4.2 GENERIC STRATEGIC MANAGEMENT MODEL



Adapted from: Pearce and Robinson (2000, p 12)

4.5.1 Components of the generic strategic management model

The various components of Pearce and Robinson's (2000) generic strategic management model will be discussed next.

4.5.2 Company mission

The first step in the generic strategic management model process involves the organization's mission. According to Pearce and Robinson (2000), the organization's mission describes its unique purpose and differentiates it from other organizations in its industry by type and scope of operations. An organization's mission describes the organization's product, markets and emphasises technological areas that are reflective of the organization's priorities and values.

4.5.3 Internal analysis

In the internal analysis stage, the organization evaluates its internal resources such as human, financial and physical resources. At the same time it assesses the strengths and weaknesses of its management and organizational structure. By contrasting and comparing its previous successes and concerns with that of its present capabilities, the organization tries to identify its future capabilities.

4.5.4 External environment

In the generic strategic management model, the organization's external business environment is described as the remote, industry and operating environments and consists of all the elements that affect its strategic options and competitive positioning.

4.5.5 Strategic analysis and choice

The simultaneous assessment of its internal and external environments enables the organization to identify a range of potential opportunities. These potential opportunities reflect the areas of

opportunity for investment. However, each potential opportunity has to be screened against the organization's mission to obtain a list of desired opportunities that the organization may pursue. At this point a strategic choice has to be made. This process is intended to provide for an amalgamation of the formulation of the long-term objectives and the development of generic grand strategies that is intended to position the organization favourably in its external environment in order to fulfil its mission.

In single product or service organizations, the strategic analysis and choice process is focused on the identification of strategies that effectively build sustainable competitive advantages that are founded on critical value chain activities and capabilities otherwise regarded as the core activities of the organization. In multi-product/service organizations, management attention is drawn to the combination of businesses that maximise shareholder value as the central area of focus.

4.5.6 Long-term objectives

Long-term objectives refer to the results that an organization strives to achieve over number of years. Long-term objectives are generally focused on areas such as profitability, return on investment, technological leadership, productivity, competitive positioning, public responsibility, and human resource development and employee relations.

4.5.7 Generic and grand strategies

All organizations either explicitly or implicitly adopt single or multiple generic strategies that are characteristic of their competitive posture in the market. The three generic competitive strategy options available to an organization are cost leadership, differentiation or focus (see section 4.7). As part of their generic strategy, progressive managers strive to develop a combination of low cost and differentiation competitive advantage capabilities. These capabilities are usually combined with their long-term objectives to formulate an all-encompassing master action plan (sometimes called the grand strategy) that aims to achieve the organization's long-term

objectives. The organization's grand strategy consists of a unique package of long-term strategies.

4.5.8 Action plans and short-term objectives

An action plan is a plan that translates the generic and grand strategies into actionable results that are obtained through four elements:

- (1) the identification of specific functional tactics and actions that need to be completed over a week, month or quarter to enable the organization to achieve the long-term objective and competitive advantage required;
- (2) clearly-defined time frames in which to complete specific actions for achieving the objective;
- (3) allocating responsibility and accountability for the completion of each action identified in the plan;
- (4) every action of the action plan has specific objectives that have an outcome that should materialise.

4.5.9 Functional tactics

Each business function (such as marketing, human resources, finances and operations) has to undertake activities that contribute to the organization's achievement of long-term objectives. Functional managers within each business function have to develop tactics for their business function and develop a functional tactical plan that outlines statements or the means that will be used to achieve short-term objectives.

4.5.10 Policies that empower action

Reacting to market changes in a quick and responsive manner requires speed and quick decision-making capabilities. One way to enable speedy decision-making in an organization is to decentralise decision-making to the lowest level in the organization. Policies serve to guide and facilitate employee decision-making in an organization. Policies are necessary to guide the behaviour of all employees as well as to establish control over their activities so as to ensure that

the organization's strategic objectives are achieved in a consistent manner. They also serve as a good basis for standardising procedures. To enable speedy responsiveness, it is important for policies to be of such a nature that they standardise routine decision-making and broaden the discretion of employees in implementing business strategies.

4.5.11 Restructuring, reengineering and refocusing the organization

Restructuring, reengineering and refocusing the organization deal with the internal focus of the organization. Decisions about how the work should get done efficiently and effectively to achieve the strategy are taken at this stage in the process. At this stage, the organization looks at ways to organise to achieve the mission; where the leadership should come from; what the culture of the organization should be to support the strategy; what rewards should be used to mould organizational behaviour and what should be done to encourage appropriate behaviour that is conducive to achieving the organization's strategy.

4.5.12 Strategic control and continuous improvement

Strategic control involves measuring and evaluating strategy and determining the progress being made towards achieving the organization's strategy. The purpose of this step is to detect deviations from or changes in the underlying premises and taking any corrective action necessary to realign the organization to the path of fulfilling its strategy. Continuous improvements are an important part of this process, which enables managers to respond proactively and rapidly to the changes that affect their organization's success. By constantly examining their way of managing, managers are able to improve on existing methods, procedures and processes and focus on achieving the organization's strategy.

Strategic marketing is discussed next and a strategic marketing model applicable to South African fixed line telecommunication operators is developed and discussed.

4.6 STRATEGIC MARKETING

The purpose of an organization is to create value for customers (Hammer, 1996). Marketing's role, then, in a South African fixed line telecommunication's organization such as Telkom is to determine how the organization can fulfil this purpose. In order to achieve this, the organization has to develop a market strategy. Market strategy can therefore be seen as the organization's innovative, discovering, revolutionary and rule breaking endeavours to create sustainable value for customers. Marketing in fixed line telecommunication operators plays a strategic role in creating, developing and driving the organization's long-term survival.

4.6.1 Marketing's strategic role

Marketing plays a functional and strategic role in the organization (Du Plessis et al, 2001). This study focused only on the strategic role of marketing; hence the functional marketing management role fell outside its scope.

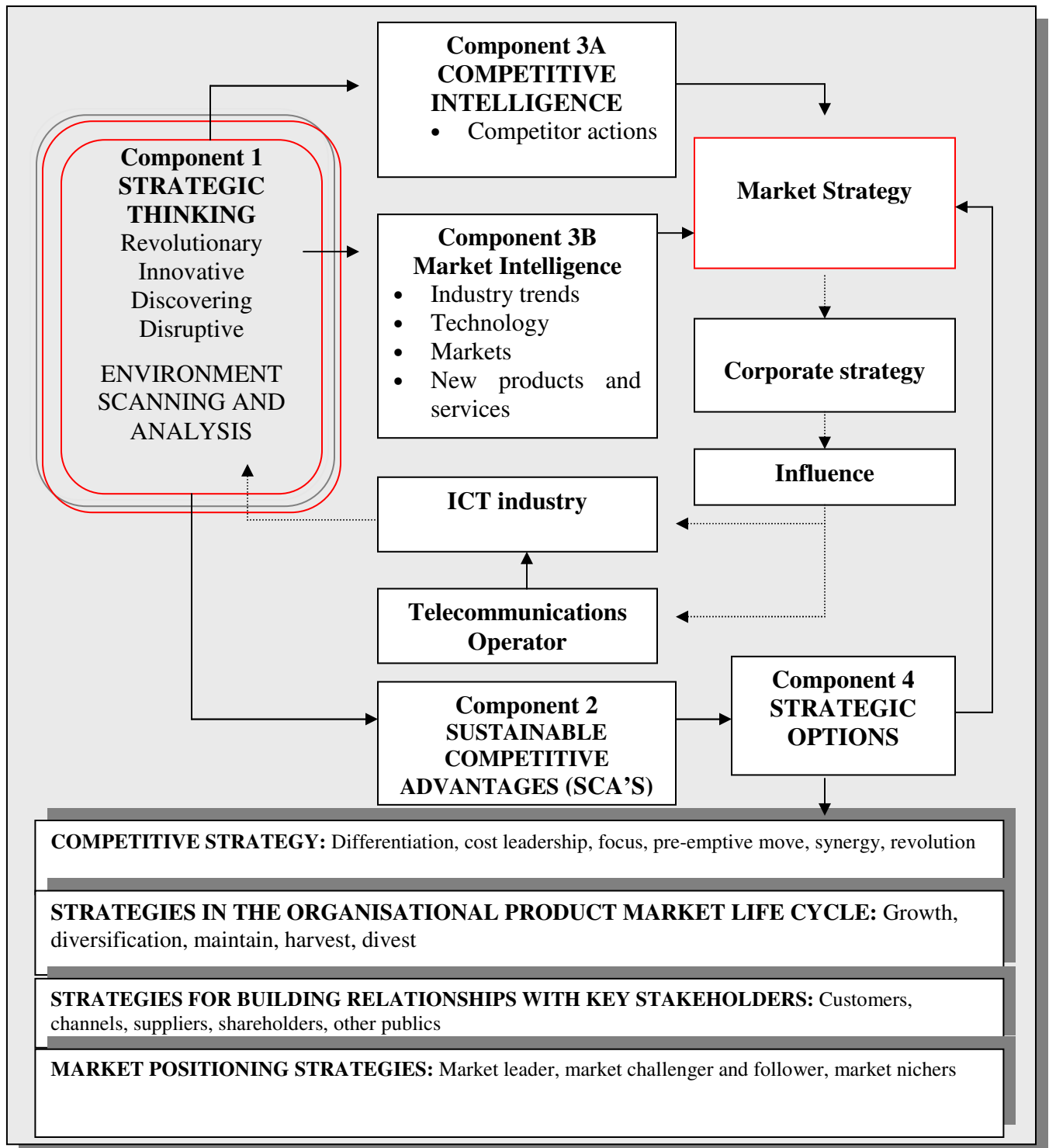
Aaker (1998) contends that the planning cycles are insufficient to deal with the accelerated rate of environmental change. He states further that, in order for organizations to deal with the complexity of changing environmental trends and avoid the elements of surprise threats in their business environment, strategic decision-making capability has to be incubated outside an organization's planning cycle. This view is very pertinent for the South African fixed line telecommunication's industry.

Since strategic marketing's main role in the South African fixed line telecommunication organization is to create value for customers and ensure the long-term survival of the organizations, the responsibility for identifying new value-creation opportunities and value-erosion threats and the customer value-creation infusion, lies with strategic marketing. Strategic marketing's role in the South African fixed line telecommunications organization is to proactively engage the organization's environment strategically and futuristically and develop the fundamental foundations for corporate strategy to chart the organization's path by creating the future through influencing the South African telecommunications business environment.

4.6.2 Strategic marketing model

Figure 4.3 below illustrates the strategic marketing model framework that has been developed for South African fixed line telecommunication's operators and aims to satisfy the strategic marketing function of intelligence gathering, strategic thinking, market strategy development and future creation in the organization's business environment.

FIGURE 4.3 STRATEGIC MARKETING MODEL APPLIED TO THE SOUTH AFRICAN TELECOMMUNICATIONS ENVIRONMENT



Adapted from: Du Plessis et al (2001, p 167)

From figure 4.3 it is clear that strategic marketing follows a proactive approach that aims to redefine the organization's future. The basic assumption underlying this model is that, by employing skilful strategic marketing thinking, the fixed line telecommunications operator can influence its business environment and ensure its future survival and prosperity.

As indicated in figure 4.3, strategic marketing plays a crucial role in transforming the telecommunications business environment. Through environmental scanning, strategic marketing adds value to the strategic management process by employing its strategic marketing thinking capability in the competitive and marketing intelligence-gathering effort to revolutionise, innovate, disrupt and discover new meaning from the intelligence gathered.

The central focus of the strategic marketing effort is to identify sustainable competitive advantages for the organization (Aaker, 1998 and Du Plessis et al, 2001). This implies that in the telecommunications industry the strategic marketing effort is to identify sustainable competitive advantages for the fixed line telecommunications operator. Having injected new meaning (innovation, disruption, rule breaking and discovery) into the intelligence effort and identified strategic competitive advantages, strategic marketing combines strategic options to proactively develop new marketing strategies that act as the platform for the development of corporate strategy.

The strategic significance of the South African fixed line telecommunications marketing effort is that it influences on three levels, namely the organization, the industry and the South African telecommunication business environment. By proactively influencing and changing these three levels, the fixed line telecommunications operator becomes an effective instrument capable of shaping and securing its future.

4.6.3 Strategic marketing components

In a South African fixed line telecommunications organization, strategic marketing relies on four major input components for its output, (see Figure 4.3), namely

- Component 1: environmental scanning, analysis and strategic thinking
- Component 2: sustainable competitive advantages

- Component 3: market/competitive intelligence
- Component 4: strategic options.

These four components will now be described and used as a framework to discuss market strategy for South African fixed line telecommunications operators.

4.6.3.1 Component 1: Strategic thinking, environmental scanning and analysis

Telecommunications organizations do not exist in isolation but in a business environment characterised by its sub environments (see chapter 2). In a dynamic, rapidly changing environment like telecommunications, the organization can easily disappear unless an environmental scanning and information gathering, analysis and transformation system is in place to monitor its business environment. Jain (1990), Aaker (1998), Walker, Boyd and Leréché (1999) and Chorn (2002) propose that for an organization to survive and thrive in a turbulent business environment, it requires an early detection system that is constantly in contact with its environment. The purpose of such an early detection system is to pick up signals directly from the business environment and to relay these signals to the decision-making layer of the organization so that relevant action can be taken to protect the organization from potential threats and alert it to new opportunities. This is very applicable to the South African fixed line telecommunications business environment.

While it is crucial for fixed line telecommunications organizations to develop capability to monitor the environment for potential threats and opportunities, responding to rapid persistent change will not ensure the South African telecommunications fixed line organization's survival. Rather, the development of a proactive capability will ensure longer-term survival and prosperity. In this regard Aguilar (in Jain, 1990) developed a framework, consisting of four patterns used by managers to manage information proactively, namely

- **undirected viewing** (viewing of information with no specific purpose)
- **conditioned viewing** (directed viewing but with no active search)
- **informal search** (the collection of purpose-oriented information without a formal approach)
- **formal search** (the collection of specific information for a specific purpose).

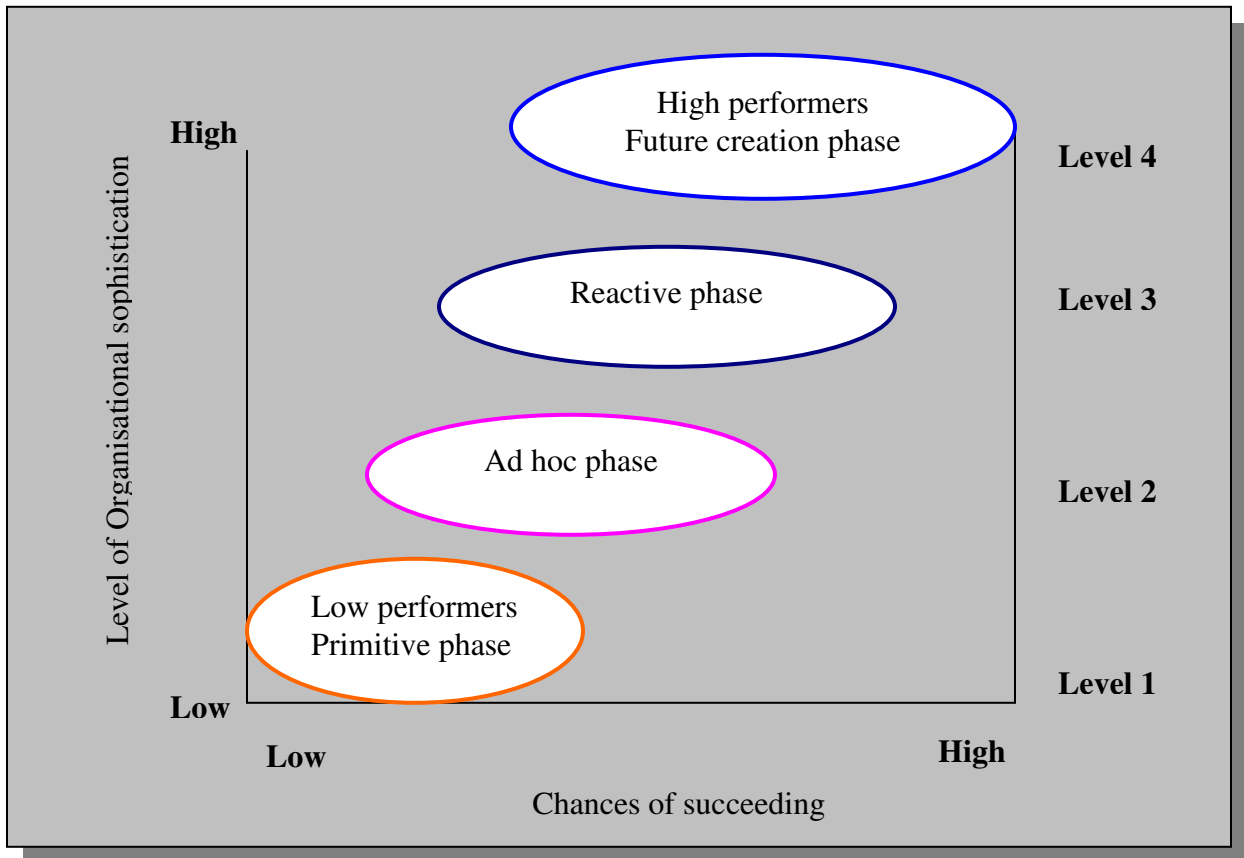
This framework indicates that environmental information gathering in an organization follows a clear pattern of moving from a broad, unsystematic, undirected approach to a narrow, focused, systematic, formal information search approach. The importance that an organization places on its level of information gathering and analyses is a good indicator of the level at which the organization is operating. In a study on environmental scanning Jain (1990) found that four evolutionary activity phases, ranging from primitive to highly proactive, could be identified. Figure 4.5 represents the various environmental scanning sophistication levels.

As depicted in figure 4.4, at level 1, the primitive phase, the environment is regarded as concrete and totally inevitable and the organization is regarded as a static recipient of its impacting changes. In this phase, management is exposed to both strategic and non-strategic information but are non-responsive to distinguishing the differences. At this level of environmental scanning, no effort is made to use the information constructively to the organization's benefit.

At level 2, the ad hoc phase, (which is a slight improvement on phase 1) environmental scanning does take place. Management identifies a few areas that require information-gathering attention, but no formal systems or initiative for environmental scanning exist. At level 3, the reactive phase, environmental scanning is seen as important and efforts are made to scan the environment for information in various areas. At this stage management recognise environmental scanning as a means for gathering useful information. However, the information-gathering process is carried out in a haphazard and uncoordinated manner. Everything in the environment is regarded as important and the organization drowns in information overload, leading to non-productive gains in its information-gathering efforts. Although the organizations management understand the potential opportunities and threats in the business environment, they are reactive to these changes.

Level 4, the high performer phase, represents the most advanced level of information gathering. The phase 4 organization practises environmental scanning in a vigorous, proactive and structured way. In this phase the organization selectively identifies key focus areas on which to concentrate the scanning effort. Carefully thought-out processes for information identification, collection and dissemination exist in the organization.

FIGURE 4.4 ENVIRONMENTAL SCANNING SOPHISTICATION LEVELS



For South African fixed line telecommunications organizations to influence the business environment and the future demands that they operate at level 4 intelligence capabilities. To influence the future of the organization in the South African telecommunications environment characterised by continuous disruptive change not only requires level 4 capabilities but also demands level 4 analysis and strategic thinking capabilities. This implies that organizations (such as Telkom) that face high levels of uncertainty in the business environment must not only proactively implement high level processes that build focused intelligence gathering into every aspect of the organization (strategic and business level), but should also use the intelligence in a strategic thinking manner to create the capability to influence the future. For example, the announcements in the telecommunications policy directives of 2001 (see section 2.8.1.4.4) of the issuing of a multimedia licence to Sentech represented a serious threat to Telkom, Multichoice and the SNO. The policy directives gave no indication of whether Sentech would be allowed to provide services directly to end-users.

If these organizations were operating at level 4 capability, they would have used this information to predict how Sentech would threaten their future revenue bases and have implemented the action needed to avert this threat (such as lobbying the Government or threatening to disrupt the Initial Public Offer on Telkom's side and refusing to participate in the SNO licence on the SNO's part). This would have enabled these organizations to change the future. However, as Bidoli (2002) reported, Sentech moved ahead with the implementation of a broadband rollout plan that at the time aimed to target schools, residential customers and business organizations thereby influencing its own future and at the same time seriously undermining the strategic positioning of the other market players.

4.6.3.2 Component 2: Sustainable Competitive Advantages (SCA's)

In order to survive in a turbulent competitive environment, organizations require competitive advantages that make them uniquely different and are sustainable over their competitors (Du Plessis et al 2001). This means that, in order to survive, fixed line telecommunications operators such as Telkom will require competitive advantages that make them uniquely different and are sustainable over their competitors. Czepiel (1992, p 44) defines a sustainable competitive advantage (SCA) as "the ability to deliver superior value to the market for a protracted period of time", Hammer (1996), Kotler (1998) and others state that the fundamental purpose of an organization is to create value for customers. Creating value for customers is necessary, but in a competitive South African telecommunications environment where all organizations are vying for a limited number of customers, the emphasis must be on the creation of "superior value" (Czepiel 1992). Superior value implies that customers should be convinced that they are obtaining the most value for their money and this value must be obtained at a cost. The difference between the cost of a product and/or service and the benefit derived by a customer represents the perceived value that is obtained. The greater the difference between the cost and the benefit derived, the more the perceived value (Du Plessis et al, 2001).

The second important aspect about a sustainable competitive advantage for it to be beneficial to an organization is that it must be sustainable over a period of time. This means that, for an SCA to be effective and provide the organization with the strategic leverage or advantage, the SCA must be sustainable over a period of time. It must provide the organization with a sense of

uniqueness (that customer's value) that clearly distinguishes or separates the organization from other players in the market. Sustainable competitive advantages are built by using a combination or combinations of strategic options. The sustainable competitive advantages that are developed are then fed into the overall marketing strategy for the organization where, in combination with market and competitive intelligence and strategic thinking, they are used to develop the corporate strategy for an organization.

4.6.3.3 Component 3A: Competitive intelligence

Stanat (in van Hamersveld, 1999, p XVI) defines competitive intelligence as "the systematic process for the collection and dissemination of competitively relevant information". In competitive intelligence (CI) information gathering, the main thrust of the intelligence gathering effort, is placed on analysing a competitive organization its products, pricing, financial performance, technology and strategy". According to Gilad (in van Hamersveld, 1999, p XVII), competitive intelligence is used as a form of measurement in an organization to benchmark against another organization's ability to compete.

Competitive intelligence is built on information gathering about organization's competitors in the market. It is crucial for fixed line telecommunications operators in today's turbulent times to stay abreast of the activities of competition in the South African telecommunications business environment. The Chinese General Sun Tsu (in Pollard, 1999) maintained that to know oneself is to win half the battle but to know oneself and the enemy is to win the battle. The importance of knowing and understanding the organization's competitors is a vital ingredient in strategic marketing decision-making.

By understanding and predicting competitor moves in the market an organization is placed in a strategic position where it will be able to rewrite the future. Jakobiak (1999) says that competitive intelligence is a management tool that helps management to improve their decision-making capability. Van Hamersfeld (1999) points out that a primary reason for the popularity of competitive intelligence in the United States and Europe was the increasing pressure from Asia and the degradation and slowdown of market growth. Benchmarking and international best practices are management concepts that have their foundations in observing the behaviours of

others. Therefore, an imperative for the design and development of successful South African fixed line operator market strategy is the observation of the competitive behaviours that exist in the South African telecommunications market.

4.6.3.4 Component 3B: Market intelligence

According to Nauckhoff (1999), market intelligence is a systematic process involving the provision of data, information and knowledge insight to management for making the most reliable effective and efficient business decisions. Market intelligence focuses on five key areas. These are: contextual information on the organization's business environment (political, economic, social, technological and global), consumers (end users), customers, competition and information that resides inside the organization.

At the heart of an intelligent organization that constructively and proactively recreates its future lies a sophisticated, intelligent market intelligence system. Marketing intelligence is much more than traditional research whose main purpose in the past was to reactively engage in research activities to provide answers to management's questions. This traditional approach qualifies for organizations operating at level 1 (see section 4.4.3.1). In a pro-active intelligent level 4 organization, market intelligence (data about the organization's business environment, customers, competitors and internal organization information) is proactively gathered, analysed and transformed into information and made valuable through the new knowledge (interpretation, reliable prediction and foresight) it creates and disseminates throughout the organization.

The implications of this are that, in order to succeed, South African fixed line telecommunications operators must operate at level 4 information competency. Besides effective market intelligence, South African fixed line operators are also faced with a variety of strategic options from which to choose.

4.6.3.5 Component 4: Strategic options

A market strategy consists of different components. The market strategy is developed from two main components, namely identifying sustainable competitive advantages and using strategic

options. There are five options: competitive strategy development; market positioning strategies; strategies over the life cycle of an organization; relationship building strategies for developing strong relationships with key stakeholder groups, and strategies for operating at a global level. By combining these five strategy options South African fixed line operators can develop a market strategy that would enable them to compete in a sustainable way in the South African telecommunications market.

4.7 COMPETITIVE STRATEGY

A competitive strategy is developed for organizations to achieve sustainable competitive advantages over their competitors (Cravens and Lamb, 1993). Competitive strategy selection depends on a number of factors, such as, the industry in which an organization participates, the industry rivalry and the exact capabilities of the organization. Porter (1980) developed a competitive strategy model that is widely used to define the main competitive strategies that organizations can employ to compete successfully in an industry.

According to Porter (1980), an organization can compete on the basis of being a cost leader (that is to provide products and services at the lowest cost in the industry), differentiation (by improving the perceived value of the product and or service) and focus (concentrating on a particular market or segment in which an organization enjoys superior competitive advantage).

Du Plessis et al (2001) and Aaker (1998) add two additional competitive strategy dimensions to Porter's model. According to them an organization could use pre-emption or synergism. An organization is pre-emptive when it makes the first move into a certain field, such as Vodacom's move into prepaid services). By being the first mover, the organization acts before (pre-empts) other organizations in the market and gains a competitive advantage. An organization is synergistic when all the functions in an organization are working collectively and synergistically, leading to the creation of a sustainable competitive advantage.

These dimensions provide a wide but not comprehensive range of competitive strategy options available to an organization to compete. Building on the work of Grant (2002), Christenson and Overdorf (2000), Hamel (1996), Prahalad (1996), and others, a new competitive strategy

dimension for South African fixed line telecommunications operators emerges, namely a revolutionary competitive strategy.

4.7.1 Cost leadership strategy

Competition based on a cost leadership strategy is one of the most favourable positions for a fixed line telecommunications operator to occupy. A telecommunications operator that competes on a cost leadership strategy competes on the basis of lower prices charged for its products and/or services than its competitors. It is able to achieve this capability by means of lowering its overall cost structure to provide the product or service. For it to be successful, a low cost strategy must be sustainable (Pearce and Robinson, 2000).

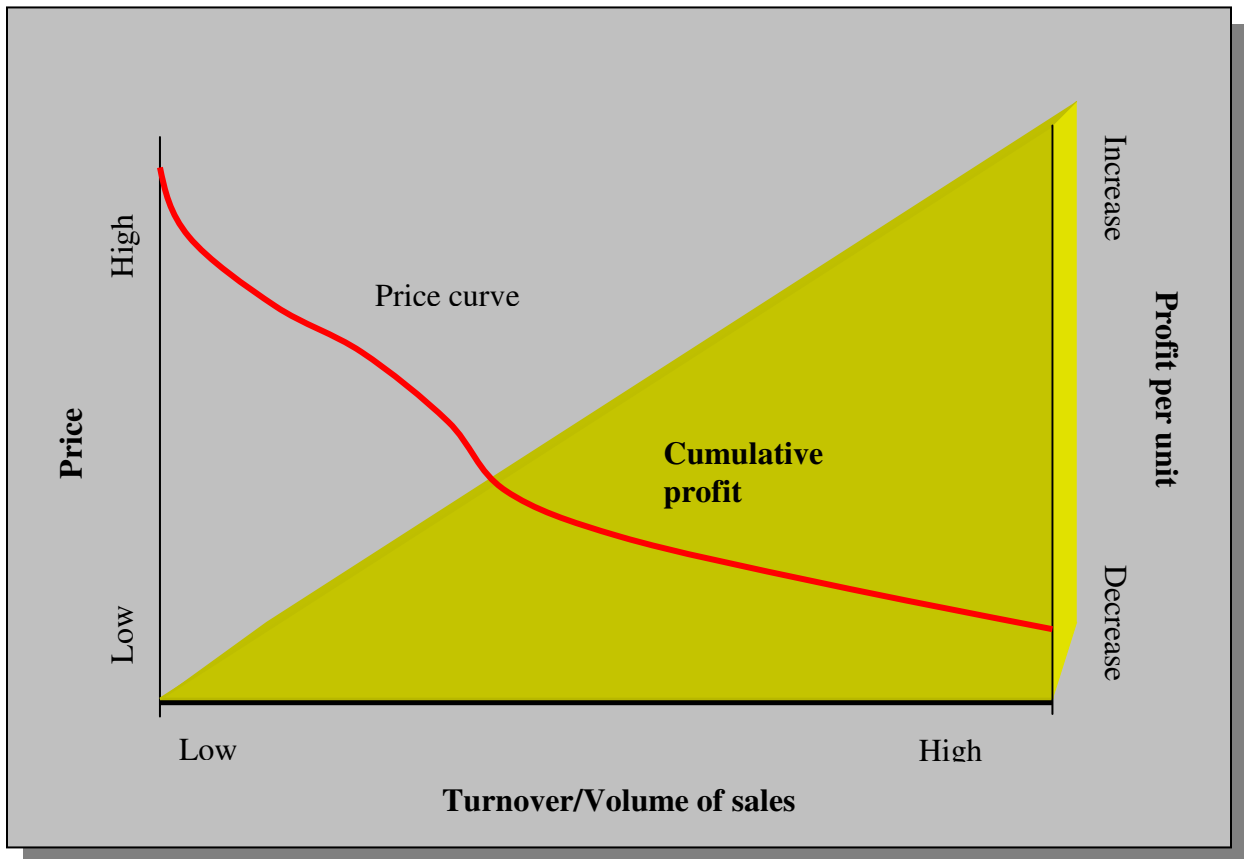
Typical areas where the fixed line telecommunications operator may reduce costs are to be found in creating efficiencies across the value chain, lower manufacturing input costs, such as using less expensive raw materials and labour, increasing productivity and resource usage (increasing the number of fixed lines to employee ratio), securing lower cost of capital, increasing its return on investment, lowering the cost of marketing telecommunication products and services and applying just in time (JIT) procurement methods.

In return, customers are charged lower prices for the communications value proposition. In this way fixed line telecommunications operators are able to secure a sustainable competitive advantage over their competitors. Lower prices than competitors are not the only advantage of a cost leadership strategy (Du Plessis et al, 2001). Other advantages that can be derived from this strategy are increased profitability leading to greater cash reserves that can be used to increase market share, fund new research and development initiatives and diversify into new areas of business opportunity.

Sustainable cost advantages are achieved by evaluating the value chain for cost leadership advantages, benchmarking these with competitors and determining the impact that these cost advantages will have on the five forces impacting on the organization. Dess and Miller (1993) state that sustainable cost advantages that give the organization an advantage in one or more

areas of the industry forces should become the foundation for the organization’s competitive strategy. Figure 4.5 depicts the cumulative profit-volume relationship.

FIGURE 4.5 CUMULATIVE PROFIT-VOLUME RELATIONSHIP



As indicated in figure 4.5, at high prices the volume of products and services are low and although profits are high, the resultant cumulative profits are low. However, when prices are low, as in the case of a cost leadership strategy, the turnover or volume of sales of products and/or services sold increases. Although profits per unit decrease, the cumulative profit increases. Many wholesalers employ this cost leadership strategy by reducing margins on individual per unit products, leading to a surge in the volume of products demanded and resulting in an increase in the cumulative profits of the organization. A cost leadership strategy can influence the industry forces in the following ways:

(1) Market rivalry. Sustainable low cost leadership could squeeze competitors out of the ICT market into other markets, thereby reducing the competitive intensity. Unrelenting price competition can have a disastrous effect on the health of a market as it could lead to the

destruction of all the market players in the longer term. Price competition in the airline industry is a good example.

(2) New market entrants. New telecommunications market entrants are deterred by the existence of a powerful cost leader in the industry. Having little or no experience in the market, the new entrant is generally unable to duplicate every cost advantage that the leader has.

(3) Buyer pressure. Customers who place great demand pressure on the low cost fixed line telecommunications leader to maintain low prices can cause key competitors that are unable to match the prices of the low cost leader out of the market resulting in a decline in alternative sources of supply for the product/services to the market.

(4) Substitute products. Low prices brought about by lowered costs can resist the entry of substitute products into the market. Cost leaders are able to defend their products to a much greater degree against substitute products for two main reasons. Firstly, the original product maintains its quality status as opposed to a substitute product that is generally perceived by customers to be inferior. Secondly, the low price makes the original product more attractive to customers in comparison to substitute products.

(5) Supplier price increases. Increased profits created through a cost leadership strategy allow the low cost leader to absorb cost increases from suppliers, resulting in the strengthening of the relationship with suppliers as they become more loyal to the low cost organization.

A cost leadership strategy is not a foolproof strategy with no risk attached to it. Risk accompanies all strategies. Pearce and Robinson (2000) point out the following risks that accompany a cost leadership strategy.

- **Ease of replicating cost saving activities.** The majority of low cost activities can be easily copied by competitors, resulting in the competitive advantage only lasting for a short time.
- **Reliance on cost leadership exclusivity.** Fixed line telecommunication operators who rely solely on cost leadership for competitive advantage without considering product differentiation must be convinced of the sustainability of the cost advantage. This is especially true for commodity-type products. A cost leader who hopes to sustain a profit margin over weaker competitors could face pressure from customers demanding lower prices. This could have a destructive effect on both the market leader and the challengers.
- **Uncontrolled cost cutting could disadvantage other competitive advantages.** The fixed line telecommunications cost leader's obsession with cost reduction initiatives could

seriously undermine the development of new competitive advantages in the area of product attributes and revolutionary product development. For example, new product development initiatives will suffer if the cost leader withholds research and development investment in favour of reducing costs.

- **Cost leadership advantages get exhausted over a period of time.** With the passage of time competitors learn to replicate low cost advantages, leading to a reduction or elimination of the competitive advantage. Competitive advantages that are not sustainable over time have a high degree of risk attached to them (Pearce and Robinson, 2000).

4.7.2 Differentiation strategy

A differentiation strategy involves sustainable advantages that enable an organization to provide customers with a unique market offering that they value. Successful differentiating strategies permit an organization to make a product or service market offering that customers perceive to be of greater value and are willing and able to pay a premium to obtain the offering. The premium can be called the “value premium” and the cost is referred to as the “differentiation cost” (Pearce and Robinson, 2000).

The selection of a differentiation strategy does not automatically guarantee a fixed line telecommunications operator a competitive advantage. Telecommunications organizations that opt to follow a differentiation strategy have to identify the differentiating factors carefully to ensure that competitors cannot replicate these easily. The selection of the basis for differentiation also has to be carefully thought out and backed by solid market intelligence and research to confirm that the differentiation factors will yield sufficient “value premium” to customers to command a “differentiation cost” (David, 1999).

Sustainable differentiation is achieved by evaluating the value chain for cost leadership advantages, benchmarking these with competitors and determining the impact that these cost advantages will have on the five forces impacting on the organization. Differentiation advantages that are sustainable and that give the organization an advantage in one or more areas of the industry forces should become the basis for the organization’s competitive strategy. Sustainable differentiation opportunities that provide the organization with a competitive advantage over

competitors in one or more of the industry force areas must be used to create sustainable competitive advantages. The industry force areas are as follows:

(1) Industry rivalry. Industry rivalry is seriously downplayed when an organization is able to differentiate its market offerings from its competitors. For example, Mercedes Benz has been able to differentiate its products and services in the mind of the customer over other car manufacturers. Mercedes is perceived to be of much higher quality than Toyota, for example.

(2) Buyer price elasticity. Telecommunications buyers are much less sensitive to prices for differentiated than non-differentiated market offerings. For example, most corporate customers are willing to pay a premium for network service availability and high quality services.

(3) New market entrants. Differentiation creates brand loyalty for a telecommunications operator's products and services. Once customers become accustomed to a particular market offering, they generally remain loyal to that particular market-offering brand unless something happens to change their perception of the offering. As a result, it becomes a major challenge to any new entrants hoping to capture market share, as customers will not easily switch their preferences to another brand.

(4) Threat of substitute products. In a differentiated market, product imitation constricts perceived differentiation. Product innovation can render a differentiation strategy totally meaningless. This is especially true for the fixed line telecommunications market.

A differentiation strategy is not flawless and can suffer serious setbacks. Among the setbacks that an organization pursuing a differentiation strategy can encounter is the rapid rate of technological innovation, and product and service cost.

- **Rapid pace of technological innovation.** Technological improvements that redefine the way value is created for customers can destroy an existing differentiating advantage by rendering its advantage obsolete. A good example of this is the new IP technology that allows making a long distance call using the Internet and paying local call charges. This new technology is attacking the long distance products that traditional telecommunications companies used to differentiate themselves from other organizations.
- **Product and service cost.** Low cost producers can effectively destroy a differentiation on the basis of lowering their cost to a point where the difference in prices charged becomes so great that it is impossible for the differentiation to maintain brand loyalty. In such cases, the

buyer may forego some of the differentiating features in favour of securing the offering at a lower cost.

4.7.3 Focus strategy

Sometimes a telecommunications operator who wants to compete in the market is unable to lodge a full-scale onslaught against the other telecommunications market competitors because of a lack of human resources, capital and/or some constraining factor such as lack of experience and scale of operations. In such cases, the telecommunications operator's participation cannot be excluded since a viable option would be for the organization to select a small market segment (niche) and concentrate its marketing efforts there. Telecommunications operators who pursue this kind of option follow a focus strategy. A focus strategy can be honed in on providing ICT products or services to a niche market by competing on the basis of cost leadership or differentiation (David, 1999).

Among the risks associated with a focus strategy are that competitors could be attracted to the focus market segment after waiting and watching to see how the focused organization is doing to determine the viability of the market segment. Focused organizations could become a take-over target for larger organizations wanting to broaden their market offerings. A serious risk associated with a focus strategy is the false perception that this strategy and not some customised low cost or differentiation factor is creating the competitive advantage.

4.7.4 Pre-emptive move strategy

The pre-emptive move strategy can be described as a competitive strategy that is used by a telecommunications operator who is the first to move into a market using a new product or service. A pre-emptive move strategy, however, does not necessarily always involve innovative products. Other moves that can be considered to be pre-emptive strategy are when an organization is the first to move into a new geographic area, such as taking up prime locations and leaving competitors with second-rate locations, or when an organization is the first to adopt a new manufacturing technique or technology and patenting it, thereby giving it a sustainable

competitive advantage over its competitors in the market. Organizations involved in research and development activities generally could be classified as first movers.

Multichoice in South Africa through digital satellite television can also be considered a first mover in the interactive television market with its introduction of TV mail (e-mail through the television) and TV shopping (shopping through interactive TV). It will also become the first broadcasting organization to provide pay per view video on demand services (user pays to view videos by requesting movies directly from interactive TV). Vodacom has also been a first mover in a number of innovative cellular product areas such as short message services (SMS) over cellular phones.

According to Du Plessis et al (2001), some of the important considerations that must be accounted for before embarking on a pre-emptive competitive strategy are innovation, resource commitment and pre-emptive move assumptions.

(1) Innovation. To be a “first mover”, a telecommunications organization must be in possession of some factor or factors that give it a competitive edge that enables it to make the first move before other market players. Stated differently, a first mover strategy requires that a telecommunications organization should have an edge over market rivals by being in possession of some factor or factors, such as, say, new technology, patented products or have access to geographic locations before any of the other market participants. To obtain these factors requires an organizational culture that allows risk taking and promotes innovative thinking

(2) Resource commitment. Innovation usually involves a high degree of risk and may be associated with high capital costs and resource commitment. The introduction of cellular telephony in South Africa, for example, required huge investment, resource commitment and a very high level of risk. If cellular telephony had failed to meet market expectations, the losses incurred would have been catastrophic to both Vodacom and MTN. The high level of resource commitment coupled with the high degree of associated risk acts as a barrier to entry and as a deterrent to potential competitors and new market entrants

(3) Pre-emptive move assumptions. A pre-emptive move strategy is based on the assumption that the telecommunications organization has an advantage over competitors and that they would not be able to replicate the advantage in the short run. This is not always the case, however, sometimes competitors are able to respond more effectively and efficiently than the pre-emptive mover. For example, a competitor could gain access to the market by being better than the first mover in a number of areas, such as marketing skill, having economies of scale or simply just being able to copy the advantage by gaining access to information inexpensively. Whatever the case, the important point is that an organization considering a pre-emptive strategy should carefully consider the assumptions made and ensure that they are valid.

4.7.5 Revolutionary strategy

Although Du Plessis et al (2001) and Aaker (1998) acknowledge Hamel's (1996) theory on revolutionary strategy, they do not recognise it as a formal competitive strategy. In this study, however, the researcher acknowledged the revolutionary theory as a competitive strategy that organizations operating in an environment experiencing rapid change employ. The rationale (see section 4.2.1.1) is that the change in some industries (such as telecommunications) is so rapid that one of the only sensible ways for an organization to survive is to create the future by looking for ways to disrupt the industry by continuously creating new products that satisfy customer needs (Robert, 1995, p 3). A revolutionary competitive strategy can be defined as a strategy that an organization deliberately employs to change the rules of an industry, reconstruct old paradigms and revolutionise an industry with new innovation. The introduction of digital technology in watch making by Texas Instruments, for example, is a good example of a disruptive strategy. Mobile telephones over fixed line phones are another example.

Aaker (1998) implies that strategies themselves should be revolutionary. The term "strategy" itself implies revolutionary thinking. However, a strategy itself that is dedicated to revolution as a means to compete cannot be dispelled. The fundamental purpose for deliberately implementing such a strategy in an organization is to compete against competitors on the basis of altering the rules of the industry. Microsoft, for example, follows a revolutionary strategy. Microsoft competes against itself to create revolutionary innovations over its existing innovations.

An organization that selects to compete on the basis of a revolutionary strategy creates and establishes processes throughout the organization to capture innovation and disruption. For example, human resource acquisition is focused on obtaining a diversity of “out of the box” strategic thinkers, an experimental, inquisitive organizational culture is encouraged, knowledge is shared openly across organizational functions, and performance and reward schemes are created to fuel revolutionary ideas.

The risks associated with a revolutionary strategy are very high, and include the following:

- **Success is not guaranteed.** Implementing a revolutionary strategy does not automatically guarantee success. However, if successful, the rewards can be substantial
- **Commitment across the value chain.** A revolutionary strategy requires commitment from all segments and employees across the value chain. If commitment is absent, the strategic intent will not materialise.
- **Organizational culture.** A primary requirement for the success of this strategy is an organizational culture that supports knowledge sharing, innovation and experimentation, and rewards maverick thinking.
- **Focus on the right things:** It is critical for an organization to focus on the right areas and potential customer needs. If the focus is incorrect, the effort will be wasted because the revolutionary innovations will not make an impact on customers.
- **Costs.** A revolutionary strategy can be very costly in terms of time, capital investment and human resources. Organizations that follow a revolutionary strategy should prepare themselves to spend large sums of money and use various resources that could ultimately yield a nil return on investment should the revolutionary strategy fail. However, should it succeed, the rewards could be very high.

4.7.6 Synergy strategy

Du Plessis et al (2001) and Aaker (1998) advocate synergy strategy as an additional dimension to Porter’s generic competitive strategies. Du Plessis et al (2001) point out that a synergistic competitive strategy leverages the collective business unit capabilities of an organization. The duplication of an organization’s business unit synergy cannot be easily duplicated because of the complex personal nature of business units. This creates a solid sustainable competitive advantage

for the organization that can last a long time. A synergy strategy where all the business units are synchronised to work synergistically, combining their individual capabilities to create a greater more powerful capability is a utopian situation. In reality, cross-functional teamwork across business units is difficult to achieve, for several reasons. One reason is the administrative relationships that exist between the co-ordinating headquarters and individual business managers.

Walker, Boyd and Lerréché (1999) point out that the administrative relationships between the headquarters and individual business units, managers and marketing employees as well as implementation of marketing and competitive strategies are influenced by each other. These relationships not only affect the implementation of a competitive strategy but also the synergistic relationships between individual units. Three major factors that affect a selected business strategy, according to Walker, Boyd and Lerréché (1999), and that would also have a major effect on organizational synergy are level of autonomy, degree of cross-functional sharing, and performance rewards.

- **Level of autonomy.** The level of authority that business unit managers enjoy will have a major influence on business unit synergy.
- **Degree of cross-functional sharing.** The level at which business units share functional programmes and facilities as well as information and knowledge will affect the degree of synergy created.
- **Performance rewards.** Performance rewards also influence synergy and business unit effectiveness. How an organization rewards individual business unit managers has a critical effect on both competitive strategy and synergy creation.

A competitive synergy strategy can be highly effective and efficient in creating successful sustainable competitive advantages for a fixed line telecommunications operator. However, its successful implementation will depend on factors such as the size of the organization (the smaller the organization, the easier it is to co-ordinate functional activities), the organizational culture and the type of organization.

It is important to note that before any particular strategy is selected, each alternative is carefully scrutinised to evaluate whether the organization has the capability to not only successfully

implement the selected strategy but is able to follow through with its strategy selection. In this regard, the organization must evaluate the resources available, timing, organizational structure, culture and the competitive strategies and market positioning of competitors.

Besides the components discussed above, another vital factor in an organization's marketing strategy is the organization's market positioning in respect to the market (Wilson and Gilligan, 1997). The different market positions that an organization can occupy will be identified and discussed as well as the strategies that can be used for each strategic market position.

4.8 MARKET POSITIONING STRATEGIES

Wilson and Gilligan (1997) point out that the importance of market position and its effect on strategy has led the organization's market posture to be divided into three categories, namely market leader, market challenger and follower, and market nicher.

Each of these market-positioning strategies will be discussed next.

4.8.1 Market leader

In most industries there is an organization that can be recognised as the industry leader. Such an organization generally has the largest share of the market. Through its pricing, advertising concentration, distribution coverage, technological advancement and the rapid new product and service introductions, it is able to establish the rules for competitive engagement. The organization's dominant stance in the market creates the standard for other organizations in the industry.

4.8.2 Market challenger and follower

Organizations who are not in an industry leadership position because they have less market share have two options for positioning themselves in the market. Firstly, they may opt to directly attack the market leader and other organizations aggressively (market challenger) or they could decide to pursue a non-aggressive stance by trailing behind the market leader (market follower).

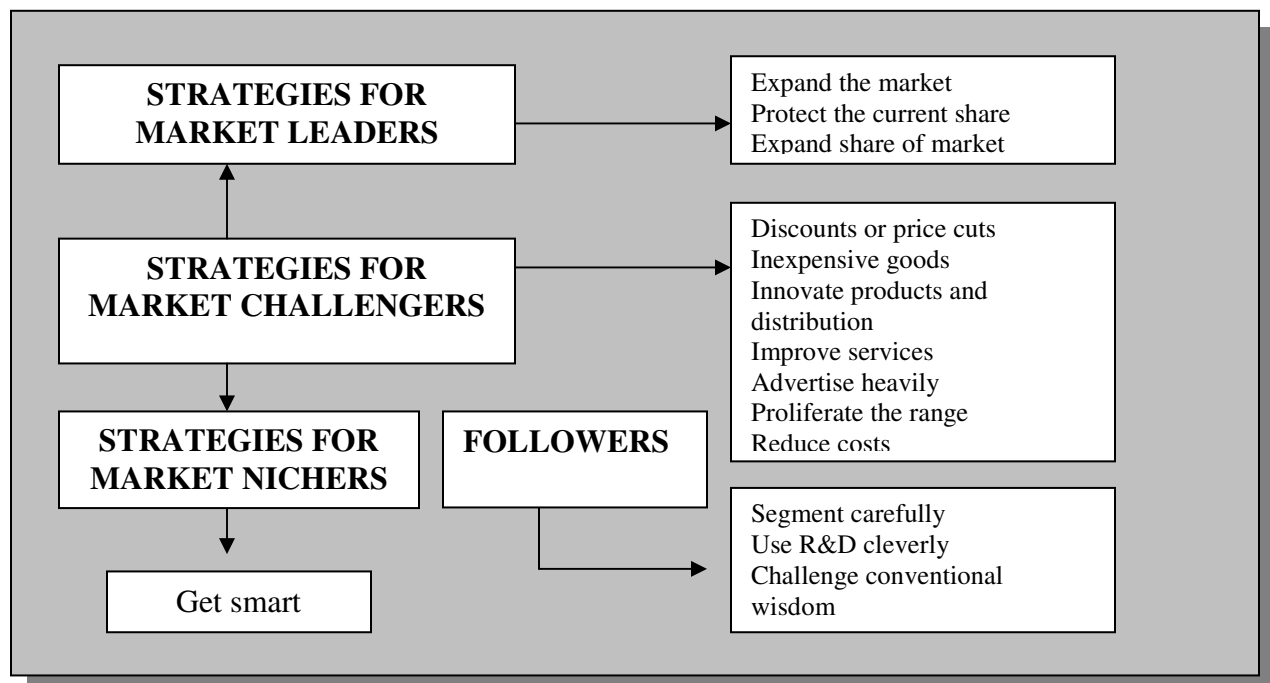
4.8.3 Market nicher

In almost every industry there are many organizations that do not have the resources to wage a full-scale battle on the industry. In such instances, these organizations are able to sustain themselves by identifying and focusing on a small segment of the market and specialising in creating value for this market.

4.9 STRATEGIES FOR MARKET LEADERS, MARKET FOLLOWERS AND MARKET NICHERS

The market positioning classification of organizations in an industry according to market leader, market follower and market nicher opens a new dimension of strategic marketing decision-making for South African telecommunications operators. The next section discusses the strategies available to market leaders, market followers and market nichers to indicate how these organizations might compete in the South African telecommunications market place. Figure 4.6 depicts the various strategies available to telecommunications operators, depending on their position in the market.

FIGURE 4.6 TELECOMMUNICATIONS MARKET POSITIONING STRATEGIES



Adapted from: Wilson and Gilligan . (1997, p 338)

As indicated in figure 4.6, each category of market participant in the telecommunications industry can adopt a number of strategic actions to enhance their survival and positions in the industry.

4.9.1 Strategies for market leaders

A market leadership position is an immensely attractive and enviable position for a telecommunications operator to occupy. Market leadership offers an organization scope to influence other market players, set the competitive pace and offers a higher return on investment (Wilson and Gilligan, 1997). Accordingly then, a market leadership position in the South African telecommunications industry would be highly sought after and hence open to constant attack by other market players aspiring to become the market leader. The pressure to maintain its leadership standing is therefore very high on the telecommunications market leader and if it wishes to maintain its dominant position, it will need to defend its position on an ongoing basis. Wilson and Gilligan (1997) point out that to enable a South African telecommunications market leader to protect its leadership territory, it has to focus its attention on three major areas, namely:

- establishing the best way to expand its market share
- determining how it can protect its existing market share
- identifying how it can increase its market share


Table 4.2 illustrates the actions that a market leader may take to protect its leadership position.

These positions are:

(1) Market expansion provides the most from which the market leader could gain. In building up this strategy, the strategist has to identify new users, uses and increased usage levels for the organization's products and services (Wilson and Gilligan, 1997). This can be achieved in a number of ways. For example, Telkom increased the number of fixed line subscribers by providing telephone line access to the rural areas of South Africa. It also created a subsidiary Internet company to increase the use of its fixed lines. Vodacom adopted the "Idols" programme on TV to stimulate usage of its network as customers were asked to dial in (using a Vodacom number) and vote for their favourite pop idol. The current drive by MTN and Vodacom to provide data and multimedia services is a way for these organizations to increase network usage.

Another example is Honda, who identified groups like women and commuters who previously did not use motorcycles. By developing a range of lightweight, small and economic machines Honda was able to appeal to this group of potential users. Through an extensive advertising campaign that emphasised convenience and style, Honda was able to expand the overall market. An important area that requires further discussion is establishing new uses for an organization's products and services. Sometimes an organization's products and services can be used for purposes other than what they were originally intended for. For example, furniture polish intended for home use has been extended to include use for boats, cars and other applications. By finding ways to increase the existing fixed line uses, the telecommunications market leader will be able to expand the current market.

TABLE 4.1 MARKET LEADERSHIP STRATEGIES

	Market expansion	Current market share expansion	Protect overall market
Market leadership strategies 	<ul style="list-style-type: none"> • Targeting non-user groups • Finding new product/service uses • Increasing the usage of the product/service 	<ul style="list-style-type: none"> • Increasing advertising • Providing price incentives • Developing new products/services • Increasing capabilities through mergers and take-overs • Geographic expansion • Distributor expansion 	<ul style="list-style-type: none"> • Strong market positioning • Establishing and refining sustainable competitive advantages • Continuous product innovation • Adopting a proactive stance • Customer relationship management strategies • Strong distribution relations

Adapted from: Wilson and Gilligan (1997, p 339)

(2) Protecting market share. One of the dangers to a market leader is that as it tries to expand the market it should never lose sight of its market share. Market leaders are very susceptible to attacks from challengers who are always in wait for the right opportunity when the leader is off guard to attack. For example, Coca-Cola and Pepsi, Bic and Wilkinson Sword and Kodak and



Fuji. Owing to its size, the market leader is always vulnerable to attack from challengers. The success of the challengers attack strategy will depend on the leader's ability to recognise its vulnerability and defend its strategic market positioning by implementing marketing strategies that neutralise attacks by challengers. Thus the telecommunications market leader should always be alert and prepared to defend its market share. One of the best-known ways for the telecommunications market leader to protect itself against attack is to be innovative. Kotler (1998, p 321) describes the act of innovation as the leader organization's refusal "to be content with the way things are and leading the industry in new product ideas, customer services, distribution effectiveness, cost cutting. It keeps increasing its competitive effectiveness and value to the customer. The leader applies the 'military principle of offensive': the commander exercises initiative, sets the pace, and exploits enemy weaknesses. The best defence is good offence. The dominant firm, even when it does not launch offensives, must at all least guard all of its fronts and not leave any exposed flanks. It must keep costs down, and its prices must be consonant with the value customers see in the brand. The leader must 'plug holes' so that attackers do not jump in".

Some of the ways that this can be achieved in the telecommunications industry are to revisit the traditional use of the fixed line telephone as a communication tool and to look outside this traditional function for innovative applications. For example, one of the greatest strengths of the fixed line is that it terminates at five million points. Crime is a major problem in South Africa and it is possible to use the fixed line to offer security services to customers. Other possible opportunities to generate additional revenues from the fixed line are linking the fixed line customer appliances to collect information about customer usage patterns (how much milk, cool drink, etc.) is used daily and storing this information in a central data warehouse. This information can be sold to organizations that have a need for such information. Metering the amount of electricity consumed is another example of an opportunity that can be used to sell services to the metropolitan councils. It is apparent that the cost of 'plugging holes' can be high, but cost of failure to do so and the subsequent loss of product and market share are greater.

(3) Expanding market share. Finally, the third option open to telecommunication market leaders to maintain their market standing is to expand their market share. This can be achieved in a number of ways, such as increasing advertising initiatives, improving distribution, providing

price incentives to buyers, introducing new products in existing markets, and expanding capability by forming strategic partnerships and alliances and through mergers and acquisitions (Wilson and Gilligan, 1998).

Some of the strategies that telecommunications market challengers may employ will be discussed next.

4.9.2 Strategies for market challengers

Telecommunications operators who do not lead the market have two choices with regard to positioning themselves in the market. They may choose to directly attack the market leader undoubtedly bringing about a full-scale war with the intention of taking on the leadership of the market (market challenger) or they may select to follow a much less aggressive strategy where they accept the status of the market leader and are willing to follow (market follower). Before making a choice, market challengers have to consider a number of factors such as the possible costs involved in directly attacking the market leader, the costs and resource requirements involved in attacking other organizations in the market, the probability of being successful, the potential returns, and management's willingness to carry out the strategy. Fruhan (1972) warns against the inherent dangers involved in unwise spending, pointing out that in mature markets, management could easily be lured by the promise of gaining market share only to find that such gains are not economically feasible. Dolan (1981) emphasises that competition is intensified in industries where demand is stagnant and where there are high fixed and high inventory costs. Whilst the need to capture additional market share in stagnant markets is understandable, it is important to know that such market share expeditions are costly and require major resource commitments that could lead to victories that are not economically feasible and could actually lead to the demise of the organization. Wilson and Gilligan (1997) state that by recognising this it should become clearer to the strategist that the option selected should be the most cost effective. The following options are available to a telecommunications market challenger:

- lodging a full scale direct attack on the market leader.
- staging an attack on organizations of similar size to itself but are insufficiently financed or are merely reactive.
- lodging direct attacks on smaller regional organizations.

The selection of any of these options necessitates careful consideration of various factors. The one factor that requires careful consideration, however, is the competitive consequences resulting from the choice. For example, directly attacking the market leader can be hazardous to the challenger and the degree of risk attached to this option is very high. Porter (1985) indicates that a market leader who faced direct attack could, because of its favourable market positioning, resort to price cutting, flood the market with new product offerings or engage in an advertising campaign that shuts the challenger out of the market.

At the same time, a challenger who successfully takes on the market leader can enjoy substantially high financial and power rewards. It is largely due to the benefits of successfully defeating the market leader that many market challengers are willing to select the high risk high return option of directly attacking the market position of the market leader. Wilson and Gilligan (1997) present some guidelines for challenger organizations on attacking the market leader. According to them, the challenger has to satisfy three basic conditions, namely

- The challenger must have a sustainable competitive advantage over the market leader either in terms of cost or differentiation.
- The challenger should be in a position where it is able to render the leader's advantages impotent by doing the same things equally well or better than the market leader.
- A preventative obstacle that prevents the market leader from retaliating should exist. Common obstacles that are found are the leader being prevented by anti-trust legislation and inflexible and high technological commitments that the challenger can bypass.

In general, the market challenger will normally meet all three these basic conditions. However, sometimes meeting one or two conditions is adequate. A successful attack by a market challenger depends on its ability to sustain its competitive advantage and to some degree on its ability to rearrange the design, manufacture and delivery activities of the business. Failure to achieve this means that the market challenger should opt to avoid attacking the market leader and rather go up against other vulnerable organizations in the industry that are the same size or smaller. Such a manoeuvre would be much more manageable and the chances of succeeding would be greater. Choosing whom to attack is not only critical to the possible future success of

the market challenger but also to determining the risks and costs involved (Wilson and Gilligan, 1997).

Besides these market strategy options, telecommunications operators could pursue the option of market follower.

4.9.3 Strategies for market followers

Sometimes a telecommunications operator can survive very profitably in a market by avoiding challenging the market leader and adopting a less proactive stance by following what other players in the market are doing. Levitt (1966), Kotler (1998) and others stress the benefits of pursuing a market follower strategy. Levitt (1966) points out, for example, how a strategy of product imitation could be equally profitable to a strategy of product innovation without carrying any of the associated development costs.

The attraction to avoid becoming the market leader and simply employing a market follower strategy can be very appealing to some organizations. Maintaining a follower strategy becomes more appealing when the follower organization is aware of costs and dangers associated with lodging an attack on the market leader. Lodging a full-scale attack on the market leader can have disastrous consequences for the organization lodging the attack. Such an organization must be sure that the challenge will be meaningful and will surely yield positive results. There is very little margin for error. Any meaningful attack on the market leadership position would generally require a major breakthrough in technology, cost, innovation, distribution or pricing that would give the challenger a superior competitive advantage that the market leader would not be able to counter in a short period (Wilson and Gilligan, 1997). It is highly unlikely that an organization without any of the sustainable competitive advantages mentioned would be able to launch a successful attack against an experienced and well-equipped market leader.

Consequently the majority of market participants have come to terms with this reality and have accepted to follow a positioning strategy that avoids threatening the superior status of the market leader. In this way the risk of counterattack and conflict from the leader is avoided. Through adopting a follower strategy, an organization usually becomes content with duplicating the

leader's actions by offering similar products and services, prices and service levels. In this way, market share is maintained and tends to remain stable over a time. This in no way implies that market followers are without any strategies, however, Saunders (1987) points out that organizations with low market shares share a number of common characteristics, including the following:

- They segment the market carefully thereby ensuring that they compete only in those markets where they enjoy significant strengths.
- They focus on profitability instead of sales growth and market share.
- They tend to concentrate on specialisation instead of diversification.
- They concentrate on adding value instead of mass production and maintain quality rather than quantity.
- Some organizations had leaders that were strong willed, committed and followed a hands on approach regarding every aspect of the business. These organizations were willing to challenge conventional wisdom.

From these characteristics it would seem that there is a need for telecommunications follower organizations to develop a strategy that is clear, concise and unambiguous. However, many market followers do not recognise the need for a concise strategy and generally appear to follow a strategy that is derivative and implicit (Wilson and Gilligan, 1997). Market followers should recognise this weakness and should strive to position themselves in such a manner that they are able to protect their customer base and that sales increase with the general growth of the market. Furthermore, they need to ensure that they are not an open target to the predatory nature of market challengers who could gain market share by poaching sales away, from smaller or equal sized organizations (see section 4.4.8).

Confronted with these challenges, telecommunications market followers need to determine how they will compete in the market and, particularly, how they will pursue the market leader. The telecommunications market follower will need to consider how it will reduce its vulnerability to aggression by other organizations in the market. In this regard, some of the elements that it might consider are stringent cost control measures, establishing a clearly defined product and service strategy and identifying new business opportunities early. Wilson and Gilligan (1997) state that where the market follower is perceived by customers to be imitating the market leader this can

have serious implications for the market follower. Customers may be confused, resulting in a decrease in purchasing from the market follower. Wilson and Gilligan (1997), identify three clear market-positioning postures that market followers may engage, namely

- **Following closely.** The market follower pursues the market leader with the closest possible marketing mix and market segmentation.
- **Following at a distance.** The market follower follows the market leader in such a manner that although similarities prevail between the two (market leader and market follower), differentiation does exist in some areas.
- **Following selectively.** The market follower selectively follows the market leader by careful selection of products and markets so that the possibility of direct competition is reduced.

The final market strategy option open to a telecommunications operator is a market niche strategy.

4.9.4 Strategies for market nichers

The final positioning strategy that a telecommunications operator can select is the market position of market nicher. There are a number of reasons why a telecommunications operator might opt to follow a single market or niche strategy. One of the main reasons for following a niche strategy is avoidance, where a small organization deliberately sets out to avoid confrontation with other large competitor organizations in the market. A market niche strategy involves the identification of a telecommunications market segment that other competitors in the market have ignored largely because they appear risky, small and perhaps unappealing. A market niche strategy is highly unlikely to succeed in industries where huge market power is an important factor for the realisation of economies of scale, such as the process and extractive industries. A market niche strategy can be advantageous to an organization however, because it creates the advantage and capability for an organization to react quickly to new market opportunities and potential threats in the market.

The selection of a market niche strategy is out of necessity rather than choice. Organizations that lack the necessary resources to challenge other organizations in the industry generally opt to remain subdued and concealed. They fear that if they are detected and perceived to be a threat,

they would be unable to withstand an aggressive competitive onslaught. As a result, they seek out and service select small market segments in which other organizations show disinterest. Sometimes they may identify a small market segment that can easily be captured, protected and, through energised perseverance and outstanding differentiation through service excellence, make profits (Jain, 1990). In contrast to Jain (1990), Wilson and Gilligan (1997) propose that a market niche strategy can also be followed by large organizations. They maintain that although market niching is common among smaller organizations, larger organizations operating in aggressively competitive industries and where the costs involved in securing a high position do not warrant an aggressive posture, may adopt this strategy. They point out that the advantages and profitability that can be derived from a market niche strategy can be very favourable if properly implemented. At the same time they concur with Jain (1990) that a market niche strategy can assist an organization by avoiding confrontation and direct competition.

An important question that arises is what makes a market niche strategy appealing to an organization. According to Kotler (1998), the attraction of a niche strategy is affected by the following factors:

- Through differentiating itself from competitors on the basis of establishing a solid reputation with customers, an organization can successfully defend its position.
- Normally its niche position is secure because competitors are not interested in the market segment or show a total disregard for it.
- The organization is adequately resourced to provide sufficiently for the niche market.
- An organization can generally generate sufficient profits because of its size and the market purchasing power.
- The niche market is normally not stagnant and does have room for future growth opportunities.

The factor that makes a niche strategy effective for telecommunications operators is specialisation. By focusing and specialising on a small market segment, the telecommunication market niche organization is able to secure its market position in that market segment. However, the dangers attached to a market niche strategy include changes to the nature of the market created by increased competition, new technological innovations that render existing technologies obsolete, economic downturns or some external event such as a flood or forest fire.

Such market shocks can be devastating to the market nicher if it leaves itself unprotected and exposed. Therefore, organizations that opt to follow a market niche strategy should ensure that they protect themselves adequately from these crises. A effective way to protect themselves from these shocks is to concentrate on multiple niching instead of a single niche (in this way, if something goes wrong in one market niche, the organization can fall back on the others.

Market niching offers good profitability opportunities. Wilson and Gilligan (1997) state that market nichers may choose to participate in the market in the following ways:

- geographic specialisation
- type of end user specialisation
- product or product line specialisation
- quality/price spectrum competition
- service specialisation
- customer size specialisation
- product feature specialisation

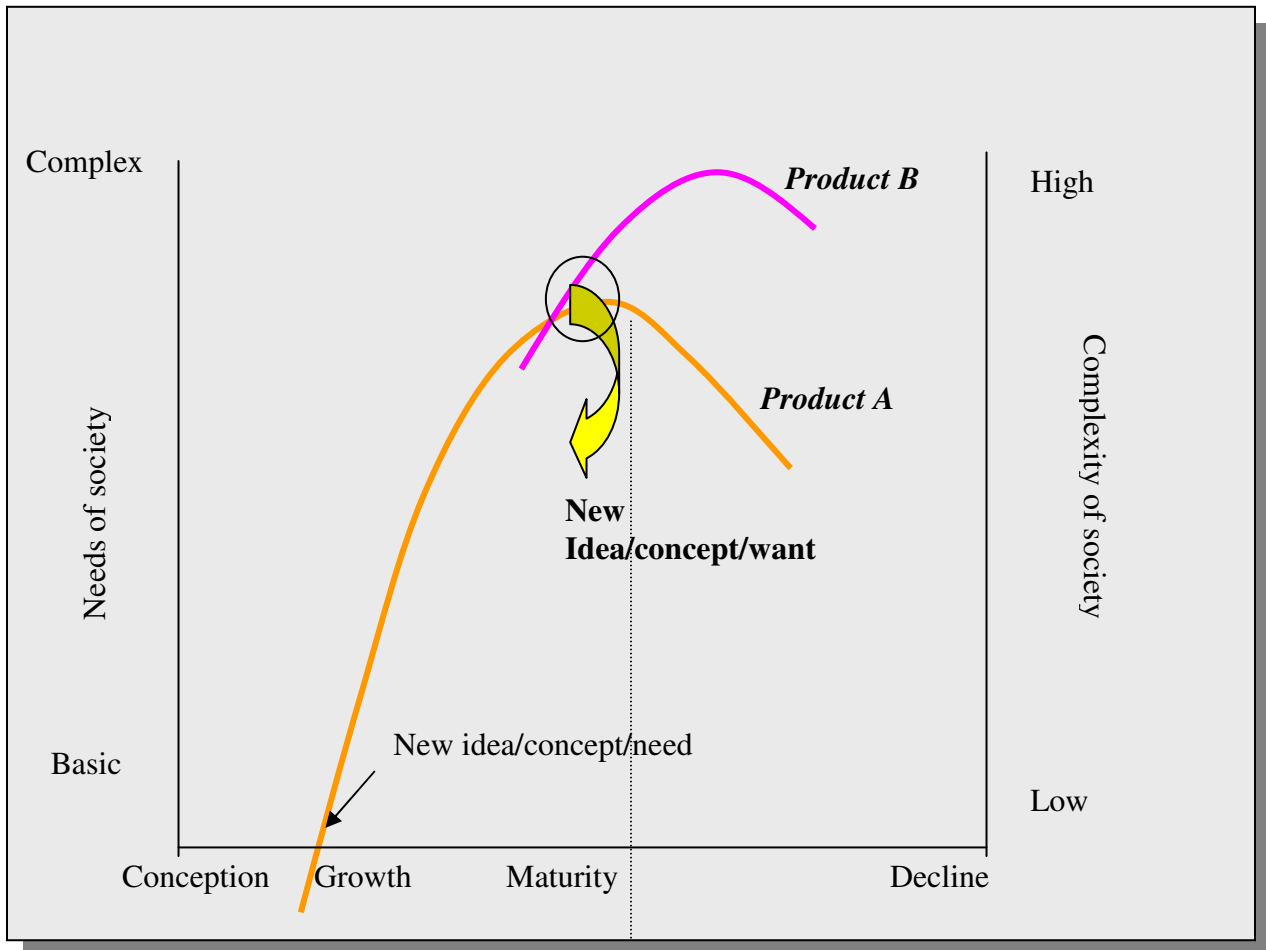
The positioning strategies that telecommunications operators can adopt in the telecommunications market place have been discussed. *These strategy options were investigated with Telkom management in the empirical research phase to determine their perception of what strategy Telkom should adopt.* The strategies employed in the different stages of the organizational life cycle will be discussed next.

4.10 ORGANIZATIONAL PRODUCT-MARKET LIFE CYCLE STRATEGIES

People need to satisfy their needs for survival. Maslow put forward the theory on human need progression that as people's basic needs are satisfied their need satisfaction becomes increasingly complex and they want more (Smit and Cronjè, 1992). The purpose of an organization is to satisfy society's needs. As societies progress, there needs become more sophisticated, which correlates with Maslow's hierarchy of needs. Human utility generally diminishes with increasing need satisfaction.

Figure 4.7 illustrates the organizational product-market life cycle for a product or service. As indicated in figure 4.7, people's hence society's needs can be categorised into basic and complex needs. At the same time, society can be either basic or complex. As societies become more sophisticated (complex), their needs become more complex.

FIGURE 4.7 ORGANIZATIONAL PRODUCT-MARKET LIFE CYCLE



Because organizations exist to create utility for society at different points, their lifespan follows a linear pattern of conception, growth, maturity and decline. The conception stage begins with the conceptualisation, identification or creation of a new product to satisfy a basic need in society. The growth stage involves providing this newly created product or service to satisfy society's need. As society's needs are satiated, the utility that people derive from the product or service diminishes to a point where the product or service no longer satisfies the need because society's level of sophistication and complexity has increased or the quantity supplied in the market is available in abundance and the product/service becomes a commodity. This results in decreasing

satisfaction for the product and/or service and its decline. In the case of a commodity, the oversupply results in a sharp decline in the value attached to the product or service. Therefore, it is important to understand that the organization's product-market life cycle undergoes a process of conception (identifying or creating a need and creating a product or service to satisfy the need), growth (when it produces the product or service to satisfy the need as the demand for the product grows) and eventual decline (when the organization's product-market ceases to exist because society's needs have become more sophisticated and people are no longer satisfied by the same product or service).

The duration of the organizational product-market life cycle depends on the rate of change of social sophistication. The longer it takes for social needs to change, the longer the organizational product-market life cycle duration for a specific product or service.

Organizations hoping to prolong their longevity in the market must be able to identify when a product will reach the maturity phase. Levitt (1960) and Albratt (2002) maintain that the basic needs of customers do not change but that a broad range of products and services exist that are capable of satisfying customer needs. This, then correspond to the fact that although basic customer needs do not change, they do become increasingly sophisticated and their basic needs can be satisfied as their sophistication increases by providing a broader range of products and services to satisfy the basic need. For example, transport is a basic need, but it can be satisfied with different products such as trains, aeroplanes, boats, cars and buses. However, as customers become more sophisticated, the products that satisfy their basic needs also become increasingly sophisticated. As indicated in figure 4.7, when a product such as product A approaches maturity, the organization should already have developed or acquired a new product, product B, that satisfies the same need but is in keeping with the increased level of customer sophistication. The new product starts a new life cycle and the organization's life cycle is extended. Alternatively, the organization could discover a new customer need and this would lead to the development of a new product/service and a new organizational and product life cycle.

Throughout the organizational product-market life cycle, the way that an organization selects to compete and its product-market strategies will depend on where it is in its life cycle. There are a

number of product-market life cycle strategies that an organization can follow, which will be discussed next.

4.10.1 STRATEGIES IN THE PRODUCT-MARKET CONCEPTUAL AND INTRODUCTION PHASE

Product and service saturation has become a characteristic of the market. One third of Fortune 500 companies no longer existed in their original form in 1983 (Venter, 2000). Every organization aspires to be successful and to extend its life cycle forever. World-class organizations such as Coca-Cola, South African Breweries, BT and AT&T have shown that to extend their respective organizational product market life cycles, they need to constantly innovate and create new market offerings.

4.10.2 GROWTH STAGE STRATEGIES

All organizations strive to achieve growth at some time in their organizational life cycle. Organizations wish to grow to increase shareholder value (stock price increases), increase market share and attract talented management. It is not difficult to grow, but sustaining growth over a period is a problem. In order to sustain growth successfully over the longer term, it has to be accompanied by good operational efficiency (Du Plessis et al, 2001). Figure 4.8 illustrates Aaker's different growth strategies (in Du Plessis et al, 2001).

FIGURE 4.8 DIFFERENT GROWTH STRATEGIES

	Present products	New products
Existing markets	GROWTH IN EXISTING PRODUCT MARKETS <ul style="list-style-type: none"> • Increase market share • Increase product usage • Increase frequency of use • Increase quality used • New applications for current users 	PRODUCT DEVELOPMENT <ul style="list-style-type: none"> • Add product features • Expand product line • Develop new generation products • Develop new products for the same market
New markets	MARKET DEVELOPMENT <ul style="list-style-type: none"> • Expand geographically • Target New segments 	DIVERSIFICATION <ul style="list-style-type: none"> • Related • Unrelated
VERTICAL INTEGRATION <ul style="list-style-type: none"> • Forward integration • Backward integration 		

Source: Du Plessis et al, 2001, p 239

Figure 4.8 depicts the various strategies available to organizations for creating growth. The growth strategies that an organization may employ are: growth in existing product markets, product development, market development and diversification and vertical integration.

4.10.2.1 Growth in existing product markets

Growth in existing product markets involves seeking out growth opportunities in an organization’s current market, using existing products in its product portfolio. This strategy aims to improve the marketing of the organization’s existing products in its present market with the intention of exploiting opportunities or capturing market share from its rivals. The strategic growth options that may be used to achieve these objectives are increasing existing market share, stimulating the customers use of the existing product range, increasing frequency of product usage, and finding new applications for the product (Du Plessis et al, 2001).

(1) Increase market share. To increase market share, marketers attempt to take away market share from other market players in the industry or they may resort to securing a greater proportion of new customers entering the market. Tactics used to achieve this include using effective marketing communication programmes, increasing distribution outlets or opting for a more drastic approach such as lowering the price of the product or service. However, a reduction in price usually results in a price war that can seriously damage the profitability of the industry. It is important to note that these tactics are of a short-term nature and that the marketer should always strive to achieve long-term competitive advantages that are sustainable.

(2) Increase product usage. This growth tactic involves increasing the amount of the product used. Here the marketer knows and understands the underlying reasons for purchasing the product and aims to increase the usage of the product by convincing customers of the benefits to be derived from using more of the product. For example, Tongaat Hulett the sugar refinery group, advertises how good sugar is and that it gives the customer energy. They advocate drinking more sugar to increase energy levels.

(3) Increase frequency of use. Increasing the frequency of a product's usage among customers is another growth strategy that is often employed. The tactics used to increase the use of an organization's product range from simple reminder advertising to creating new ways to use the product or service. For example, Pyotts provides recipes on their biscuit packaging that include their biscuits in the list of ingredients for making a new dish. The effect of this is to increase the usage frequency of Pyott's products.

(4) New applications for current users. Finding new applications to increase the usage of an organizations product or services is another strategy often used. This strategy involves finding other uses for a product or service. For example, Telkom introduced information call centres to provide customers with directory information. As customers call the centre for information, the existing fixed line is used and generates additional voice revenue for Telkom.

4.10.2.2 Growth through product development

In order to grow and prosper in the Twenty first century, organizations (especially those involved in the fast moving industries such as electronics, IT and ICT) will need to become truly strategic in their thinking and adopt a discovering, rule breaking and innovative approach to create future value for customers (see section 4.6.2 above). The importance of and benefits derived from being a first mover and speedy new product developer have already been described. Du Plessis et al (2001) state that the adoption of an innovation strategy implies a purposeful directed effort of the organization to be a first mover in the market and can be very costly because of the high development costs involved in new product development and product development features. A product development strategy includes the development of new products for existing markets, new generation products and product features (Schnaars in Du Plessis et al, 2001).

(1) Develop new products for existing markets. Developing new products for existing markets is a strategy that involves developing complementary products that can be provided to existing customers without sacrificing revenues that may be cannibalised from existing products. In developing new products for existing markets, an organization will seek to exploit synergistic advantages that may arise from areas such as distribution, brand equity, marketing and the benefits that can be derived from its image (Du Plessis et al, 2001).

(2) Development of new product features. Existing products tend to go through four general phases during the organizational life cycle (see section 4.11), namely introduction, growth, maturity and decline. These phases are referred to as the product life cycle. During the introduction and growth stages, the utility that society obtains from the product or service offering is insufficient to satisfy their basic needs therefore the market will absorb more.

However, as competitors enter the market and competition for the market intensifies, the supply of the product or service increases and the market becomes saturated. This is when the product reaches its mature stage. In this stage customer utility diminishes as a result of increased supply of the product or service. To survive organizations resort to adding features to existing products to make them more appealing to customers. For example, Telkom has added many new features such as voicemail (callers can leave message in a recorded voice box that the receiving party can

retrieve later), call barring (customers can bar certain numbers from being dialled), call divert (customers can divert a call to another number) to the existing service to make it more appealing to customers.

(3) Develop new generation products. Hamel and Prahalad (1994) state that competition is no longer about capturing market share (short term) but more about competing for the future (long term). They maintain that in competing for the future, the race is on to see which organization will reach the future first. Technological innovation, regeneration and disruption seriously threaten the security of market leaders. If they intend and wish to maintain their positions, they will need not only to be aware of new technological developments but will also have to actively participate in creating the future. Customers still have many unidentified needs of which they are unaware of and the future role of the organization is to help customers identify these needs (Hamel and Prahalad, 1994). For example twenty years ago the cell phone was not even considered by customers yet today it has become a necessity for many. New product innovations and discoveries can shape the organization's future and extend its longevity whilst simultaneously transforming existing products into obsolescence (Robert, 1995).

4.10.2.3 Market development

One of the growth strategies that an organization can use to accomplish growth and extend its life cycle is market development. Market development involves identifying new markets to serve, using the organization's existing products and services. Market development can take place on two levels. By geographic expansion, an organization could expand on a national and international basis. The other level is for an organization to target new market segments.

(1) Expand geographically. Geographic expansion means that in order to grow, an organization finds new geographic areas to provide its existing product or service offerings. These new geographical areas can be either within or outside the country. Nando's chicken franchises, for example, opted to grow its markets by opening new franchises both nationally and internationally in Australia, Malaysia, Botswana and, more recently, the US. MTN, Vodacom and Esi~tel's expansion into Africa to generate new revenues is another example of geographical

expansion. A decision to expand to other countries involves a number of important marketing considerations. Marketing environments change from country to country. Customer cultures and preferences have to be seriously considered before a decision is made to transfer an existing concept into a new market.

(2) Target new market segments. Market growth may also be achieved by targeting new market segments. This strategy involves providing existing organization products and services to new segments in the market. For example, cellular phones were initially introduced for the South African business market segment. Later, it was established that the teen market segment is a very profitable market and cellular phones were then targeted at the teen segment.

4.10.2.4 Diversification

Diversification may be used as an alternative growth strategy. Although dynamic, Du Plessis et al (2001) point out that diversification as a strategy can also be a dangerous choice. The danger lies in the organization's movement into unknown areas where it is inexperienced and lacks the required expertise for effective competition. A diversification strategy may be portrayed as the choice of an organization to enter product/markets that are alien to the organization's existing product/markets. There are two types of diversification, namely related and unrelated diversification.

(1) Related diversification. Organizations that follow a related diversification approach either develop customers or products internally that are similar to its existing business. In this way the organization can achieve economies of scale and synergy by sharing its resources such as brand equity, research and development capability and facilities, marketing skills and distribution capabilities. For example, Spescom acquired US-based Altris software to complement its existing electronic document management suite of products and services. By diversifying into a related business such as Altris, Spescom was able to extend the capability of its existing product and service offerings.

(2) Unrelated diversification. Unrelated diversification takes place when an organization ventures by expanding to previously unknown areas and products. For example, Camel cigarettes

venture into the clothing and footwear market was unrelated diversification. Unrelated diversification can be a serious threat to an organization because it is entering new product/service areas in which it has no experience. This may result in the total failure of the organization.

4.10.2.5 Integration as a growth strategy

An organization may also secure growth by using an integration strategy. Integration occurs when an organization combines some levels of the distribution system in such a manner that they are able to work systematically as an independent system. Vertical integration takes place when an organization takes control over levels above or below its own level. These may be either upstream or downstream capabilities that involve the flow of products between the organization, its suppliers and customers (Du Plessis et al, 2001).

(1) Forward integration. Forward integration occurs when an organization takes control over the distribution of its products or services such as when a manufacturing concern creates or buys out its own retail outlets.

(2) Backward integration. This type of integration occurs when an organization such as a manufacturer, integrates upstream with its suppliers or direct raw material sources. Here the organization takes full control of ownership over the supplier or raw material source.

(3) Horizontal integration. In a horizontal integration strategy, an organization establishes control over competitors, resulting in a reduction in competition and an increase in the organizations market share and hence profitability. Careful attention must be paid to the regulatory regime where such a strategy can easily be perceived as anti-competitive.

4.10.3 STRATEGIES IN MATURE STAGE

The rapid rate of change will at some point impact on an organization's industry. Organizations offering a particular type of product or service in the market will reach a mature stage because from the introduction of a new product or service in the market customer utility increases at

diminishing rates. This means that at some time, a product or service will reach a product-market saturation point and the market for that product or service will become mature. Consequently, organizations must learn how to cope with a mature product-market. Usually when a product reaches the mature phase of its product-market life cycle, there are tell-tale signs referred to as “shakeout”. “Shakeout” occurs when weaker non-proactive organizations fall out of the market through failure or market withdrawal or are digested by other organizations in the market (Walker, Boyd and Lerréché, 1999). Growth strategies are equally relevant during the product-market maturity stage and can be applied quite effectively (see section 4.10.2). However, three important points should be noted:

- During the mature product-market stage, organizations are unlikely to find new customers for their mature product/service offering.
- A crucial objective of organizations will be to protect their existing customer base.
- Organizations should constantly be aware of the stage of their product-market and identify when the market is entering the mature stage early.

Organizations that survive the “shakeout” period should pursue the strategy of retaining their existing customer base and strengthening their competitive positions. This will involve three marketing actions, namely to secure customer retention and loyalty through increased satisfaction, to persuade, remind and encourage repeat purchasing by customers, and to introduce new product and service offerings (identified during the growth stage) to the market.

The next stage in the product-market life cycle is the decline stage.

4.10.4 STRATEGIES IN PRODUCT-MARKET DECLINE STAGE

When a product-market enters the decline stage, management must make the critical decision whether to remain in the product-market, divest from the market or liquidate their organizations. The option selected will depend on various factors, and there could even be an opportunity to increase market share and hence profitability (Du Plessis et al, 2001).

4.10.4.1 Attractiveness of declining markets

Before an organization embarks on any decision, it is a prerequisite to carry out market analysis to identify the relative market attractiveness. Walker, Boyd and Lerréché (1999) state three factors for consideration before any conclusive decision is made. The conditions of demand, exit barriers and the intensity of competition. These factors are very important and will be discussed next.

(1) Conditions of demand. There are various reasons for a decline in demand in a product market. Macro forces, such as technological innovation and advancement, create new varieties of a product that cater for a basic need and are very often accompanied by lower prices and improved quality over existing products (e.g. cell phones for fixed line phones and electronic calculators for slide rules). Regulatory change also causes shifts in customer demand (e.g. higher taxes and banning of smoking in public places caused many people to stop smoking and lessened demand for cigarettes). Demographic factors, such as changing customer habits can lead to serious declines in demand (e.g. fewer couples are having more than one child, which lessens the demand for baby products). Declining demand rates will influence the organization's decision on whether to remain in the product-market or to withdraw gradually or immediately.

(2) Exit barriers. Sometimes an organization is faced with very serious exit barriers that it has to consider carefully during a product-market decline stage. High exit barriers make an industry extremely unattractive during the product-market decline stage. Huge capital investments that are not flexible to conversion for other uses can be a serious barrier to exiting the market. Another factor that may act as a deterrent to market exit is the level of involvement of organizational assets or resources in the organization's other business units or business processes.

(3) Intensity of future competitive rivalry. One of the most important considerations to be taken into account when deciding on exiting a product-market is the level of competition in the market. Although there may still be substantial clustered demand opportunities in the declining product-market, it might be unwise for an organization to remain in the market because of the presence of powerful competitors.

The strategies that can be used in the product-market decline stage will be examined next.

4.10.4.2 Product-market decline stage strategies

According to Du Plessis et al (2001) there are five strategies available to an organization may in the product-market decline stage: exit the market through liquidation or divestment, continue its presence in the market and use harvesting, select a maintenance strategy, select a niche strategy or become a profitable survivor.

(1) Divestiture or liquidation strategy. This strategy is followed when an organization realises that the chance of future survival in this product-market is slim due to poor market environment conditions or stronger competitor presence and activity. By selling during the early stages of product-market decline, an organization stands a better chance of recouping more of its investment than by having waited until later. Early liquidation increases the organization's chances of finding a potential buyer. It also will contribute to the organization's cash flow position and overall financial risk that could arise from total failure.

(2) Hold and maintain. In this strategy, an organization opts to maintain the same levels of investment as during the product-market maturity phase so as not to compromise product quality, production capability and customer satisfaction, quality of service and customer loyalty.

(3) Harvesting strategy. In a harvesting strategy, the telecommunications organization aims to maximise its cash flow over a short period. Here the organization gradually reduces its investment and its cost, like what Telkom SA is doing at the moment. Products are managed to achieve maximum profitability and lowest cost whilst simultaneously reducing production volume.

(4) Niche strategy. The niche strategy was discussed in section 4.10.4 above. Suffice it to say that this is a possible strategy that an organization can employ in the product-market decline stage.

(5) Profitable survivor. A remaining competitor with a strong market share position, resources and sustainable competitive advantages in a declining product-market who identifies that the declining market is still attractive, may select to increase its investment and aggressive stance in

the market with the intention of establishing itself as the market leader until the final demise of the market. In pursuit of its objectives, the organization could resort to using aggressive tactics to encourage remaining competitors to leave the market.

4.11 KEY STAKEHOLDER RELATIONSHIP BUILDING STRATEGIES

Du Plessis et al (2001), Gordon (1998) and Treasure (2002) state that relationships are really the main assets of any organization. They point out that capital equipment, knowledge assets (such as patents, copyrights and intellectual capital), products and know-how are not real assets. Instead the relationships that an organization builds are the assets that drive its long-term profitability and sustainability. Du Plessis et al (2001) contend that organizational relationships present an organization with long-term lower risk revenue opportunities and provide the necessary opportunities to grow its revenues and profits.

Because relationships are so important to an organization, every effort should be made to build solid relationships with all the organization's stakeholders. This means building a relationship chain linked by the individual relationships with employees, shareholders, customers, retailers, external stakeholders and others involved in the creation and delivery of value to customers (Du Plessis, et al, 2001). The strength of the customer relationship management process will be determined by the strength of the individual stakeholder relations. Any weakness in the synergistic relationship between an organization and its stakeholder will, not only seriously undermine, but also weaken the organization's customer relationship endeavours. The links in the relationship chain will be discussed next.

4.11.1 Employees

South African fixed line telecommunications operators who wish to build long-lasting customer relationships and ensure consistent value for customers must first create value for their employees. Heskett, Thomas, Loveman, Sasser and Schlesinger (1994), Albratt (2000) and Thomas (2000) state that customer value is created when customers are satisfied and customer satisfaction is a variable that is dependent on productivity. According to Robbins (1998, p 23), "An organization is productive if it achieves its goals and does so by transferring inputs to

outputs at the lower cost". Although Robbins associates productivity with number crunching, Haskett et al (1994) measure productivity according to value created. They maintain that customer satisfaction is, to a large degree, influenced by the value of services and that *satisfied, loyal and productive employees create that value*.

Employee satisfaction is the result of high quality support services, policies and processes that make it possible (empower) for them to deliver exceptional results to customers. Employee satisfaction is influenced by job satisfaction. Robbins (1998) defines job satisfaction as a general attitude towards one's work. Gordon (1998) also maintains that relationships with customers will only stabilise and become committed after the organization strengthens its relationships with its employees. Therefore, South African fixed line telecommunications operators should build solid relationships with employees first before they embark on customer relationship strategies.

4.11.1.1 Employee relationship building strategies

The importance of employees to the South African fixed line telecommunications operator's future profitability cannot be discounted. Therefore the way these organizations build relationships with employee groups is critical for the development of a strong base for future success. Some of the core principles that South African fixed line telecommunications operators can adopt to build loyal, productive and profitable employee relationships include the following:

- Treat employees as people and with the respect they deserve.
- Provide opportunities for employee development and growth.
- Establish processes throughout the organization that motivate and fire up employees to perform.
- Create a culture of shared values and open expression.
- Develop an employee database that profiles every employee in the organization in terms of skills, contribution to value adding, and cost to the organization.
- Create a conducive work environment that encourages and stimulates strategic thinking, creativity and self-fulfilment.
- Promote mutual trust between employees and the organization.
- Share information about products, services, competitors and challenges for the future with employees.

- Promote freedom of expression, team collaboration and organizational ownership between all employees.

Having discussed the importance of employee relationships to the South African telecommunications fixed line operator and outlining some of the core principles that should be used in developing employee relationship strategies, the next relationship that will be discussed is that of the South African telecommunications operator's customers.

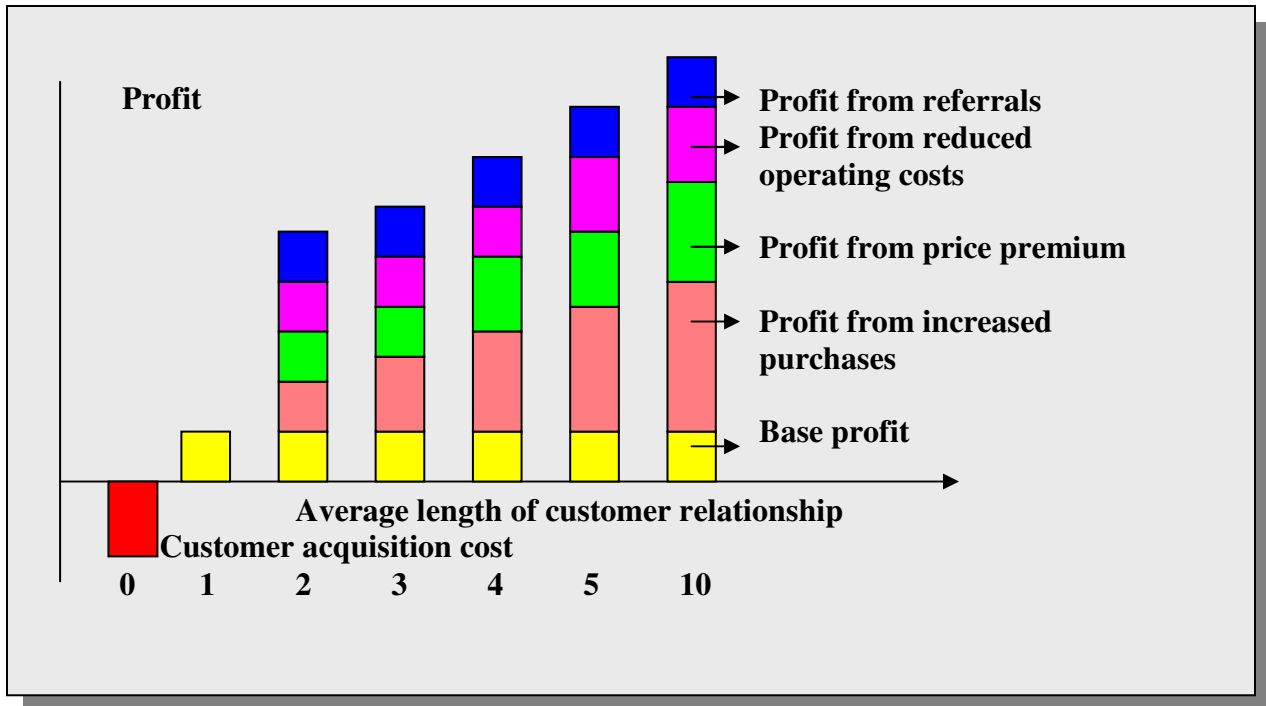
4.11.2 Customers

Customers are the *raison d'être* for an organization's existence yet many organizations continue to focus their attention on acquiring new customers and neglecting existing customers, instead of concentrating on both. Managing customer relationships is one of the most important requirements for organizational survival and prosperity. According to Du Plessis et al (2001), it is generally acknowledged that marketing recognises the need for customer strategies that aim to acquire and retain customers. This is the focus of customer relationship management.

4.11.2.1 Link between profitability and customer loyalty

According to Reicheld et al in Heskett et al (1994), customer loyalty can produce profit increments of 25% to 85%. The more loyal a customer is to an organization, the more profit is generated. According to Cannie and Caplan (1992), customers must never be seen against the initial revenue that they bring in, instead the customer's revenue and profitability must be viewed against the life of the customer. This means that the longer a customer is retained, the more profitable that customer will be to the organization. An existing customer who is loyal to Telkom for example, will spend approximately R4 800,00 per annum multiplied by the number of years that the customer remains loyal. This means that a customer who remains loyal for ten years will spend R48 000,00 (this is the lifetime value of the customer). The lifetime value excludes any increased purchases, profits from price premiums, profits from reduced operating costs and profits from referrals that can be realised during the customer's lifetime with an organization. Figure 4.9 represent the impact of retaining customers on the profits of an organization.

FIGURE 4.9 THE IMPACT OF CUSTOMER RETENTION ON PROFITS



Adapted from: Heskett et al (1990)

From figure 4.9 it is clear that in the beginning at year 0, there is a cost to acquire a new customer. These costs are incurred because of the costs involved in attracting, retaining and serving a customer (for example, advertising and promotions). However, once customers begin their relationship with the organization, the base profit derived from the customers grows over time by other factors, such as increased purchases that they make during their relationship with the organization, profit from charging a premium because over time the customers form a bond with the organization and enjoy doing business with the organization, profits from reduced operating costs and profits that the organization gets from other customers that the first customers refer to the organization.

4.11.2.2 Strategies for building customer relationships

This section will briefly elaborate on some of the key principles of relationship marketing for building sound customer relationships and profiting from these. In order to build sound relationships with customers and profit from the relationship organizations should seek to (Du Plessis et al, 2002):

- Know each of their best customers and treat them well.

- Understand the customers business and unique needs and wants.
- Create continued value for customers by working with them for mutual benefit.
- Identify those customers who are profitable (not all customers are profitable).
- Decide on which relationships to continue and which to end (the general rule is if a customer is a cost and is unlikely to become profitable, fire the customer).
- Know the 'cost to serve' the customer well.
- Recognise and understand that some customers will be profitable tomorrow.
- Customer segmentation should be done only after understanding and knowing the customer base.
- Help existing profitable customers to become more successful.

From this it follows that fixed line telecommunications operators should consistently seek to build strong relationships with their profitable customers.

4.11.3 Channels

Intermediaries refer to organizations that promote and distribute an organization's products and services to customers (Du Plessis et al, 2001). Coca-Cola SA, for example, makes use of various channels such as SSMEs, hyperstores and retailers, to distribute its products. In some cases, organizations use many channels to serve customers while others use only one or two channels. Most manufacturing concerns make use of multiple channels (wholesalers and retailers) to get their products to customers. However, new technology and innovations in product distribution such as mail order and electronic commerce using the Internet and interactive television, have removed the traditional wholesaler and retailer from the distribution chain.

According to Du Plessis et al (2001), there is growing recognition that organizations hoping to become successful will need to create an effective supply chain that is better than those of their competitors. Superior supply chains are created through synergistic relationships that exist between an organization and its distribution channel intermediaries. To create this synergistic relationship, organizations have to forge closer relations with channel intermediaries by indulging them the same way they would their best customers. Gordon (1998) explains that there

are three main reasons why organizations should strive to establish solid relationships with their customers:

- (a) Before end customer value can be secured channel intermediaries must first be enlisted and enrolled.
- (b) The intermediary plays a critical role by adding value to the product, a function that the manufacturer cannot easily replicate.
- (c) The intermediary as the customer facing frontline is the foundation for creating new value for customers and a vital contributor to cost elimination from existing systems.

Thus, in order to create value for end customers, fixed line telecommunications operators must first form a bond with their channel intermediaries. Building relationships with intermediaries is an important competency that fixed line telecommunications operators will need to compete for the future.

4.11.3.1 Strategies to build relationships with channel intermediaries

Gordon (1998) outlines ten steps for organizations to build solid relationships with their intermediaries. These ten steps can be regarded as the main principles for establishing firm channel relationships. The ten channel relationship building principles that fixed line telecommunications operators must adopt are:

- Have mutual respect (there must be mutual respect between both parties).
- Create and take ownership of a relationship development process (in order to ensure that the channel relationship strategy is implemented, the fixed line operator must ensure ownership).
- Recognise channel intermediaries as customers first and treat them as such.
- Recognise the channel intermediary as an independent business.
- Never plan in isolation, always plan together (make the intermediary a part of the planning process to ensure commitment).
- Work closely together to innovate.
- Remove unnecessary cost from the system.
- Ensure that the end customer and market are always aligned to the operator's operations.
- Ensure consistency throughout.
- Provide telecommunication products and services that are bundled.

Besides building strong relationships with channel intermediaries, fixed line telecommunications operators must also ensure strong supplier relationships are maintained.

4.11.4 Suppliers

The establishment of meaningful and ongoing strategic supplier relations is a key ingredient for organizational success (Gordon, 1998). In the South African telecommunications industry, for example, fixed line service providers such as Telkom are highly dependent on suppliers to provide new technology and applications to ensure that existing technologies are updated before the old technologies become obsolete. Telkom and Alcatel have a very good synergistic relationship between themselves to develop new technology and applications. SNO too, has formed strong supplier relationships, (e.g. Transtel and Ericsson) (see section 3.2.6). *Telkom's dependence on supplier relationships was investigated with Telkom management in the empirical research phase to determine their perception of how dependent Telkom is on its suppliers.*

In some industries, especially knowledge intensive industries, such as communications, electronics and aircraft manufacture, that are highly dependent on expensive research and development activities, suppliers are often involved in research and development activities on behalf of their customers thus making the need for closer co-operation even more important. Suppliers can also contribute significantly to the organization's development of sustainable competitive advantages. Woolworth's South Africa and Marks and Spencer in the UK rely heavily on their suppliers by signing exclusivity agreements with them to buy out all their production in return for total exclusivity. These suppliers do not supply their products to anyone else in the market except to Woolworth's in South Africa or to Marks and Spencer in the UK. This creates a sustainable competitive advantage for these organizations.

4.11.4.1 Strategies to build relationships with suppliers

Gordon (1998) contends that an organization should treat suppliers the same as other key stakeholders. However, several major ingredients are required for a successful organization-supplier relationship. Gordon (1998) states that the following are some of the key requirements (principles) for developing sound supplier relationships:

- Establish a data warehouse that describes the supplier and their performance.
- Assessment of the organization's suppliers to evaluate their contribution to the organizations profitability, future potential for profit contribution and list the suppliers that contribute the most to profitability.
- Constantly compare suppliers with each other and their importance for the organization.
- Put a mutual value creation process in place between suppliers and organization.
- Establish a governance process between the parties.
- Manage suppliers in the same way as customers.
- Develop mutual trust as the foundation between suppliers and the organization.
- Share information with each other.

The principles mentioned above provide a foundation on which the relationship is established. Apart from suppliers, the organization is also involved in a strategic relationships with its shareholders.

4.11.5 Shareholders and investors

A prerequisite for the organization's success is the establishment of long-lasting and trustworthy relationships between an organization and its owners (shareholders and investors). According to Gordon and Peck (in Du Plessis et al, 2001), in some organizations where there is an increasing lack of loyalty between the organizations and their investors, the relationship between these parties has become impersonal and anonymous. Technology seems to be the main culprit in causing these relationships to stray (shareholders trade over the Internet to buy and sell shares without becoming personally involved in the organization). In such cases, the shareholders exercise relatively no influence over the organization's relationships. An organization's image can be affected by its owners, therefore it is important for an organization to be owned by the right owners (Du Plessis et al, 2001). The many forms of ownership are outside the scope of this study and will not be discussed except to mention that the relationship that exists between an organizations management and its shareholders can have a positive or negative effect on the organization and will depend on the timing of the shareholder/financier/organization relationship. Hence, there is a need for organizations to secure excellent relations with each of their shareholders as well as financiers.

4.11.6 Communities

Another important stakeholder today is the community in which the organization operates. Throughout the world organizations are increasingly becoming aware that in order to succeed they need to act on their social conscience by becoming actively involved in community development projects that promote the overall well-being of society. According to Ryan (2002, p 14) “Companies are learning that pure profit is no longer good enough. Community involvement determines reputation - which affects the share price”. Hence building strong community relationships is an important factor in building strong brand equity. Social responsibility is an important ingredient in business sustainability (Grayson in Ryan, 2002). Tredoux (in Ryan 2002) maintains that true corporate citizenship is not a shallow concept, and true community involvement means being involved practically in every aspect of community life.

4.12 STRATEGIC MARKETING FOR FIXED LINE TELECOMMUNICATION OPERATORS IN SOUTH AFRICA

In section 4.6.2, the researcher developed a specialised strategic marketing model appropriate for telecommunications fixed line service providers. The researcher indicated that this model would be used to evaluate and develop a market strategy for fixed line telecommunications operators. Since Telkom SA is the most prominent and oldest existing fixed line telecommunications service provider in South Africa, it was selected for the application and development of a market strategy for fixed line telecommunication operators.

This section describes the theoretical marketing strategy framework (see figure 4.4 section 4.6.2) used to develop a market strategy for fixed line telecommunications operators. Then, using the findings the business environment analysis, the researcher develops possible market strategies that Telkom could apply in the South African ICT industry Marketing strategy which falls in the domain of functional strategy, will not be discussed here.

From figure 4.3, it is clear that the strategic marketing process is continuous and responsible for creating an organization’s future by providing strategic marketing input into the organization’s corporate strategy. Du Plessis et al (2001) state that this process is so inextricably interwoven that at times it is difficult to distinguish between strategic marketing and corporate strategy. Strydom, Jooste and Cant (2000) point out that there is no consensus on the use of the term

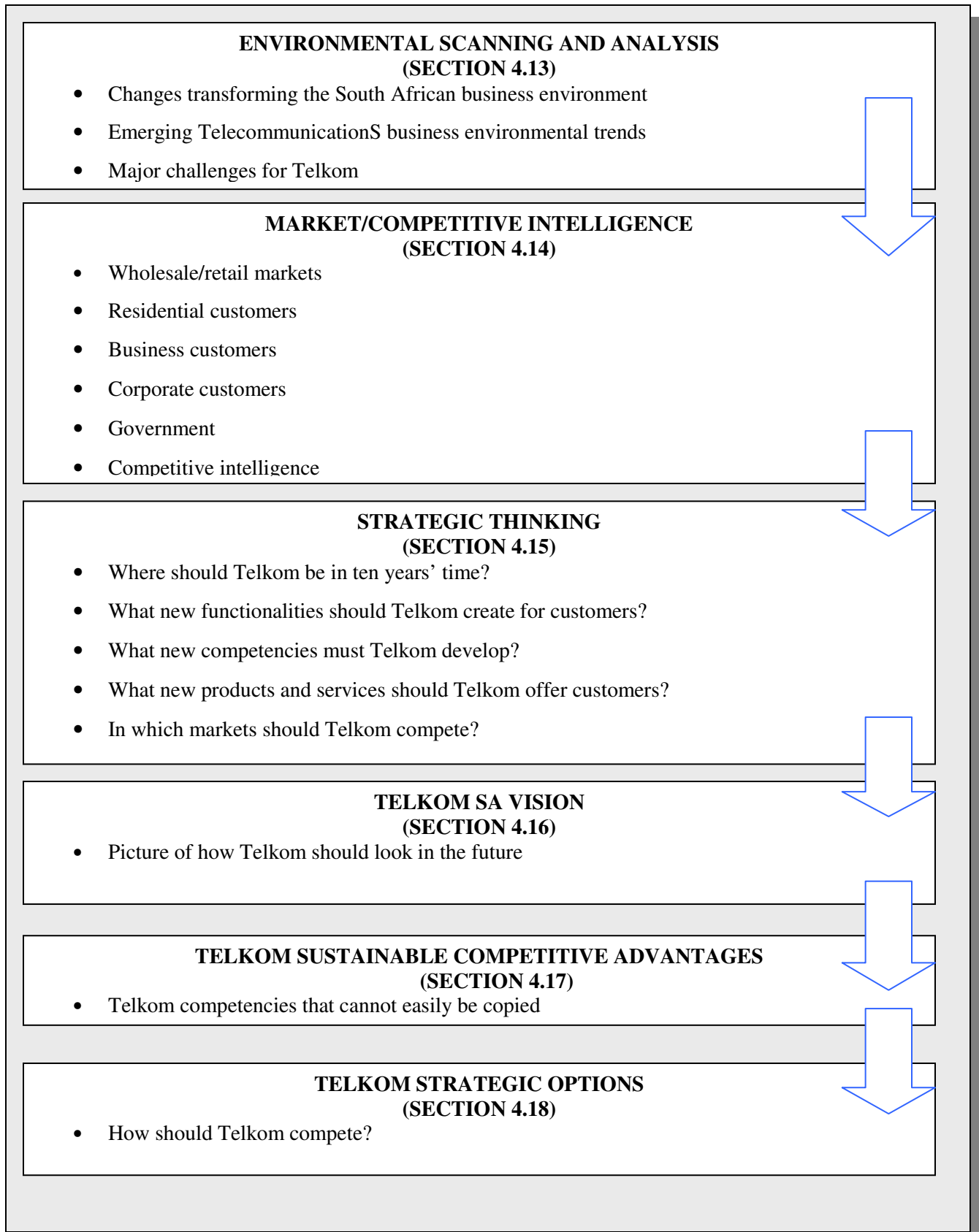
“strategic marketing”. Therefore, for the sake of clarity, in this study, “strategic marketing” refers to a process involving a number of clearly outlined activities that take place at the corporate and business unit levels. The researcher takes a bird’s eye view and the functional marketing strategies fall outside this scope. Strategic marketing’s role in the South African fixed line telecommunications sector is the provision of intelligence and strategic thinking capabilities and strategic options that motivates the organization to future-oriented action. In order to do this, the fixed line telecommunications organization needs a well-articulated strategic marketing process plan.

The strategic marketing process plan derived from the strategic marketing model is outlined in figure 4.10 below and provides a well-demonstrated and logical path for developing a market strategy for Telkom. As shown in figure 4.10, the strategic marketing planning process begins with an analysis of the fixed line telecommunications organization’s external and internal business environments. In this process, market and competitor intelligence is gathered proactively followed by strategic thinking. The process is not linear but follows a pattern of scanning, analysing, and strategic thinking. Typical questions that emerge during this stage are: What changes are taking place in the fixed line telecommunications organization’ business environment? What are the trends? What are our strengths and weaknesses? What new communications technologies are being introduced? How are these technologies changing customer behaviour? How are customers’ communications needs evolving in the different market segments? What new functionalities would appeal to customers in the light of these changes? What are our large competitors doing? What products and services are the smaller new market entrants creating for the market? How can we innovate? What do we need to do to change the nature of our products and services so that we create value for customers and serve them better? How can we use our products and services and integrate these with other industries? Where is the market going over the next ten years? What new industries will emerge in the next Twenty years? What core competencies must we develop in our organization? What sustainable competitive advantages do we have and how can we create new ones?

The next step in the strategic marketing process involves the development of the most appropriate strategic options to position the organization in the industry.

The strategic marketing planning process outlined in figure 4.10 will be used to induce a possible market strategy for Telkom. *The different strategic options were tested with Telkom management in the empirical research phase to identify their feasibility and relevance.*

FIGURE 4.10 STRATEGIC MARKETING PROCESS PATH



4.13 ENVIRONMENTAL SCANNING AND ANALYSIS

In chapters 2 and 3 the telecommunications business environment was analysed and the major changes taking place at this time were discussed and the main trends that are emerging were also identified (see section 3.6.1). The business environmental analysis revealed a number of challenges that Telkom will need to overcome.

4.13.1 Major challenges for Telkom

The major challenges that Telkom faces are indicated in Table 4.1 below.

TABLE 4.2 CHALLENGES TELKOM FACES

Challenge	Impact level		
	High	Medium	Low
Changing needs of customers	*****		
Competition		****	
Regulatory changes (see chapter 2)	****		
Reduction in voice revenues and increase in data revenues	****		
Increasing bandwidth supply resulting in aggressive competition	***		
Technology	*****		
Globalisation		****	

Importance: Extremely important ***** Very Important **** Important ***

Table 4.1 depicts some of the major important challenges that Telkom and therefore fixed line telecommunications operators have to face. These challenges are briefly discussed next.

4.13.1.1 Changing needs of customers

In South Africa, the US, Japan, India, China and elsewhere, customer communications needs are changing. The fixed line telephone is quickly being replaced by mobile phones, for several reasons. Generally, fixed line telephony rollout is labour intensive and time consuming. It requires trenches and poles to set up telephone routes. Consequently, customers have to wait a long time for a telephone line. With mobile telephony though, network construction is much

faster and customers can be connected to the mobile grid within a few days. *The importance of the changing needs of customers was investigated with Telkom management in the empirical research phase to determine the importance they attach to this.*

Since the introduction of mobile telephony in South Africa, 14 million mobile phones were in use at the end of December 2002 (see section 1.4.3). Other factors that contribute to mobile substitution for fixed line include enhanced customer lifestyles (in-house research at Telkom found that customers enjoy the freedom of mobility), and the innovative pricing packages that the South African mobile operators are offering, such as prepaid, which have made mobile phones affordable to almost everyone.

South African business needs are also changing rapidly. To enhance efficiencies almost all businesses, government and even SSMEs are beginning to leverage ICT. One of the main drivers of this is the Internet and the convergence of information technology with communications.

4.13.1.2 Competition

Competition among industry players has intensified with the partial deregulation of the South African telecommunications industry. New competitors such as the SNO, value-added network service providers and mobile operators pose a serious threat to Telkom. Telkom is challenged to find new and innovative ways of holding on to its existing customer base. *The importance of competition in the South African fixed line and mobile communications business environment was investigated with Telkom management in the empirical research stage.*

4.13.1.3 Regulatory changes

Until 7 May 2002, Telkom was the only licensed fixed line telecommunications operator in South Africa. Deregulation of the South African telecommunications industry in South Africa created a major challenge for Telkom. The gradual liberalisation of South African telecommunications led to the entry of new market entrants such as the SNO mobile operators (MTN, Vodacom and Cell C), Sentech and various value added network service providers (see

chapter 3) into the telecommunications market. Each of these players aims to take market share away from Telkom.

4.13.1.4 Reduction in voice revenues and increase in data revenues

Since the introduction of mobile voice telephony, Telkom has experienced a gradual decline in fixed line voice revenues. In line with international trends, data revenues have gradually increased. Fixed line voice revenues at present exceed data revenues expectations and trends indicate that data revenues will soon overtake revenues derived from fixed line voice.

4.13.1.5 Increasing bandwidth supply resulting in aggressive competition

With the introduction of new competitors into the fixed line telecommunications market in South Africa, the supply of bandwidth is expected to increase (as in the developed economies). This is a serious challenge for Telkom as an increase in the supply of bandwidth will generally lead to a reduction in prices and decreased revenues generated from bandwidth. This will mean that Telkom will have to identify new revenue-generating marketing opportunities.

4.13.1.6 Technology

Two major changes in technology are a serious challenge to Telkom, namely wireless technologies and the Internet. As a fixed line operator, Telkom is constrained by its fixed line infrastructure. This is a serious constraint if the changing needs of customers from fixed line to mobile telephony are considered (see section 4.13.1.1). Another major technological challenge is the Internet. Using the Internet and IP technologies, value-added network service providers are able to offer customers discounted call charges. International traffic that is routed through the Internet can be offered to customers at local call charges. This means that Telkom's revenues will be seriously reduced thus making a strong case for Telkom to identify new marketing opportunities that will increase its revenues.

4.13.1.7 Globalisation

The Internet has removed geographical boundaries and Denwa, AT&T, Worldcom and other international organizations can offer their telecommunication services (at lower prices than Telkom) directly to customers in South Africa. This is a serious challenge for Telkom as it means that Telkom will have to compete against some of the best telecommunications organizations in the world.

4.14 MARKET/COMPETITIVE INTELLIGENCE

This section outlines the fixed line telecommunications market landscape in South Africa and how the changes, trends and challenges are impacting on the different market segments for fixed line telecommunication products and services and what new customer needs are emerging.

4.14.1 Wholesale markets

The wholesale market segment comprises the following (see chapter 3 section 3.2.5) ISP's, VAN's, SMMEs, and international operators and special markets.

The traditional wholesale model involves the sale of spare capacity to intermediaries or aggregators over surplus infrastructure in bundled voice and data packages. In this way, the fixed line telecommunications service provider could ensure that some return on fixed capital employed was recouped. The value that the intermediary brought to the transaction was contained in the marketing mix. Intermediaries were able to market total services, such as circuit switched voice (call centre, directory enquiries and operator services, leased line) to customers, by using the fixed line operators network and adding new value through optimising end customers' overall experience in obtaining and maintaining the service. The traditional wholesale model relied heavily on the sale of wholesale bundles of excess network capacity. In Western Europe, falling prices and new market entrants have squeezed out the margins from this avenue of business and incumbent fixed line telecommunications operators have experienced diminished

returns on capital invested. Having realised these trends, fixed line service providers are now enquiring about what needs to be done to sustain them.

Simultaneously, the convergence of IT with communications and broadcasting has ushered in new opportunities for telecommunication operators, including: the growth of e-commerce, ASP, data warehousing, mobile data services, and wireless Internet.

As network intelligence migrates to the periphery of the network, new marketing opportunities in communications are created as indicated in Figure 4.11 below. These new opportunities being created open up a host of marketing opportunities for three groups of wholesale customers, namely:

- resellers (These are ICT organizations that buy the products and services at wholesale prices and resell at retail to the end users.)
- service providers (Buyers of wholesale products and services, mainly bandwidth, add content or applications and resell customised total services and products; for example, ISP and VANS.)
- network services (These are mainly competitor fixed line service providers like the SNO and SMMEs that buy wholesale minutes from the incumbent for retail purposes.)

FIGURE 4.11: NEW MARKETING OPPORTUNITIES IN COMMUNICATIONS

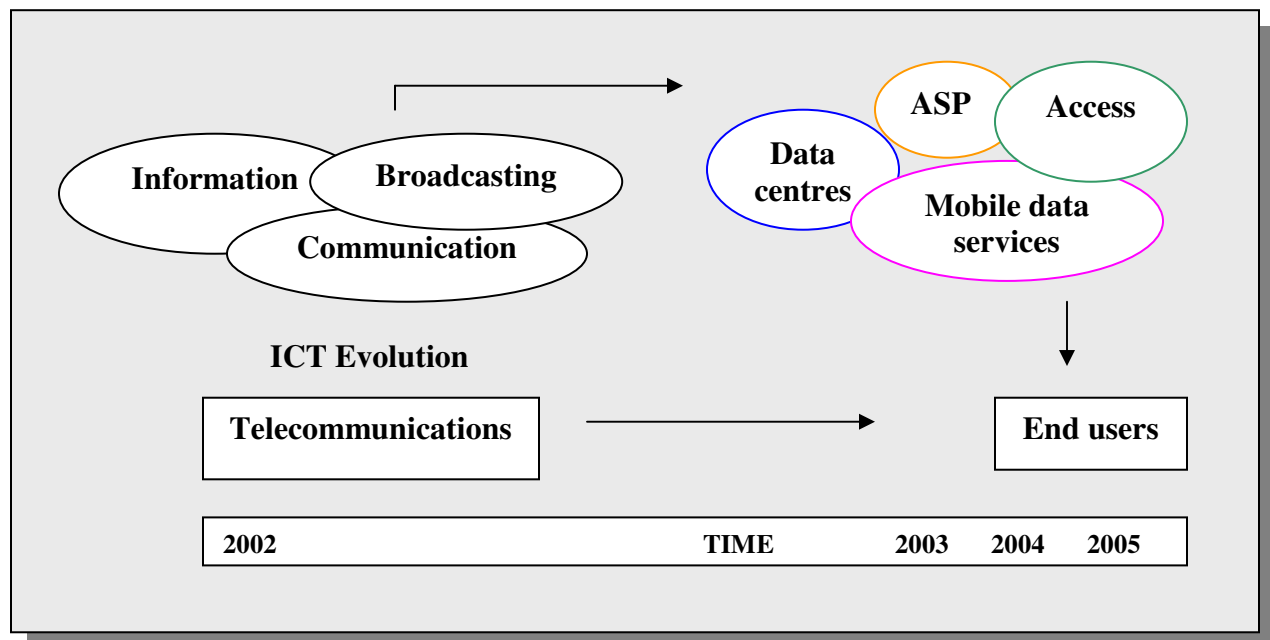


Figure 4.12 below, reflects the various marketing opportunities that exist for wholesale ICT services and products. This model opens up a host of new opportunities beyond the traditional wholesale model. Uglow and Gambhir, (2000), Koppman, (1999), Wallage, (1998) indicate that these retailers of communications tend to focus their businesses on selected niche areas. Their product/service offerings are then limited to those specific areas of concentration. For example, in Europe, Storm, Global Crossing, Carrier 1, Interoute, KPN West and Fibernet focus on providing retail services on national and long distance routes. In the US, Williams, Global Crossing, Broadwing and Level 3 also focus on international and national long distance wholesale traffic. Figure 4.11 illustrates the different areas of ICT products and services that can be sold to wholesalers.

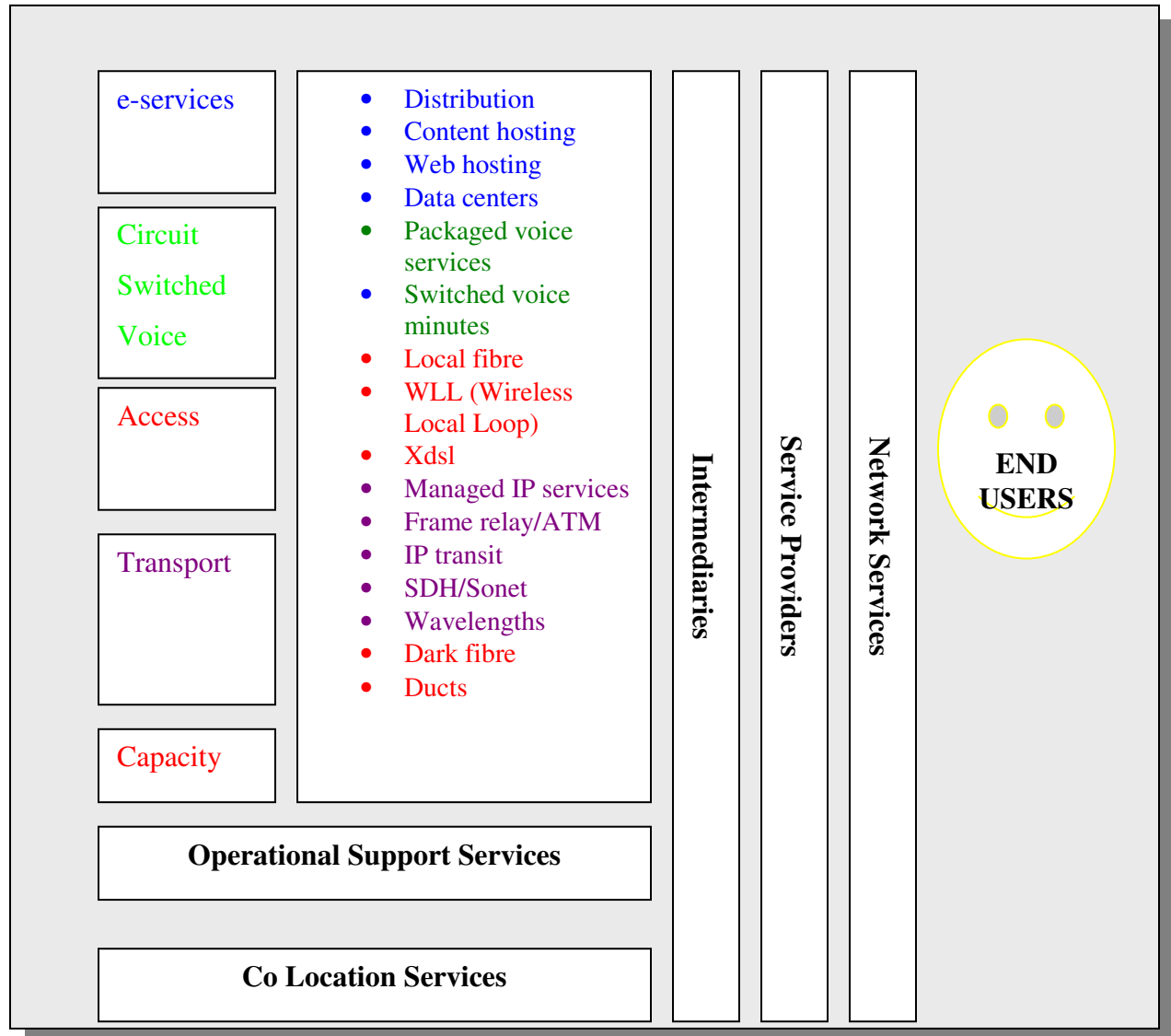
New fixed line service providers would want to provide retail services to customers as soon as possible. To do so, they would have to either lease infrastructure from incumbents or buy out wholesale products and services directly from incumbent fixed line service providers. Although fixed line competitors will want to rely on their own infrastructure to provide services to their clients, building new infrastructure is highly capital intensive and would require an injection of vast amounts of seed capital that new market entrants will not be willing to outlay.

For the incumbent fixed line telecommunications service provider, like Telkom that owns the infrastructure, providing complete wholesale products and services, it would seem to be servicing the competition, but it could and should be seen as a business model for servicing retailers rather than wholesalers. Since the incumbent service provider will share in the margins of new markets that the wholesaler creates. However, this will require incumbents to change their current mind-sets from viewing retailers as competitors to viewing them as customers with whom to form closer partnerships and share value.

Another reason for incumbent fixed line service providers to offer total wholesale products and services is that the prices charged for bandwidth are moving towards zero (Gilders theory - see chapter 1) and future margins are captured in the value created by the intelligence that resides at the edge of the network. By providing bandwidth only, the incumbent is placed at a serious disadvantage because the buyers of wholesale bandwidth will almost certainly obtain the highest margins from the value that they create for customers at the end of the pipe. ISP's are a good

example of this. Furthermore customers who buy wholesale bandwidth can easily switch to Telkom’s competitors (the SNO and Sentech) that offer similar products and services. According to Wallage (1998), in the UK, for example, wholesalers are keen to use an alternative provider to the incumbent fixed line service provider. ISP’s and cellular operators, for example, have been keen to go outside of British Telecom (BT), where possible.

FIGURE 4.12 AREAS OF WHOLESALE OPPORTUNITIES



Adapted from: Uglow and Gambhir (2000, p 5)

Customer migration can also be attributed to other competitor service providers providing customised packages that compete strongly on price against incumbents. This raises another major contentious issue. If incumbents do not offer packaged wholesale solutions in all the areas

described in figure 4.12 above, this could have a negative impact on the incumbent service provider because wholesale customers would turn to other service providers for these services. In South Africa, this would mean that wholesalers would turn to the SNO or Sentech. Table 4.1 depicts the main issues involved in selecting a telecommunications service provider as a wholesale provider.

Table 4.1 illustrates the advantages and disadvantages of the main issues involved in selecting the incumbent operator as a wholesale provider. The flexibility of the incumbent fixed line service provider is a major issue. The incumbent must be flexible in providing wholesale services to customers. Inflexibility could possibly lead to a migration of the wholesale customer base away from the incumbent to competitors (in South Africa to the SNO). Another major disadvantage is that incumbents are not generally geared to provide wholesale services to customers. This represents a major threat to incumbents because non-preparedness on their part will result in wholesale customers moving over to the competitors (Wallage, 1998).

TABLE 4.3 MAIN ISSUES FOR SELECTING WHOLESALE PROVIDER

Advantages	Disadvantages
• Size	• Price
• Geographic spread	• Flexibility
• Experience	• Lack of bandwidth availability and network obsolescence
• Safe choice	• Generally not geared to provide wholesale services
	• Competition from other local operators

Source: Wallage (1998, p 3)

The question (which was incorporated into the questionnaire) that arises, then, is how should incumbent operators provide wholesale services? Should it be a phased or should a “big bang” approach, (which means that all the services should be offered at once)? The answers to these questions are provided in the strategic thinking stage (see section 4.15). Aside from the wholesale market segments, Telkom also provides retail products and services directly to end user customers. The retail market for fixed line telecommunication products and services will be discussed next.

4.14.2 Retail markets

The retail market for Telkom consists of the following market segments (see section 3.2.5). The changes and environmental trends for residential, business and corporate customers and government will be discussed.

4.14.2.1 Residential customers

In South Africa, the majority of profitable residential customers are located in the urban areas of the country. The basic need for fixed line telecommunications services are currently limited to social and emergency factors rather than business applications. However, the general slow down of the global economy caused many organizations in South Africa to downsize, thereby leading to mass retrenchments/(layoffs). At the same time, jobs are no longer permanent and South Africa will need to create many vibrant SMMEs if it hopes to contribute to increased employment and sustainable future development. Given these broad changes, what are some of the trends emerging in South Africa in this market segment that affect Telkom? The following are among the main trends that are emerging:

- The Government is promising SMME development.
- People's working habits are gradually changing towards remote working.
- A strong Black middle and upper class system is emerging.
- Customer sophistication is gradually increasing in urban areas.
- There is a growing trend to use the Internet for work and business from home.

These trends are investigated with Telkom management in the empirical research phase. The corporate and business market segments will be discussed next.

4.14.2.2 Business and corporate customers

The corporate and business market segments are also experiencing enormous change in their respective business environments, including the following:

- growing aggression of competition forcing organizations to focus on cost reductions, effectiveness and efficiencies
- formation of strategic alliances and partnerships (for example, Liberty and Standard Bank)
- outsourcing of non-core business (for example, property maintenance and security)
- closer relationships with customers, suppliers, shareholders and other stakeholders
- increasing reliance on networks and the Internet for business applications
- heavy investments being secured in knowledge economy (for example, electronic learning and video conferencing)
- decentralisation of network intelligence to remote intelligent mobile terminals (for example, cellular phones are used to retrieve electronic mail)
- globalisation (Many organizations are operating across national boundaries (for example, Nandos, Spescom, Old Mutual and DiData).

These changes have an enormous impact on corporates and businesses in South Africa and are opening up new marketing opportunities for Telkom.

4.14.2.3 Government

South Africa's re-entry into the mainstream global environment after years of exclusion and sanctions brought about a flood of new trends and changes to the Government market segment, including:

- need for efficient and effective Government (needs to reduce costs and operate effectively)
- transparency (Government is committed to openness and transparency in its affairs, needs to make its affairs public)
- accessibility (Government's major objective is to be within reach of all people in the country)
- promotion of education and competitiveness
- move to use ICT to leverage its objectives
- Promotion of economic opportunities for historically disadvantaged groups

These are some of the major trends emerging in each market segment of the South African telecommunications business environment. *These trends were investigated with Telkom management in the empirical research stage.* Another area where there is vibrant activity is the competitive landscape.

4.14.3 Competitive intelligence

Telkom has to contend with a number of established and new market competitors (see section 3.2.9). Changing technology, new innovations, the Internet and convergence are some of the factors driving competitor activity. In this section the competitive trends emerging in the competitive ICT landscape are outlined and briefly discussed. The following are among the major trends developing among competitors:

- Wireless operators are introducing data/multimedia capabilities into their networks.
- VANS are providing value-added network services over Telkom infrastructure.
- The SNO is preparing to compete aggressively against Telkom to take away market share in the business and corporate market segments.
- Wireless operators are highly innovative.

4.15 STRATEGIC THINKING

Based on earlier findings, this section considers what Telkom should be doing to sustain itself and thrive in the ICT market. The main objective of this section is to broadly provide guidelines to the following strategic questions:

- What should Telkom be in ten years time?
- What new functionalities should Telkom create for customers?
- What new competencies must Telkom develop?
- What new products and services should Telkom offer customers?
- In which markets should Telkom compete?

4.15.1 Telkom ten years hence

If Telkom intends surviving in the future, it has to redefine the way it sees itself and the industry. Should Telkom continue to see itself as a fixed line telecommunications service provider, it will seriously undermine itself and limit its opportunities! Telkom's core business extends beyond the traditional fixed line, because Telkom's raison d'être is to satisfy customers' communication needs. This definition fundamentally alters the traditional boundary of fixed line telecommunications service provider to communication services provider. It includes everything to do with communications in whatever ways communication can be done. It also removes the barriers and limitations of fixed line and telecommunications and replaces it with the freedom to serve customers' communication needs using any means it wills. Communication is no longer confined to fixed line and voice-only services. As a communications company, Telkom is free to provide fixed and mobile services. It can create multiple product and service lines that satiate customers' communication needs in whatever format they choose for communications, whether voice, data, image or a combination of the three (multimedia). Telkom must look beyond the normal fixed line telephone and expand the capabilities of the phone.

The future Telkom must be a communications organization that provides total end-to-end complete communication solutions for its customers. Telkom must be involved in any business allows customers to communicate in whatever form they choose.

4.15.2 New customer functionalities

ICT must be exploited to its full potential to create new functionalities for customers. Telkom should extend its capabilities of moving voice, data and image to include some of the following new customer functionalities:

- fixed line services to mobile services
- End-to-end ICT solutions
- enhance intelligence of telephone (enable services such as short message services and data transfer)
- fixed line phones should become small, mobile and highly intelligent
- extend applications of fixed line to allow remote control of home devices, security and data collection (for example, collect information about fridge contents, electricity usage, lights

on/off, etc; information can be sold to organizations who wish to determine customer product/service usage patterns)

- provide central data storage facilities for customers that are accessible anywhere, any time using intelligent remote devices (for example, a small intelligent easy-to-use pocket notebook computer to retrieve all documents and software packages from Telkom data warehouse)
- allow customers to communicate with anyone or anything whenever and wherever they choose
- Transform Telkom into an organization that fulfils all the communications needs of its customers in whatever way they choose and contributes to development of mankind by bringing fashion, style, convenience, fun and joy into their working, playing and home lives.

Given these new customer functionalities that Telkom must develop, what new competencies should the organization create? The development of new competencies is crucial for the creation of future products and service offerings. As a communications organization, Telkom should develop a number of new competencies such as:

- Develop skills in information communication broadcasting technology (networking, solutioning, security, data storage, e-commerce, Internet access, web hosting, web design, etc).
- Develop mobile wireless technology skills.
- Enhance marketing skills for ICT products and services.
- Improve ICT consulting and project management skills.
- Recruit ICT knowledge base into the organization.
- Generate creative and lateral thinking skills.
- Form strategic partnerships and alliances relationship management.
- Enhance stakeholder relationship management capabilities.
- Develop business skills and competency.
- Develop strategic thinking skills.

The above are some of the new competencies that Telkom would have to develop to survive and prosper in the twenty first century.

4.15.3 New products and services

Table 4.2 below illustrates some of the broad new product and service areas that Telkom should focus on over the next two to twenty years.

Table 4.3 depicts some of the new products and services that Telkom should provide over a relative time frame that spans between two to twenty years. Over the long term (two to twenty years), Telkom needs to develop capabilities and products that will be relevant to the far off future. The world population is currently over six billion and many of the world's nations, such as Russia and the US are working synergistically to develop a space station for future space travel. From the progress so far, it seems that space travel will become a reality in the fifteen to twenty years. This will create a need for space communications devices and services that will enable communication between people as they travel through space.

TABLE 4.4 TELKOM NEW PRODUCTS AND SERVICES OVER TIME

Long term (5-20 years)	Short term (2-5 years)
<ul style="list-style-type: none"> • The communication of physical objects • Space communication • Financial services communication • Communication with non-living things (such as fridge, microwave, alarm system, car, house, etc) 	<ul style="list-style-type: none"> • Networking (LAN and WAN) • Global and national networking solutions • Fixed mobile communications • Network security • Data services

Another possible area for future product development can be found in moving physical objects between two places. Already work has begun on this project with some success. Electronic financial services are another market space area that will develop within the next ten years. Future financial transactions will become paperless. Telkom must develop the capabilities to exploit these new opportunities that will arise in the future. Each financial transaction of the future will require some form of electronic communication. *In the empirical research phase, these future product and service development areas in financial services were tested with Telkom management to determine how far into the future they are seeing.*

In the shorter period extending over the next two to five years, Telkom should prepare itself to provide a host of converged ICT products and services to customers. Typical products and services that Telkom should offer are networking services (end-to-end) providing customers with total communication solutions for WAN and LAN, global networking, network integration and desktop management. Telkom should also provide a variety of data managed services, such as data hosting, application services, data warehousing, security applications, Internet services, and network integration. *To evaluate how aware Telkom management are of changing customer needs, they were, in the empirical research phase, asked for their opinions on which products and services Telkom should provide to its customers.*

Thus far, in the marketing intelligence stage the changing needs and trends of Telkom's market segments were discussed. In the competitive intelligence stage the broad activities of Telkom's competitors were outlined. In the strategic thinking stage a time frame that spans between two to ten years was constructed. This time span was divided into a long and short term and the new product development areas where Telkom should focus were highlighted. Having identified these, an important strategic question that requires attention is which markets should Telkom compete? This is discussed next.

4.15.4 Markets for competing

The secondary research has found that Telkom should consider competing in the following markets:

- ICT market (providing integrated telecommunications, multimedia and IT solutions to customers)
- focus on the corporate, business and SMME market segments providing customised total solutions
- provide wholesale bundled services
- incorporate mobile communications service offerings into its fixed services
- grow its markets beyond South Africa into Africa, like its competitors
- protect its existing market segments

- provide new products and services to advanced residential customers and continue to provide basic services to other residential customers to maintain its image and social relationships

Having evaluated what Telkom should be doing to strategically position itself in the ICT market, Telkom's vision, values and strategic objectives will be discussed to determine whether these are aligned in terms of the theory for achieving future success. Where there is no alignment to the theory, what Telkom should be doing will be pointed out, using the theory as background.

4.16 TELKOM SA VISION

Telkom's vision is: **“to be a world-class communications company.** We will be world-class when our customers say we are. We are a communications company that offers total communication solutions to our customers

- We are more than just a "phone company"
- Our area of business includes a full spectrum of digital communications, including voice, data, video, and latest Internet and E-Commerce enabling technologies”.

The Telkom vision is aligned to widening the industry borders to provide “total communications solutions” rather than limiting the organization to telecommunications solutions only.

Telkom's value system encompasses the following statements:

“To move toward our vision, we embrace the following five values:

- we value our people and their diversity
- we are performance-driven
- we are customer-focused
- we create value for our shareholders
- we act with integrity in everything we do ” (*Telkom Annual Report, 2001, p 3*)

The Telkom value system is relevant for its vision but lacks building innovation, creativity, disruption and discovery into the value system. Considering Hamel and Prahalad (1996),

Robert (2001) and Forster and Kaplan's (2001) views, a typical value that could have been included in Telkom's core value system is "we encourage our employees to think innovatively by exercising creativity and discovery so that they disrupt our industry to benefit our customers".

Telkom's **Strategic Objectives** (*Telkom Annual Report, 2002, p 1*) are:

- growing and defending core markets
- exploiting convergence opportunities
- driving operational and capital efficiencies
- improving the customer experience
- investing in our people
- being a good corporate citizen

4.17 TELKOM'S SUSTAINABLE COMPETITIVE ADVANTAGES

According to Seidl (2002), some of the sustainable competitive advantages that Telkom holds and is intent on developing further are

- Network infrastructure owner
- Network scalability
- Highly skilled IT and telecommunications network engineers
- Established national reputation (brand equity)
- Ownership of a national network operating centre (NNOC)
- Strategic partnerships and alliances with world class companies for example Cisco, Accenture, Sun micro systems, Deloitte and SAP

The development of these sustainable competitive advantages is focused in the right areas. It is evident that Telkom's intention is to create new competencies in ICT. By developing these new competencies, Telkom will be well positioned to take advantage of the short-term opportunities that arise in the ICT market. *Telkom's sustainable competitive advantages were investigated with Telkom management in the empirical research stage to evaluate what they perceived to be Telkom's competitive advantages.*

4.18 TELKOM'S STRATEGIC OPTIONS

This section outlines the strategic marketing options that Telkom has selected.

4.18.1 Competitive strategy

Because of its multiple product and services nature, Telkom is using a focus competitive strategy for each of its products and services. Telkom is following a niche strategy by diversifying on the basis of customer service and reliability and the provision of value-added features to a select market segment, while also leveraging its brand equity.

4.18.2 Market positioning strategy

Telkom occupies the market leadership position in respect of its fixed line telecommunications services. However, when it comes to the provision of ICT value-added services, is following a market niche strategy by targeting and concentrating on niche market segments, such as the corporate and business market segments. Hence Telkom is intent on defending its core fixed line telecommunications market against new market entrants such as the SNO. By providing new products to existing market segments (such as mainly business and corporate customers), Telkom is following a market growth strategy. The poor global economic conditions have tightened most organizations' budgets and increased the competitive intensity between the competitors in the ICT market. In providing value-added voice telecommunication services (such as Call answer, My ring, Block call, Waiting call, Call catcher, Call divert, etc), Telkom is adding features to the existing voice services that it offers, so that it can squeeze additional revenue from its voice services.

In September 2001, Telkom began to shift its focus to providing networking products and services following market leaders such as Dimension Data. In this market, too, Telkom wishes to be a market nicher by identifying select pockets of high value customers and providing network value-added services, such as network security, LANs and WANs. For as long as Telkom's position as a monopoly remained unchallenged, this market strategy was sufficient to allow

Telkom to survive reasonably well. However, with the introduction of new competitors such as the SNO, Telkom's niche market position is seriously threatened.

Lavender and Lewin (2001), suggest that fixed line telecommunication operators need to become innovative if they are to unlock new value for customers. A strategy that Telkom has ignored completely and which is highly relevant for the ICT industry is a revolutionary strategy (see section 4.8.5). As a result, Telkom is lagging far behind some of its competitors. For example, both MTN and Vodacom have been very innovative in new product and service innovations. One of the new services that they offer is general packet radio switching services (GPRS) over the cellular phone. GPRS enables customers to send both data and voice over the cellular network. Telkom has not introduced a breakthrough product or service that redefines the industry. In this regard, Telkom appears to be a market follower. The problem with being a follower in the voice market is that Telkom's voice services are fixed while its competitors, MTN, Vodacom and Cell C, are mobile service providers. As a result, these competitors will start to poach customers away from Telkom, especially if they could reduce their pricing structures. So what should Telkom do?

Telkom should continue to milk its voice products and services and use these revenues to develop mobile capabilities. This can be achieved by either starting to upgrade its fixed line network to accommodate mobile services (an expensive option) or it could concentrate on securing a controlling interest in Vodacom, where it already owns 50%. In addition, Telkom should continue to exploit the new marketing opportunities being created by convergence. Telkom should investigate the opportunity to acquire a strategic IT organization, such as DiData or Comparex, now while their share price is at an all-time low. This horizontal integration move would broaden Telkom's position in the South African and global ICT market by giving it access to a larger national and international market. It would also provide Telkom with a sustainable competitive advantage by adding to its capabilities in three core areas, namely fixed line, mobile and IT. Telkom should also seek to build closer relationships with its profitable business and corporate customers. *These market strategy actions were investigated with Telkom management in the empirical research phase.*

4.18.3 Organizational product market life cycle strategy

It is increasingly evident from the literature review on international telecommunication trends that the revenues generated from fixed line telecommunications will continue to decline (see chapter 1). South Africa is no exception to this rule. Fixed line voice products and services have reached a mature stage in markets with the necessary buying power. With new competitors in the South African market, the increased availability of voice services (and bandwidth) will result in these services becoming commodities. The new value-added network services will add value to the existing fixed line product and is currently in a growth stage. It is inevitable that at some point in the future, the new value-added network services and products will reach the maturity stage of their product market life cycles and therefore it is important that Telkom implement innovation now rather than later to sustain its future.

4.18.4 Relationship building strategy

Telkom has relationships with a number of key stakeholder groups. The four most important relationship-building strategies that Telkom has are customer, employee, shareholder and supplier relationships.

These relationships are discussed next.

4.18.4.1 Telkom's Customer Relationship

According to Seidl (2002), Telkom's business is defined through its customers. Seidl (2002) points out that customer satisfaction is extremely important to the organization and Telkom therefore is engaged in an annual customer satisfaction measurement (CSM) survey to measure and improve customer satisfaction. Furthermore, Telkom has been utilising customer relationship management strategies to retain its major business and corporate customers. Core to its market strategy, Telkom views its relationships with business customers (Telkom Annual Report, 2001). By entering into service level agreements and forging closer partnerships with major customers, Telkom has been locking in these customers to ensure that they remain loyal for some time and will not migrate to competitors.

In 1997 Telkom, embarked on an ambitious network modernisation and upgrade programme to improve service level efficiencies and network reliability thereby enabling the organization to improve service levels and customer satisfaction (Telkom, 2000/2001). It has also introduced a number of customer service initiatives, such as a centralised Call Centre (fault reporting and new customer order processing) and a number of customer service branches throughout South Africa that are linked directly to Telkom's Access Network Operation back offices (*Telkom Annual Report, 2001*).

4.18.4.2 Telkom's employee relationship

Telkom understands that sound employee relationships are the foundation of any successful organization. As a result, in 2001, Telkom implemented several employee relationship-building strategies, including

- recruiting highly skilled IT staff
- paying a premium in the form of retention pay for highly skilled employees
- communicating regularly with employees about organizational matters
- committing and spending R486.6 million on human resource development programmes in 2001 and R1.9 billion between 1997 and 2001
- striving to be viewed as an attractive and competitive employer
- creating an atmosphere of learning and sharing
- initiating specialised development and retention programmes, such as IDP (Individual development Programme), VHP (Very High Profile) and Deputy's Programme (*Telkom Annual Report, 2001*).

In early 2002, during Telkom's preparation for its IPO and competition, Telkom was forced to reduce employee numbers. All that time, employee morale was at its lowest, resulting in high levels of demotivation. Moreover, there was a lack of transparency and communication from top management on the main issues affecting the organization. Low levels of trust accompanied this. So far the overall impact of these changes to Telkom's employee relationships could not be evaluated. However, the literature suggests that in cases like these it is inevitable that customer

satisfaction would be affected (see section 4.11.1.1), which could have serious negative consequences for Telkom.

4.18.4.3 Telkom's shareholder relationship

Telkom's shareholders are the South African Government (67%), Thintana (comprising SBC Communications 18% and Telekom Malaysia 12%) and Uthingo (3%). Telkom's relationships with its shareholders has not been well documented although its relationship with SBC has been more of a strategic equity relationship with Thintana taking up key executive positions between 1997 and 2001 as part of a skills transfer agreement between the South African Government and Thintana. This relationship has worked well for Telkom because since 1997, Telkom has made strong inroads in improving its network infrastructure, customer services and overall market perception. The Government's relationship with Telkom is warm and Government even allowed Telkom a five-year exclusivity period to get its house in order before liberalising the South African fixed line telecommunications industry. The Telkom Board is actively involved in managing the organization.

4.18.4.4 Telkom supplier relationships

As the major supplier of fixed line telecommunications services in South Africa, Telkom is a major buyer of telecommunications products and services. Telkom is a buyer of technology and works closely with its suppliers to develop its infrastructure and product service portfolio. Among Telkom's suppliers are Siemens, Marconi, Altech, Cisco, Sun Microsystems, Accenture, Deloitte, Commerce One and Spescom. To ensure closer co-operation between its suppliers and itself, Telkom has entered into a number of exclusivity agreements, thereby securing sole supply rights from its suppliers over its competitors.

4.19 CONCLUSION

This chapter discussed the generic strategic management model and developed a strategic marketing model for South African fixed line telecommunications operators. The various strategic options available to an organization to compete were discussed and used to evaluate and

develop a market strategy for South African fixed line telecommunications operators. Because Telkom SA is the most prominent and oldest existing fixed line telecommunications service provider in South Africa, it was used as an example for the application and development of a market strategy for South African fixed line telecommunications operators. A theoretical market strategy framework was used to evaluate and develop a possible market strategy for fixed line telecommunications operators in South Africa. This chapter is the end of the literature review. Chapter 5 discusses the research methodology used in this study.

CHAPTER 5

RESEARCH METHODOLOGY

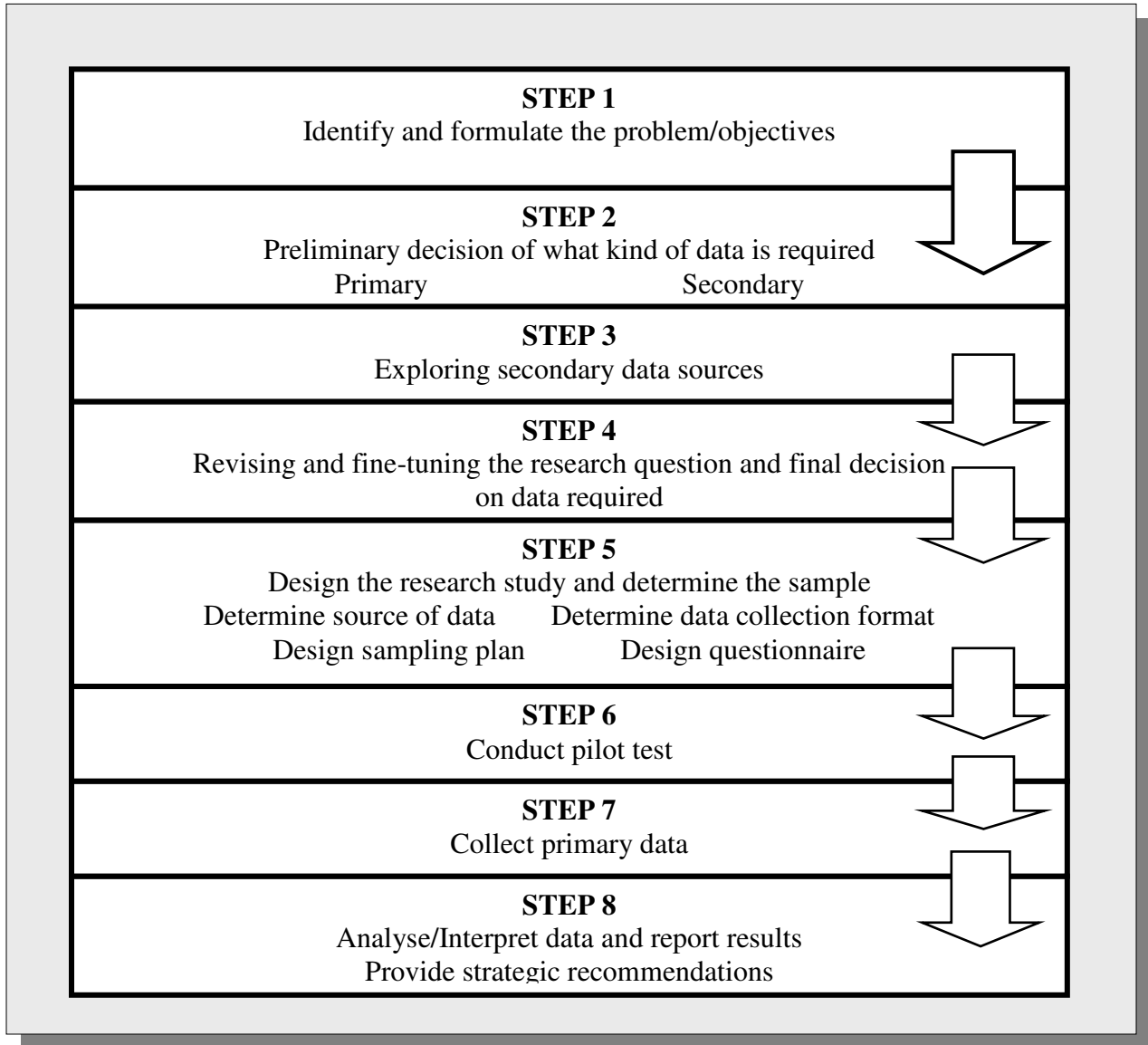
5.1 INTRODUCTION

This chapter describes the research methodology used in this study. The research methodology forms the backbone of and guides the planning, organising, analysing and interpretation of the data. Leedy, Newby and Ertmer (1997, p 9), state the “methodology dictates the acquisition of data, contrives an approach so that meanings that lie below the surface of those data become manifest, and finally issues a conclusion or series of conclusions that lead to an expansion of knowledge”. For this reason, it is essential to understand how the data was gathered in order to assess the research findings, interpretations, recommendations and conclusions and judge the validity and reliability of the data. Accordingly, the steps in the marketing research process will be discussed within a theoretical framework derived from the literature review. Then the objectives of the study will be reviewed and the methodology used in this study discussed.

5.2 STEPS IN THE MARKETING RESEARCH PROCESS

For this study, the literature review on the marketing research process included Martins, Loubser and Van Wyk (2002); McDaniel and Gates (2001); Aaker, Kumar and Day (1998); Cameron (1997); Neuman (1997); Kinnear and Taylor (1996); Hartley (1994); Gill and Johnson (1991); Groenewald (1989) and Saunders, Lewis and Thornhill (1989). With regard to the framework for the stages in the marketing research process, the researcher found Martins, Loubser and Van Wyk (2002); Aaker, Kumar and Day (1998) and Dillon, Madden and Firtle (1994) the most suitable as these authors provided a framework developed specifically for researching marketing problems. In addition, where the researcher considered it appropriate, the steps used by other authors were included. Figure 5.1 below represents the adapted marketing research process steps followed. These steps will subsequently be discussed.

FIGURE 5.1 STEPS IN THE MARKETING RESEARCH PROCESS



Adapted from: Martins, Loubser and Van Wyk (2002); Aaker, Kumar and Day (1998); Dillon Madden and Firtle (1994)

5.2.1 Step 1: Identify and formulate the problem/objectives

According to Martins, Loubser and Van Wyk (2002), the American Marketing Association (AMA) found the most important step in the research process to be problem definition. Research problems originate either to solve a current problem or to pursue an opportunity. A proper problem definition result in understanding the information required and aids the formulation of

the research objectives. If a problem is well formulated and the research objectives clearly defined, then the probability of designing a research study that will yield the required information efficiently is greatly enhanced.

Problem formulation should result in a precise statement of objectives of the research to be conducted as well as a set of research questions. Research questions are often posed in terms of hypothesis. Relevant research questions essentially include: What...? Why...?, When...?, Where...?, and How...? These types of questions can be placed in perspective through situation analysis. A situation analysis involves determining where you've been, where you are and where you would most likely end up if existing plans and trends continue. It also involves analysing the organization's market strategy past and current, the competitive landscape, conditions of the market, competitors and customer reactions. Each of these factors plays a critical role in assisting both manager and researcher to recognise and identify potential problems and opportunities to assist in the development of new strategies. The situation analysis is involved with scanning the general environment, reviewing the organization's product markets, scanning the organization's customers and determining their new needs and evaluating competitor's strategies and their products (Dillon, Madden and Firtle, 1994, p 33). Aaker, Kumar and Day (1998) state that effective market strategies are built on an in-depth understanding of the market environment and specific characteristics that exist in the market.

The research objectives consist of three components, namely the research question, the hypotheses, and the scope of the research. The research question specifies the information required by the researcher or decision maker. The second and third components assist the researcher to make the research question as precise and specific as possible. The hypothesis is developed to answer the research question and the scope of the research defines the boundaries (Aaker, Kumar and Day, 1998). Once the research problem has been identified, formulated and refined the data required for answering the research questions and providing answers to management's questions should become clear.

5.2.2 Step 2: Preliminary decision on kind of data required

One of the first steps for the researcher is to determine whether the problem will require primary and/or secondary data. Secondary data already exist and can be found in libraries, public institutions, and even within the organization (Dillon, Madden and Firtle, 1987). Sources of secondary data include books, research reports, and magazine, newspaper, and journals or periodical articles. Primary data have been collected for the sole purpose of providing answers to the research question.

Although secondary information may be useful in answering some of the research questions, it cannot always satisfy the research objectives. Secondary information is sometimes outdated (for example, secondary information on customer telecommunications needs), information obtained from secondary sources is not always reliable and it can be misleading (Dillon, Madden and Firtle, 1994). Besides being outdated, secondary information does not always provide adequate answers to management's questions. For these reasons, primary research is needed.

At this stage the researcher should have a clear idea of the type of data that will be required to satisfy the research objectives. These data may be in the form of facts (data that can be measured), levels of awareness (determining whether respondents' know or do not know about the problem), opinions and attitudes (respondents' judgment or perception of the problem), preferences (establishing what respondents' prefer), motives (identifying the reasons for people's action) and behaviour (the way that people behave in the situation or problem being studied) (Martins, Loubser and Van Wyk, 2002).

5.2.3 Step 3: Exploring secondary data sources

Research involves the search for information to satisfy research questions. To broaden the scope of the research questions and deepen the investigation of the research topic, researchers need to explore secondary literature for possible available information. A preliminary review of related literature assists in generating and refining research areas and a critical review helps to establish what research has been conducted and what, if any, research is currently in progress (Saunders,

Lewis and Thornhill, 1997). Hence a literature review in marketing research serves as a situation analysis. By evaluating the secondary literature available, changes taking place in the organization's business environment can be identified. This leads to the identification, analysis and resolution of opportunities and threats through the development of appropriate new strategies (Dillon, Madden and Firtle, 1987).

5.2.4 Step 4: Revising and fine-tuning the research question

Martins, Loubser and Van Wyk (2002) use the term "fine-tuning" in marketing research, pointing out that after the researcher has reviewed the secondary literature, the research questions need to be fine-tuned. This is when a more vivid picture of the problem emerges.

5.2.5 Step 5: Design the research study and determine the sample

Research design is an important step that provides the plans for achieving the research objectives and providing the necessary answers to the problems. Various methods are available to the researcher, such as whether to use a secondary data study approach, a case study, survey research, an experiment or simulation. Survey research, for instance, may make use of questionnaires, personal or telephonic interviews, or observation. Data collection and data-collection methods are also important in the research design. For example, the researcher needs to consider whether the data should be collected within a specified time or at specified intervals; whether to use closed, scaled and/or open-ended questions, and if scaled, what scale should be used. In addition, the researcher has to take into account how best to achieve reliability and validity as well as avoid bias (Martins, Loubser and Van Wyk, 2002).

Furthermore the researcher also needs to consider the target population and determine the characteristics of the sample, including the number of persons to be interviewed and who they should be. A significant criterion is ensuring that the sample is fully representative of the population relevant to resolving the management problem and research questions.

5.2.6 Step 6: Conduct pilot test

A pilot test is a simulation of the real test but on a much smaller scale. It is conducted with respondents' who are not part of the sample population, in order to identify any possible weaknesses in the research design as well as to provide a solid base for determining and refining the sample (Martins, Loubser and Van Wyk, 2002).

5.2.7 Step 7: Collect primary data

Primary data collection may vary between simple observations of one specific area, such as a specific area in a business, to an observation over a large area, such as a corporate with many locations in different parts of the world. The methodology selected will determine how the data will be collected. Multiple data-collection methods and instruments, such as questionnaires, standardised tests, laboratory notes, observation, and transcribed recordings of focus groups, have their own merits and implications. The use of multiple methods to collect data is usually not considered by researchers because of the cost. Hence, the researcher has to make an *a priori* decision on a method that will provide the most satisfactory range of data, and is reliable and cost effective (Martins, Loubser and Van Wyk, 2001).

5.2.8 Step 8: Analyse/interpret data, report results and provide strategic recommendations

Once the data has been collected it has to be captured, edited and filtered to remove errors that may have occurred in the capturing process. After this, the information has to be converted into relevant knowledge through careful data analysis. This stage involves reducing the data to a manageable size and allows for the information to be summarised, synthesised and statistically analysed to provide answers to the research problem. The interpretive process is concerned mainly concerned with the use of logical thinking to derive logical and justified conclusions. Once this process has been completed, reporting the research findings and making recommendations closes the research process.

5.3 IDENTIFYING AND FORMULATING THE STUDY RESEARCH OBJECTIVES

This section reviews the research objectives formulated in chapter 1 (see section 1.7). The primary objective of this study was to determine new marketing opportunities for fixed line telecommunication operators in South Africa using a strategic evaluation. The research further wished to

- identify the changes taking place in the telecommunications business environment in South Africa
- analyse the major drivers of change creating new marketing opportunities in the South African telecommunications sector
- identify the new marketing opportunities arising for fixed line telecommunication operators in South Africa
- make recommendations for market strategy for South African fixed line telecommunications operators to take advantage of the new marketing opportunities
- make recommendations for future research in the area of strategic telecommunications marketing

5.4 DATA REQUIRED

The researcher used two kinds of data, namely primary and secondary, in the study to achieve the research objectives.

5.4.1 Primary data

Dillon, Madden and Firtle (1993, p 33) define primary data as the “information that has been collected specifically for the research problem at hand”. To answer the questions of the research problem the researcher made use of a survey questionnaire and a stratified sample of knowledgeable persons (managers, senior managers and executives) across key departments (that have a direct bearing on the research) of Telkom SA. The key focus areas of investigation were

- technology strategy
- sales and marketing
- information technology

- Government relations
- technology and network service (see section 5.7 on research population).

5.4.2 Secondary data

According to McDaniel and Gates (2001), secondary data is data that has been previously gathered and may be relevant to the research problem. In this study, the researcher both international and local secondary, sources including journals, magazines, technical reports, industry reports and the Internet. Most of the secondary literature were recent publications, dating back no further than fifteen years, because the study topic involves ICT and mainly revolves around convergence, which is a relatively new field of study.

5.5 EXPLORING SECONDARY DATA SOURCES

In order to gain a deeper understanding and broaden the scope of the research problem, the researcher explored a wide variety of secondary data sources relying heavily on both primary and secondary resources. The literature review provided the background information to the changes taking place in the telecommunications business environment in South Africa and globally. It also highlighted the trends and projected industry forecasts for the telecommunications sector. New telecommunications products and services and industry competitor activity were also identified from the literature.

5.6 REVISING AND FINE-TUNING THE RESEARCH QUESTION

After completing the literature review, the researcher revisited the research questions and was satisfied that the objective was still relevant. The next step in the research process was to design the research study and determine the sample.

5.7 DESIGNING THE RESEARCH STUDY AND DETERMINING THE SAMPLE

According to Leedy et al (1997, p 104), the data dictates the research methodology and the proposed methodology is “merely an operational framework within which the data are placed so that their meaning may be seen more clearly”. The central research objective of this study was to

determine the new marketing opportunities for fixed line telecommunications operators in South Africa following a strategic marketing approach.

Creswell (1994, p 2) defines a quantitative study as “an inquiry into a social or human problem, based on testing a theory, composed of variables, measured with numbers and analysed with statistical procedures, in order to determine whether the predictive generalizations of the theory hold true”. Creswell (1994, p 2) goes on to define a qualitative study as an “inquiry process of understanding a social or human problem, based on building a complex holistic picture, formed with words, reporting detailed, views of informants and conducted in a natural setting”. As both methodologies could yield significant value to this study, depending on the data types, both research methodologies were used and the respondents’ responses were qualitative and quantitative.

Gill and Johnson (1991, p 9) state that, when undertaking research, a researcher has a choice of research approaches “in making an area of interest researchable”. In this case the researcher could choose to limit this study to a secondary data study, case study or survey research study. Gill and Johnson (1991) point out that the choice of approach should be guided by the content of the problem, the availability of resources and the location of the data. After careful consideration of these factors, the researcher decided to use secondary data and the case study method. The rationale was that the data (such as market share, industry trends, customer needs, regulatory change, emergent technology and competitive information) were located in the secondary literature and in the responses, perceptions and thoughts of the case studies, the respondents’ from Telkom.

5.7.1 Secondary data

This study involved determining new marketing opportunities for fixed line telecommunication operators in South Africa, using a strategic evaluation approach. At the time the study was undertaken, the global and South African telecommunications industry were going through major upheaval. As a result, in order for this study to satisfy the research objectives, the researcher had to rely heavily on secondary research sources because of the rapidly changing telecommunications business environment and the researcher’s dependence on keeping abreast of these changes. In

addition, to ensure that the subject was covered as comprehensively as possible, secondary sources of information had to be consulted to broaden the scope and depth of the research effort. Furthermore, the researcher had access to a wide variety of problem-related primary and secondary literature, such as market reports from research companies (like Ovum, Gartner and BMI-Techknowledge), journals, market and competitive intelligence from within Telkom as well as online databases that provided enormous insight into the research problem.

5.7.2 Case study

Having identified the market trends and some of the new marketing opportunities emerging for fixed line telecommunications operators in South Africa from the literature review, the findings and new questions that emerged from the primary and secondary literature sources had to be tested with knowledgeable persons in the South African fixed line telecommunications industry. Because Telkom was the only licensed public fixed line telecommunication service operator in South Africa at the time, the researcher opted to use the case study approach as part of a research strategy to investigate the problem with knowledgeable individuals occupying management positions in strategically important service organizations in Telkom.

Hartley (1994, p 209) defines case study research as “a detailed investigation, often with data collected over a period of time, of one or more organizations or groups, or within organizations, with a view to providing an analysis of the context and processes involved in the phenomenon under study”. Hartley (1994) points out that the phenomenon is not isolated from its context as in the case of laboratory research, but rather is of interest because it is in relation to its context. According to Yin (in Hartley, 1994), the case study is not a method but rather a research strategy used to shed light on a research problem and could use a number of methods that may be qualitative or quantitative or both but generally the emphasis is more on qualitative analysis. Hartley (1994, p 209) indicates that the case study is used frequently in one or more organizations. Because of its exploratory nature, the case study is an ideal strategy to explore not typicality but unusualness and extremity about some phenomenon.

Hartley (1994, p 209) indicates that the choice of a method depends on two factors: the relationship between theory and method, and the way the researcher “attends to the potential

weakness of the method”. He adds that the case study might involve the use of questionnaires combined with interviews (semi structured and/or structured) and observation for detailed investigation.

After finalising the research methods to be employed in this study, the sample for the empirical research had to be determined. The first step was to define the universe.

5.7.3 Defining the universe

Since the main focus of this study was on South African fixed line telecommunications operators and the leading fixed line telecommunication service provider in South Africa was Telkom at the time, the universe was defined as strategic decision makers in management positions in Telkom.

5.7.4 Selection and description of study participants

According to Saunders, Lewis and Thornhill (1997, p 145), purposive sampling also known as judgmental sampling allows researchers to use judgment in selecting cases which will enable them to best answer the research questions. They state that the selection of cases “for a purposive sample should be dependent on your research questions and objectives”. Due to the specialised nature (requiring knowledgeable persons from the South African fixed line telecommunications industry) of the research objectives, the researcher opted to use a non-probability sampling method. Critical case purposive sampling was used. This sampling method relies on the selection of critical cases on the “basis that they can make a point dramatically or because they are important. The focus of data collection is to obtain an understanding of what is happening in each critical case so that logical generalizations can be made” (Saunders, Lewis and Thornhill, 1997, p 145). Paton (1990) states that the use of the critical case method is indicated by asking the following questions:

- If it occurs at a particular place will it also occur elsewhere? As a major player in the ICT industry in South Africa, any occurrence at Telkom should also occur elsewhere.
- If they cannot understand the process, then would no one else be in a position to understand the problem? If Telkom management do not understand how the changes in the South

African telecommunications business environment are changing their business, then no one else in South Africa would be in a position to understand the problem.

- If they are experiencing problems, can it be certain that everyone else is experiencing the same problems? Telkom was experiencing declining voice revenues. As mentioned earlier, global operators are also experiencing a decline in voice revenues (see chapter 1, section 1.4.2).

The main motivation for this selection was that Telkom management represented a critical case, because if they did not understand what was taking place in the South African telecommunications business environment, then no one else would be in a position to understand the process. At the same time, if Telkom were experiencing a reduction in revenues, then all fixed line telecommunications operators would also be experiencing the same problem. Finally, if Telkom needed to identify new revenue-generating avenues, the same would happen everywhere. As a result, the case study strategy was deemed the most appropriate to resolve the research questions.

The study participants were purposively selected from five strategic business areas in Telkom, namely Technology and Network Services, Marketing, Strategic planning, Government relations and Information Technology service organizations of Telkom SA. The reason for this was that these service organizations represented the strategic divisions of Telkom and were the most well positioned in terms of exposure to elements such as technology, Government thinking and regulatory legislation, corporate strategy and evolving customer needs and product development and market trends for fixed line telecommunication operators in South Africa. Of these five strategic business areas, Technology and Network Services, Marketing, and Information Technology Services represented the most critical areas because they were the major drivers of technology strategy and marketing direction for Telkom. In the researcher's view, this made them the most suitable to provide valuable and reliable input into the study.

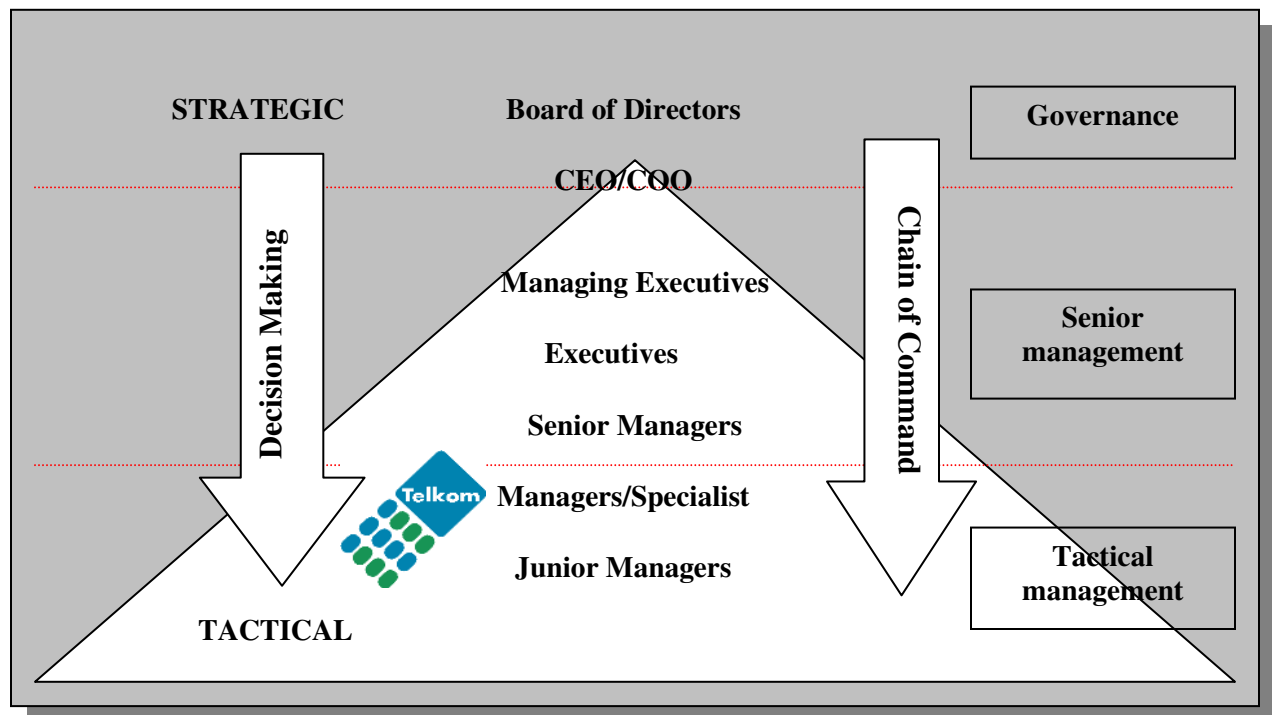
A list of names and contact details were obtained from the Telkom Human Resources Department. To add to the validity of the data findings, all the participants were selected from the managerial and/or executive bands in these departments. It should be noted that the population was representative of middle to executive management level (including specialist that

Telkom classified as management). According to Hamel and Prahalad (1994) and Foster and Kaplan (2001), for an organization to operate strategically in a volatile business environment, the input in the strategic management process should involve knowledgeable individuals from the organization's management, ranging from middle management to executive level (see Telkom management structure in figure 5.2 below). The telecommunications population involved in this study will be discussed next.

5.7.5 Telkom sample

Figure 5.2 depicts Telkom's management structure.

FIGURE 5.2 TELKOM SA MANAGEMENT STRUCTURE



As indicated in figure 5.2, a board of directors, comprising representatives of its shareholders, heads Telkom: the SA Government, Thintana (SBC Communications and Telecom Malaysia) and Uthingo. The Chief Executive Officer and Chief Operating Officer control the organization. A team, comprising the Chief Technical Officer, the Chief Marketing Officer and managing executives from each service organization, supports them. These, in turn, are supported by a number of executives from each service organization across the value chain, which, in turn, is supported by senior managers, managers and junior managers. The chain of command is

hierarchical. Strategic decisions are made by senior management level and up whilst tactical decisions are by management level and down. In identifying the sample, the Telkom structure reflected in figure 5.2 was taken into consideration.

Table 5.1 below presents the population of Telkom management selected for this study. Five major service organizations were identified and used to conduct the study. Each of these units was disproportionate and consisted of an integral mixture of separate units that exist in a conglomerate relationship.

TABLE 5.1 NUMBER OF TELKOM SA MANAGERS/EXECUTIVES PER SERVICE ORGANIZATION

Population description	Total survey population (%)	Total number (n)	Strategic importance
SURVEY			
Sales and Marketing	42	655	Very high
Government Relations	1.52	24	Medium
Information Technology	23.70	374	Very high
Technology and Network Services	33	516	Very high
Strategic Planning	0.57	9	Medium
TOTAL POPULATION	100	1578	

Telkom SA Human Resources Records, March 2002

5.7.6 Data-collection method

The researcher chose the survey questionnaire, as the data-collection method.

5.7.7 Questionnaire

The researcher compiled a questionnaire (see Appendix 3 for a copy of the survey questionnaire). The instrument used was a self-administered questionnaire with a Likert five-point scale option (for example, 1= Strongly disagree, 2= Disagree, 3= Neither agree nor disagree, 4= Agree and 5= Strongly agree). Table 5.2 represents the layout of the questionnaire. The questionnaire was separated into four distinct areas of investigation: Section A: Biographical questions; Section B: South African telecommunications business environment; Section C: New

marketing opportunities for fixed line telecommunications service providers; Section D: Strategic marketing.

TABLE 5.2 SUMMARY OF QUESTIONNAIRE LAYOUT

Questionnaire Section	Data component	Type/s of question used
Section A	Biographical information	Multiple options and nominal scaled questions
Section B	SA telecommunications business environment	Categorical questions and ordinal scaled
Section C	New marketing opportunities for fixed line telecommunications operators	Categorical questions, ordinal and interval scaled scaled
Section D	Strategic marketing	Categorical questions and ordinal

5.7.7.1 Questionnaire layout

In compiling the questionnaire, the researcher's chief concern was to keep it simple and make it easily understandable without compromising the objectives of the study. The questionnaire was constructed to ensure neatness, readability and that the questions flowed logically and could be easily understood by the respondents' (Leedy et al, 1997 and McDaniel and Gates, 2001). A possible weakness of the questionnaire was its length, which was seventeen pages, including the covering letter. This was unavoidable. In order to obtain sufficient data to satisfy the research objectives, no questions could be left out. To compensate for the questionnaire's length, the questions were presented interestingly to capture the respondent's attention.

5.7.7.2 Wording, consistency and appropriate type of questions

In drawing up the questionnaire, the researcher kept the wording simple and the meaning clear to make it easy for the respondents' to complete the questionnaire. The target population was also a serious consideration in choosing the types of question since all the respondents' were in management positions and were busy because Telkom at the time was preparing for an IPO. Therefore the researcher was concerned that the questionnaire should make reasonable demands on the respondents' and at the same time obtain all the necessary data required to satisfy the objectives of the study.

5.7.7.3 Response category format

The closed questions were divided into the following categories:

- Nominal – non-numerical, such as male and female
- Interval – equal numerical intervals, such as age, for example, where age categories were grouped into categories of equal size
- Ordinal - rank ordered questions (according to a scale of Strongly disagree, Disagree, Neither agree nor disagree, Agree and Strongly agree).

Each of the questions was pre-coded to facilitate easy data entry into SPSS and to make interpretation easy. Depending on the number of variables involved, ordinal questions used a five-point Likert scale while nominal and interval questions were allocated numeric values ranging from 1 to 6.

5.8 PILOT TESTING OF QUESTIONNAIRE

Leedy et al (1997) point out that relevance is one of the chief factors to be considered in drawing up a questionnaire and it should be designed in such a manner that the research objectives are fulfilled. To ensure that the questionnaire fulfilled the study objectives, the questionnaire was quality tested on an item-by-item basis with colleagues in the Telkom marketing research department for precision of expression, relevance and objectivity. In addition the questionnaire was also pilot tested with a small group including a doctoral graduate, two master's graduates and the promoter for this thesis. A copy of the questionnaire was sent to the Bureau for Market Research (BMR) at the University of South Africa to check and test for data capturing relevance. Some questions were subsequently refined according to the comments received from the pilot group.

To make the questionnaire easy to distribute and complete, the refined questionnaire was converted to an electronic questionnaire by a group of Telkom IT professionals and subjected to a further pilot test with the pilot test group. It was found to be unsuitable as it took up too much time to complete and, more importantly, the respondents' indicated that it was difficult to keep track of the questions and maintain their thought, as they had to keep paging up and down in the

electronic questionnaire. Consequently, the electronic questionnaire was shelved and the researcher proceeded with the initial plan for questionnaire distribution that involved attaching the Word format questionnaire (see Appendix C) to electronic mail and distributing it to all the survey respondents' No hardcopy of the electronic questionnaire is available because due to the sensitivity of the information, Telkom IT destroyed it.

5.9 DATA COLLECTION

The questionnaire was the data-collection method for this study. The distribution of the questionnaire to all the respondents' was achieved by obtaining a list of names and contact details (service organization, job level, telephone number, fax number, e-mail address) from the Telkom Human Resources Department. The list of names isolated only those employees in each of the five Telkom service organizations on the criterion that they occupied a management position in their organization or unit. After having finalised the survey questionnaire it was mailed electronically to all the respondents' in each service organization. A covering letter, outlining the purpose of the research and containing brief instructions for completing and returning the questionnaire to the researcher (see Appendix C), was included.

To increase the return rate of the questionnaires, a period of one month was set aside as a closing date with two-week intervals to remind respondents' to complete the questionnaire. Independent meetings were also held with management executives requesting them to encourage their subordinates to complete the questionnaire. When the first deadline date was reached, in order to increase the response rate the researcher opted to extend the deadline date by three weeks to give those respondents' who had not responded a chance to respond. Once again, the questionnaire together with the covering letter was dispatched via e-mail to all the respondents'. The only change made to the original covering letter was the new deadline date.

5.10 DATA ANALYSIS, INTERPRETATION AND REPORTING OF RESULTS

In total 163 (10.32%) of the 1578 respondents, responded to the survey. This study used a variety of unique data analysis techniques that were the most appropriate for this study to explore the data and inform the research objectives.

5.10.1 Data and method of data entry

The data collected from the questionnaire were mainly organised into nominal, ordinal and interval form. Statsoft (2002), Leedy et al (1997) and Howell (1992) describe these data forms as follows:

- **nominal:** data assigned labels in this study, for example junior managers, managers, marketing, strategic planning, male and female
- **ordinal:** data given a sequential order in the study, for example strongly disagree, disagree, neither agree nor disagree, agree and strongly agree
- **interval:** data arranged in such a way that there is a legitimate difference between scale points, for example, temperature.

SPSS 11.0 was used to carry out all analysis. After validating and editing each questionnaire (checking questionnaires to see that the correct target group completed them, skip patterns were correctly followed, etc) the data was entered directly into SPSS. Aaker, Kumar and Day (1998, p 439) state the role of the data editing process is to “identify omissions, ambiguities, and errors in the responses”. To reduce data input error, the data on each questionnaire was entered twice. Thereafter, drawing a marginal report from SPSS to monitor that the valid data codes were used and the correct skip patterns followed, a final error check was carried out. Having established that the data stored in SPSS was free of all logical errors (logical error means that skip patterns and impossible coding, for example entering a 3 instead of a 2 for a two-code question, were not violated) the next step was to compare the results of the survey.

5.10.2 Data comparison

The first step in comparing data was the use of one-way frequency tables. According to McDaniel and Gates (2001, p 399) state that a one-way frequency table “shows the number of respondents’ who gave each possible answer to each question”. In running frequency tables, the researcher had three choices for selecting the basis for percentages, namely:

- **Using total respondents’.** This means that the total number of respondents’ would be used as the basis for calculating percentages.

- **Using number of persons asked question.** Because of skip questions some respondents' were not asked certain questions. Therefore the basis used here would be only the respondents' asked the question.
- **Number answering.** This method uses only the number of respondents' who actually answered the question. For example, if a question was asked to 200 persons and 50 indicated they "don't know", then the basis for computing percentages would be 150.

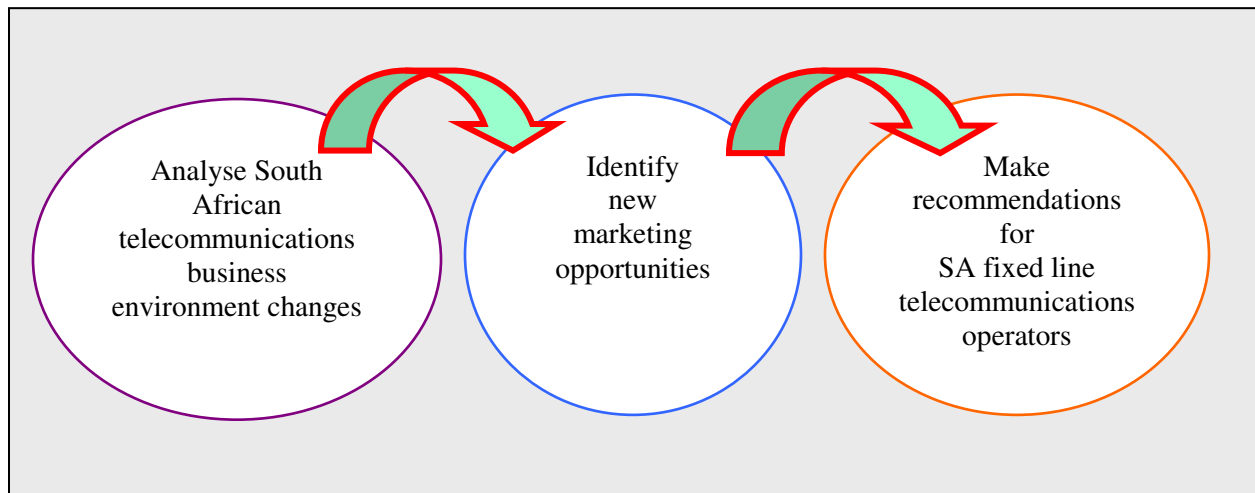
The researcher selected the number of respondents' answering a question as the basis for computing percentages. In general, cross tabulations and data comparisons were made across the five Telkom service organizations as well as within and between management groups. Dillon, Madden and Firtle (1994, p 405) describe cross-tabulation (sometimes referred to as contingency tables) as "an extension of the frequency distribution and is a common method for describing two or more variables at a time. A table cross classifying the levels of one variable with the levels of some other variable provides the bivariate (two variables at one time) frequency distribution." Top box and bottom box comparisons group the top two and bottom two groups into categories, for example, strongly agree and agree and strongly disagree and disagree. These categories are then used to obtain an overall better picture of the response patterns. Aaker, Kumar and Day (1998) recommend combining some of the question categories, especially if there is a logical explanation behind the category combination. Therefore top box and bottom box comparisons were used to provide a clearer view of the response patterns so that, overall, a clearer view of the responses could be obtained.

5.10.3 Significance testing

Martins, Loubser and Van Wyk (2002) and Kinnear and Taylor (1996) point out that reliable information about alternatives is required for good decision-making. They state that the primary objective of statistical techniques is to provide reliable answers to questions posed by management for them to make good decisions. The focus of this study was to identify new marketing opportunities for fixed line telecommunications operators in South Africa. In this study management from five of the most strategic service organizations in Telkom were identified as the population (universe). The study aimed to identify the changes taking place in the South African telecommunications business environment and the new marketing

opportunities arising in this environment. Finally, it aimed to identify a market strategy for Telkom that would position the organization favourably to capture these opportunities to ensure its survival and prosperity. Figure 5.3 illustrates the problem resolution strategy used in this study to resolve the central research problem.

FIGURE 5.3 RESEARCH STRATEGY STEPS TO RESOLVE RESEARCH PROBLEM



5.10.4 Selecting the appropriate statistical test

An important consideration for testing statistical significance is the appropriate test to be used since not all tests are equally relevant. According to Martins, Loubser and Van Wyk (2002) and

Kinnear and Taylor (1996), the data and the required outcomes guide the appropriate use of statistical tests. Statistics can be segregated into two main groups, namely *non-parametric* and *parametric* statistics. Nominal and ordinal data are non-parametric, and interval and ratio data are parametric. This study used nominal, ordinal and interval scaled data for data collection, which meant that both parametric and non-parametric statistical tests could be used, depending on how the data was scaled. Therefore both parametric and non-parametric statistical methods were used, where appropriate. The tests used to analyse the data will be discussed next.

(1) Pearson chi square test

The Pearson chi-square test was used to test for independence between groups. Generally, researchers are interested in establishing whether two variables in a cross-tabulation are independent of each other. Norusis (1993, p 206) points out that “two variables are by definition independent if the probability that a case falls into a given cell is simply the product of the marginal probabilities of the two categories defining the cell”.

A statistic commonly used for testing the hypothesis that the row and column variables are independent is the Pearson chi square test. The Pearson chi square is calculated by summing over all cells the squared residuals divided by the expected frequencies:

$$X^2 = \sum_i \sum_j \frac{(O_{ij} - E_{ij})^2}{E_{ij}}$$

Once the calculation is complete, the calculated chi square is compared to the critical points of the theoretical chi-square distribution so that a likeliness (likely/unlikely) estimate is produced in order to calculate how likely or unlikely the calculated value is if the two variables are independent.

(2) Yates continuity correction test

In many instances the Yates' correction for continuity is used to improve the approximation for 2x2 tables. This method involves subtracting 0.5 from the positive differences between observed frequencies and expected frequencies and adding to it 0.5 to negative differences before it is squared (Norusis, 1993). Therefore in order to improve the approximation of the Pearson chi square test, Yates' continuation continuity was used, where necessary.

(3) Kruskal Wallis one-way analysis of variance test

To test for differences between the rankings of different telecommunications products and services and, in some cases, to rank the different telecommunications products and services according to Telkom service organization rankings, an extension of the Mann-Whitney test

called the Kruskal-Wallis one-way analysis of variance, was used. Howell (1992) states that the Kruskal Wallis one-way analysis of variance is a generalisation of the Wilcoxon rank-sum test except that in this case three or more groups are involved. Leedy et al (1997) describe the Kruskal Wallis test as a one-way analysis of variance and the non-parametric equivalent of the analysis of variance (ANOVA) used in parametric statistics. Its main purpose is to determine whether k independent samples have been drawn from the same population.

The Kruskal-Wallis is computed similarly to the Mann-Whitney test. All the cases from the five Telkom services organizations were combined and ranked and in cases where the ranks were tied, average ranks were assigned. For each individual group, the ranks were summed and the Kruskal-Wallis H statistic computed from these sums. The H statistic has approximately a chi-square distribution under the hypothesis that the five groups are distributed the same.

Hence, in places where rankings were required to evaluate how the five Telkom service organizations ranked different elements, the Kruskal-Wallis test was used. In other instances, the Kruskal-Wallis test was used to visually inspect for differences between the management and top management groups. In all cases these tests were supplemented with the median or other test to enhance reliability.

(5) Median

Blarke and Cooke (1983, p 16) state that the “median M of a set of N observations which have been ranked in order of size is equal to the value taken by the middle (the $0.5 [N+1]$ observation when N is odd, and is half the sum of the values of the two middle observations (the $0.5N$ th and $[0.5N+1]$ th) when N is even”. According to Clarke and Cooke (1983), the median is generally a better measure than the mean especially when the data is skewed, because the mean can be misleading in cases where the distribution is not symmetrical or near to being symmetrical. Unlike means, which are influenced by extreme values and therefore can seriously distort the data, the median is not. Howell (1992) points out that a major advantage of the median that is shared with the mode is that it is unaffected by extreme values on either side of a distribution within a set number of scores. Since some of the data obtained was in ordinal form and non-parametric, the mean (μ) as a measure of central tendency could not be used for this data,

because ordinal data were imperfect especially when they measured respondent attitudes and perception. With ordinal data, perception could not be measured precisely. For example, an ordinal scale that aims to measure respondents' perceptions of the statement "Telkom should provide value added service" on the following scale: 1 = Strongly agree, 2 = Agree, 3 = Neither agree nor disagree, 4 = Disagree and 5 = Strongly disagree would not yield a precise mean measure if the mean equalled 4.5, since there is no description in the scale for a measure of 4.5 and it would be meaningless (Van Aardt, 2003).

Kinnear and Taylor (1996) state that if the data form comprised ordinal or interval scale then legitimate use could be made of the median to reflect the measure of central tendency. As the data in this study comprised mainly ordinal scale, the median was used as a measure of central tendency, wherever necessary, to describe the data.

(6) Mean test

The Mean is the most common measure of central tendency (Howell, 1992). In cases where the data were in interval format, the mean was used to determine central tendency. Kinnear and Taylor (1996) recommend using the mean when the data are interval scaled. Taking the sum of all the values and dividing by the sample size computes the Mean.

(7) Median test

According to Leedy et al, (1997, p 269) the "median test is a sign test for two independent samples in contradistinction to two correlate samples, as is the case with the sign test". The median test was used to visually check for differences between two groups (such as the management and top management groups) whenever it was deemed necessary to verify findings.

5.10.5 Results and strategic recommendations

Chapter 6 discusses the results (findings) of the study and chapter 7 presents the conclusions and strategic recommendations. The importance of quality information in management decision-

making should not be underestimated. In the next section some of the methods used to enhance the trustworthiness in this study are explored and briefly discussed.

5.11 METHODS OF ACHIEVING TRUSTWORTHINESS

Validity and reliability are the two words most encountered in research methodology (Leedy et al, 1997). According to Leedy et al, (1997), validity and reliability are key to assessing the trustworthiness of any research study. Therefore for the survey results to be trustworthy, it was important that the data were reliable and the measuring instrument valid.

According to Statsoft (2002), validity in its simplest form can be explained as whether or not the supposed measuring instrument tests what it is supposed to test. Kinnear and Taylor point out that validity refers to the extent to which a measurement process is free from random and logical errors and is concerned with whether the measuring instrument is measuring what it is supposed to measure, how well and how comprehensively it measures and how accurately it measures it. Therefore, validity concerns the soundness and effectiveness of the measuring instrument Leedy et al (1997) identify six of the most common types of validity, namely:

- **Face validity** relies mainly on researchers' subjective judgment and requires them to answer two questions. First, is the measuring instrument measuring what it is supposed to be measuring and second, is the sample being measured representative of the behaviour or trait being measured?
- **Content validity** refers to the accuracy with which a measuring instrument measures the factors or situations under study. Content validity is mainly concerned with the accuracy of the questions asked to elicit the information required. In other words, do the questions asked draw the right information from respondents'?
- **Criterion validity** refers to validity obtained by relating performance on measure to the performance of another measure, called the criterion. The critical component in criterion validity is a reliable and valid criterion. This implies a standard against which to measure the measuring instrument carrying out the measuring. In this case, the data of the measuring instrument should have a high correlation with data of the criterion.
- **Construct validity.** A construct is any concept, such as perception, fear, anxiety, belief, agreement, or honesty, that is intangible and cannot be directly observed. In construct

validity, the researcher is concerned with the degree to which the actual construct itself is measured.

- **Internal validity** relates to the freedom of bias in forming conclusions from the data itself. It is concerned with ascertaining that the changes in the dependent variable are the result of the independent variable rather than from the way the research was designed.
- **External validity** concerns whether the conclusions drawn from a sample can be generalized to the universe.

To test the validity of the measuring instrument the orthogonal approach (hierarchical cluster analysis method) was used for non-parametric data and factor analysis for parametric data.

Bullock and Stallybrass (1979, p 107) define cluster analysis as a “form of factor analysis in which multivariate measurements or observations on a number of individual entities are statistically analysed, usually with the aid of a computer, to try to identify internal structure, e.g. the chronological ordering of archaeological objects, or the grouping of a set of manuscripts by authorship”. Martins, et al, (2002, p 364) describe cluster analysis as a “mathematical procedure, which systematically forms clusters of objects using a measure of proximity as the primary clustering criterion”. Propose that a number of cluster analysis methods exist but that essentially the procedure are the same. There are two main forms of proximity testing: rotated and unrotated and in both cases specific extraction methods are used for cross factoring of the matrix. Kinnear and Taylor (1996) that cluster analysis enables the researcher to place variables into groups or subgroups or clusters. These authors argue that clusters are not determined *a priori* but rather that they are created by the cluster analysis procedure itself.

The orthogonal cluster analysis process begins by attempting to identify relatively homogenous groups of cases or variables on a number of selected characteristics and utilises an algorithm that begins with each case or variable in a cluster, using a process of iterations to form a single remaining cluster (SPSS, 1999^b). Accordingly, SPSS (1999^a, p 301) states that the joining distances provide a good indication of whether homogenous or non-homogenous clusters are formed. SPSS (1999^a, p 301) maintains that smaller coefficients are an indication that “fairly homogenous clusters are joined, while larger coefficients are an indication that the members of the cluster are dissimilar”. According to Van Aardt (2003), a low coefficient (>0.5) indicates that

the linkage between the clusters is very weak and therefore not measuring the same thing. The rationale for using this approach as a method to test for validity was that if, after iteration, the variables after iteration clustered and if their coefficients were small, then it could be deduced that they were the same and therefore a good indication that the different items in the scale, were measuring what they were supposed to measure. However, if the variables did not cluster, then it was an indication that the variables were not the same and implied that the measuring instrument was not measuring what it was supposed to measure but, instead, was measuring different things. Logically this implies that those variables that clustered together were alike and therefore testing the same construct being measured, while those variables that did not cluster were different and testing different hence they were not testing what was being measured.

Principal component factor analysis was used to test the validity of the parametric questions. Basically, principal component analysis summarises the correlation between two variables in a scatter plot. Hence, a regression line that represents the most suitable or best summary of these linear relationships between the variables can be drawn. If a variable that would approximate the regression line in a plot could be defined, clearly that variable would capture most of the essential properties (essence) of the two items. This means that, in future, a subject's single score on that new factor that is represented by the regression line could represent that property or essence of the two items. In this way the two variables have, in a sense been reduced to a single factor. This means that the single factor is actually a linear combination of the two variables. This illustrates the basic principle behind factor analysis. The rationale for using factor analysis, to determine the validity for parametric questions was that those variables that could converge (because of their close correlations) would form factors that would signify the number of items that did not correlate, or that were not the same. All the items in a scale would be independent and would be testing some aspect. When principal component factor analysis was used and the items converged to form factors, it would mean that those items were actually testing the same construct. The more remaining factors, after performing a factor analysis, provides good indication of the instrument's validity.

An important question that arises now is the number of factors to retain. Statsoft (2002) points out that the Kaiser criterion method is one of the most widely used because using the Kaiser criterion method, only factors with eigenvalues greater than 1 are retained to form factors. What

this means is that, unless a factor extracts at least as much as the equivalent of one original variable, it is discarded. In essence, when factor analysis is computed for a particular question, those items that have an eigenvalue of greater than or equal to 1 will form individual factors. If all the items in a scale form more than one factor, then it implies that they are different and therefore that not measuring the same construct or concept.

Statsoft (2002) regards reliability as the level to which a measurement taken with a multiple-item scale (in this case, some of the questions in the questionnaire) reflects mainly the so-called true score of the dimension that is to be measured, relative to the error. Similarly, Kinnear and Taylor (1996) explain that reliability refers to the extent to which a measurement process is free from random error. Hence reliability is mainly concerned with the accuracy, consistency and predictability of the research findings.

Therefore to ensure the accuracy, consistency and predictability of the research findings, two reliability-testing tools were used, namely Cronbach's alpha and Spearman's correlation coefficient (also called Spearman's Rho). Cronbach's alpha was used whenever parametric interval scale data were encountered in the instrument (see questions 3.3 and 3.7 of the questionnaire in Appendix C), and Spearman's correlation coefficient to calculate the reliability for the non-parametric scales.

The assessment of scale reliability is based on the correlations between the individual items or measurements that make up the scale, relative to the variances of the items. It should be noted that the validity of a scale is always limited by its reliability (Statsoft, 2002). An important question that arises, then, is how will validity be affected by less than perfect scale reliability? The random error portion of the scale is unlikely to correlate with some external criterion. Thus, if the proportion of true score in a scale is only 60% (that is, the reliability is only .60), then the correlation between the scale and the criterion variable will be "*attenuated*," that is, it will be smaller than the actual correlation of true scores (Statsoft, 2002).

According to Holm and Llewellyn (in Leedy et al., 1997, p 35), Cronbach's alpha (α) is a statistical procedure with relatively little error and involves correlating every test item with each other. Recommend that a score of $\alpha \geq .70$ is generally acceptable, but contend that where $\alpha \geq .70$

improves the evidence that items in the test instrument are measuring the same trait. Spearman's correlation coefficient works by correlating the individual items in the scale to each other. The higher the correlation, the greater the chance the measuring instrument is consistent, accurate and predicabile.

Altheide and Johnson (1994) refer to usefulness, research positioning and contextual completeness as measures of interpretative validity in quantitative research. The researcher measured the validity and reliability of this study in terms of these criteria as follows:

- **Usefulness** refers to how the study enriches its readers and moves them to action. This study will be valuable to anyone interested in telecommunications services and products and the new opportunities developing in this industry. The research findings will have an impact on fixed line telecommunications service providers (such as Telkom) and move them to take advantage of the new marketing opportunities that are revolutionising the industry.
- **Research positioning** refers to researchers' awareness of their influence on the study. From the outset, the researcher was aware of his position in influencing the research findings and therefore acted as an observer in the research process.
- **Contextual completeness** refers to the extent to which the complete situation is presented. To ensure that the study complied with this criterion, the researcher engaged technical consultants, his promoter, colleagues, the respondents' and other relevant resources for advice on various aspects of the study.

Gall, Borg and Gall (1996) list eight additional criteria for ensuring or testing validity. Of these, the researcher used triangulation, member checking, establishing a chain of evidence, and representative checks.

- **Triangulation.** A variety of primary (survey questionnaire) and secondary data sources were used. In addition, discussions with industry analysts from BMI-Techknowledge and OVUM were used to check the reliability of the research findings.
- **Member checking.** Colleagues, marketing managers, senior managers and executives from Telkom SA were requested to review the research report to check for errors and omissions and to provide additional insights that may have been overlooked.
- **Establishing a chain of evidence.** To establish a chain of evidence, the study was linked and checked with the findings of previous research using similar methods and research problems.

The researcher did this to establish whether the research findings were aligned. All anomalies were carefully screened to identify potential errors.

- **Representative checks** were used throughout the study to check whether the research findings were typical for each of the groups.

Furthermore Leedy et al (1997) state that all research should comply with the following standards:

- **Universality.** This criterion requires that the research should be of such a nature that it could be carried out by anyone. In order for the study to comply with this requirement, the researcher ensured that all information was documented and stored electronically so that it could easily be accessed. A copy of this information was made available to the researcher's promoter for the University's records.
- **Replication.** The research findings should be duplicated under exactly the same conditions. Copies of all data-collection instruments, the identified sample population and a list of company names and addresses of respondents', together with the completed data-collection tools, have been stored for future reference.
- **Control.** Although maintaining the exact parameters of the research is very important, due to the nature of this study, maintaining control over the parameters (i.e. ensuring that the parameters remained exactly the same) was difficult. However, the researcher made every effort to ensure that the parameters for the study were controlled.
- **Measurement.** Since this study used both quantitative and qualitative methods and was dominated by humanistic, social and exploratory research the measurements were more difficult to quantify, measure and evaluate. However, every effort was made to quantify, measure and evaluate the data as far as possible.

5.12 CONCLUSION

This chapter discussed the research methodology thoroughly and outlined the planning and implementation processes of the primary research phase. Chapter 6 discusses the findings.

CHAPTER 6

DATA ANALYSIS AND INTERPRETATION

6.1 INTRODUCTION

This chapter interprets and analyses the main findings of the empirical research. The primary research objective was to determine new marketing opportunities for fixed line telecommunication operators in South Africa. In addition the researcher wished to

- identify the changes taking place in the telecommunications business environment in South Africa
- analyse the major drivers of change that are creating new marketing opportunities in the South African telecommunications sector
- identify the new marketing opportunities arising for fixed line telecommunication service providers in South Africa
- make recommendations for market strategy for South African fixed line telecommunication operators so that they may take advantage of the new marketing opportunities
- make recommendations for future research in the area of strategic telecommunications marketing

The results of the research are presented and analysed using tables, graphs and other descriptive statistics in order to answer the primary and secondary research objectives, thereby leading to a resolution of the central research problem. Therefore, an analysis of the Telkom SA respondent profiles is provided (see section 6.2). Then the data that determine the major changes taking place in the South African telecommunications business environment will be presented and discussed, (see section 6.3). Section 6.4 describes the respondents' perceptions of the major drivers of change in the South African telecommunications business environment that are creating new marketing opportunities for South African fixed line telecommunication operators. This section also identifies the respondents' perceptions of the new marketing opportunities arising for South African fixed line telecommunication operators. Finally, the market strategy that South African fixed line telecommunications operators may adopt to take advantage of the

new marketing opportunities arising in the South African telecommunications business environment is discussed (see section 6.5).

Throughout the primary data analysis, patterns and trends that emerge are identified and discussed. In all cases, only valid responses and top box and bottom box scores were used as a basis for drawing conclusions. All final percentages were rounded off. Only results that had a significance level of 95% or higher were used.

6.2 ANALYSIS OF THE TELKOM SA RESPONDENT PROFILES

The respondents' were asked to answer a number of questions aimed at developing a profile on the various respondent groups involved in the study. The different profile areas are discussed next. Table 6.1 represents the cross-tabulations of respondents' per service organization that participated in the survey.

TABLE 6.1 CROSS TABULATION OF RESPONDENTS' LEVEL PER TELKOM SERVICE ORGANIZATION

Management level	Telkom Service Organization											
	Technology and Network Services		Information Technology		Government Relations		Sales and Marketing		Strategic Planning		Total	
	No	%	No	%	No	%	No	%	No	%	No	%
Manager	68	42	28	17	0	0	15	9	0	0	111	68
Senior Manager	8	5	15	9	9	6	9	6	5	3	46	28
Executive	3	2	0	0	1	1	2	1	0	0	6	4
Total	79	49	43	26	10	6	26	16	5	3	163	100

OBSERVATIONS

As indicated in Table 6.1, although the questionnaire was sent to all Telkom managers in the universe (1578) (see table 5.1), a total number of 163 (10.33%) respondents' across all five identified Telkom service organizations responded to the survey. The biggest concentrations of respondents' (68%) were from the management/specialist band: 42% of management/specialist respondents' were from Technology and Network Services, 17% were from Information

Technology, 9% were from Sales and Marketing and no managers from Government Relations and Strategic Planning participated. This was expected as in these two service organizations senior management make up the majority of management and their numbers are relatively small. A total of 28% of senior managers participated in this study and 4% of the respondents' were from the executive band. It should be noted that senior managers from all five services organizations took part in the survey while only three executives from Technology and Network Services, one from Government relations and two from Sales and Marketing participated in the survey. No executives from Information Technology and Strategic Planning provided any response to the survey. Although the questionnaire was distributed to all managing executives in the identified groups, no responses were received from this group. This was expected because at the time Telkom was preparing to list on the stock exchange and the mangement executives were preoccupied with more important issues.

6.2.1 Respondents' biographical data

Table 6.2 represents a summary of the respondents' biographical data.

TABLE 6.2 SUMMARY OF RESPONDENTS' BIOGRAPHICAL DATA

Section A: Job level	Number of respondents'	%	Total responses	Missing	%
Manager	111	68	163	0	100
Senior Manager	46	28			
Executive	6	4			
Section B: Respondents' service organization					
Technology and Network Services	79	49	163	0	100
Information Technology	43	26			
Government Relations	10	6			
Sales and Marketing	26	16			
Strategic Planning	5	3			
Section C: Years of service at Telkom					
1 year but less than 2 years	6	4	162	1	99
2 years but less than 6 years	23	14			
6 years and longer	133	82			
Section D: Years of service in Industry					
1 year but not more than 2 years	2	1	163	0	100
2 years but less than 6 years	13	8			
6 years and longer	148	91			
Section E: Qualification					
Matric	17	10	163	0	100
Degree/Diploma	92	57			
Postgraduate	49	30			
Other	5	3			
Section F: Age category					
20 – 25 years	2	1	160	3	98
26 – 30 years	11	7			
31 – 35 years	22	14			
36 – 40 years	36	23			
41 – 45 years	40	25			
46 – 50 years	25	16			
51 – 55 years	21	13			
56 – 60 years	3	2			
Section G: Gender					
Male	141	87	163	0	100
Female	22	13			
Section H: Main study field					
Technical	114	70	162	1	99
Commercial	37	23			
Other	11	7			
Section I: Main job functions					
Technology/Technology related	76	48	160	3	98
Product development	14	9			
Support (IT, Technical, HR)	26	16			
Strategic planning	13	8			
Government relations	7	4			
New product development	11	7			
IT system management	13	6			

6.2.1.1 Job levels

Section A in Table 6.2 highlights the number of respondents' per job category who took part in the survey.

OBSERVATIONS

Respondents' job levels ranged from management to executive management. As indicated in Table 6.2, 100% of respondents' responded to this question. Of the respondents', 68% belonged to the management group and 32% were the top management group (senior managers and executives combined). All the respondents' were from Telkom's managerial ranks. This implied that the responses received were relevant because they were derived from Telkom management who were possibly the most aware of the South African fixed line telecommunications business environment.

Section B of Table 6.2 reflects the number of respondents' per Telkom service organization.

6.2.1.2 Number of respondents' per service organization

Section B in Table 6.2 represents the number of respondents' per Telkom service organization.

OBSERVATIONS

The percentages of respondents' from each service organizations were as follows: Technology and Network Services 49%, Information Technology 26%, Government Relations 6%, Sales and Marketing 16% and Strategic Planning 3%. The majority of the respondents' were from the three most strategic areas in Telkom, namely Technology and Network Services, Information Technology, and Sales and Marketing.

6.2.1.3 Respondents' years of service

The respondents' years of service are reflected in table 6.2, sections C and D.

OBSERVATIONS

Telkom had employed 82% of the respondents' for over six years and 91% of the respondents' had six or more years of service in the telecommunications industry. This indicated that the majority of the respondents' had more than six years of experience in the fixed line telecommunication industry, thus increasing the validity of this study.

6.2.1.4 Respondents' qualifications

Educational qualifications play an important role in determining how people's thinking is influenced. Therefore the respondents' were asked to state their highest educational qualification. Section E in table 6.2 depicts the respondents' responses.

OBSERVATIONS

Section E of table 6.2 indicates that 57% of the respondents' had degree or a diploma, or both; 30% of the respondents held postgraduate qualifications, and 3% held other qualifications, such as certificates in psychology.

6.2.1.5 Respondents' age

To determine whether age had any effect on the respondents' responses, they were asked to select the age group to which they belonged from a list of age groups. Section F of table 6.2 indicates the respondents' age categories.

OBSERVATIONS

An analysis of the respondents' age profile shown in section F of table 6.2 revealed that 62% of the survey sample fell in the age group between 31 and 45 years, and 16% were between 46 and 50 years old. This indicated that the majority of the respondents' (as would be expected of management groups) were middle aged, making them fairly mature with the majority having a tenure of more than six years.

6.2.1.6 Respondents' gender profile

To evaluate whether there were any differences in the perceptions of male and female respondents it was important to determine their gender so that cross comparisons in their responses could be made, if necessary. Section G of table 6.2 represents the gender spread of the respondent sample.

OBSERVATIONS

Of the respondents who answered this question, 87 % were males and 13% were females. This indicated that mainly males occupied management positions at Telkom. The reason for this could be that males had dominated the telecommunications industry in South Africa in the past.

6.2.1.7 Main study fields

It was important to determine the main field of study of the respondents to see whether this influenced their perceptions.

OBSERVATIONS

Section H of table 6.2 depicts the percentage of respondents for this question. Of the respondents (99%), 70% of the respondents' main study field was technical, 23% indicated that their main study field was commercial and 7% indicated that their main study field was neither technical nor commercial.

6.2.1.8 Main job functions

Section I of table 6.2 depicts the main job functions of the 98% of respondents.

OBSERVATIONS

As was to be expected, 48% of the respondents' main job function was technical or technology related, 9% was product development, 16% provided IT, technical or HR support, 8% were mainly involved with strategic planning across the five Telkom service organizations, 4% were from Government Relations, 7% were involved mainly with new product development and 6% were IT system management. As an organization whose core business is technology related, it was expected that a high proportion of management would be mainly involved with technical and technology-related job functions. However 15.3% of the respondents were mainly involved with new product development initiatives. This meant that their involvement in the product development process would give a greater insight into the research problem, which was to identify new marketing opportunities for fixed line telecommunications operators in South Africa.

This section discussed and analysed the various elements that compose the Telkom respondents' profile. The respondents' responses to those questions aimed at determining their perceptions of the changes taking place in the South African telecommunications business environment will be presented, analysed and discussed, next.

6.3 IDENTIFYING THE CHANGES TAKING PLACE IN THE SOUTH AFRICAN TELECOMMUNICATIONS BUSINESS ENVIRONMENT

One of the objectives of this study was to determine the changes taking place in the South African telecommunications business environment. Thus, a battery of statements regarding the changes taking place in the different sub environments of the South African business environment were posed to the respondents in the empirical research phase to determine their attitudes towards and perceptions of the changes. Frequency tables were used to show the respondents' responses. In some cases, the respondents' responses were cross-tabulated to show differences between the management and top management group responses. To test for differences between the management and top management groups, the Pearson Chi Square goodness of fit test was used. In addition, where appropriate, the statements were clustered together into common telecommunications business areas of change, such as economic, regulatory, technological and social factors, that constitute the South African fixed line

telecommunications business environment (see section 2.8). The responses to each of the statements and questions will be presented, analysed and discussed next.

6.3.1 Respondents' perceptions of economic factors in the SA telecommunications business environment

The state of the global and South African economy has a serious impact on the demand for fixed line telecommunications products and services (see section 2.7.5). As a result, statements aimed at assessing Telkom management perceptions on an improvement in the global and South African economy and when an economic turnaround would take place were presented to the respondents (see questions 2.1.1 and 2.1.2 of questionnaire in appendix C). Table 6.11 depicts the respondents' responses to the statement that a global economic slowdown would have a negative effect on fixed line telecommunications operators.

TABLE 6.3 A SLOWDOWN IN THE GLOBAL ECONOMY WILL NEGATIVELY AFFECT FIXED LINE TELECOMMUNICATIONS GROWTH WORLDWIDE

Level of agreement or disagreement	Management group		Top management group %		Total	
	No	%	No	%	No	%
Agree to strongly agree	93	58	40	25	133	83
Neutral	8	5	6	4	14	9
Disagree to strongly disagree	9	6	4	3	13	9
Total	110	69	50	31	160	100
Statistic						
Pearson Chi Square	.811					
Mean Rank	81.27		78.80			
Greater than Median	24	22	11	22		
Less than Median	86	78	39	78		

OBSERVATIONS

As indicated in Table 6.3, 58% of the respondents from the management group and 25% from the top management group agreed that a slowdown in the global economy would negatively affect fixed line telecommunications growth worldwide. Grouping the top box scores indicated that a total of 83% of respondents were in agreement that fixed line telecommunications demand would be negatively affected by a slump in the global economy.

However, only 6% of the respondents from the management group and 3% from the top management group (bottom box combined) disagreed with this statement. The Pearson Chi square measured .811, indicating that there were no significant differences between the perceptions of the management group and top management group for this statement at a significance level of 0.05.

Although no significant difference were found using Chi^2 , the Kruskal Wallis non-parametric analysis found that the mean rank of the management group was 81.27 while that of the top management group was 78.80, thus constituting a very small difference of 3.47, which on a 100-point scale is very little. The median test found that the answering patterns of both these groups were similar which indicated that they were comparable and also that there are no differences in their responses. However, both the Chi^2 as well as the Chi^2 corrected for any within differences revealed no significant differences between these groups.

This indicated that there were strong levels of correlation between the two management groups with regard to their perceptions of the negative effects of a global economic slowdown on fixed line telecommunications operators. At the same time, the majority of Telkom management agreed that a slowdown in the global economy would have a negative effect on telecommunications operators. These findings were consistent with the research findings.

To determine the effects of the global economy on South African fixed line telecommunications operators, the respondents were asked to give their views on whether a slowdown in the global economy would negatively affect telecommunications growth in South Africa (see question 2.1.1 of questionnaire in Appendix C). Table 6.12 represents the Telkom management and top management groups' perceptions on whether a slowdown in the global economy would have a negative effect on telecommunications growth in South Africa.

TABLE 6.4 A SLOWDOWN IN THE GLOBAL ECONOMY WOULD NEGATIVELY AFFECT FIXED LINE TELECOMMUNICATIONS GROWTH IN SOUTH AFRICA

Level of agreement or disagreement	Management group		Top management group		Total	
	No	%	No	%	No	%
Agree to strongly agree	81	54	44	28	125	82
Neutral	8	5	2	1	10	6
Disagree to strongly disagree	19	12	4	3	23	16
Total	108	71	50	32	158	100
Statistic						
Pearson Chi Square	.278					
Mean Rank	75.98		87.10			
Greater than Median	24	22	14	28		
Less than Median	84	77	36	72		

OBSERVATIONS

As indicated in Table 6.4 above, 158 respondents responded to this question. The majority of Telkom management in both the management (54%) and top management (28%) groups agreed that a global economic slowdown would negatively affect South African fixed line telecommunications growth. Of the management respondents, 12% disagreed with this statement and 3% of top management disagreed with this statement. To determine whether there were significant differences between the perceptions of the management and top management groups, a Pearson Chi square test was used. The Pearson Chi square measured .278 for this statement which reflected that at a significance level of 0.05, there were no significant differences in the opinions of the Telkom management and top management groups. Although the number of Telkom managers who disagreed was small in comparison to those that agreed, this indicated that a small number of managers and top managers held different opinions to the one that telecommunications growth was dependent on global economic conditions because South Africa is an open economy.

Although no significant difference were found using Chi², the Kruskal Wallis non-parametric analysis of the two management groups disclosed that the management group mean ranking was 75.98 and the top management mean rank was 87.10. The difference in the mean rankings between the two groups is 11.12, which on a 100-point scale is a minor difference. The Median test indicated that the answering patterns of both these groups were similar and was an indicator that the two groups were comparable and also that there were no differences in their responses.

The Chi square asymptotic significance for this statement was .429 and the Yates continuity correction equalled .555. This proved that from both the χ^2 as well as the χ^2 corrected for any within differences that there were no significant differences between these groups.

To evaluate Telkom management opinion on when an economic turnaround would occur in the global economy, Telkom management were given a statement with two time periods (2003/2004 and 2004/2005) and asked to state their level of agreement or disagreement with each of these dates for when they thought an improvement in the global economy would occur (see question 2.1.2 of questionnaire in Appendix C). Tables 6.5 and 6.6 illustrate the Telkom management responses for each of these time periods.

TABLE 6.5 AN IMPROVEMENT IN THE GLOBAL ECONOMY WILL TAKE PLACE IN 2003/2004

Level of agreement or disagreement	Management group		Top Management group %		Total	
	No	%	No	%	No	%
Agree to strongly agree	29	20	9	6	38	27
Neutral	33	23	20	14	53	33
Disagree to strongly disagree	33	23	18	13	51	31
Total	95	66	47	33	142	87%
Statistic						
Pearson Chi Square	.039					
Kruskal Wallis Mean Rank	72.82		68.83			
Greater than Median	29	31	9	19		
Less than Median	66	69	38	81		

OBSERVATIONS

Table 6.5 represents the Telkom management perceptions of whether an improvement in the global economy would take place in 2003/2004. As can be noted from Table 6.5, 87% of the respondents responded to this statement. Of the management group, 20% and of the top management group, 6% agreed that an improvement in the global economy would take place in 2003/2004. However, 23% of the management group and 13% of from the top management group disagreed that an improvement in the global economy would take place in 2003/2004. A total of 23% of management and 14% of top management were neither in agreement or disagreement that an improvement in the global economy would take place in 2003/2004. The Pearson Chi square was used to test for any significant differences in the management and top

management groups' perceptions. The Pearson Chi square measured .039 indicating that there was a significant difference in the perceptions of the management and top management groups for this statement. The Kruskal Wallis non-parametric test mean ranking scores of the two management groups emphasised that the management group mean ranking was 72.82 and the top management mean rank was 68.83. A small difference of 3.99 in the mean rankings between the two groups is observed, suggesting that there was a very small difference between the answering patterns of the two management groups. To investigate differences within the groups, the Median test was used. The Median test showed that 31% of the management group responses were greater than the Median and 69% were less than the Median. The top management group responses indicated that 19% of responses were greater than the Median and 81% was less than the Median. The Chi square asymptotic significance for this statement was .150 and the Yates continuity correction equalled .215. This indicated that from both the Chi² as well as the Chi² corrected for any within differences that there were no significant differences between these groups.

TABLE 6.6 AN IMPROVEMENT IN THE GLOBAL ECONOMY WILL TAKE PLACE IN 2004/2005

Level of agreement or disagreement	Management group		Top management group %		Total	
	No	%	No	%	No	%
Agree to strongly agree	72	46	37	24	109	70
Neutral	25	16	7	5	32	21
Disagree to strongly disagree	9	6	5	3	14	9
Total	106	68	49	32	155	100
Statistic						
Pearson Chi Square	.470					
Mean Rank	76.43		81.39			
Greater than Median	16	15	8	16		
Less than Median	90	85	41	84		

OBSERVATIONS

Table 6.6 represents the respondents' perceptions of an improvement in the global economy occurring in 2004/2005. As reflected in Table 6.6, 70% of the respondents believed that an improvement in the global economy would take place in 2004/2005. Furthermore, 46% of these respondents were from the management group and 24% were from the top management group. This implied that according to the majority of respondents, an improvement in the global

economy would take place in 2004/2005. The respondents' perceptions did not differ significantly as indicated by the Pearson Chi square, which measured .470. The Kruskal Wallis mean ranking scores of the two management groups indicated that the management group mean ranking was 76.43 and the top management mean rank was 81.39. A minor difference of 4.96 in the mean rankings between the two groups was observed, suggesting that this difference between the mean rankings of the two management groups was small. To investigate differences in the groups, the Median test was used. The Median test showed that 15% of the management group responses were greater than the Median and 85% were less than the Median. The top management group responses indicated that 16% of the responses were greater than the Median and 84% were less than the Median. The Chi square asymptotic significance for this statement was .844 and the Yates continuity correction equalled .967. This highlighted that from both the Chi^2 as well as the Chi^2 corrected for any within differences there were no significant differences between these groups.

Since demand for telecommunications products and services in South Africa should come about after an improvement in the level of business confidence, Telkom management were given a statement that indicated that business confidence in South Africa would increase and that this would lead to an increase in demand for telecommunications in South Africa (see question 2.1.3 of questionnaire in Appendix C). Table 6.7 represents the responses to this statement. Cross-tabulations were used as a tool to identify any patterns, trends or relationships in the data.

TABLE 6.7 BUSINESS CONFIDENCE IN SA WILL IMPROVE AND THIS WILL LEAD TO AN INCREASE IN DEMAND FOR TELECOMMUNICATIONS IN SA

Biographical factor	Pearson Chi Square	Level of agreement with statement					
		Agree to strongly agree		Neutral		Disagree to strongly disagree	
		No	%	No	%	No	%
20 – 25 years	.327	1	<1	1	<1	0	0
26 – 30 years		9	6	2	1	0	0
31 – 35 years		11	7	7	4	4	3
36 – 40 years		19	12	6	4	10	6
41 – 45 years		19	12	15	9	5	3
46 – 50 years		12	8	8	5	5	3
51 – 55 years		14	9	2	1	5	3
56 – 60 years		3	2	0	0	0	0
Total	158	88	56	41	26	29	18
Male	.430	72	46	38	25	24	16
Female		13	8	3	2	4	3
Total	154	85	54	41	27	28	19
Years' service in industry							
Less than 1 year	.000	0	0	0	0	1	1
1 year but less than 2 years		1	1	0	0	0	0
2 years but less than 4 years		1	1	0	0	1	1
4 years but less than 6 years		5	6	1	1	4	5
6 years and longer		38	45	18	21	15	18
Total	85	45	53	19	22	21	25
Qualification							
Matric	.000	9	6	6	4	1	>1
Degree/Diploma		48	31	23	15	18	11
Postgraduate		29	18	12	8	7	4
Other		2	1	0	0	2	1
Total	157	88	56	41	26	28	18
Service Organization							
Technology and Network Services		49	31	19	12	9	6
Information Technology	.618	18	11	13	8	12	8
Government Relations		7	4	1	1	2	1
Sales and Marketing		12	8	9	6	5	3
Strategic Planning		3	2	0	0	1	1
Total	160	89	56	42	26	29	18
Job Level							
Management group	.497	61	38	28	17	18	11
Senior Management group		29	18	14	9	11	7
Total	161	90	56	42	25	29	18
Study field							
Technical	.731	62	41	25	16	19	13
Commercial		19	13	10	7	7	5
Other		6	4	3	2	1	>1
Total	152	87	57	38	25	27	18

OBSERVATIONS

The majority of the respondents (90%) responded to this statement. Combining the top box and bottom box scores showed that the majority of respondents (56%) across all five Telkom service organizations indicated that they agreed that an improvement in business confidence would lead to an increase in demand for telecommunications in South Africa. Only 18% of the respondents disagreed and 26% neither agreed nor disagreed. Overall, the majority opinion among Telkom management and top management was that an improvement in business confidence would lead to an increase in demand for telecommunications in South Africa. The fact that a number of respondents disagreed that an improvement in business confidence would lead to an increase in telecommunication demand, should be a serious concern for Telkom because it indicated that a small number of managers and senior managers did not believe that an improvement in business confidence would lead to an increase in demand for telecommunications and therefore were not confident of the future demand for telecommunications. It could also indicate that this group felt that telecommunications demand was not directly associated with economic prosperity, thereby highlighting the need for some Telkom managers to be trained in basic business management principles. This might also be explained by a lack of experience in the telecommunications industry.

Chi² was used to test whether there were any significant differences between groups. The Chi² for the management and top management groups measured .497 indicating that there were no significant differences between the management and top management groups. Chi² measured .327 for differences between age groups and indicated that there were no significant differences between the different age groups. There were no significant differences between the different Telkom service organizations and management groups as indicated by the Chi², which measured .618 and .497, respectively. However, there was a significant difference (.000) between the different qualifications and years of service in the telecommunication industry (.000), at 100% level of significance. This difference might be explained by the fact that most of the Telkom management have degree, diploma or postgraduate qualifications but these qualifications were technical. Years of service in the telecommunications industry also influenced the responses. There was a direct relationship between the respondents' years of service in the

telecommunication industry and their responses. More respondents with six or more years of service agreed that business confidence would improve and that this would lead to increased demand for telecommunications services.

Although no significant difference was found using Chi^2 , the Kruskal Wallis non-parametric analysis of the two management groups revealed that the management group mean ranking was 82.84 and the top management mean rank was 75.28. The difference in the mean rankings between the two groups were 7.56, which on a 100-point scale was small. The Median test indicated that the answering patterns of both these groups were similar and was an indicator that the two groups were comparable and also that there were no differences in their responses. The Chi square asymptotic significance for this statement was .228 and the Yates continuity correction was .414. This indicated that from both the Chi^2 as well as the Chi^2 corrected for any within differences there were no significant differences in the responses between between these groups.

This section examined Telkom management and top management perceptions of some of the important economic expectations and factors that would lead to an increase in telecommunications demand in South Africa. The next section the respondents' perceptions to assess regulatory factors in the South African telecommunication business environment.

6.3.2 Respondents' perceptions of regulatory factors in the SA telecommunications business environment

The regulatory environment is one of the major environments in the South African fixed line telecommunications business environment. In the past the South African Government imposed fixed line rollout obligations on Telkom to some non-profitable areas (see section 8.8.1.4). This has had a negative effect on Telkom's profitability. To evaluate whether the South African Government would impose regulatory constraints by forcing Telkom to provide fixed telecommunication lines in non-profitable areas, Telkom management were asked for their views on whether Telkom would be forced by Government to provide fixed lines in non-profitable areas and to state their level of agreement and non-agreement with the statement (see question

2.1.4 of questionnaire in Appendix C). Table 6.8 represents the respondents' responses to this statement. The responses were cross-tabulated to identify any important trends or patterns.

TABLE 6.8 GOVERNMENT PRESSURE WILL FORCE TELKOM TO PROVIDE TELECOMMUNICATION SERVICES IN PREDOMINANTLY NON-PROFITABLE AREAS

	Pearson Chi Square	Total		Level of agreement with statement					
				Agree to strongly agree		Neutral		Disagree to strongly disagree	
		No	%	No	%	No	%	No	%
Age									
20 – 30 years	.817	13	8	7	4	2	1	4	3
31 – 35 years		22	14	12	8	6	4	4	3
36 – 40 years		36	23	19	9	2	1	15	9
41 – 45 years		40	25	14	9	8	5	18	11
46 – 50 years		24	15	8	5	4	3	12	8
51 – 55 years		21	13	10	6	3	19	8	5
56 – 60 years		3	2	0	0	1	0	2	1
Total		159	100	70	44	26	16	63	40
Qualification									
Matric	.773	17	11	6	4	2	1	9	6
Degree/Diploma		89	56	44	28	13	8	32	20
Postgraduate		48	30	18	11	10	6	20	13
Other		4	3	2	1	0	0	2	1
Total		158	100	70	44	25	16	63	40
Service Organization									
Technology and Network Services	.512	78	49	29	18	12	8	37	23
Information Technology		43	27	26	16	6	4	11	7
Government Relations		10	6	4	3	3	2	3	2
Sales and Marketing		26	16	9	6	4	3	13	8
Strategic Planning		4	3	3	2	0	0	1	1
Total		160	98	71	44	25	16	64	40
Gender									
Male	.002	135	87	55	35	20	13	60	39
Female		20	13	13	8	5	3	2	1
Total		155	100	68	44	25	16	62	40

OBSERVATIONS

In total, 98% of the respondents across the Telkom service organizations responded. Of these, 44% agreed that the South African Government would force Telkom to provide telecommunications services in non-profitable areas and 40% disagreed (top box and bottom box combined), whilst 16% neither agreed nor disagreed. These findings implied that 40% of

Telkom management were of the opinion that Government would not exert pressure on Telkom to provide fixed lines in non-profitable areas. Given these views, the only conclusion that could be made was that a small group of Telkom management from the following Telkom service organizations: Technology and Network Services (23%); Information Technology (7%); Government Relations (2%); Sales and Marketing (8%), and Strategic Planning (1%) were not aware that the South African Government would impose service obligations on all telecommunication operators in South Africa in future as part of their licence agreements. Of the respondents who disagreed, 20% had a degree or diploma and 13% had postgraduate qualifications. Most of these respondents were from the Technology and Network Services service organization and were technology orientated. Consequently, they might not have business qualifications and therefore would not make the link between the Government's actions and how these affected Telkom. Although age played a minor role (because there were respondents in all age groups who disagreed) in affecting the respondents, most of the respondents who disagreed came from the age category between 36 and 50 years. This was possibly because the majority of the sample respondents were from this age group.

The Pearson Chi² tests indicated that there were no significant differences between age groups (.817), qualification (.773) and service organizations (.512). However, there were significant differences between the gender groups (.002) at the 95% and even 100% level of significance. This might mean that the male managers were more optimistic about an improvement in business confidence and a subsequent increase in telecommunications demand than the females.

Like the regulatory environment, the technological environment also plays a major role in the South African telecommunications business environment. The next section discussed the empirical research findings for the main technological changes.

6.3.3 Respondents perceptions of technological factors in the SA telecommunications business environment

Of all the business environmental factors, technology has an enormous influence on the telecommunications business environment (see chapter 2, section 2.11). The literature review identified a number of technological factors that impact on the South African fixed line telecommunication sector. To test Telkom management's perceptions of these technological changes, a few statements on the most important technological developments identified in the literature review were included in the questionnaire (see questions 2.1.7-2.1.12 and 2.1.17 of questionnaire in Appendix C).

6.3.3.1 Mobile voice telecommunications

The literature review indicated that fixed line telecommunication revenues were being depleted by mobile telephony. The first statement aimed to see whether Telkom management agreed or disagreed that fixed line telecommunication revenues were being destroyed by mobile telephony. Table 6.9 represents the respondents' cross-tabulated responses.

TABLE 6.9 FIXED LINE VOICE REVENUES ARE BEING DESTROYED BY MOBILE TELEPHONY

	Pearson Chi Square	Total		Level of agreement with statement					
				Agree to strongly agree		Neutral		Disagree to strongly disagree	
		No	%	No	%	No	%	No	%
Age									
20 – 30 years	.543	13	8	11	7	0	0	2	1
31 – 40 years		58	37	47	30	7	4	4	3
41 – 45 years		39	25	33	21	1	<1	5	3
46 – 50 years		24	15	16	10	3	2	5	3
51 – 55 years		21	13	16	10	2	1	3	2
56 – 60 years		3	2	2	>1	1	>1	0	0
Total		158	100	125	79	14	9	19	12
Service Organization									
Technology and Network Services	.137	77	48	54	34	11	7	12	8
Information Technology		43	27	34	21	3	2	6	4
Government Relations		10	6	10	6	0	0	0	0
Sales and Marketing		26	16	23	21	1	>1	2	1
Strategic planning		4	3	4	3	0	0	0	0
Total		160	100	125	78	15	9	20	13
Gender									
Male	.850	135	87	59	38	20	13	60	39
Female		20	13	13	8	5	3	2	1
Total		155	100	72	46	25	16	62	40
Years' service in industry									
Less than 1 year	.911	1	1	0	0	0	0	1	2
1 year but less than 2 years		1	1	1	2	0	0	0	0
2 years but less than 4 years		3	3	3	3	0	0	0	0
4 years but less than 6 years		10	12	9	10	0	0	1	2
6 years and longer		71	82	58	67	3	3	10	12
Total		86	53	71	82	3	3	12	14

OBSERVATIONS

The majority (99%) of the respondents responded to this question. From table 6.9, it is clear that 78% of the respondents from all the Telkom service organizations agreed that fixed line telecommunication revenues were being destroyed by mobile telephony, 13% disagreed and 9% neither agreed nor disagreed. Cross-tabulating these results indicated that the 13% who disagreed came from Technology and Network Services (8%), Information Technology (4%) and Sales and Marketing (1%). These appeared to be the same respondents who had responded

negatively previously (see section 6.3.2). This meant that 84% of the respondents were aware of the technological trend of fixed line voice telecommunications being gradually replaced by mobile voice telephony. This has serious implications for fixed line telecommunication operators such as Telkom. The effects of having its revenues for voice telephony depleted by mobile telephony implies that Telkom needs to identify new revenue-generating marketing opportunities for its fixed line telecommunications network. It could also mean that Telkom has to explore mobile telephony opportunities.

The Pearson Chi² tests indicated that there were no significant differences between the respondents from the different age groups (.543), service organizations (.850), years of service (.911) and gender (.850), at the 95% level of significance.

6.3.3.2 Respondents' perceptions of mobile phone for fixed line substitution

Mobile phone substitution for fixed line telecommunications was identified as a major technological change taking place in South Africa and internationally. Thus, statements to evaluate whether mobile telephony would replace fixed line telecommunications in the future were presented in the questionnaire and the respondents' views sought.

The respondents were asked whether telecommunication customers would use the fixed line only for Internet and mobile phones for voice communication (see question 2.1.6 of questionnaire in Appendix C). Table 6.10 represents the respondents' responses.

TABLE 6.10 CUSTOMERS WILL USE THE FIXED LINE ONLY FOR INTERNET AND MOBILE PHONES FOR VOICE COMMUNICATION

	Pearson Chi Square	Total		Level of agreement with statement					
				Agree to strongly agree		Neutral		Disagree to strongly disagree	
		No	%	No	%	No	%	No	%
Age									
20 – 30 years	.018	13	8	11	7	1	1	3	2
31 – 40 years		58	37	47	30	7	4	4	3
41 – 50 years		63	40	22	14	12	8	30	19
51 – 60 years		24	15	10	6	4	3	10	6
Total		158	100	90	57	24	15	47	30
Qualification									
Matric	.230	17	11	9	6	3	2	5	3
Degree/Diploma		89	56	42	27	10	6	37	23
Postgraduate		48	30	20	13	13	8	35	22
Other		4	3	2	1	0	0	2	1
Total		158	100	73	46	26	16	79	50
Gender									
Male	.023	135	87	61	39	19	12	55	35
Female		20	13	10	6	8	5	2	1
Total		155	100	71	46	27	17	57	36
Service Organization									
Technology and Network Services	.503	78	48	34	21	12	7	32	20
Information Technology		43	27	24	15	5	3	14	9
Government Relations		10	6	5	3	3	2	2	1
Sales and Marketing		26	16	10	6	7	4	9	6
Strategic Planning		4	2	3	2	0	0	1	>1
Total		161	100	76	47	27	17	58	36
Years of Service									
1 year but less than 2 years		1	>1	1	>1	0	0	1	>1
2 years but less than 4 years		5	3	2	1	1	>1	2	1
4 years but less than 6 years		23	14	10	6	7	4	6	4
6 years and longer		132	82	63	39	19	12	50	31
Total		161	100	76	47	27	17	59	37
Gender									
Male	.023	135	87	61	39	19	12	55	35
Female		20	13	10	6	8	5	2	1
Total		155	100	71	46	27	17	57	36

OBSERVATIONS

In total, 99% of the respondents answered this question. The respondents' perceptions of whether or not customers would use the fixed line only for Internet and mobile for voice communications were mixed. Table 6.10 indicates that 36% of the respondents disagreed that the fixed line would be used only for Internet while mobile phones would be used for voice, and 17% were unsure. Again the same trend as in previous questions was observed (see sections 6.3.2 and 6.3.3). A small number of respondents in each of the following Telkom service organizations, Technology and Network Services (20%); Information Technology (9%); Sales and Marketing (6%) and Strategic Planning (>1%) disagreed with the statement. Furthermore, 19% of the respondents who disagreed were in the age group between the 40 and 50 years old age brackets. This was an unexpected finding because managers in this age group would generally be expected to be highly experienced and knowledgeable about international and local telecommunications trends. Although 47% of the respondents agreed that in future the fixed line would be used only for Internet and mobile would be used for voice, it is alarming to note that 36% disagreed. This could possibly indicate that many of Telkom managers lack the ability to be futuristic in their thinking by identifying current trends in the business environment or that they had not been trained to think strategically. It could also indicate that almost half of Telkom managers are not familiar with the technological changes taking place in Telkom's business environment. Moreover, the results indicated that 23% of these respondents who disagreed held either a degree or diploma and 22% had postgraduate qualifications.

The Pearson Chi² tests indicated that there were no significant differences between the respondents in qualification (.230), service organization (.503) and years of service. However, there were significant differences in age (.018) and gender (.023), at a 95% level of significance.

The respondents' views on mobile telecommunications replacing fixed line telecommunications in future for voice, data and image communications, and consumers future use of mobile telecommunications in place of fixed line telephones for voice, data and image were sought (see question 2.1.9 of questionnaire in Appendix C). Table 6.19 illustrates the respondents' responses to this statement.

TABLE 6.11 IN FUTURE CONSUMERS WILL USE MOBILE TELECOMMUNICATIONS IN PLACE OF FIXED LINE TELEPHONES FOR VOICE, DATA AND IMAGE

	Pearson Chi Square	Total		Level of agreement with statement					
				Agree to strongly agree		Neutral		Disagree to strongly disagree	
		No	%	No	%	No	%	No	%
Job Level									
Manager/Specialist	.701	110	68	54	34	21	13	35	22
Senior manager		45	28	20	12	10	6	15	9
Executive		6	4	3	2	2	1	1	>1
Total		161	100	77	48	33	20	51	31
Qualification									
Matric	.823	16	10	8	5	3	2	5	3
Degree/Diploma		90	57	45	28	14	9	31	20
Postgraduate		48	30	23	15	15	9	12	8
Other		4	3	2	1	1	>1	1	>1
Total		158	100	78	49	33	21	49	31
Main Study Field									
Technical	.075	107	70	49	32	23	15	35	22
Commercial		36	23	18	12	8	5	10	7
Other		10	7	5	3	2	1	3	2
Total		153	100	72	47	33	21	48	31
Service Organization									
Technology and Network Services	.181	78	48	40	25	11	7	27	17
Information Technology		43	27	22	14	11	7	10	6
Government Relations		10	6	5	3	5	3	0	0
Sales and Marketing		26	16	8	5	5	3	13	8
Strategic Planning		4	3	1	>1	1	>1	2	1
Total		161	100	76	47	33	20	52	32
Years of service in industry									
Less than 1 year	.757	1	1	0	0	0	0	1	1
1 year but less than 2 years		1	1	1	1	0	0	0	0
2 years but less than 4 years		1	1	0	0	1	1	0	0
4 years but less than 6 years		8	10	2	2	5	6	3	4
6 years and longer		71	87	35	43	15	18	21	26
Total		82	100	37	45	21	26	25	32

OBSERVATIONS

From Table 6.11 it is clear that 99% of the respondents responded, of whom 32% disagreed, 47% agreed that in future consumers would use mobile telecommunications in place of fixed line telephones for voice, data and image and 20% neither agreed nor disagreed. The 32% of respondents who disagreed were made up as follows: Technology and Network Services (17%);

Information Technology (6%); Sales and Marketing (8%) and Strategic Planning (1%). This reinforced the earlier findings that implied that a small percentage of Telkom managers lacked the visionary capability to look into the future by identifying current trends in the business environment. The responses to this question support the notion that some Telkom managers were not familiar with the technological changes taking place in Telkom's business environment. An important finding that emerged from the data in table 6.11 was that 22% of the respondents had a technical field of study and were therefore technically rather than business orientated. This could suggest that this group of managers had not had any business management training and therefore thought differently to the other managers with business skills training exposure.

The Pearson Chi² tests showed no significant differences between the respondents for job level (.701), qualification (.823), main study field (.075) service organization (.181) and years of service (.757). Although the main study field was not significant at a 95% level, it was significant at a 90% level of significance.

6.3.3.3 Respondents' perceptions of whether mobile phones would be used for Internet application in two years' time

Table 6.12 depicts the respondents' responses to the statement "Mobile phones will be used for Internet application in two years time."

TABLE 6.12 MOBILE PHONES WILL BE USED FOR INTERNET APPLICATION IN TWO YEARS' TIME

	Pearson Chi Square	Total		Level of agreement with statement					
				Agree to strongly agree		Neutral		Disagree to strongly disagree	
		No	%	No	%	No	%	No	%
Job level									
Manager/Specialist	.093	110	68	65	40	27	17	18	11
Senior manager		45	28	37	23	6	4	2	1
Executive		6	4	2	1	3	2	1	>1
Total		161	100	104	65	36	22	21	13
Qualifications									
Matric	.430	17	11	10	6	2	14	5	4
Degree/Diploma		90	57	57	36	27	17	6	4
Postgraduate		48	30	33	21	7	4	8	5
Other		3	2	3	2	0	0	0	0
Total		158	100	103	65	36	23	19	12
Service Organization									
Technology and Network Services	.209	78	48	55	34	15	9	8	5
Information Technology		43	27	26	16	8	5	9	6
Government Relations		10	6	8	5	1	>1	1	>1
Sales and Marketing		26	16	12	7	11	7	3	2
Strategic Planning		4	2	3	2	1	>1	0	0
Total		161	100	104	65	36	23	21	13
Age									
20 – 30 years	.018	13	8	6	4	2	1	5	3
31 – 40 years		57	36	15	9	15	9	17	11
41 – 45 years		40	25	32	20	3	2	22	14
46 – 50 years		25	16	9	6	6	4	14	9
51 – 55 years		21	13	10	6	1	>1	10	6
56 – 60 years		3	2	0	0	0	0	3	2
Total		159	100	72	45	27	17	68	43

OBSERVATIONS

As indicated in Table 6.12, only 65% of the respondents agreed that mobile phones would be used for Internet application in two years' time, 13% disagreed and 23% were unsure. This finding was in sharp contrast to the literature review finding that Internet application over mobile phones was already a reality, such as from Do Co Mo in Japan and that the technological trend was for the Internet to become mobile in the near future (see chapter 1, section 1.4.3). This implied that some Telkom managers were not keeping abreast of the technological developments taking place in the external business environment or that they were not being kept informed through the Marketing Intelligence function in Telkom. The literature

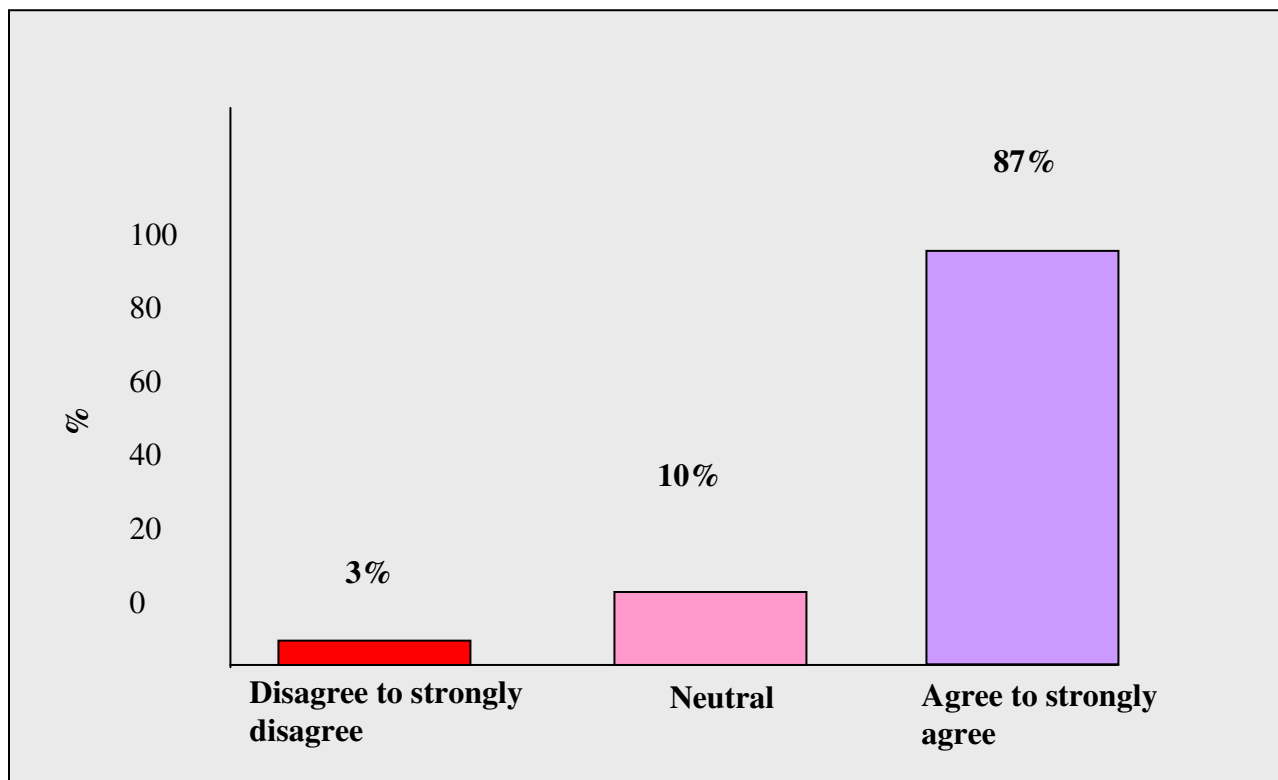
review indicated that Marketing Intelligence should play an active role in transferring knowledge of an organization's business environment throughout the organization (see chapter 4, section 4.6.3.4).

The Pearson Chi² tests showed no significant differences between the respondents for job level (.093), qualification (.430), main study field (.075) and service organization (.091). There was a significant difference in age (.018) at a 95% level of significance. Although not significant at 95% significance, the main study field was significantly different at a 90% confidence level.

6.3.3.4 Respondents' perceptions of Telkom's technology dependence on suppliers

To determine whether Telkom was dependent on suppliers for technology, the respondents were asked to state their opinions on whether Telkom was dependent on suppliers for technology (see question 2.1.12 of questionnaire in Appendix C). Figure 6.1 depicts the responses to this statement.

FIGURE 6.1 TELKOM IS DEPENDENT ON NEW TECHNOLOGY FROM SUPPLIERS



OBSERVATIONS

Figure 6.1 indicates that the majority of the Telkom managers (87%) agreed that Telkom was dependent on suppliers for technology. This was an important finding that as a fixed line telecommunications operator Telkom's technology innovation was left to its suppliers to develop, which meant that Telkom did not develop its own technology and was therefore less innovative in new product and service developments. Furthermore, it indicated that Telkom was inclined to be reactive rather than proactive. According to Hamel (1996), the world is becoming hostile towards industry incumbents and friendlier towards what they term "Mavericks" (organizations that constantly innovate and create new products and services that recreate the future – see chaptr 4, section 4.3.2). If Telkom continued to rely on its suppliers to develop new technology it would be unlikely to challenge the constructs of traditional paradigms and recreate the future. This, by implication, means that if Telkom is to survive into the future, it must reduce its reliance on suppliers for innovation and actively participate in recreating the future by leading its suppliers.

Telkom's dependence on technology suppliers can also be a serious weakness to Telkom because other telecommunications organizations could easily access new technologies from these suppliers unless Telkom is able to lock its suppliers into sole supplier agreements. The danger in this strategy is that Telkom would then be limited to technology supply from only those suppliers with whom it has signed lock-in agreements.

6.3.4 Respondents' perceptions of fixed line telecommunications and mobile telecommunication opportunities in Africa

South Africa is one of the most developed countries in Africa, with the most advanced telecommunications technology on the continent. Since Africa suffers from a serious shortage of telecommunications and information technology infrastructure, it was important to test whether the respondents believed there were telecommunications opportunities on the continent (see question 2.1.7 of questionnaire in Appendix C). The purpose of this question was to gain an overall picture of Telkom managements' perceptions and to determine whether there were any

significant differences in the perceptions of the management and top management groups. Table 6.13 represents the respondent's responses.

TABLE 6.13 PROFITABLE TELECOMMUNICATIONS OPPORTUNITIES FOR TELECOMMUNICATIONS OPERATORS IN AFRICA (FIXED LINE)

Level of agreement or disagreement	Management group		Top management group		Total	
	No	%	No	%	No	%
Agree to strongly agree	68	42	31	19	99	61
Neutral	19	12	8	5	27	17
Disagree to strongly disagree	23	14	12	7	35	21
Total	110	68	51	31	161	99
Statistic						
<i>Pearson Chi Square</i>	.910					
<i>Asymp. Sig.</i>	.992					
<i>Kruskal Wallis Mean Rank</i>	81.59		79.73			
<i>Greater than Median</i>	13	12	6	12		
<i>Less than Median</i>	97	88	45	88		
<i>Yates Continuity Correction: Asymp. Sig.</i>	.800					

OBSERVATIONS

Of the 99% of the respondents who responded, 61% agreed, 21% disagreed and 17% neither agreed nor disagreed. A total of 68% of the respondents who agreed were from the management group and 31% were from the top management group. The Chi square measured .910 indicating that for this statement there were no significant differences in the perceptions of the management and top management groups. These responses indicated that 21% of the respondents were not aware of the opportunities that existed for fixed line telecommunications operators in Africa (see chapter 3, sections 3.4.2.7 and 3.6.1). These respondents were limited to thinking of telecommunication opportunities for fixed line operators in terms of the fixed line and had not considered the possibility that South African fixed line operators could own mobile networks in countries outside South Africa. This was a serious concern because most of the respondents were from the three most strategic service organizations in Telkom and once again, highlighted that some respondents did not really understand where the future opportunities were in the telecommunications market.

Although no significant differences were found using χ^2 , the Kruskal Wallis non-parametric analysis indicated that the mean rank of the management group was 81.59 while that of the top management group was 79.73, thus constituting a minor difference of 1.86, which on a 100-point scale was minute. The Median test found that the answering patterns of both these groups were similar, which indicated that they were comparable as well as that there were no differences in their responses. It further appeared from both the χ^2 and the χ^2 corrected for any within differences that there were no significant differences between these groups.

Table 6.14 depicts the respondents' cross-tabulated responses to the existence of profitable telecom opportunities for telecommunications operators in Africa" as an opportunity for mobile telecommunication operators.

TABLE 6.14 PROFITABLE TELECOMMUNICATIONS OPPORTUNITIES FOR TELECOMMUNICATIONS OPERATORS IN AFRICA (MOBILE)

Level of agreement or disagreement	Management group		Top management group		Total	
	No	%	No	%	No	%
Agree to strongly agree	99	61	50	31	149	91
Neutral	7	4	0	0	7	4
Disagree to strongly disagree	4	2	1	1	5	3
Total	110	67	51	32	161	98
Statistic						
Pearson Chi Square	.210					
Asymp. Sig.	.128					
Kruskal Wallis Mean Rank	76.81		90.04			
Greater than Median	30	27	20	39		
Less than Median	80	73	31	61		
Yates Continuity Correction: Asymp. Sig.	.180					

OBSERVATIONS

Of the 98% of the respondents who responded to this question, 91% agreed, only 3% disagreed and 4% neither agreed nor disagreed. Only 1 respondent from the top management group disagreed. The Chi square measured .210, indicating that there were no significant differences in the perceptions of the management and top management groups. This implied that the majority

of the respondents across the two Telkom management groups believed that there were many profitable opportunities in Africa for mobile telecommunications. These findings were consistent with the secondary research findings that there were numerous marketing opportunities for telecommunications operators in Africa.

No significant differences were found using χ^2 . The Kruskal Wallis non-parametric analysis found that the mean rank of the management group was 76.81 while that of the top management group was 90.04, thus indicating a marginal difference of 13.23. The Median test found that the answering patterns of both these groups were similar which indicated that they were comparable and that there were no differences in their responses. Furthermore, both the χ^2 and the χ^2 corrected for any within differences found no significant differences between these groups.

To discover whether there were profitable opportunities in Africa for value added network services, the respondents' perceptions of such opportunities in Africa were sought (see question 2.1.13 of questionnaire in Appendix C). Table 6.15 depicts the respondents' responses to this statement.

TABLE 6.15 THERE ARE PROFITABLE OPPORTUNITIES IN AFRICA FOR VALUE ADDED NETWORKS

Level of agreement or disagreement	Management group		Top management group		Total	
	No	%	No	%	No	%
Agree to strongly agree	93	58	47	29	140	88
Neutral	12	8	4	3	16	10
Disagree to strongly disagree	3	2	1	>1	4	3
Total	108	68	52	33	160	98
Statistic						
Pearson Chi Square	.486					
Asymp. Sig.	.446					
Kruskal Wallis Mean Rank	80.23		81.07			
> Median	25	23	9	18		
<=Less than Median	84	77	42	82		
Yates Continuity Correction: Asymp. Sig.	.579					

OBSERVATIONS

As can be seen from table 6.15 98% of the respondents responded. Of these, 88% agreed, 3% disagreed and 10% neither agreed nor disagreed. The Chi square measured .486, which indicated that there were no significant differences between the management and top management groups. The majority of the respondents agreed that Africa is a potentially good market for telecommunication operators to offer value added network services.

Although no significant differences were found using χ^2 , the Kruskal Wallis non-parametric analysis revealed that the mean rank of the management group was 80.23 and that of the top management group was 81.07, thus indicating a minor difference of 0.84, which on a 100-point scale was minute. The Median test found that the answering patterns of both these groups were similar, which indicated that they were comparable and that there were no differences in their responses. Furthermore, both the χ^2 and the χ^2 corrected for any within differences found no significant differences between these groups.

The respondents' views were sought on whether e-commerce was a profitable opportunity area for telecommunication operators in Africa (see question 2.1.13 of questionnaire in Appendix C). Table 6.16, illustrates the respondents' responses to this statement.

TABLE 6.16 THERE ARE PROFITABLE OPPORTUNITIES IN AFRICA FOR E-COMMERCE

Level of agreement or disagreement	Management group		Top management group		Total	
	No	%	No	%	No	%
Agree to strongly agree	87	54	44	28	131	82
Neutral	20	13	5	3	25	16
Disagree to strongly disagree	2	1	2	1	4	3
Total	109	68	51	32	160	98
Statistic						
Pearson Chi Square	.410					
Asymp. Sig.	.922					
Kruskal Wallis Mean Rank	79.24		83.19			
> Median	27	25	13	25		
<=Less than Median	82	75	38	75		
Yates Continuity Correction: Asymp. Sig.	.922					

OBSERVATIONS

Of the 98% who responded, 82% agreed, 3% disagreed and 16% neither agreed nor disagreed. The Chi square measured .410 reflecting that there were no significant differences in the perceptions of the two management groups. From the large majority (82%) who agreed, it could be inferred that Africa is a potentially good market opportunity to provide e-commerce solutions.

No significant differences were found using Chi². The Kruskal Wallis non-parametric analysis found that the mean rank of the management group was 79.24 and the top management group was 83.19, thus indicating a marginal difference of 3.95. The Median test found that the answering patterns of both these groups were the same, which indicated that they were comparable and there were no differences in their responses. Furthermore, both the Chi² and the Chi² corrected for any within differences indicated no significant differences between these groups.

The respondents were asked for their views on the possibility of profitable opportunities for mobile telephony in Africa (see question 2.1.7 of questionnaire in Appendix C). Table 6.17 depicts the responses.

TABLE 6.17 THERE ARE PROFITABLE OPPORTUNITIES IN AFRICA FOR MOBILE TELEPHONY

Level of agreement or disagreement	Management group		Top management group		Total	
	No	%	No	%	No	%
Agree to strongly agree	103	64	51	32	154	96
Neutral	4	3	0	0	4	3
Disagree to strongly disagree	2	1	0	0	2	1
Total	109	68	51	32	160	98
Statistic						
Pearson Chi Square	.558					
Asymp. Sig.	.128					
Kruskal Wallis Mean Rank	78.52		84.73			
> Median	44	40	23	45		
<=Less than Median	65	60	28	55		
Yates Continuity Correction: Asymp. Sig.	.180					

OBSERVATIONS

Table 6.17 98% indicates that 96% of the 98% who responded agreed that there were profitable opportunities for mobile telephony in Africa compared to the 91% who agreed there were new opportunities for mobile operators in Africa previously (see table 6.14, section 6.3.4). The slight difference in the agreement rate between the two statements could be attributed to the way the respondents interpreted the two statements. The first statement could have been interpreted as there were many telecommunication opportunities for mobile operators that fell outside the scope of mobile telephony and the second statement as referring only to mobile telephony. At the same time, only 1% of the respondents disagreed while 3% were neutral. When testing the perceptions of the two management groups on this statement, it was found that the perceptions were the same for both management groups as reflected by the Chi squared measure of .558, showing that there were no significant differences between the two groups. It was evident from the results for this statement that according to the Telkom respondents' perceptions, there are profitable opportunities for mobile communications in Africa, which agreed with the literature review findings.

Although no significant differences were found using χ^2 , the Kruskal Wallis non-parametric analysis found that the mean rank of the management group was 78.52 and that of the top management group was 84.73, thus indicating a minor difference of 6.21, which on a 100-point scale was small. The Median test found that the answering patterns of both these groups were similar which indicated that the two groups were comparable and there were no differences in their responses. Furthermore, the χ^2 as well as the χ^2 corrected for any within differences found that there were no significant differences between these groups.

The respondents' views were sought on whether there were profitable opportunities for Internet in Africa, (see question 2.1.13 of questionnaire in Appendix C). Table 6.18 represents the responses.

TABLE 6.18 THERE ARE PROFITABLE OPPORTUNITIES IN AFRICA FOR INTERNET

Level of agreement or disagreement	Management group		Top management group		Total	
	No	%	No	%	No	%
Agree to strongly agree	98	61	50	31	148	93
Neutral	8	5	1	>1	9	6
Disagree to strongly disagree	3	2	0	0	3	2
Total	109	68	51	31	160	98
Statistic						
<i>Pearson Chi Square</i>	.428					
<i>Asymp. Sig.</i>	.316					
<i>Kruskal Wallis Mean Rank</i>	77.23		87.49			
<i>> Median</i>	36	33	21	41		
<i><=Less than Median</i>	73	67	30	59		
<i>Yates Continuity Correction: Asymp. Sig.</i>	.409					

OBSERVATIONS

As indicated in Table 6.18, 93% of the 98% who responded agreed that there were profitable opportunities for Internet services in Africa. The Chi square measure, which measured .429, indicated strong consensus between the Telkom management and top management groups on Africa as a profitable opportunity for Internet. There was also a strong correlation between these findings and the findings in the literature review that Africa presents profitable opportunities for providing Internet services.

Although no significant differences were found using Chi², the Kruskal Wallis non-parametric analysis found that the mean rank of the management group was 77.23 and that of the top management group was 87.49, thus indicating a minor difference of 10.26, which on a 100-point scale was relative. The Median test indicated that the patterns for answering of both these groups were similar and were comparable. It also indicated that there were no differences in their responses. Furthermore, both the Chi² and the Chi² corrected for any within differences found no significant differences between these groups.

6.3.5 Respondents' perceptions of whether teleworking/telecommuting would increase in South Africa

The literature review (see chapter 3, section 3.2.5.1) identified that telecommuting was becoming increasingly common in developed economies. To determine whether this trend could be expected in South Africa, the respondents were asked for their opinions on the statement: Teleworking/Telecommuting (working between home and office) will increase in South Africa (see question 2.1.10 of questionnaire in Appendix C). The respondents' responses were cross-tabulated to identify any relationships. Table 6.19 represents the respondents' responses.

TABLE 6.19 TELEWORKING/TELECOMMUTING (WORKING BETWEEN HOME AND OFFICE) WILL INCREASE IN SOUTH AFRICA

Level of agreement or disagreement	Management group		Top management group		Total	
	No	%	No	%	No	%
Agree to strongly agree	98	60	41	25	139	85
Neutral	9	6	9	6	18	11
Disagree to strongly disagree	4	1	1	>1	5	3
Total	111	67	51	32	162	99
Statistic						
<i>Pearson Chi Square</i>		.392				
<i>Asymp. Sig.</i>		.587				
<i>Kruskal Wallis Mean Rank</i>		83.77		76.56		
> Median		26	23	10	20	
<= Median		85	77	41	80	
<i>Yates Continuity Correction: Asymp. Sig.</i>		.735				

OBSERVATIONS

A total of 99% responded, of whom 85% agreed, only 3% disagreed and 11% neither agreed nor disagreed. Of the respondents, 88% of Telkom management and 80% of Telkom management perceived that telecommuting would increase in South Africa in the future. This implied that the majority of Telkom management believed that telecommuting would increase in South Africa and therefore would open up a host of new marketing opportunities that fixed line telecommunication operators could exploit.

Although no significant differences were found using χ^2 , the Kruskal Wallis non-parametric analysis found that the mean rank of the management group was 83.77 and for the top management group was 76.56, indicating a small difference of 7.21, which on a 100-point scale was small. The Median test found that the answering patterns of both these groups were similar, which indicated that they were comparable and also that there were no differences in their responses. Furthermore, both the χ^2 and the χ^2 corrected for any within differences found no significant differences between these groups.

6.3.6 Respondents' perceptions of whether Telkom would need new revolutionary converged ICT products and services to survive

Traditionally, Telkom has been a provider of voice services and more recently, of data services. An important question that needed to be answered in this study was whether the respondents believed that Telkom would need new revolutionary converged ICT products and services. Table 6.20 represents the respondents' perceptions in this regard.

TABLE 6.20 IN ORDER TO SURVIVE IN FUTURE TELKOM WILL NEED REVOLUTIONARY NEW CONVERGED ICT PRODUCTS AND SERVICES

Level of agreement or disagreement	Management group		Top management group		Total	
	No	%	No	%	No	%
Agree to strongly agree	111	69	51	31	162	100
Neutral	0	0	0	0	0	0
Disagree to strongly disagree	0	0	0	0	0	0
Total	111	69	51	31	162	100

OBSERVATIONS

From table 6.20 a 100% response rate can be noted to this question. All the respondents (100%) agreed that Telkom would need new converged ICT products to survive in future. The Chi square test found a high degree of consensus between the Telkom management and top management responses, measuring .508, which indicated that there were no significant differences between the two management group opinions. This finding emphasised that Telkom managers believed that Telkom was to survive in future, it would need new converged ICT products and services. It

also indicated that these managers viewed Telkom's provision of converged ICT products as an important future source of revenue. This supports the case that this study will be very valuable to fixed line telecommunications operators in South Africa and elsewhere because it highlights some of the new marketing opportunities and threats that fixed line telecommunications operators face.

6.3.7 Respondents' perceptions of whether small medium micro enterprises would grow in South Africa

The literature review identified the growth of SMMEs as an area of future opportunity for fixed line telecommunications operators. Therefore, to evaluate whether SMMEs would grow in South Africa, the respondents' perceptions of the question were sought. Table 6.21 below represents the respondents' views.

TABLE 6.21 SMALL, MEDIUM, MICRO ENTERPRISES WILL GROW IN SOUTH AFRICA

Level of agreement or disagreement	Management group		Top management group		Total	
	No	%	No	%	No	%
Agree to strongly agree	92	57	41	25	133	82
Neutral	17	10	5	3	22	13
Disagree to strongly disagree	3	2	4	2	7	4
Total	112	69	50	30	162	99
Statistic						
Pearson Chi Square	.295					
Asymp. Sig.	.202					
Kruskal Wallis Mean Rank	79.26		84.86			
> Median	27	24	17	34		
<= Median	84	76	33	66		
Yates Continuity Correction: Asymp. Sig.	.279					

OBSERVATIONS

Table 6.21 reflects a 99% response rate. Of the respondents, 82% agreed that SMMEs would grow in South Africa, 4% disagreed and 13% neither agreed nor disagreed. Both the management and top management held similar views of the future growth of SMMEs in South Africa. There were no significant differences in their opinions as reflected by the Chi square,

which measured .295. If Telkom management view the future growth of SMMEs taking place in South Africa then the SMME market could become an important future market for fixed line telecommunications operators in South Africa.

Although no significant differences were found using χ^2 , the Kruskal Wallis non-parametric analysis found that the mean rank of the management group was 79.26 and that of the top management group was 84.86, thus indicating a minor difference of 5.6 which on a 100-point scale was small. The Median test found that the answering patterns of both these groups were similar which indicated that they were comparable and there were no differences in their responses. Furthermore, both the χ^2 and the χ^2 corrected for any within differences indicated no significant differences between these groups.

6.3.8 Respondents' perceptions of whether competition would be positive for Telkom

The respondents' perceptions of the effect of competition on Telkom were also examined. Table 6.22 represents the respondents' views on whether comp

TABLE 6.22 COMPETITION WILL BE POSITIVE FOR TELKOM

Level of agreement or disagreement	Management group		Top management group		Total	
	No	%	No	%	No	%
Agree to strongly agree	89	55	39	24	128	79
Neutral	14	8	7	4	21	13
Disagree to strongly disagree	8	5	6	4	14	9
Total	111	68	52	32	163	100
Statistic						
Pearson Chi Square	.678					
Asymp. Sig.	.415					
Kruskal Wallis Mean Rank	81.64		81.19			
> Median	22	20	13	25		
<= Median	89	80	39	75		
Yates Continuity Correction: Asymp. Sig.	.543					

OBSERVATIONS

Table 6.22 reflects a 100% response rate. Of the respondents', 79% agreed that competition would be positive for Telkom and therefore implied that competition could be positive for South African fixed line telecommunications operators. However, 9% of the respondents' disagreed and 13% neither agreed or disagreed. Both the management group (55%) and the top management group (24%) respectively, felt that competition would have a positive effect on Telkom. This means that Telkom is presently not competitive because until now it has been a monopoly. The Chi Square measurement of .678 indicated that both management groups thought the same and there were no significant differences in perception between them. According to these findings, competition in the South African telecommunications business environment would have positive effects on fixed line telecommunication operators. However, these findings contrast with those of the literature, which maintains that competition would erode Telkom's market share.

Although no significant differences were found using Chi², the Kruskal Wallis non-parametric analysis found that the mean rank of the management group was 81.64 and that of the top management group was 81.19, thus indicating a minor difference of 0.45, which on a 100-point scale was very small. The Median test found that the answering patterns of both these groups similar which indicated that they were comparable and there were no differences in their responses. Furthermore, the Chi² as well as the Chi² corrected for any within differences found no significant differences between these groups.

6.3.9 Respondents' perceptions of whether South African businesses were using ICT to compete globally

South African businesses that use ICT for competing globally are an indication of a potential market for ICT products and services and therefore an area of opportunity that fixed line telecommunications operators could exploit. Therefore, the respondents' views were sought on whether South African businesses were using ICT to compete globally. Table 6.23 depicts the respondents' responses.

TABLE 6.23 SOUTH AFRICAN BUSINESSES ARE USING ICT TO COMPETE GLOBALLY

Level of agreement or disagreement	Management group		Top management group		Total	
	No	%	No	%	No	%
Agree to strongly agree	93	57	42	26	135	83
Neutral	8	5	6	4	14	9
Disagree to strongly disagree	9	6	4	2	13	8
Total	111	68	52	32	163	100
Statistic						
<i>Pearson Chi Square</i>	.669					
<i>Asymp. Sig.</i>	.887					
<i>Kruskal Wallis Mean Rank</i>	81.73		81.00			
<i>> Median</i>	25	23	12	24		
<i><= Median</i>	86	77	39	76		
<i>Yates Continuity Correction: Asymp. Sig.</i>	.952					

OBSERVATIONS

Table 6.23 reflects a 100% response rate. Most of the respondents (83%) agreed that South African businesses were using ICT to compete globally, while only 8% disagreed and 9% neither agreed nor disagreed. The respondents' responses indicated that the majority of Telkom managers (management, 57% and top management, 26%) believed that South African businesses were using ICT to compete globally. These perceptions confirmed Ericsson's (2001) view (see chapter 3, section 3.2.5.1) and were a strong indicator that the new marketing opportunities for fixed line telecommunication operators lie in providing ICT products and services to the South African business sector.

While no significant differences were found using χ^2 , the Kruskal Wallis non-parametric analysis found that the mean rank of the management group was 81.73 and that of the top management group was 81.00, thus indicating a minor difference of 0.73 which on a 100-point scale was very small. The Median test revealed that the answering patterns of both these groups were practically identical, which indicated that they were comparable and there were no differences in their responses. Furthermore, the χ^2 as well as the χ^2 corrected for any within differences found no significant differences between these groups.

6.3.10 Respondents' responses to whether social groups would become more powerful as a force of change in SA

Chapter 2 pointed out that social groups could be a powerful change force in the South African telecommunications business environment and could pose a threat to Telkom. Accordingly, the respondents' were asked for their perceptions on social groups as a force of change in South Africa. Table 6.24 depicts the responses.

TABLE 6.24 SOCIAL GROUPS WILL BECOME MORE POWERFUL AS A FORCE OF CHANGE IN SA

	Pearson Chi Square	Total		Level of agreement with statement					
				Agree to strongly agree		Neutral		Disagree to strongly disagree	
		No	%	No	%	No	%	No	%
Age									
20 – 30 years	.235	13	8	8	5	5	3	0	0
31 – 40 years		58	36	30	19	15	9	3	2
41 – 50 years		65	41	45	28	19	12	1	>1
51 – 60 years		24	15	16	10	3	2	5	3
Total		160	98	99	62	42	26	9	6
Study field									
Technical	.000	108	66	66	43	32	21	9	6
Commercial		36	22	28	18	8	5	0	0
Other		10	6	9	6	1	>1	0	0
Total			154	94	103	67	41	27	9
Service Organization									
Technology and Network Services	.132	79	49	58	36	16	10	5	3
Information Technology		43	27	27	17	11	7	5	3
Government Relations		10	6	8	49	2	1	0	0
Sales and Marketing		26	16	13	8	12	7	1	>1
Strategic Planning		4	2	4	2	0	0	0	0
Total		162	99	110	68	41	25	6	4
Job level									
Manager	.140	111	69	80	49	2	1	29	18
Senior Manager		45	28	26	16	16	10	3	2
Executive		6	4	4	2	1	>1	1	>1
Total			162	99	110	68	19	12	33

OBSERVATIONS

Table 6.24 reflects a 99% response rate. In total, 68% of the respondents from both management groups agreed that social pressure groups would have increased power in future in South Africa. Only 20% of the respondents' disagreed and 12% neither agreed nor disagreed, which implied that they were either unsure or did not know. This finding seemed to indicate that this group of

respondents did not understand the power of social pressure groups in the South African telecommunications business environment and pointed to a weakness in some of Telkom management's understanding of the external telecommunications business environment, a trend identified previously. However, it should be noted that these respondents appear to be the same group that were encountered in sections 6.3.1 to 6.3.4) and are spread throughout each of the Telkom service organizations and not limited to any particular Telkom service organization. Although most of these respondents were from the management group, >2% were from senior management. None of the respondents who disagreed was from the Government Relations and Strategic Planning service organizations, which would indicate organizations might be more in tune with the South African telecommunications social environment. In addition, the respondents' who disagreed had a predominantly technical background, which pointed to some Telkom managers being technically orientated and not having an understanding of the South African telecommunications business environment.

The Pearson Chi² tests found no significant differences between the respondents Job level (.140), service organization (.132) and age (.235). There was, however, a significant difference between the respondents' main study field (.000) at a 100% level of significance.

6.3.11 Respondents' views on whether many future opportunities exist for fixed line telecommunications operators

The literature review indicated that the traditional value that fixed line operators received from voice services was becoming obsolete. This meant that fixed line operators had to explore new areas for market development. Consequently, the respondents' views on future marketing opportunities for fixed line telecommunication operators were assessed. Table 6.25 depicts the respondents' views.

TABLE 6.25 MANY FUTURE OPPORTUNITIES EXIST FOR FIXED LINE TELECOMMUNICATIONS OPERATORS

Level of agreement or disagreement	Management group		Top management group		Total	
	No	%	No	%	No	%
Agree to strongly agree	65	40	34	21	99	60
Neutral	32	20	5	3	37	23
Disagree to strongly disagree	15	9	12	7	27	17
Total	111	69	51	31	163	100
Statistic						
Pearson Chi Square		.016				
Asymp. Sig.		.131				
Kruskal Wallis Mean Rank		81.63		81.22		
> Median		9	10	1	2	
<= Median		101	90	50	98	
Yates Continuity Correction:		.247				
Asymp. Sig.						

OBSERVATIONS

Table 6.25 reflects a 100% response rate. Of the respondents', 60% agreed that there were many future opportunities for fixed line telecommunications operators in South Africa, 17% disagreed and 23% were unsure. The Chi square measured .016 for this statement, indicating that there were significant differences in the perceptions of the two management groups. The number of respondents who were unsure (neither agreed or disagreed) could be a cause for concern to Telkom and a possible indication that some Telkom managers did not know the South African telecommunications business environment (see section 6.3.3.2).

Although Pearson Chi² found significant differences, the Kruskal Wallis non-parametric analysis found that the mean rank of the management group was 81.63 and that of the top management group was 81.22, thus indicating a minor difference of 0.41, which on a 100-point scale was very small. The Median test revealed that the answering patterns of both these groups were very similar, which indicated that these groups were comparable and there were no differences in their responses. Furthermore, the Chi² corrected for any within differences found no significant differences between these groups.

6.3.12 Respondents' views on whether there were future opportunities for mobile telecommunications operators

Chapter 1, (section 1.4.3), pointed out that the next stage in the evolution of telecommunication technology is the migration to mobile, therefore this area would provide many future telecommunication opportunities. Telkom management's perceptions of whether many future marketing opportunities were being created in mobile telecommunications were assessed. Table 6.26 below represents the respondents' perceptions.

TABLE 6.26 MANY FUTURE OPPORTUNITIES EXIST FOR MOBILE TELECOMMUNICATIONS OPERATORS

Level of agreement or disagreement	Management group		Top management group		Total	
	No	%	No	%	No	%
Agree to strongly agree	73	46	30	19	103	63
Neutral	10	6	11	7	21	13
Disagree to strongly disagree	25	16	10	6	35	21
Total	108	68	51	32	159	97
<i>Pearson Chi Square</i>						
.091						
<i>Asymp. Sig.</i>						
.280						
<i>Kruskal Wallis Mean Rank</i>						
76.10 88.26						
> Median	35	32	21	41		
<= Median	73	68	30	59		
<i>Yates Continuity Correction:</i>						
.367						
<i>Asymp. Sig.</i>						

OBSERVATIONS

Table 6.26 reflects a 97% response rate, of whom 63% agreed, 13% were unsure and 21% disagreed that there would be many future opportunities for mobile telecommunications operators.

While no significant differences were found between the management and top management groups using χ^2 , the Kruskal Wallis non-parametric analysis found that the mean rank of the management group was 76.10 and that of the top management group was 88.26, thus indicating a difference of 12.16, which on a 100-point scale was small. The Median test found that the answering patterns of both these groups were similar, which indicated that they were

comparable and there were no differences in their responses. Furthermore, the Chi² as well as the Chi² corrected for any within differences found no significant differences between these groups.

Having discussed the changes taking place in the South African telecommunications business environment and the Telkom management's perceptions of these changes, the respondents' perceptions of the major drivers of change in the South African business environment will be examined next.

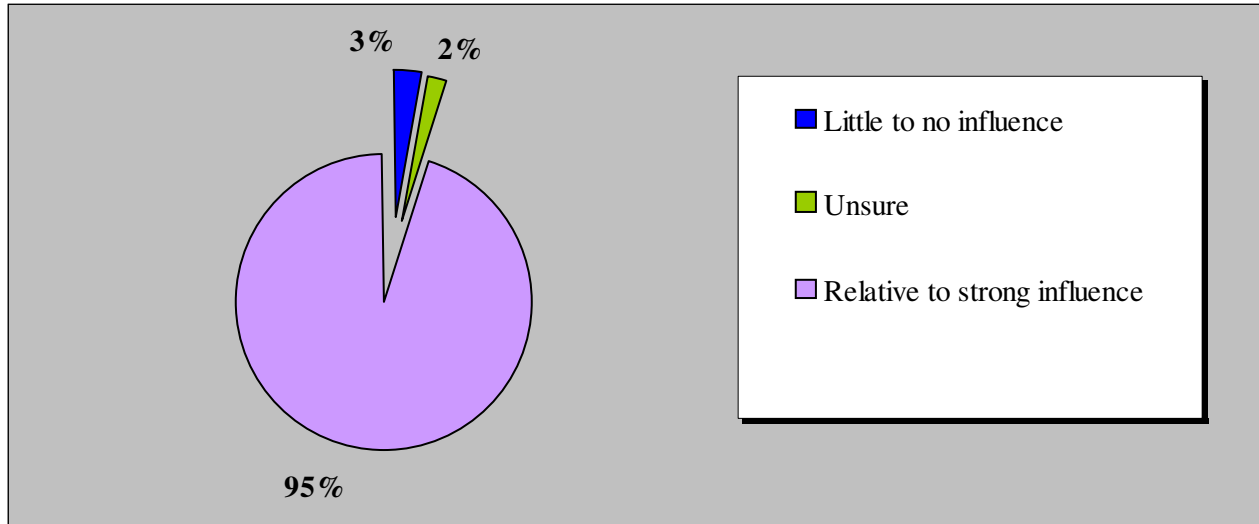
6.4 MAJOR DRIVERS OF CHANGE CREATING NEW MARKETING OPPORTUNITIES IN THE SOUTH AFRICAN TELECOMMUNICATIONS BUSINESS ENVIRONMENT

Identifying the major drivers of change in the South African telecommunications business environment that are creating new marketing opportunities in the sector was an important outcome for this study. Since new opportunities and threats are brought about by change in the organizations business environment (see chapters 2 and 3), identifying the major drivers was critical to understanding change in the South African telecommunications business environment. This section examines some areas where change is taking place in the South African telecommunications business environment. The respondents' perceptions of the impact of each of these factors on the South African telecommunications business environment, were therefore assessed.

6.4.1 Respondents' perceptions of regulatory influence on fixed and mobile telecommunications operators in South Africa

Figure 6.2 graphically illustrates the respondents' perceptions of regulatory influence on the South African fixed line telecommunications business environment.

FIGURE 6.2 REGULATORY INFLUENCE ON FIXED LINE TELECOMMUNICATIONS OPERATORS

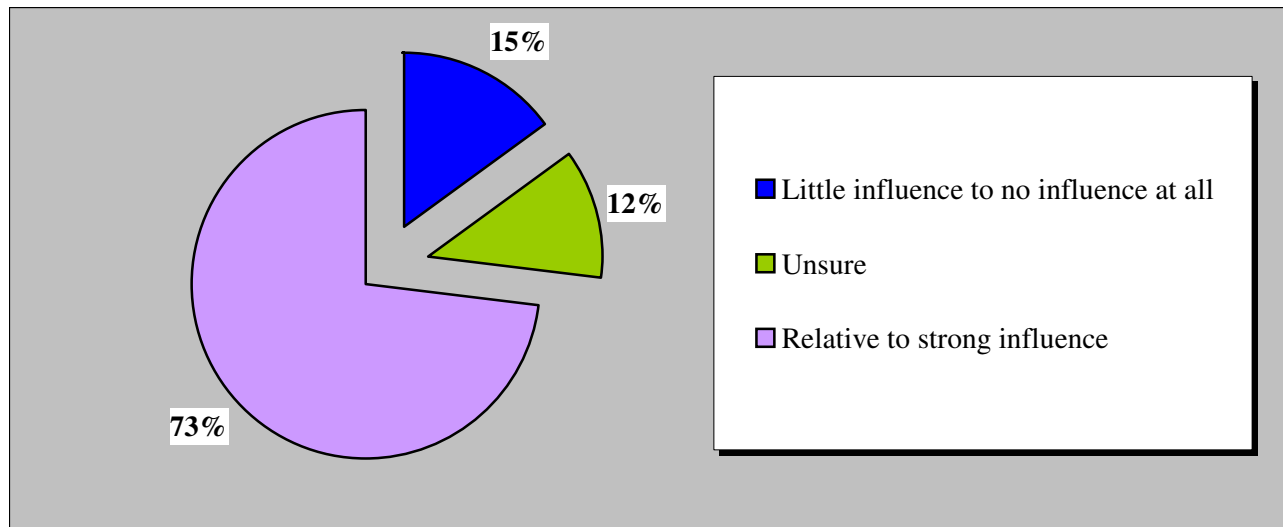


OBSERVATIONS

From figure 6.2 above, it is evident that the majority of the respondents (95%) viewed regulatory influences as having a relatively to very strong influence on the South African fixed line telecommunications business environment, 3% felt that the South African regulatory environment would have little or no influence on fixed line telecommunication operators and 2% were unsure. This was a significant finding because it indicated that the South African fixed line telecommunications operators face a serious threat from the changing regulatory environment.

Figure 6.3 illustrates the respondents' responses to the influence of the regulatory environment on the mobile telecommunications operators in South Africa.

FIGURE 6.3 REGULATORY INFLUENCE ON MOBILE TELECOMMUNICATIONS OPERATORS



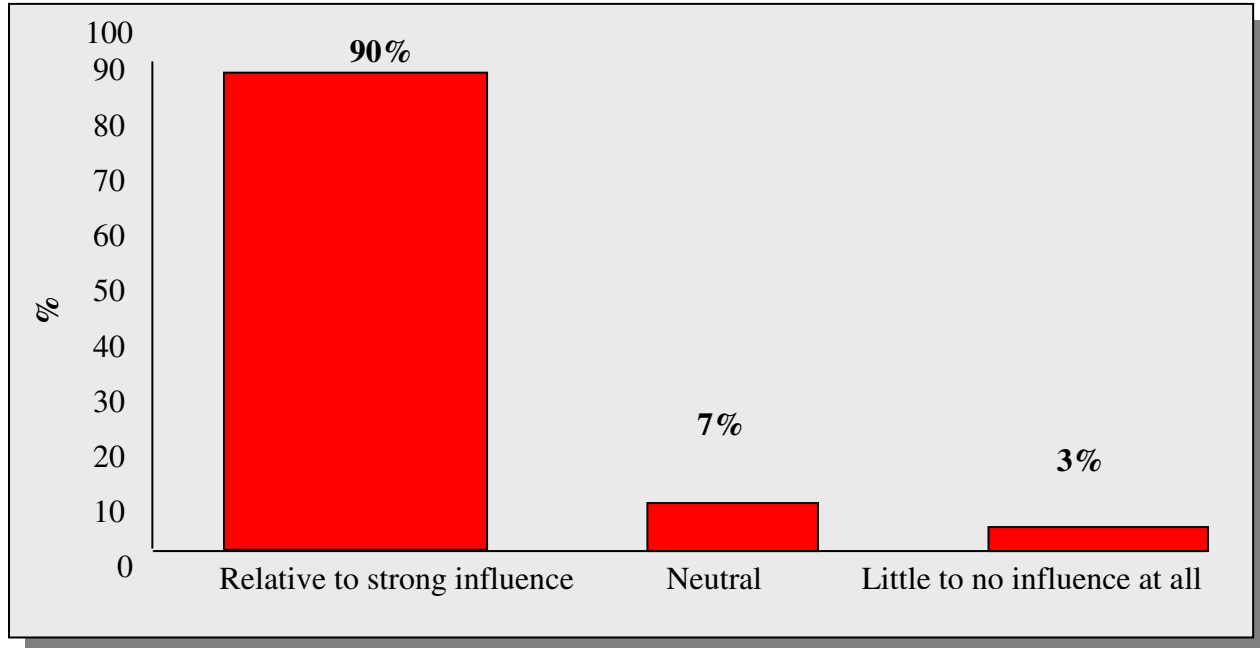
OBSERVATIONS

As indicated in figure 6.3, the majority of the respondents (73%) were of the opinion that the regulatory environment has a serious impact on the South African mobile telecommunications business environment. Although 73% of the respondents believed that the South African regulatory environment had a relatively to very strong influence on South African mobile operators, this percentage was lower than that of the 95% of respondents who felt the regulatory environment had a relatively to very strong influence on fixed line telecommunications operators (see figure 6.8). These findings implied that Telkom management viewed the regulatory influence on fixed line operators as more pronounced than for mobile telecommunications operators in South Africa. This could be explained by the major regulatory changes taking place in the South African telecommunications regulatory environment (see chapter 2, section 2.8.1).

6.4.2 Respondents' perceptions of the influence of changes in telecommunication technology on fixed line communications

The researched wished to determine the respondents' perceptions of telecommunications technology as a driver of change in the South African fixed line telecommunications business environment. Figure 6.4 graphically represents the respondents' perception of the impact telecommunications technology had on South African fixed line telecommunications.

FIGURE 6.4 INFLUENCE OF TELECOMMUNICATIONS TECHNOLOGY ON FIXED LINE TELECOMMUNICATIONS



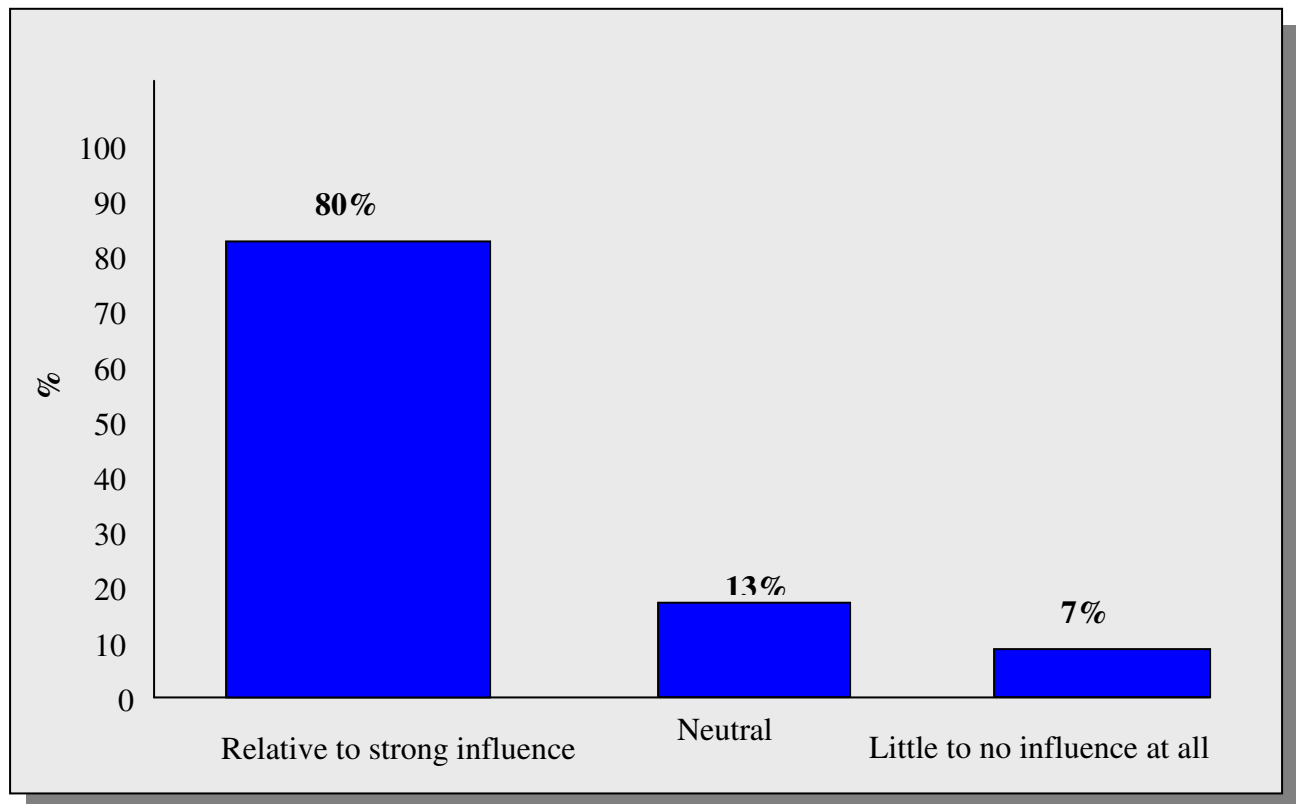
OBSERVATIONS

As depicted in figure 6.4, by far the majority of Telkom management respondents' (90%) felt that telecommunications technology has a relative to strong influence on the South African fixed line telecommunications business environment. These findings correlate with the arguments of some authors (Pearce and Robinson, 2000; Kruger, 1999; Marx et al, 1997; Smit and Cronjè, 1992) that technology has a very high degree of influence on the business environment. An important conclusion that can be drawn from this finding is that technology exerts a strong influence on South African fixed line telecommunication operators and therefore it is very important for these operators to constantly track changes taking place in technology. This is one of the important functions that should fall within the scope of the telecommunication fixed line marketing intelligence function discussed in chapter four (see chapter 4, section 4.6.3.4).

6.4.3 Respondents' perceptions of the impact of change in telecommunications technology on mobile communications

The researcher wished to evaluate Telkom management's perceptions of the influence of technology on mobile communications. Figure 6.5 graphically illustrates the respondents' perceptions of the influence of technology on mobile communications.

FIGURE 6.5 INFLUENCE OF CHANGES IN TELECOMMUNICATIONS TECHNOLOGY ON MOBILE COMMUNICATIONS



OBSERVATIONS

From table 6.5, it is evident that technological change has a relatively to very strong influence on mobile telecommunications. A total of 80% of the respondents indicated that changing technology had a relatively to very strong influence on mobile communications. These findings agree with those in the literature review, which indicated that technological change had a great impact on mobile communications. Only 7% of the respondents' were of the opinion that

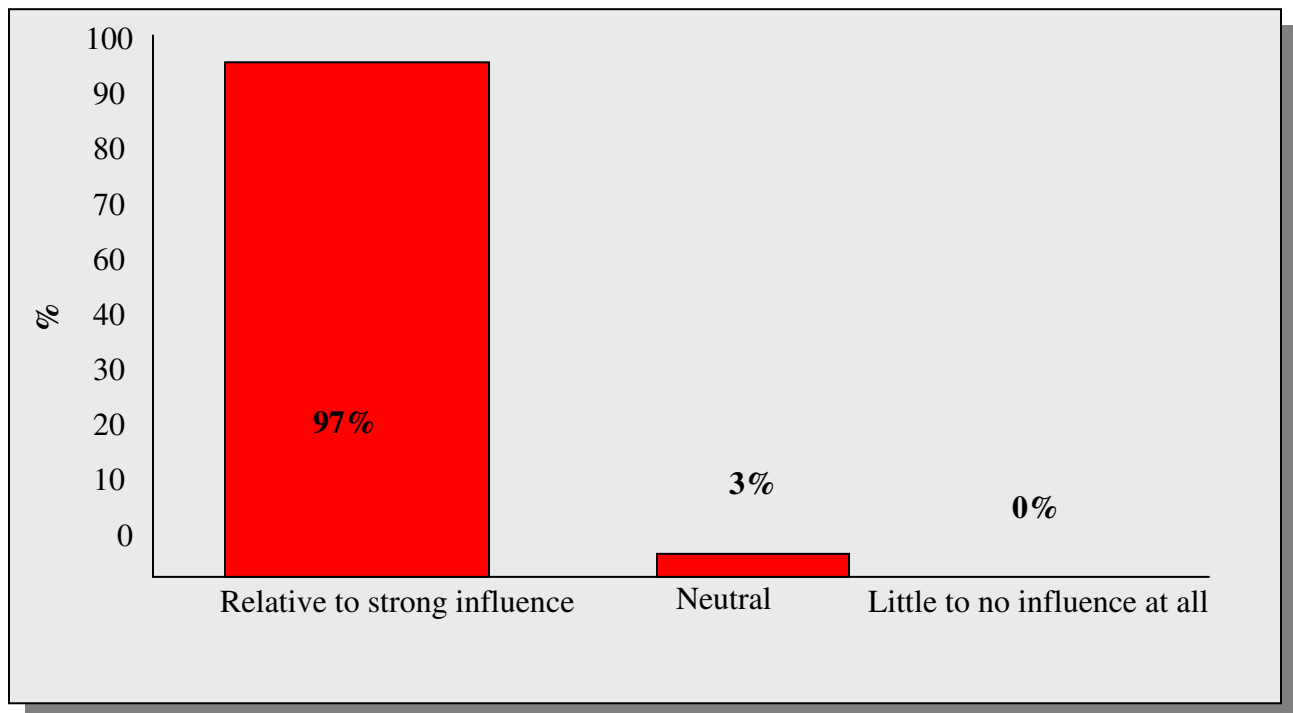
changing technology had no impact on mobile telecommunications, which indicated that some Telkom managers did not understand the telecommunications business environment very well, a trend identified earlier (see sections 6.3.1 to 6.3.3). Since the majority of the respondents gave the same answers, it was not necessary to conduct statistical tests to determine any significant difference.

The respondents' perceptions of the influence of changing customer needs on fixed line telecommunications will be analysed and briefly discussed next.

6.4.4 Respondents' perceptions of the influence of changing customer needs on fixed line telecommunications

An important trend that emerged in the literature review was that the communications needs of customers were changing. Accordingly, the researcher wished to investigate Telkom management's perceptions of the influence of changing customer needs on fixed line and mobile telecommunications. Figure 6.12 represents the respondents'.

FIGURE 6.6 INFLUENCE OF CHANGING CUSTOMER TELECOMMUNICATIONS NEEDS ON FIXED LINE



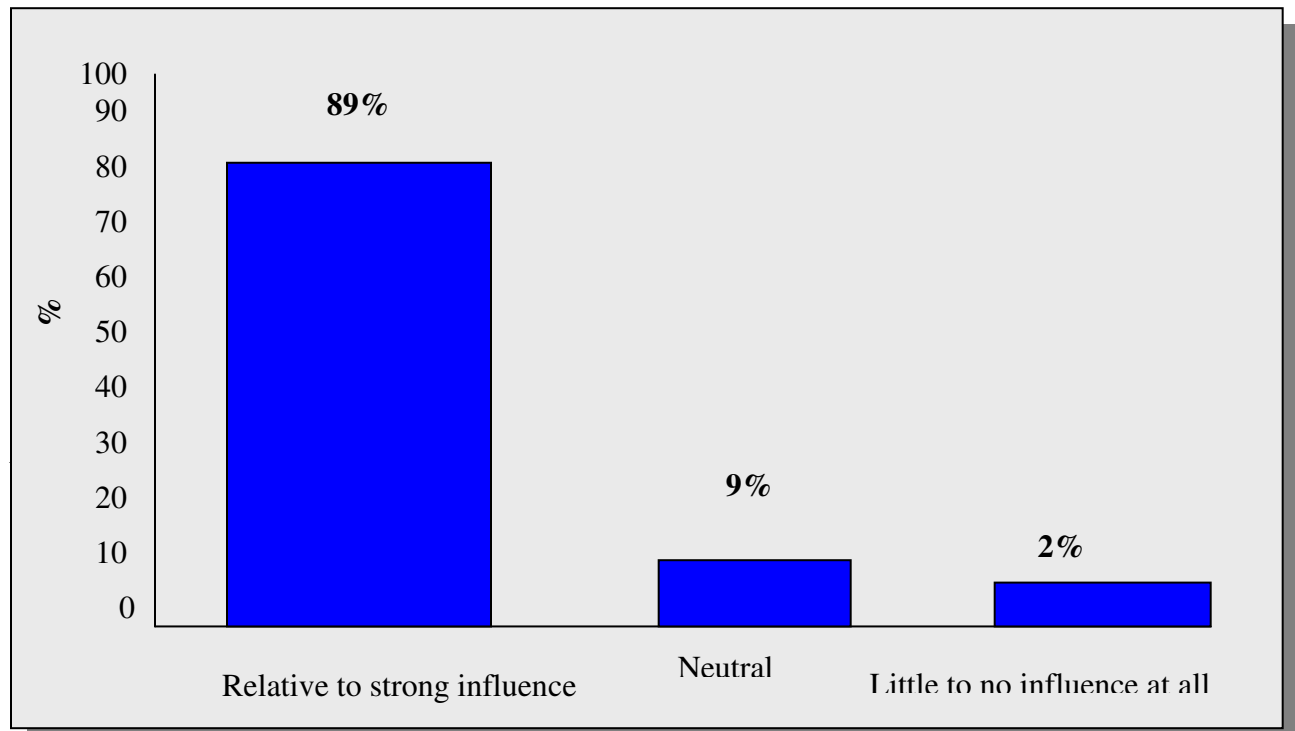
OBSERVATIONS

From figure 6.6, it is evident that 97% of Telkom managers perceived changing customer needs as a relatively to very strong influence on fixed line telecommunications. This could be due to Telkom embarking on employee customer awareness programmes since 1991 to make employees aware of the importance of customers to Telkom. Of the respondents', 97% were of the opinion that changing customer needs had a relatively to very strong influence on fixed line telecommunication operators such as Telkom. This finding also highlights the impact that the Telkom customer awareness programmes have had on Telkom management.

6.4.5 Respondents' perceptions of the influence of changing customer needs on mobile telecommunications

Figure 6.7 represents the respondents' perceptions of the influence of changing customer needs on mobile communications in South Africa.

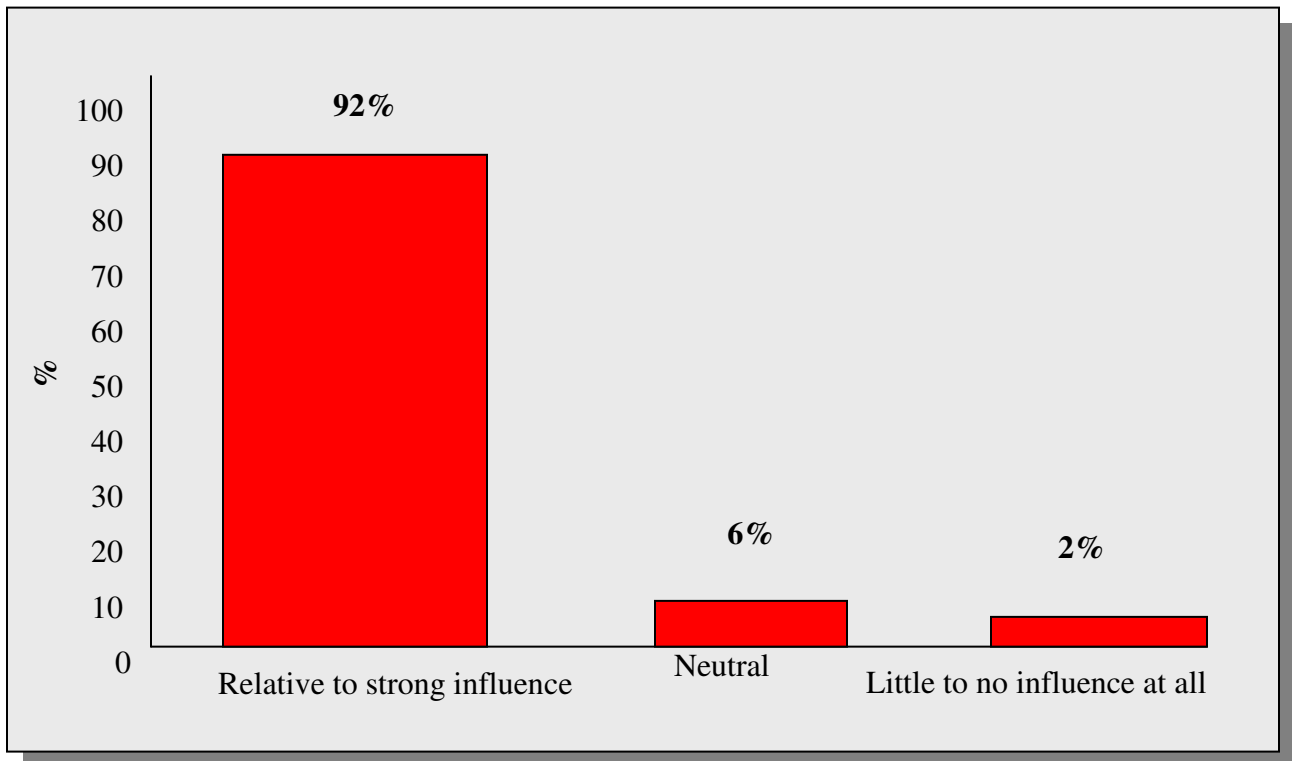
FIGURE 6.7 INFLUENCE OF CHANGING CUSTOMER NEEDS ON MOBILE TELECOMMUNICATIONS



6.4.6 Respondents' responses to the influence of convergence (integration of voice, data and image) on fixed line telecommunications

The literature showed convergence as a major driver of change in the South African telecommunications business environment. The researcher therefore wished to gauge the perceptions of Telkom management on the influence of convergence on the South African telecommunications business environment. Figure 6.8 depicts the respondents' views on the influence of convergence on fixed line telecommunications.

FIGURE 6.8 INFLUENCE OF CONVERGENCE (INTEGRATION OF VOICE, DATA AND IMAGE) ON FIXED LINE TELECOMMUNICATIONS



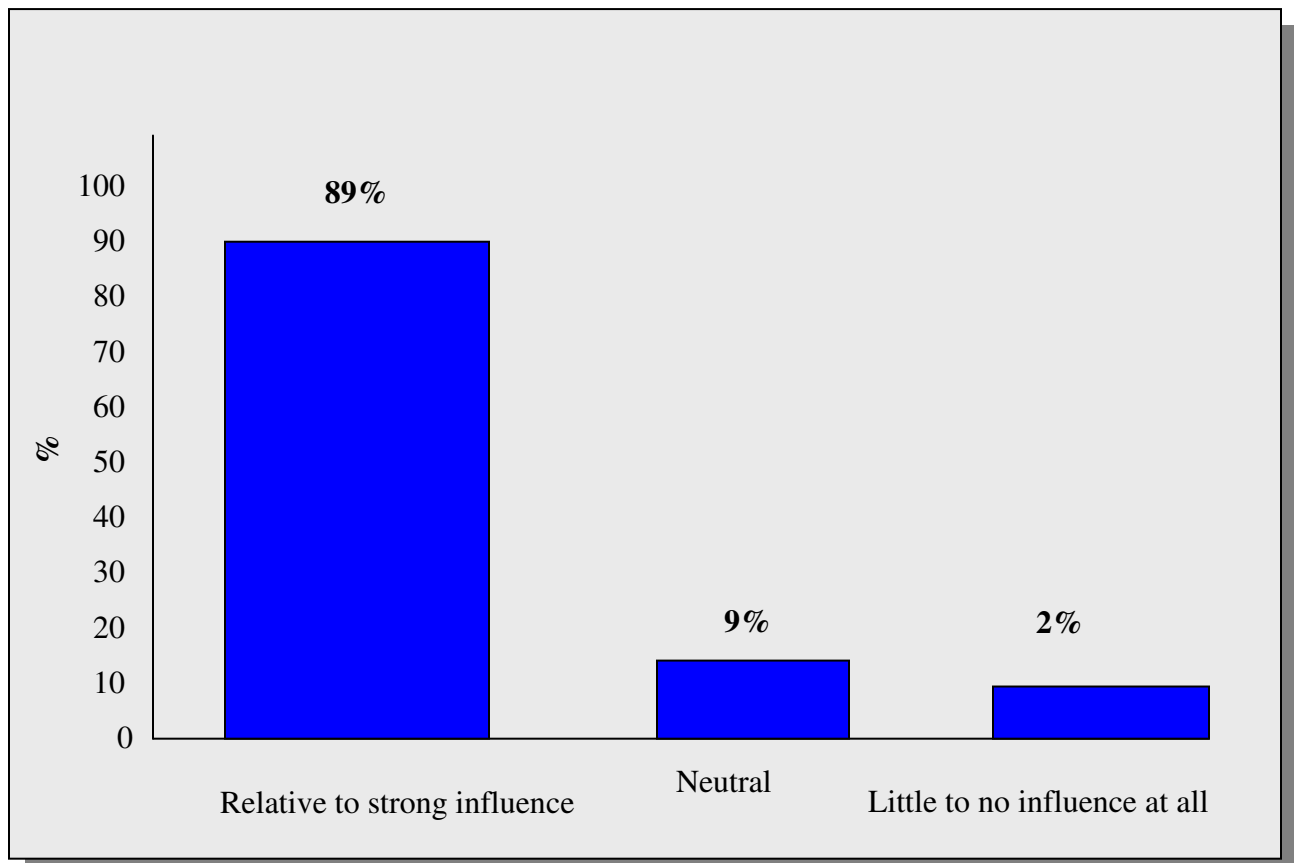
OBSERVATIONS

As reflected in Figure 6.8, the majority of the respondents' (92%) felt that convergence had a relatively to very strong influence on fixed line telecommunications. Only 2% of the respondents were of the opinion that convergence had little or no influence at all on fixed line telecommunications. These findings were consistent with the findings in the literature review that convergence had a strong influence on fixed line telecommunications and was changing the

nature of traditional telecommunications products and services offered by fixed line telecommunications operators.

Figure 6.9 graphically illustrates the respondents' perceptions of the influence of convergence on mobile telecommunications.

FIGURE 6.9 INFLUENCE OF CONVERGENCE (INTEGRATION OF VOICE, DATA AND IMAGE) ON MOBILE TELECOMMUNICATIONS



OBSERVATIONS

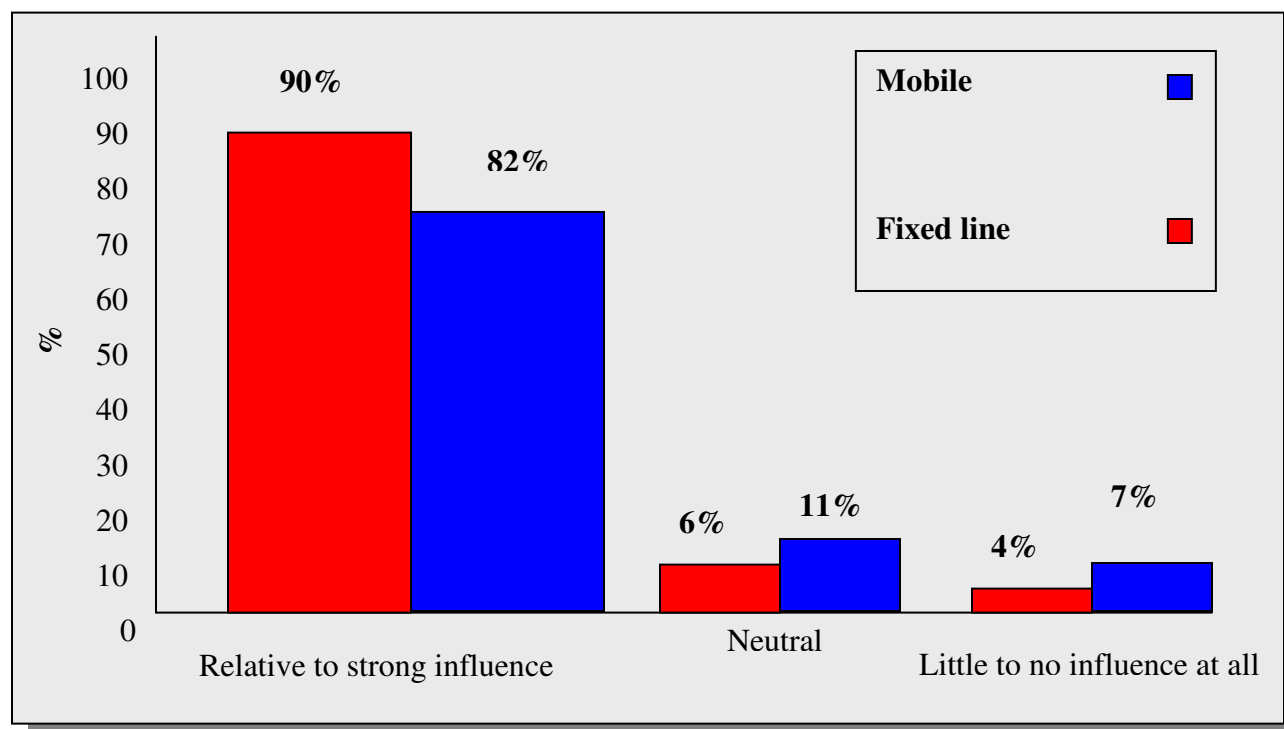
Figure 6.9 shows the respondents' perception of the influence of convergence on mobile telecommunications. The majority of the respondents (89%) were of the opinion that convergence had a relatively to very strong influence on fixed line telecommunications. Only 2% perceived convergence as having little or no influence at all on mobile telecommunications. These findings were consistent with the findings in the literature that points out the strong

influence of convergence on mobile telecommunications and the way it was changing the nature of traditional telecommunication products and services that fixed line telecommunications operators offer (see chapter 1, section 1.4.1).

6.4.7 Respondents' views on the influence of economic conditions on fixed line and mobile telecommunications

Figure 6.10 illustrates the respondents' perceptions of the influence of economic conditions on the South African fixed line and mobile telecommunications business environment.

FIGURE 6.10 INFLUENCE OF ECONOMIC CONDITIONS ON FIXED AND MOBILE TELECOMMUNICATIONS



OBSERVATIONS

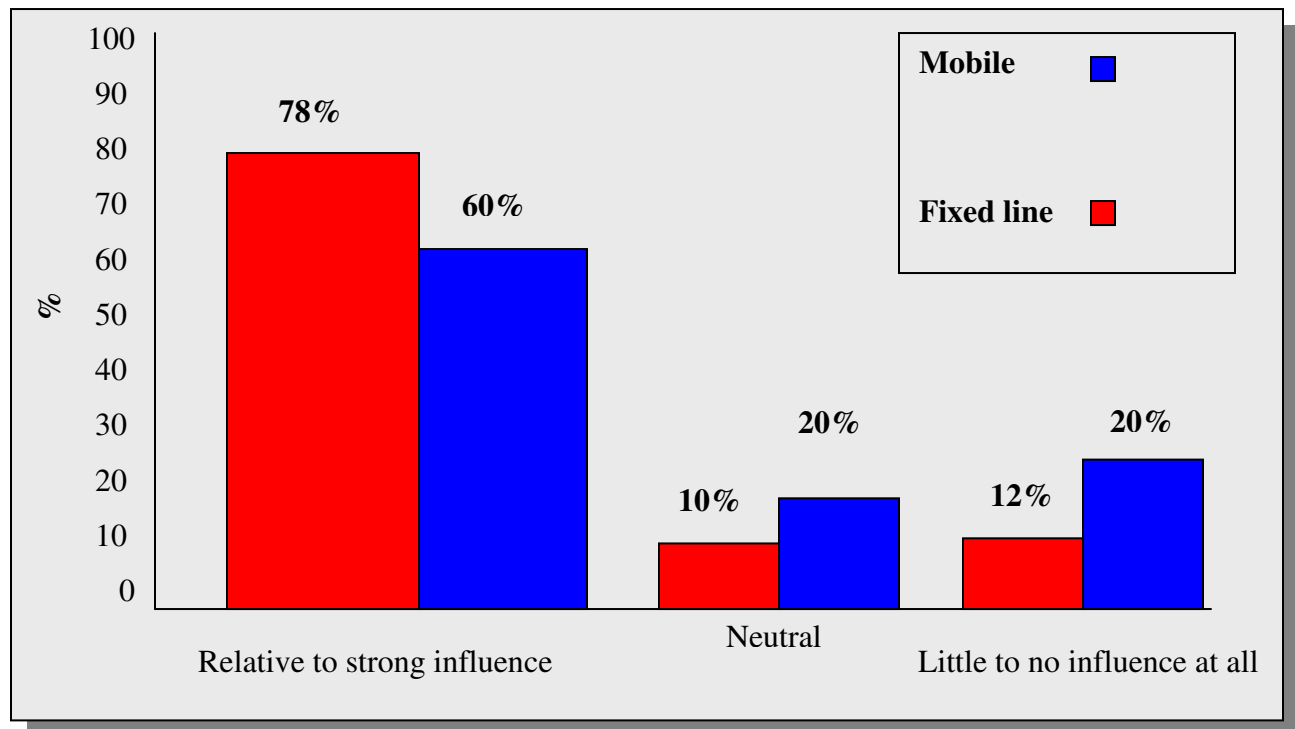
As indicated in figure 6.10, 90% of the respondents believed that economic conditions had a relatively to very strong influence on fixed line telecommunications while 82% felt economic conditions had a relatively to very strong influence on mobile telecommunications in South Africa. Very few respondents (4% for fixed line and 7% for mobile) were of the opinion that

economic conditions had little or no influence at all on the South African telecommunications business environment.

6.4.8 Respondents' views on the influence of IT competitors on fixed line operators

The literature review indicated that many IT organizations were using Telkom's infrastructure to provide value-added network services (see chapter 3, section 3.2.3). It was also pointed out that network value-added services could be a good source of future revenues for Telkom. DiData, Uunet, AST and Arivia.com were identified as IT organizations providing value-added network services in South Africa and consequently as competitors to Telkom. Therefore it was important to check Telkom management's perceptions of the influence IT organizations exerted on the fixed line and mobile telecommunications operators in the South African business environment. Figure 6.11 depicts the respondents' perceptions of the influence that competition from IT organizations had on fixed line and mobile operators, respectively.

FIGURE 6.11 INFLUENCE OF COMPETITION FROM IT ORGANIZATIONS ON FIXED LINE AND MOBILE TELECOMMUNICATIONS OPERATORS



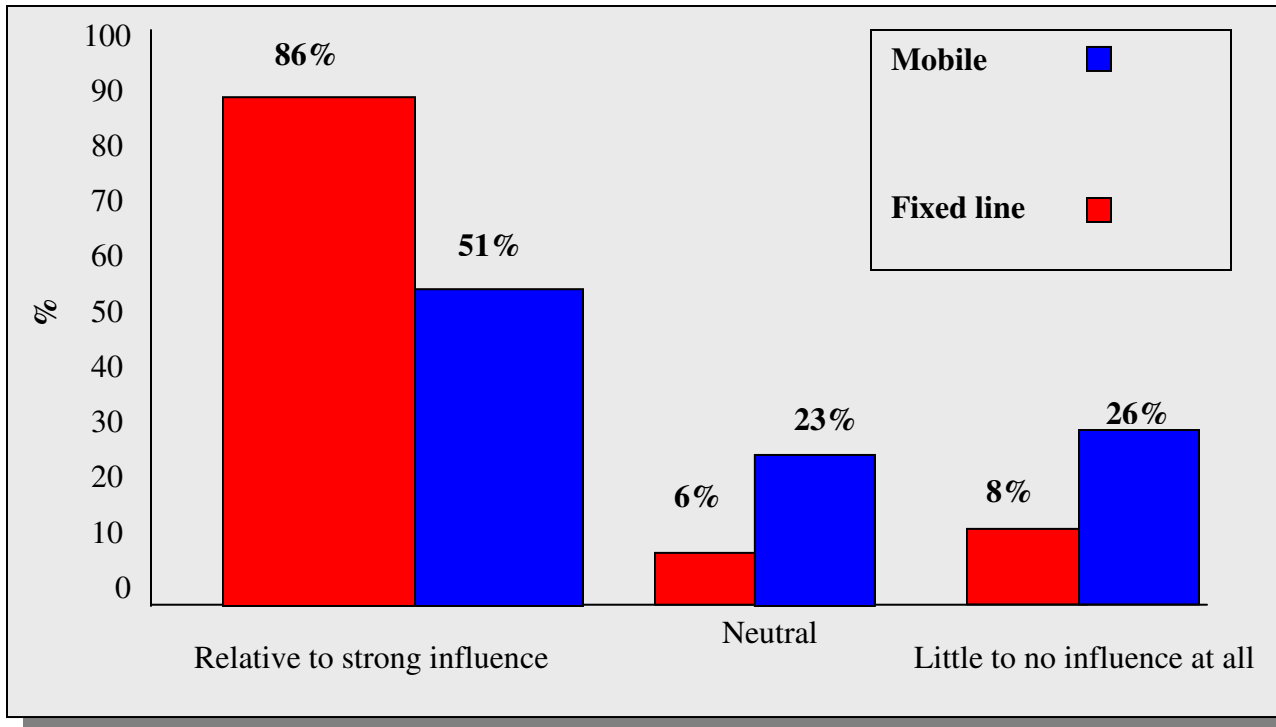
OBSERVATIONS

As illustrated in figure 6.11, 78% of the respondents' indicated that competition from IT organizations had a relatively to very strong influence on fixed line telecommunications operators and 60% felt that competition from IT organizations had a relatively to very strong influence on mobile operators. A number of the respondents (12% for fixed line and 20% for mobile) did not consider that IT organizations had much influence over telecommunication operators. These results indicated that fixed line telecommunications operators face a greater competitive threat from IT organizations than mobile telecommunications operators. The level of influence that the SNO would have on South African telecommunications operators was another important element that needed to be identified. The respondents' views on the SNO influence on the South African telecommunications operators will be discussed next.

6.4.9 Respondents' perceptions of the influence of SNO on telecommunications operators

The deregulation of telecommunications in South Africa was due to result in the introduction of a second national fixed line operator in 2003. This implied that Telkom and the mobile operators (Cell C; MTN and Vodacom) would have a direct competitor in the South African telecommunications market. The researcher therefore wished to determine Telkom management's perception of the influence of the SNO as a competitor to fixed line and mobile telecommunications operators in South Africa. Figure 6.12 depicts the respondents' views on the influence the SNO would have on fixed line and mobile telecommunication operators.

FIGURE 6.12 INFLUENCE OF COMPETITION FROM SECOND NATIONAL OPERATOR ON FIXED LINE AND MOBILE TELECOMMUNICATIONS OPERATORS



OBSERVATIONS

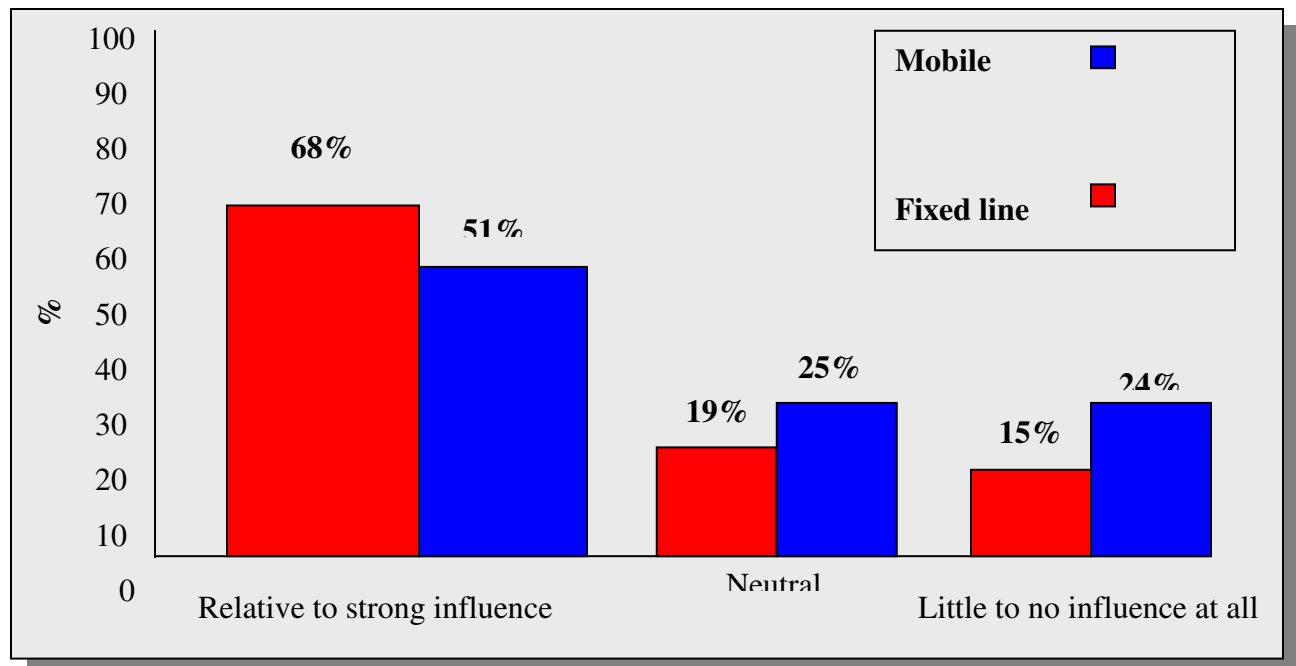
From figure 6.12 it is clear that 86% of the respondents’ felt that the SNO would have a relatively to very strong influence on South African fixed line telecommunications operators and 51% indicated that the SNO would have a relatively to very strong influence on the South African mobile telecommunications operators. At the same time, 26% of the respondents were of the opinion that the SNO would have no influence over the mobile operators and 8% believed the SNO would have no influence on fixed line telecommunications operators. Of the respondents, 23% indicated that they were unsure about the influence of the SNO on the mobile operators and 6% were also neutral about the influence the SNO would have on the South African fixed line telecommunications operators. These findings were quite normal since the introduction of a new competitor to the market generally results in a loss of revenue to the new operator. It could also put pressure on the incumbent operator to become innovative in order to hold and maintain existing customers.

The respondents' perceptions of the influence of telecommunications resellers and SMMEs on South African telecommunication operators will be discussed in the following sections next.

6.4.10 Respondents' perceptions of the resellers and SMME's influence on telecommunications operators

The literature review examined the role of new telecommunications players, such as resellers and SMMEs, in the South African telecommunications business environment (see chapter 3, section 3.2.5.2). The researcher, then, wished Telkom management's perceptions of the influence new ICT players like resellers and SMME's would have on the fixed line and mobile telecommunication operators. Figure 6.13 represents the respondents' perceptions.

FIGURE 6.13 INFLUENCE OF NEW ICT PLAYERS SUCH AS RESELLERS AND SMMEs ON FIXED LINE AND MOBILE TELECOMMUNICATIONS OPERATORS



OBSERVATIONS

Of the respondents', 68% were of the opinion that new telecommunications market players such as resellers and SMME's would have a relatively to very strong influence on fixed line telecommunications operators and 51% held that new players would have a relatively to very

strong influence on mobile telecommunications operators. This was an important finding because it implied that most Telkom managers perceived new telecommunications market players and SMMEs would have a significant influence on telecommunications operators from a competitive point of view. Figure 6.13 indicates that in the respondents' view new telecommunications players and SMMEs would have the same influence on mobile as on fixed line operators telecommunications. About 51% of the respondents were of the opinion that new telecommunications players would have a relatively to very strong influence on mobile telecommunications operators, 25% were unsure and 24% indicated that they would have little or no influence on mobile telecommunications operators at all.

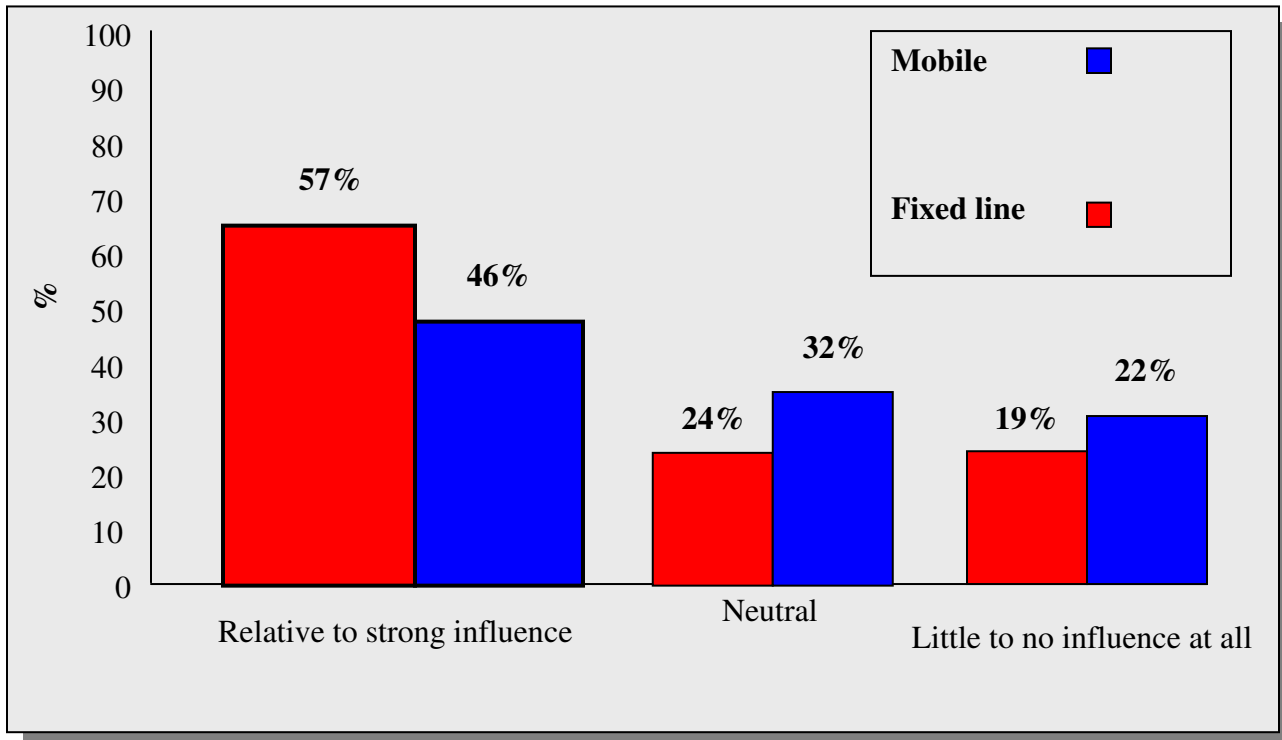
By comparison, the respondents' perceived resellers to have a greater influence on fixed line than on mobile telecommunications operators. This can be explained by the fact that mobile operators already have mobile resellers, such as Autopage and Metro, whereas the fixed line operators do not have any resellers operating in the market.

Social pressure groups exert a high level of influence on the South African telecommunications business environment (see chapter 2, section 2.10). The respondents' perceptions of the degree of influence that social pressure groups exerted on South African telecommunication operators will be discussed next.

6.4.11 Respondents' perceptions of the influence of social groups on telecommunications operators

Chapter 2 discussed the power of social groups as a force of change (see section 2.10). Accordingly, the researcher wished to determine the respondents' perceptions of the degree of influence of social group pressure on the fixed line and mobile telecommunication operators in South Africa (see also section 6.3.10). Figure 6.14 depicts the respondents' perceptions of the influence of social group pressure on the South African fixed line telecommunications operators.

FIGURE 6.14 INFLUENCE OF SOCIAL GROUP PRESSURE ON FIXED LINE AND MOBILE TELECOMMUNICATIONS OPERATORS



OBSERVATIONS

A total of 99% of the respondents' responded to this question. Figure 6.14 indicates that 57% of the respondents' felt that social pressure groups had a relatively to very strong influence on fixed line telecommunication operators and 19% felt that social pressure groups had little or no influence at all on fixed line telecommunications operators. At the same time, 24% were unsure whether social pressure groups had an influence on South African fixed line telecommunication operators. Most of the respondents did not view social groups as having a major influence on the South African fixed and mobile telecommunication operators. From figure 6.14 it is clear that 46% of the respondents felt social pressure groups had a relatively to very strong influence on mobile telecommunication operators and 22% were of the opinion that they had little or no influence at all on mobile telecommunication operators while 32% were unsure. This meant that more than half of the Telkom managers from both the management and top management groups across each of the five Telkom service organizations did not know that social pressure groups

exerted a great degree of influence on the South African fixed and mobile telecommunications operators.

The following section describes the Telkom management perceptions of the market competitiveness of South African ICT service providers.

6.4.12 Market competitiveness of South African ICT service providers

Some of the most important South African ICT organization was profiled in the literature review (see chapter 3). How these ICT organizations were strategically positioning themselves in the South African ICT sector was discussed. As major competitors in the South African telecommunications market environment, then, it was important to identify the ones that were the most competitive because this would provide an indication of which organizations Telkom would have to monitor closely. Therefore the respondents were given a list of twelve ICT organizations obtained from the literature review and asked to rate the organizations according to their perception of the organizations' market competitiveness from 1 to 13, where 1 represented the least competitive and 13 the most competitive organization. The mean rank was used as a basis to rank these organizations. Table 6.27 represents how the respondents' ranked the South African ICT organizations in terms of being the most competitive. Table 6.28 depicts the Telkom mean rankings per competitor organization.

It was also important to establish how each of the Telkom service organizations ranked the identified ICT organizations to determine whether there was unanimity in their rankings. Table 6.28 highlights the mean rank for each of the South African ICT organizations per Telkom service organization. The non-parametric Kruskal Wallis independent group test was used to test for any significant differences between the different service organizations' rankings of these ICT organizations.

TABLE 6.27 RESPONDENTS' PERCEPTION ANALYSIS ON MOST COMPETITIVE ICT ORGANIZATION

Competitiveness	Didata		Arivia.com		CS Holdings		SNO		Telkom		AST		Comparex		Vodacom		MTN		Cell C		Sentech		UUNET	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
1	13	8	7	4.3	3	1.8	10	6.1	15	9.2	5	3.1	0	0	24	14.7	4	2.5	0	0	0	0	4	2.5
2	5	3.1	15	9.2	4	2.5	20	12.3	9	5.5	11	6.7	10	6.1	15	9.2	16	9.8	7	4.3	12	7.4	18	11
3	8	4.9	16	9.8	7	4.3	15	9.2	3	1.8	7	4.3	18	11	5	3.1	19	11.7	13	8	23	14.1	9	5.5
4	16	9.8	12	7.4	19	11.7	11	6.7	13	8	16	9.8	23	14.1	2	1.2	5	3.1	14	8.6	5	3.1	12	7.4
5	15	9.2	20	12.3	18	11	10	6.1	10	6.1	17	10.4	19	11.7	2	1.2	4	2.5	10	6.1	13	8	12	7.4
6	11	6.7	22	13.5	19	11.7	6	3.7	3	1.8	17	10.4	15	9.2	2	1.2	8	4.9	11	6.7	19	11.7	16	9.8
7	21	12.9	17	10.4	23	14.1	6	3.7	8	4.9	15	9.2	12	7.4	5	3.1	3	1.8	8	4.9	25	15.3	15	9.2
8	10	6.1	11	6.7	17	10.4	10	6.1	1	.6	29	17.8	14	8.6	1	.6	8	4.9	21	12.9	13	8	23	14.1
9	19	11.7	7	4.3	14	8.6	14	8.6	6	3.7	12	7.4	15	9.2	5	3.1	6	3.7	28	17.2	14	8.6	16	9.8
10	11	6.7	8	4.9	12	7.4	14	8.6	11	6.7	14	8.6	12	7.4	5	3.1	18	11	24	14.7	11	6.7	11	6.7
11	8	4.9	10	6.1	12	7.4	3	1.8	20	12.3	6	3.7	8	4.9	14	8.6	39	23.9	7	4.3	10	6.1	10	6.1
12	12	7.4	6	3.7	3	1.8	20	12.3	10	6.1	2	1.2	5	3.1	44	27	19	11.7	5	3.1	6	3.7	6	3.7
13	5	3.1	0	0	0	0	11	6.7	45	27.6	0	0	0	0	30	18.4	5	3.1	5	3.1	1	.6	0	0
T	154	94.5	151	92.6	151	92.6	150	92	152	94.5	151	92.6	151	92.6	154	94.5	154	94.5	153	93.9	152	93.3	152	93.3
M	9	5.5	12	7.4	12	7.4	13	8	9	5.5	12	7.4	12	7.4	9	5.5	9	5.5	10	6.1	11	6.7	11	6.7
N	163	100	163	100	163	100	163	100	163	100	163	100	163	100	163	100	163	100	163	100	163	100	163	100

TABLE 6.28 NON-PARAMETRIC KRUSKAL WALLIS TEST OF TELKOM SERVICE ORGANIZATIONS' MEAN RANK PER COMPETITOR

Telkom Service Organization	Ranking per corganizations											
	Dimension Data	Arivia.Kom	CS Holdings	SNO	Telkom SA	AST	Comparex	Vodacom	MTN	Cell C	Sentech	Uunet
Technology and Network Services	76.23	82.09	76.39	73.88	78.85	72.79	75.52	77.23	76.87	77.91	79.71	71.45
Information Technology	72.48	69.87	72.76	84.88	75.63	81.06	76.50	76.74	76.00	75.44	74.08	73.26
Government Relations	71.95	73.90	66.75	75.40	80.25	78.15	80.65	66.60	75.45	67.30	77.40	88.50
Sales and Marketing	86.48	71.90	84.60	64.30	77.20	72.04	67.92	81.02	78.98	75.78	68.46	86.08
Strategic Planning	91.75	45.00	56.00	51.38	48.75	78.75	97.25	76.50	81.38	90.13	74.75	90.13
Test statistics												
<i>Chi Square</i>	2.196	4.512	2.492	4.905	1.900	1.189	1.918	.788	.126	.937	1.360	3.521
<i>Df</i>	4	4	4	4	4	4	4	4	4	4	4	4
<i>Asymp. Significance</i>	.700	.341	.646	.297	.754	.880	.751	.940	.998	.919	.851	.475

OBSERVATIONS

From table 6.27 it is clear that according to the summarised perceptions of Telkom management, no single competitor stands out as the most competitive in the South African ICT market. According to the mean ranking, the ICT organizations were ranked by the individual Telkom service organizations as depicted in table 6.29 below.

TABLE 6.29 SOUTH AFRICAN ICT ORGANIZATIONS SUMMARISED COMPETITIVE RANKING PER TELKOM SERVICE ORGANIZATION

Telkom Service Organization	Ranking		
	1st	2nd	3rd
<i>Technology and Networks Services</i>	Arivia.kom	Cell C	Vodacom
<i>Information Technology</i>	SNO	AST	Vodacom
<i>Government Relations</i>	Uunet	Comparex	Sentech
<i>Sales and Marketing</i>	Didata	Uunet	CS Holdings
<i>Strategic Planning</i>	Comparex	Didata	Cell C

As indicated in table 6.29, there is no single organization that all Telkom service organizations view as the most market competitive. Different clusters of managers have different perceptions of which ICT organization is the most competitive in the market. The survey population came from different service organizations in Telkom and each had their own opinions about the most competitive organization in their respective areas of interest. For example, IT managers perceive the most market competitive ICT organizations differently to Technology and Network Services. The fact that each of the organizations listed attracted a response from some respondents indicates that each of these organizations plays an important competitive role in the South African ICT market. The results of the Chi² significance test in table 6.28 also indicate that there were no significant differences between the rankings of the different Telkom service organizations for each ICT organization at $p \geq .05$. Apart from the Strategic Planning Service organization's mean ranking for Arivia.Kom, CS Holdings, Didata, SNO and Telkom, the

differences in mean rankings between the service organizations were small on a 100-point scale, indicating that all the ICT organizations were regarded as similarly competitive. This indicated that Telkom management across all five service organizations was aware of the competitiveness of each of these ICT competitor organizations.

6.4.13 Respondents' perceptions of Telkom's competitive advantages

To determine how Telkom management perceived Telkom's competitive advantages, they were given a list of competitive advantages and asked to rate how competitive they perceived Telkom to be for each competitive advantage (see question 2.4 of questionnaire in Appendix C). Table 6.30 represents the respondents' perceptions.

TABLE 6.30 RESPONDENTS' PERCEPTIONS OF TELKOM'S COMPETITIVE ADVANTAGES

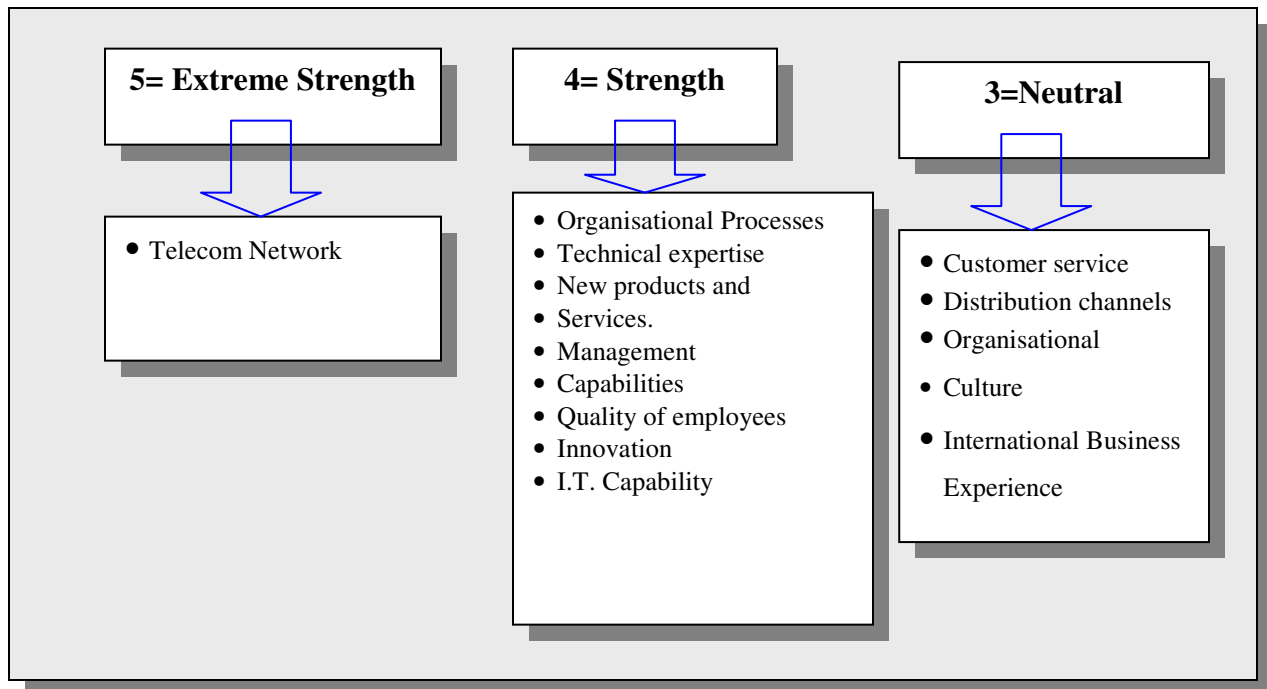
Competitive advantage	Number		Ext. Weak		Weak		Unsure		Strong to Extremely Strong		Median
	Total	%	No	%	No	%	No	%	No	%	
Organizational Processes	157	96	9	6	42	26.8	23	14	93	51	4
Customer service	157	96	13	8	33	20.2	36	22	75	46	3
Technical expertise	157	96	0	0	7	4.3	5	3	145	89	4
New products and Services	157	96	0	0	36	22.1	27	17	94	58	4
Management Capabilities	157	96	3	2	28	17.2	32	20	94	58	4
Quality of employees	157	96	1	1	14	8.6	44	27	98	60	4
Telecom Network	157	96	0	0	3	1.8	6	4	148	91	5
Technology	157	96	0	0	4	2.5	5	3	146	90	4
Distribution channels	157	96	6	4	46	28.2	35	22	70	42	3
Organizational Culture	157	96	11	7	36	22.1	49	30	61	38	3
Innovation	157	96	7	4	33	20.2	36	22	81	44	4
International business experience	157	96	9	6	31	19	48	29	80	42	3
IT capability	157	96	0	0	8	4.9	19	11	130	70	4

OBSERVATIONS

A clearly-defined pattern emerged from the data. The results obtained for this question indicated that most of the respondents' were of the opinion that Telkom was strong to extremely strong in most competitive areas. However, some of the managers perceived Telkom as weak in some competitive areas. Nevertheless, the majority of the respondents' were of the opinion that Telkom was strong to extremely strong (Median greater than 3) in all the competitive advantages listed.

Since the data obtained was non-parametric and ordinal, the Median was used to rank the individual competitive advantage areas according to how the respondents' perceived Telkom's advantages. Since ordinal scales are not as precise in measurement as ratio or interval scaled data, Means could not be used to rank the competitive advantages in order of importance because ordinal data are not as precise as ratio or interval scaled data and therefore obtaining the average would be meaningless (for a discussion of the Median - see section 5.10.4.2). A further motivation for using the Median was, to illustrate for example, that where the measurement scale of a question is 4 = Strong and 5 = Extremely strong, a mean of 4.4 would be meaningless because it would be neither strong nor very strong. By using the Median, the central value of the responses can be obtained. Since the Median for responses of all the items in the scale ranged between 3 and 5 as indicated in Table 6.30, each item was clustered according to its Median into three cluster categories, namely 5 = Extremely strong, 4 = Strong and 3 = Unsure, to provide a visual illustration of how the respondents' viewed Telkom's competitive advantages (see figure 6.15 below).

FIGURE 6.15 RESPONDENTS' CLUSTERED PERCEPTIONS OF TELKOM'S COMPETITIVE ADVANTAGES



From figure 6.15 it is clear that the respondents' perceived Telkom to have no weaknesses. This illustrates Telkom myopia because here the respondents indicated that Telkom had no weaknesses whereas in comparison to its competitors, Telkom was perceived to be weak in most of these areas (see section 6.4.14 and figure 6.16). Then, Telkom has only one extreme strength that can be regarded as a sustainable competitive advantage (because it would be difficult for competitors to replicate), namely its telecommunications network. Telkom has a number of strengths that could be used effectively to take advantage of the new marketing opportunities arising in the South African telecommunications business environment. Finally there are several important areas (customer service, distribution channels, organizational culture and international business experience) that the respondents' regarded as neutral and, although rated as neutral, these should be seen as being ranked the lowest. According to Baker and Hart (1999) these areas are highly significant because according to Baker and Hart (1999) they are responsible for augmenting the core product or service offering and could affect Telkom's ability to compete effectively and efficiently in the telecommunications market.

The Spearman's correlation coefficient for this scale measured 0.83, reflecting that it was well above the .70, indicating a high level of reliability (see chapter 5, section 5.11). However, validity appeared to be extremely weak for this scale. Cluster analysis (agglomeration schedule) indicated that all the variables in the scale linked to form a single cluster, but these links were weak as indicated by the coefficient of determination, which was .004. These findings indicate that the reliability for this scale was high (0.83) but validity was low.

The respondents' perceptions of the competitive advantages of Telkom's competitors will be discussed next.

6.4.14 Competitors' competitive advantages in comparison to Telkom

An important area that needed to be tested with Telkom management was how they perceived the competitive advantages of competitors' against Telkom. Identifying those competitive areas where competitors were stronger than Telkom would reveal the areas where Telkom would require development. Table 6.31 represents a summary of the respondents' perception of the competitors' competitive advantages as apposed to Telkom.

The respondents were given a list of competitive dimensions and they were asked to assess the most competitive organization they selected on each of these dimensions against Telkom, using the following scale: 1 = Definitely superior to Telkom; 2 = Superior to Telkom; 3 = Neither superior to nor weaker than Telkom; 4 = Weaker than Telkom; and 5 = Definitely much weaker than Telkom (see question 2.5 of questionnaire in Appendix C). The Median was used to compare and rank the responses and identify the competitive areas where the respondents considered Telkom was weaker than its competitors.

TABLE 6.31 COMPETITOR COMPETITIVE ADVANTAGES COMPARED TO TELKOM

Competitive advantage	Respondents		Superior to definitely superior to Telkom		Neither weaker nor stronger than Telkom		Weaker than to definitely weaker than Telkom		Median
	Total	%	No	%	No	%	No	%	
Organizational Processes	100	61	60	37	26	16	13	8	2
Customer service	102	62	75	46	13	8	14	9	2
Technical expertise	101	62	30	19	52	32	19	13	3
New products and Service	101	62	70	43	16	10	15	9	2
Management capabilities	100	61	49	30	40	25	11	7	3
Quality of employees	100	61	47	29	43	26	10	6	3
Telecom Network	101	62	21	13	41	25	39	24	3
Technology	101	62	31	19	54	33	16	10	3
Distribution channels	101	62	68	42	18	11	15	9	2
Organizational Culture	100	61	70	43	20	12	10	6	2
Innovation	103	63	75	47	11	9	17	8	2
Int. Business Exp.	101	62	60	36	30	18	12	7	2
IT Capability	100	61	49	30	40	25	11	7	3

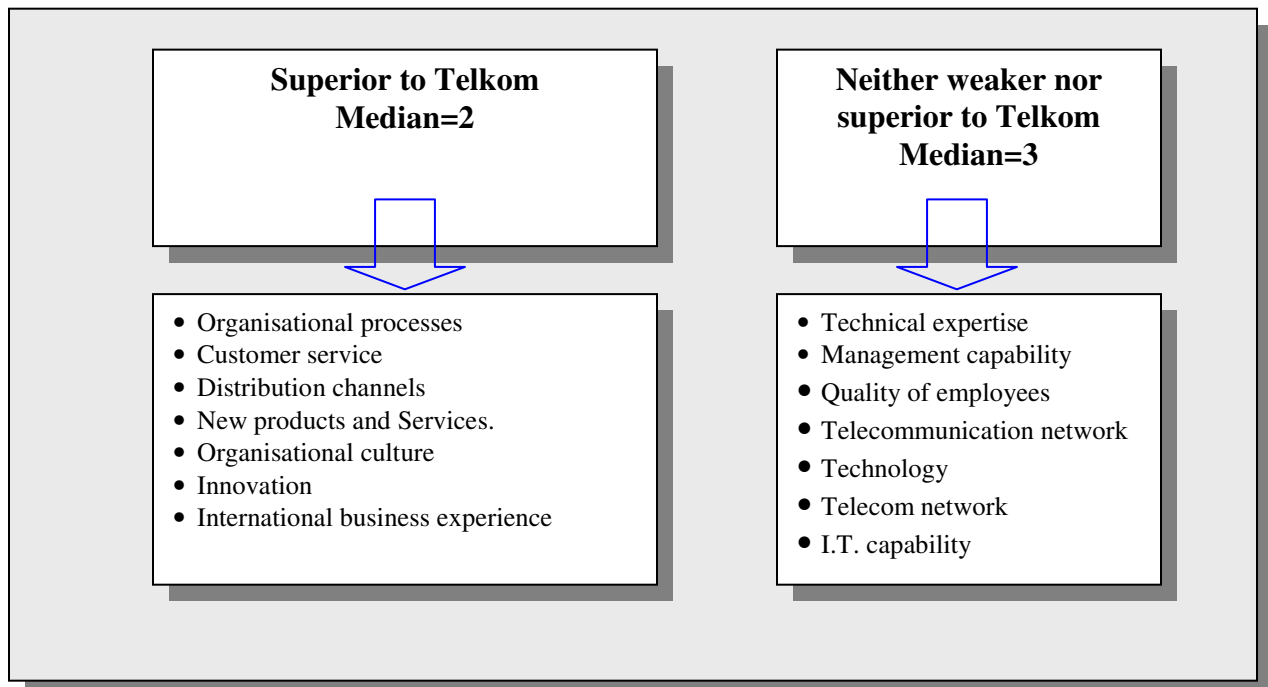
OBSERVATIONS

Between 61% and 63% of the respondents' responded to this question. Respondents' could perhaps have found the question difficult to understand. As indicated in table 6.31 those competitor competitive advantages that received the most selection responses from the respondents were highlighted. Medians were used to rank Telkom competitor advantages and to make cross-comparisons with Telkom. Because of the way the question was scaled (see question 2.5 in the questionnaire), a low Median (less than 3) would indicate an area where Telkom's competitors were superior to Telkom and a high Median (greater than 3) would indicate an area where Telkom's competitors were weaker than Telkom. Table 6.31 reveals that most of the respondents perceive Telkom's competitors as superior to Telkom in a number of competitive areas. Since the results indicate that the Median for the responses of all the items in the scale ranged between 2 and 3, as shown in Table 6.31, each item was clustered according to its

Median into the two cluster categories that emerged from the results, namely: 2 = Superior to Telkom and 3 = Neither weaker nor superior to Telkom.

Figure 6.16 illustrates the respondents' perceptions of competitor competitive advantages in relation to Telkom.

FIGURE 6.16 CLUSTERED PERCEPTIONS OF TELKOM COMPETITOR COMPETITIVE ADVANTAGES IN COMPARISON TO TELKOM



The findings presented in figure 6.16 indicate that the respondents' perceive, Telkom's competitors to have a number of competitive advantages that are superior to Telkom. It is particularly important to note the competitive advantage areas where competitors have an advantage over Telkom, namely customer service, distribution channels, organizational culture and international business experience. These areas were identified in section 6.4.13 as weaknesses in Telkom and these findings confirmed this. However, an important finding was that in some areas previously identified as areas of strength for Telkom (see section 6.4.13) respondents' rated competitors' superior to Telkom, thus indicating a major contradiction in the respondents' perceptions. These areas were organizational processes, new products and services, and innovation. According to Grant (2002), DuPlessis et al (2001), Baker and Hart

(1999), Hammer (1996), Hamel and Prahalad (1994), these competitive areas are some of the important areas where an organization may establish sustainable competitive advantages.

Spearman's correlation coefficient for this scale measured 0.67, which indicated that it was below .70, indicating a low level of reliability for this scale (see section 5.11). Validity was extremely weak for this scale. Cluster analysis indicated that all the variables in the scale linked to form a single cluster, but these links were very weak as indicated by the coefficient of determination, which measured .036. These findings indicated that both the reliability (0.67) as well as the validity for this scale was low.

6.4.15 Supplier importance to Telkom

The literature review indicated that telecommunications technology suppliers play an important role in establishing competitive advantages in the telecommunications market (see chapter 3, section 3.2.6). By identifying the most important suppliers to Telkom, Telkom could lock them into exclusivity agreements thereby ensuring that they provided technology only to Telkom, thus giving Telkom a sustainable competitive advantage. To determine the importance of suppliers to Telkom, the respondents were asked to rank a list of suppliers operating in South Africa according to their perceived importance to Telkom, using a scale of 1 to 5, where 1 = Extremely important, 2 = Important, 3 = Neither important nor unimportant, 4 = Not important and 5 = Not important at all (see question 2.7 of questionnaire in Appendix C).

The mean rank was used to rank each ICT supplier organization according to the respondents' perceptions in each of the different service organizations. The non-parametric Kruskal Wallis test for significance between independent groups was used to test for differences between each of the Telkom service organization ratings of each supplier. Table 6.32 represents the Kruskal Wallis mean rank for each ICT technology supplier per Telkom service organization. Medians were used to determine the level of importance the respondents attached to each Telkom supplier and the non-parametric Kruskal Wallis and Chi² were used to test for differences in rankings between the management and top management groups.

TABLE 6.32 TELKOM SERVICE ORGANIZATIONS MEAN RANKINGS OF SUPPLIERS' IMPORTANCE TO TELKOM PER SERVICE ORGANIZATION

Supplier	Statistic			Kruskal Wallis Mean rank per Telkom Service Organization					
	Asymp. Significance	Management Group Mean rank		Median	Technology and Network Services	Information Technology	Government Relations	Sales and Marketing	Strategic Planning
		Management	Top management						
Marconi	.792	76.36	72.30	2	75.56	78.56	67.17	69.46	60.00
Alcatel Altech	.218	78.40	72.75	2	74.26	87.77	66.90	65.85	89.75
Grintek	.982	78.24	65.77	2	75.27	72.73	73.20	74.72	63.00
Cisco	.010	81.97	65.67	2	87.44	74.38	64.30	56.81	50.38
Ericsson	.574	73.94	77.03	3	69.96	80.21	69.20	82.04	85.00
Nortel	.342	72.56	79.69	3	79.72	65.27	69.75	81.85	64.13
Siemens	.776	79.92	71.17	2	73.75	80.10	87.40	75.00	89.88
3 Com	.071	75.77	72.09	3	80.15	61.62	84.00	81.29	44.50
Spescom	.151	74.44	76.11	2	70.30	79.39	74.00	88.26	39.63
Sun Microsystems	.492	77.66	69.73	2	78.53	68.29	75.15	80.63	51.00

OBSERVATIONS

From Table 6.32 it is clear that each Telkom service organization ranked the different suppliers differently. Those suppliers that most of the respondents perceived as extremely important to important to Telkom (top box and bottom box combined) and the way that the different service organizations ranked each supplier are as follows:

- **Marconi** - 60% of the respondents perceived Marconi as an important supplier to Telkom, 21% felt Marconi was neither important nor unimportant to Telkom, 9% indicated that Marconi was unimportant and 2% believed Marconi was not important at all to Telkom. Of

all five Telkom service organizations, Technology and Network Services ranked Marconi the highest (mean rank = 75.56).

- **Alcatel Altech** - 71% of the respondents perceived Alcatel Altech to be important to extremely important to Telkom, 15% regarded Alcatel Altech as neither important nor unimportant and 8% perceived Alcatel Altech as unimportant to Telkom. Strategic Planning ranked Alcatel Altech the highest (mean rank = 89.75), of all the service organizations for its importance to Telkom as a supplier.
- **Grintek** - 54% of the respondents perceived Grintek as important to extremely important to Telkom, 11% felt that Grintek was unimportant to not important at all and 26% were of the opinion that Grintek was neither important nor unimportant to Telkom. Technology and Network Services ranked Grintek the highest of all the service organizations (mean rank = 75.27).
- **Cisco** - 68% of the respondents viewed Cisco as extremely important to important to Telkom as a supplier, 9% regarded that Cisco as not important to not important at all to Telkom and 17% believed that Cisco was neither important nor unimportant to Telkom. Technology and Network Services rated Cisco the highest of all the Telkom services organization (mean rank = 87.44).
- **Siemens** - 77% of the respondents indicated that Siemens was extremely important to important to Telkom, 9% regarded Siemens as not important and 9% regarded Siemens as neither important nor unimportant as a supplier to Telkom. The highest mean rank for Siemens was 89.88, given by Strategic Planning.
- **Spescom** - 92% of the respondents ranked Spescom; 49% felt that Spescom was important to Telkom, 25% felt that Spescom was neither important nor unimportant to Telkom and 18% were of the opinion that Spescom was not an important supplier to Telkom. Spescom received the highest mean rank of 88.26 from Sales and Marketing.
- **Sun Microsystems** - 92% of the respondents ranked Sun Microsystems; 47.8% felt Sun Microsystems was an important supplier to Telkom, 30.7% indicated that Sun Microsystems was neither important nor unimportant and 13.4% believed that Sun Microsystems was not important to Telkom. Sun Microsystems received the highest mean rank from Sales and Marketing (mean rank = 80.63).

- *3Com - Government relations ranked 3Com the highest (mean rank = 84.00) of all the Telkom service organizations.*

This finding indicated that Telkom management were not operating cross functionally and were not sharing information between service organizations, and exposed a weakness in cross-functional operations as well as communication and implies that each Telkom service organization had its own opinions about important suppliers to Telkom and that no cross-functional communication took place in the organization. It also indicated that no cross-functional synergies took place between the five Telkom service organizations. This is supported by the previous findings (see section 6.4.13) that Telkom management perceived Telkom as weak in organizational culture, customer service and distribution channels. If there were no synergies between the different functions of the value chain, customer service and distribution would be affected. This also indicated a poor organizational culture caused by poor internal communications (Robbins, 1998).

The Chi² indicated that there were no significant differences between the rankings of the various Telkom service organizations for the different suppliers at a 95% significance level. At a 90% significance level, however, there were significant differences in the service organization rankings for Cisco (.010) and 3Com (.071). The non-parametric Kruskal Wallis analysis found that the differences between the management and top management group mean rankings for each of the suppliers was marginal and was small on a 100-point scale. This indicated that there were no significant differences in the mean rankings of the five service organization groups. The Medians found that some suppliers were more important than others (Median = 2). These suppliers ranked as important by the respondents were: Marconi (Median = 2), Cisco (Median = 2), Siemens, Alcatel Altech, Grintek (Median = 2), Spescom (Median = 2) and Sun Microsystems (Median = 2).

This section examined the major drivers of change in the South African telecommunications business environment. The next section will analyse and discuss the respondents' perceptions of the new marketing opportunities for South African fixed line telecommunication operators.

6.5 IDENTIFYING NEW MARKETING OPPORTUNITIES EMERGING FOR FIXED LINE TELECOMMUNICATIONS OPERATORS IN SOUTH AFRICA

Throughout the analysis of the South African telecommunications business environment in chapters 2 to 5 many possible new marketing opportunities were identified for South African fixed line telecommunications operators. The researcher stated that these new marketing opportunities would be tested with knowledgeable persons in the South African fixed line telecommunications sector. Therefore, Telkom management were asked to give their opinions on a number of questions (identified in the literature review) to confirm some of the new marketing opportunities emerging for fixed line telecommunications operators in South Africa. The top and bottom box scores were combined to give a better overall picture of the data distribution patterns. Medians, where applicable, were also used as a basis for drawing comparisons between the data. In this section the respondents' opinions on some of the new marketing opportunities emerging for fixed line telecommunication operators in South Africa are analysed and discussed.

6.5.1 Respondents' perceptions of change and marketing opportunities in the South African telecommunications business environment

Table 6.33 represents the respondents' perceptions of change and the evolving marketing opportunities in the South African telecommunications business environment. The respondents were given twelve statements to evaluate their perception of new marketing opportunities for fixed line telecommunications operators (see section C, question 3.1 of the questionnaire). The purpose of these statements was to see whether Telkom management felt that change in the South African business environment was creating new marketing opportunities for fixed line telecommunication operators, and how they perceived some of these opportunities.

TABLE 6.33 RESPONDENTS' PERCEPTIONS OF CHANGE AND EMERGENT MARKETING OPPORTUNITIES IN THE SOUTH AFRICAN TELECOMMUNICATIONS BUSINESS ENVIRONMENT

Statement	Respondents		Disagree to Strongly Disagree		Neither agree nor disagree		Agree to Strongly agree		Median
	No	%	No	%	No	%	No	%	
1. Business Environment Change: SA	157	96	14	9	17	10	126	80	4
2. Business Environment Change: World	157	96	8	6	25	15	123	78	4
3. Customer needs: sophistication increase	158	97	3	2	2	2	151	95	4
4. Increase in fixed line revenues	158	96	53	34	35	22	45	28	3
5. Electronic financial services	158	97	6	4	18	11	134	85	4
6. Future: data will overtake voice	158	97	21	13	12	7	124	80	4
7. Telkom should provide wholesale products and services	158	96	8	5	16	10	134	85	4
8. Wireless will replace fixed line in future	158	97	86	54	21	13	50	31	2
9. Wireless offers more opportunities than fixed line	156	96	43	28	42	26	71	46	3
10. Telkom must offer VAN's to increase fixed line revenues	158	97	3	2	5	3	150	95	4
11. Telkom should explore cable broadcasting opportunities	157	96	16	10	18	11	124	79	4
12. Telkom should provide IT services	157	96	8	5	7	4	142	90	4

OBSERVATIONS

As indicated in table 6.33, the majority of the respondents' agreed with most of the statements. Of the respondents', 80% agreed that change in the South African business environment was bringing about new opportunities for fixed line telecommunication operators in South Africa, (top box combined) and 78% agreed that change in the business environment was bringing about new opportunities for fixed line telecommunications operators in the world. Only 9% of the

respondents' disagreed that business environmental change was creating new marketing opportunities for fixed line telecommunications operators in South Africa. The Median for both statements 1 and 2 was 4 (Agree), reflecting the perceptions of the respondents.

According to 95% of the respondents, telecommunications customer needs were becoming increasingly sophisticated (see to statement 3 in table 6.33). The Median for statement 3 equalled 4 (Agree), indicating that the general perception of the respondents was in agreement with this statement.

With regard to the statement "fixed line voice revenues will increase in future in SA", 34% of the respondents' disagreed that fixed line voice revenues would increase in SA in future (see statement 4 in table 6.33). The secondary research findings pointed out that voice revenues for fixed line telecommunications were declining globally and revealed the importance for South African fixed line telecommunications operators to keep themselves informed of changes in the business environment in order to identify changing patterns in technology and customer behaviour and to find new sources of revenue-generating opportunities. The Median for this statement was 3 (Neither agree nor disagree) and is indicated that Telkom management were unsure. This signalled an important finding that raised several issues. First, it indicated that some Telkom managers were not outward-looking and did not keep abreast of the technological changes taking place in the South African business environment. Secondly, it indicated a stem in the flow of market intelligence throughout the organization since the role of marketing intelligence is to disseminate such intelligence throughout the organization (see chapter 4, section 4.6.3.4). This tacitly implied that Telkom was not operating at level 4 organizational capability.

The Median for statement 4 was 3 (Neither in agreement nor disagreement) and indicated that the average response for this statement was neutral, meaning that the respondents' did not know whether or not fixed line voice would increase in future.

The respondents' responses to statement 5 in table 6.33 indicated that 85% agreed that electronic financial data services were a good revenue opportunity for fixed line

telecommunications operators in South Africa. The Median supports this, which were 4 (Agree). For statement 6 in table 6.33, 80% of the respondents' agreed that in the near future data services revenues would surpass voice revenues. This finding corresponded to the findings in the literature review, which indicated a similar trend.

According to the responses for statement 7, 85% of the respondents' believed Telkom should provide wholesale products and services. The Median for this statement was 4 (Agree) and confirmed that most of the respondents' agreed that Telkom should provide wholesale ICT products and services. These findings concurred with the secondary literature findings (see section 4.14.1 and 4.15.5).

Statement 8 aimed to test whether respondents' believed that the fixed line would be replaced by wireless communications. From the responses received for statement 8, 54% disagreed and 34% agreed that wireless would be substituted for the fixed line. This indicated that 54% of the respondents' perceived that the fixed line would still be used in future. The mean for this statement was 2.69, indicating that the average leaning of the responses was towards disagreeing that the fixed line would be replaced by wireless communications.

To determine whether there were more opportunities in wireless than fixed line telecommunications, the respondents' were given the statement "wireless telecommunications offers more opportunities for service providers than fixed line services in SA"(see statement 9 in Table 6.33). A total of 96% of the respondents' responded. Of these, 71 46% agreed, 28% disagreed and 26% neither agreed nor disagreed that wireless offered more opportunities than fixed line telecommunications. The Median for statement 9 was 3 (Neither agree nor disagree), indicating that the central tendency of the responses was unsure, which again revealed an important weakness of some managers in Telkom to understand the South African telecommunications business environment.

To the statement "Telkom must offer value-added network services to increase fixed line revenues" (see statement 10 in Table 6.33), 97% of the respondents' responded. The overwhelming majority of the respondents' (95%) agreed. Only 2% disagreed and 3% neither

agreed nor disagreed. The Median for statement 10 was 4 (agree) suggesting that there was agreement between Telkom managers that Telkom should provide value-added network services. This was an important finding because it indicated that most Telkom managers had recognised that fixed line revenues needed to be supplemented by providing value-added network services, a trend emphasised in the literature review (see chapter 3, sections 3.2.1 to 3.2.6).

6.5.2 Importance for fixed line telecommunication operators to find new revenue-generating products and services

An important question that was raised with Telkom management was how important they perceived the need for fixed line telecommunications service providers to find new revenue-generating products and services. The reason for asking this question was to determine whether Telkom management realised the importance of new products and services for Telkom in the light of the decreasing revenues that Telkom was obtaining from its voice products and services. Table 6.34 depicts the respondents' perceptions of the importance for fixed line telecommunication operators to find new revenue generating products and services.

TABLE 6.34 RESPONDENTS' PERCEPTIONS OF THE IMPORTANCE FOR FIXED LINE TELECOMMUNICATION OPERATORS TO FIND NEW REVENUE-GENERATING PRODUCTS AND SERVICES

	Total	
	No	%
Disagree	0	0
Neither agree nor disagree	0	0
Agree to strongly agree	163	100
Total	163	100
Median	5 = Extremely important	

OBSERVATIONS

Table 6.34 indicates a 100% response rate and agreement that it was very important for fixed line telecommunications operators to find new revenue generating products and services. A significant finding was that the Median for this item was 5, which indicated that all the respondents' believed that it was extremely important for fixed line telecommunications operators to identify new revenue-generating products and services. This finding was consistent with Hamel and Prahalad (1994), who state that businesses that want to succeed today must

constantly seek to challenge the constructs of traditional paradigms by innovating in a way that always seeks to create new value for customers.

This was one of the strongest signals to fixed line telecommunications operators like Telkom to become innovative and destructive and to identify and develop new products and services that create value for customers. It indicated further that 100% of the Telkom managers were of the opinion that Telkom should be developing new products and services. This indicates that Telkom management realised that if Telkom was to succeed in future, it would need new products and services. It also confirmed that the Telkom management strongly believed existing revenues needed to be supplemented with value-added products and services.

6.5.3 Future challenges for fixed line telecommunications operators in South Africa

To determine the areas of future importance that Telkom management believed fixed line telecommunications operators in South Africa would face, they were given a list of possible future challenges for fixed line telecommunication operators and asked to rate the perceived importance of these challenges on the following rating scale: 1 = Extremely important, 2 = Important, 3 = Neither important nor unimportant, 4 = Unimportant and 5 = Not important at all. Means were used to identify the order of importance for each factor. Table 6.35 represents the respondents' perceptions.

TABLE 6.35 RESPONDENTS' PERCEPTIONS OF THE FACTORS OF FUTURE GLOBAL IMPORTANCE FOR FIXED LINE TELECOMMUNICATIONS OPERATORS IN SOUTH AFRICA

Factors of future Importance (Fixed line)	Respondents' Answering Question		Important To very Important		Neutral		Unimportant to Not important		Median
	No	%	No	%	No	%	No	%	
	1. Customer relationships	159	98	150	94	0	0	9	
2. Internet	157	96	140	89	4	3	15	10	1
3. Deregulation	159	98	124	79	21	13	14	11	2
4. Competition	159	98	139	87	11	7	9	6	1
5. Globalisation	159	98	133	84	15	9	11	7	2
6. Convergence of ICT	156	98	143	92	4	3	9	6	1
7. Developing new VAPS	158	97	146	92	2	1	10	6	2
8. Customer Relationship Management	158	97	147	93	2	1	9	6	1
9. New ways for value creation	158	97	148	94	1	>1	9	6	1
11. New product development	156	96	146	94	0	0	10	6	1
12. Skilled employee retention	157	96	142	90	5	3	10	6	1
13. CRM products services	157	96	144	92	10		10	6	1
14. E-commerce prod/serv	157	96	142	90	3	2	12	8	1
15. M-commerce prod/serv	145	89	113	78	23	14	9	6	2
16. E-financial services	153	93	137	90	7	4	9	6	1
17. ASP provisioning	157	96	138	88	9	6	10	6	1
18. ISP services	154	95	131	85	8	5	15	10	1
19. Data centres	154	95	138	90	6	4	10	6	1
20. Networking	157	96	142	90	4	3	11	7	1
21. Network security	154	95	138	90	6	4	10	6	1
22. Wireless LANs	154	95	120	78	20	12	14	9	2
23. Voice services	154	95	132	86	10	6	12	8	2
24. Wireless communications	154	95	121	79	19	12	14	9	2
25. Cable broadcasting	154	95	122	79	17	10	15	10	2
26. Provide IT services	154	95	134	87	7	4	13	8	1

OBSERVATIONS

Table 6.35 reveals the future areas of importance that most of the respondents' felt were important or extremely important for fixed line telecommunications operators. It was evident from the Medians of each response that the respondents' regarded each areas listed as having future importance. However, some of the challenges were rated as extremely important (1) while others were rated as important (2). Table 6.36 illustrates areas of future importance for fixed line telecommunications operators.

TABLE 6.36 SUMMARY OF FUTURE AREAS OF IMPORTANCE FOR FIXED LINE TELECOMMUNICATIONS OPERATORS

<i>Extremely important (Median=1)</i>	<i>Important (Median=2)</i>
• <i>Customer relationships</i>	• <i>Deregulation</i>
• <i>Internet</i>	• <i>Globalisation</i>
• <i>New ways to create value creation</i>	• <i>Developing new Value Added Network products and services</i>
• <i>Competition</i>	• <i>Wireless LAN's</i>
• <i>Customer Relationship Management</i>	• <i>Voice services</i>
• <i>Skilled employee retention</i>	• <i>Cable services</i>
• <i>Network security</i>	• <i>Broadcasting services</i>
• <i>CRM products and services</i>	
• <i>E-commerce</i>	
• <i>Convergence of ICT</i>	
• <i>IT provision</i>	
• <i>ISP services</i>	
• <i>Networking</i>	
• <i>Network security</i>	
• <i>Data centres</i>	

From the challenges identified in Table 6.36 above, it was clear that two broad areas of future importance emerged from these findings. Firstly, customers and the management of relationships with them were regarded as the most important challenges for fixed line telecommunication operators in the future. This finding concurred with of Gordon's (1998) finding that customer relationship management would be a very important area for organizations to concentrate on to

ensure long-term sustainability. Secondly, some of the other important challenges included, developing new products and services and finding new ways of creating value for customers. Retaining skilled employees, and ensuring Network security would also be high priority challenges. It should be noted that the convergence of ICT and providing IT services were identified as areas that would be extremely important in future for fixed line telecommunications operators. These findings indicated that the respondents' thinking correlated with the findings in the literature review that organizations today (especially those involved in technology) must seek to build strong stakeholder relationships and strive to disrupt the industry by challenging the constructs of traditional paradigms through the creation of superior value for customers. These were areas where Telkom had failed to succeed. If Telkom is to succeed in future then it will have to embrace the future and set out to recreate its future by adopting processes to adapt its organizational culture to one that injects life into innovation and disruption and strives to recreate the future. This means that Telkom should begin by exploiting the new marketing opportunities that exist in the South African telecommunications business environment.

6.5.4 Future challenges for mobile telecommunications operators in South Africa

To determine the areas of future importance that the respondents' believed mobile telecommunications operators in South Africa would face, they were asked to rate a list of possible future challenges in order of perceived importance. Table 6.37 represents the respondents' ratings.

TABLE 6.37 RESPONDENTS' PERCEPTIONS OF THE FACTORS OF FUTURE GLOBAL IMPORTANCE FOR MOBILE TELECOMMUNICATIONS OPERATORS IN SOUTH AFRICA

Factors of future importance (Mobile)	Total respondents' answering question		Important to extremely important		Neither important nor unimportant		Unimportant not important at all		Median
	No	%	No	%	No	%	No	%	
Customer relationships	157	96	136	87	9	6	12	8	1
Internet	157	96	85	54	36	22	16	10	2
Deregulation	156	96	105	67	31	19	20	12	2
Competition	157	96	133	85	10	6	14	9	2
Globalisation	157	96	127	81	19	11	11	7	2
Convergence of ICT	155	95	130	84	15	9	10	6	2
Developing new VAPS	155	95	108	70	27	17	20	13	2
CRM	155	95	138	89	10	6	12	8	1
New Value creation	156	96	140	90	6	4	10	6	1
Competition	154	95	125	81	16	10	13	8	2
New product development	156	96	146	94	0	0	10	6	1
Skilled employee retention	155	95	137	88	10	6	8	5	1
CRM products services	154	95	138	90	9	6	7	5	1
E-commerce prod/services	155	95	120	77	24	15	11	7	1
M-commerce prod/services	155	95	136	88	9	6	10	6	1
E-financial services	151	93	127	84	14	9	10	7	1
ASP provisioning	155	95	121	78	22	14	12	8	2
ISP services	152	93	107	70	27	17	18	12	2
Data centres	152	93	93	61	37	23	22	14	2
Networking	155	95	130	84	13	8	12	8	2
Network security	151	93	124	82	14	9	13	9	1
Wireless LANs	152	93	109	72	27	17	16	11	2
Voice services	152	93	126	83	13	8	13	9	2
Wireless communications	152	93	140	92	4	3	8	5	1
IT services	152	93	93	61	37	23	22	14	2

OBSERVATIONS

The future areas of importance that most of the respondents' regarded as important or extremely important for mobile telecommunication operators have been summarised in table 6.37. It is evident from the primary research findings that the majority of the respondents' regarded all the challenges listed as important. However some of the more urgent future challenges (extremely important) identified are represented in Table 6.38.

TABLE 6.38 SUMMARY OF FUTURE AREAS OF IMPORTANCE FOR MOBILE TELECOMMUNICATIONS OPERATORS

<i>Extremely important (Median=1)</i>	<i>Important (Median=2)</i>
• <i>New value creation</i>	• <i>Internet</i>
• <i>Customer Relationship Management</i>	• <i>Deregulation</i>
• <i>Skilled employee retention</i>	• <i>Competition</i>
• <i>New product development</i>	• <i>Globalisation</i>
• <i>Customer relationships</i>	• <i>Convergence of ICT</i>
• <i>CRM products and services</i>	• <i>Developing new VAPS</i>
• <i>Wireless communication</i>	• <i>ASP provisioning</i>
• <i>M-commerce products and services</i>	• <i>ISP services</i>
• <i>Network security</i>	• <i>Data centres</i>
• <i>E-financial services</i>	• <i>Networking</i>
	• <i>Wireless LANs</i>
	• <i>Voice services</i>
	• <i>IT services</i>

From Table 6.38 it is clear that similar future challenges emerged for mobile as for fixed line telecommunications operators. Building sound relationships with customers and managing these relationships were regarded as an extremely important future challenge by most of the respondents'. Other challenges that most respondents' regarded as extremely important were the development of new products and the creation of value for customers. Skills retention was also regarded as a future challenge of extreme importance. This can be explained by the fact that there is a shortage of skilled ICT personnel worldwide. However the concentration of responses on areas of extreme future importance for mobile operators was in the areas of customer

relationship management, new product/service development with strong emphasis on e-commerce and m-commerce, e-financial services and network security. There was relatively less emphasis on such areas as Internet, voice services (although mobile voice is growing rapidly in South Africa), data centres and competition.

Spearman's correlation coefficient for this scale measured 0.78 and indicated that it was well within the .70 range, indicating a high level of reliability for this scale. However, validity was extremely weak for this scale. Cluster analysis indicated that all the variables in the scale linked to form a single cluster, but that the relationships between the items (clusters) were very weak as indicated by the highest coefficient of determination of all items, which measured .07. These findings indicated that the reliability for this scale (0.78) was within the accepted range, but that the validity was low.

An important area tested with the respondents' was teleworking trends in South Africa. The respondents' perceptions of teleworking in South Africa will be discussed next.

6.5.5 Remote working (Teleworking) trends in South Africa

The literature review indicated that remote working was an important trend emerging in South Africa (see section 3.2.5.1). To test when remote working would become a norm in South Africa, the respondents' were asked to give their opinions on when they thought remote working would become a norm in South Africa. Table 6.39 depicts the responses.

TABLE 6.39 RESPONDENTS' PERCEPTIONS OF WHEN REMOTE WORKING WILL BECOME A NORM IN SOUTH AFRICA

Time period	Total	
	Number	%
Less than 1 year	2	1
1-2 years	20	12
3-5 years	83	51
5 years and more	50	31
Never	8	5
Total	163	100

OBSERVATIONS

As indicated in Table 6.39, the respondents' opinions ranged from between less than 1 year to never. Most of the respondents' (51%), however, felt that remote working would become a norm in 3 to 5 years' time; 31% were of the opinion that remote working would become a norm in South Africa in 5 or more years' time, and only 5% believed that remote working would never become a norm in South Africa. These findings indicated that remote working would become a norm in South Africa in future and was an area of opportunity that fixed line telecommunication operators such as Telkom should exploit.

This section looked at the respondents' perceptions of when remote working would become a norm in South Africa. The next section will examine the respondents' opinions on the various market segments' contribution to South African telecommunications operators revenues.

6.5.6 Future market segment revenue contribution to South African telecommunications operators

An important component for determining new telecommunications marketing opportunities is the revenue potential of the market. In this regard the South African telecommunications market is segmented into multiple market segments, each with its own potential of revenue contribution to South African fixed line telecommunications operators (see chapter 3, section 3.2.5). The market segments that contribute the most to telecommunications operator revenues are the markets that in the short term have the potential to provide the most opportunities for telecommunications operators. Therefore to seek out those market segments in South Africa that contribute the highest to telecommunications operators' revenue streams, the respondents' were asked to rank (on a scale of 1 to 6 where 1 = most contribution and 6 = least contribution) the different telecommunication market segments according to their perceptions of which segment contributed the most to fixed line and mobile telecommunications operators' revenues (see question 3.6 of questionnaire in Appendix C).

Due to the nature of the data and scale (interval) of the question, Means were used as the basis for drawing conclusions and ranking data. Table 6.40 represents the Means and ranks of the responses.

TABLE 6.40 SOUTH AFRICAN FIXED LINE TELECOMMUNICATIONS FUTURE REVENUE CONTRIBUTION PER MARKET SEGMENT

Market Segment	N	Minimum	Maximum	Mean	Std. Deviation
Residential	149	1	6	3.13	1.829
SMME's	145	1	6	3.62	1.612
Corporates (1)	155	1	6	5.05	1.705
Resellers	150	1	6	3.69	1.699
Business	154	1	6	4.45	1.455
International	154	1	6	4.26	1.490
Government	145	1	6	4.00	1.523

OBSERVATIONS

Table 6.40 indicates how the respondents' answered this question. Using the means as a basis for comparison revealed that corporates ($\mu = 5.05$) would make the highest contribution to future fixed line revenues while business ($\mu = 4.45$) would contribute the second highest revenue contribution, followed by International ($\mu = 4.26$), Government ($\mu = 4.00$), Resellers ($\mu = 3.69$), SMME's ($\mu = 3.62$) and residential ($\mu = 3.13$). This was significant because it indicated that fixed line telecommunications operators would derive their highest future revenues from the corporate, business, international and Government market segments and that these were the markets where converged ICT products and services were mainly required.

Means were used to determine the market segments that would make the highest contribution to mobile revenues in future, according to the respondents' perceptions. Table 6.41 depicts the results.

TABLE 6.41 SOUTH AFRICAN MOBILE TELECOMMUNICATIONS FUTURE REVENUE CONTRIBUTION PER MARKET SEGMENT

Market Segment (Rank)	N	Minimum	Maximum	Mean	Std. Deviation
Residential (3)	141	1	6	4.06	1.825
SMME's (6)	138	1	6	3.54	1.515
Corporates (1)	144	1	6	4.27	1.771
Resellers (4)	136	1	6	3.75	1.720
Business (2)	144	1	6	4.14	1.536
International (5)	139	1	6	3.74	1.634
Government (6)	136	1	6	3.33	1.446

OBSERVATIONS

According to the respondents' perceptions, the market segment that would make the highest contribution to mobile revenues was the corporate market segment. Observing the means for each market segment in Table 6.41 reveals that overall, the respondents' felt that corporates ($\mu = 4.27$) would contribute the highest to mobile operator revenues followed by business ($\mu = 4.14$), residential ($\mu = 4.06$), resellers (3.75) and international ($\mu = 3.74$), SMME's ($\mu = 3.54$) and Government ($\mu = 3.33$). This was an important finding because it indicated of the future competitive intensity in the corporate and business market segments between fixed line and mobile telecommunications operators.

To survive under these circumstances, fixed line telecommunications operators would need to differentiate themselves from mobile operators in the products and services that they offer. They would also have to be superiorly innovative. A possible solution for fixed line telecommunication operators to avoid direct confrontation with mobile operators would be for the fixed line operators to create strategic partnerships and joint ventures with the mobile operators so that profitable partnerships are created rather than aggressive competitive rivalry.

The main industry sectors as sources of future revenue for fixed line telecommunications operators will be examined next.

6.5.7 Main industry sector sources of future revenue for fixed line telecommunications operators

The various sectors or industries in the South African telecommunications business environment each contribute in varying amounts to fixed line telecommunications operators' revenues. Therefore it was important to isolate those industries that the respondents' felt would make the highest contribution to fixed line telecommunications operators' revenues. Isolating the various industry sources that contribute to fixed line operator revenues would facilitate identifying the sectors on which fixed line telecommunication operators would need to concentrate to secure future revenues. Table 6.42 illustrates the respondents' perceptions of the importance of the different industry sectors to fixed line telecommunications operator revenues in South Africa.

TABLE 6.42 IMPORTANT INDUSTRY SOURCES OF FUTURE REVENUE FOR FIXED LINE TELECOMMUNICATIONS OPERATORS

Industry sector Source of future revenue (Fixed line)	Median	Respondents' answering question		Not important to not important at all		Neither important nor unimportant		Important to very important	
		No	%	No	%	No	%	No	%
1. Banking	5	157	96.3	4	1	1	1	149	95
2. Mining	4	156	95.7	16	4	40	26	100	64
3. Insurance	4	157	96.3	13	3	21	13	123	78
4. Retailing	4	157	96.3	10	1	13	8	134	85
5. Health	4	156	95.7	16	2	27	17	113	72
6. Building	3	156	95.7	22	3	60	39	77	49
7. Local Government	4	155	95.1	12	2	37	24	115	74
8. Manufacturing	4	155	95.1	7	1	36	23	112	72

OBSERVATIONS

Table 6.42 indicated how the way the respondents' rated the different industry sectors' contribution to fixed line telecommunications operator future revenues. The lowest Median score for all the sectors was 3. This was a good indication and revealed that all the sectors would

contribute to fixed line telecommunications operator revenues in future. However, these findings clearly illustrated that some sectors would make a higher contribution to fixed line telecommunication operator revenues than others and therefore had a higher level of importance (Median>3).

The Median for the banking sector was 5 (very important), which indicated that respondents' perceived the banking sector would make the highest contribution to fixed line revenues in future. This was significant because it coincided with previous findings (see section 6.4.1) and indicated one of the areas on which fixed line telecommunications operators should focus attention for the development of new innovative ICT products and services and should collaborate with mobile operators to create value for customers.

Most of the respondents' were also of the opinion that each of the industry sectors would be important to telecommunications fixed line revenue contribution, although some sectors were more important than others. The sectors regarded as important (Median = 4) were Mining, Insurance, Retailing, Health, Local Government and Manufacturing. Of all the identified sectors, the Building sector received the lowest ranking (Median = 3), perhaps because the building sector is currently one of the lowest contributors to fixed line telecommunications revenues. These findings concurred with Du Plessis' (1999) projected forecast (see chapter 1, table 1.2).

6.5.8 Sources of future revenue for mobile telecommunications operators

Identifying the main sources of revenue contribution for mobile telecommunications operators was important to indicate the sectors where there are mobile telecommunication opportunities that could be exploited by fixed line telecommunications operators. Table 6.43 represents the respondents' perceptions of the importance of the various industries as future sources of revenue contribution to mobile telecommunications operators.

TABLE 6.43 IMPORTANT INDUSTRY SOURCES OF FUTURE REVENUE CONTRIBUTION FOR MOBILE TELECOMMUNICATIONS OPERATORS

Industry sector source of future revenue (Mobile)	Median	Respondents' answering question		Importance to mobile revenue contribution					
				Not important at all Unimportant		Neither important nor Unimportant		Important to Very important	
		No	%	No	%	No	%	No	%
1. Banking	4	144	88.3	16	11	27	18.8	101	70
2. Mining	3	144	88.3	22	15	52	36.1	70	49
3. Insurance	4	144	88.3	9	6	33	22.9	102	71
4. Retailing	4	144	88.3	14	10	22	15.3	108	75
5. Health	4	143	87.7	22	15	47	32.9	74	51
6. Building	4	143	87.7	18	13	47	32.9	78	54
7. Local Government	3	143	87.7	32	22	44	30.8	67	47
8. Manufacturing	4	143	87.7	18	13	38	26.6	87	60

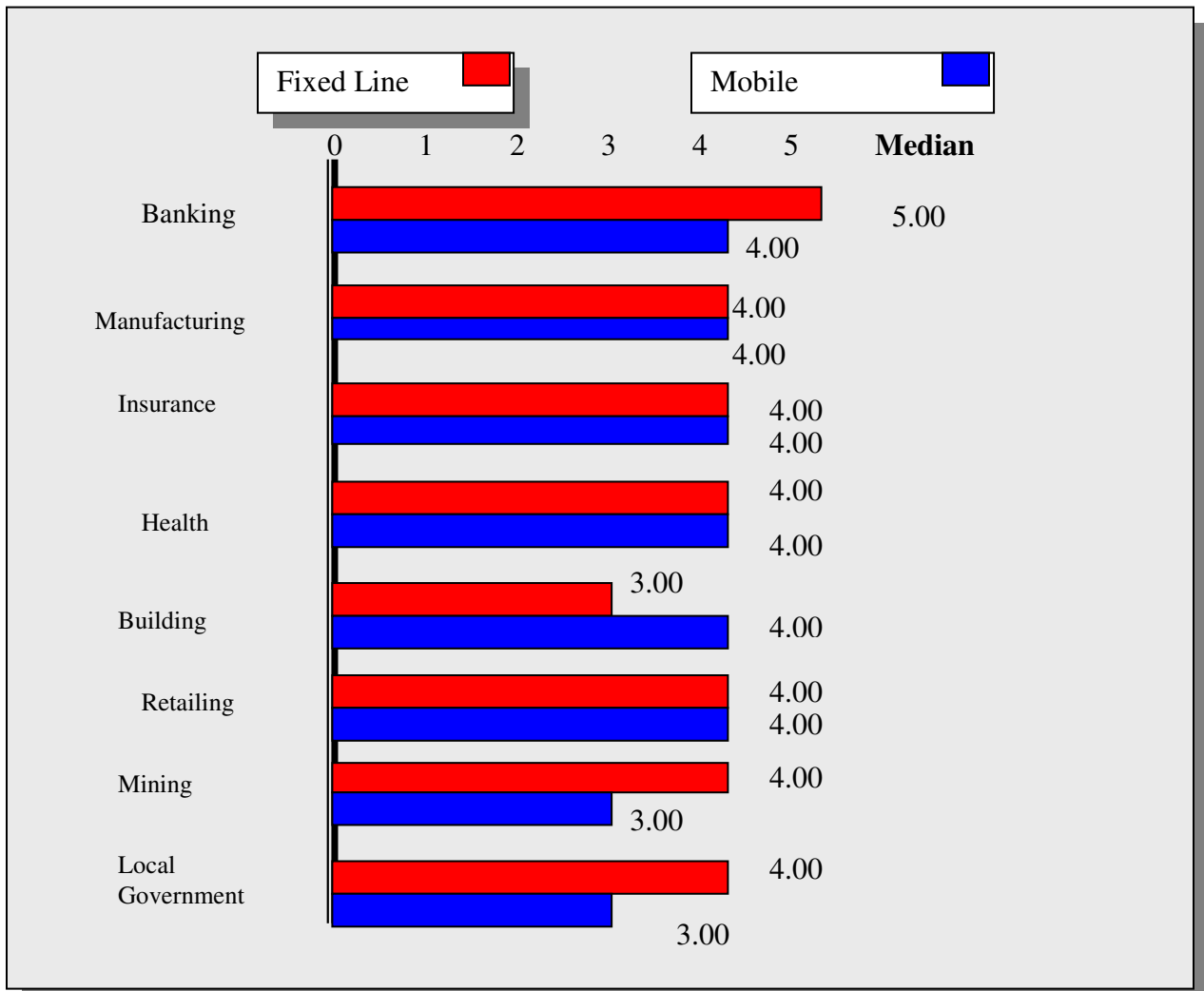
OBSERVATIONS

As indicated in Table 6.43, the primary research findings were similar to the findings for fixed line telecommunications operators. All the industry sectors were perceived to be important to mobile operators' future revenue contribution. In particular, the respondents' viewed the Banking (Median = 4), Retailing (Median = 4), Insurance (Median = 4), Building (Median = 4), and Health (Median = 4) sectors as important to future mobile revenue contribution. However, banking was not regarded as very important for future mobile revenue contribution. The literature review revealed that the worldwide trend is for banking services to migrate towards mobile services. This finding implied that these sectors were the areas where mobile telecommunication operators would concentrate their marketing efforts. In addition, the Government and Mining sectors received the lowest rankings. A low ranking for mining sector revenue contribution was expected. However a low ranking for the Government sector's contribution to mobile revenues was unexpected since one of the objectives of the South African Government is to make information accessible to the South African people (see chapter 2, section 2.1.8.3) and mobile technology offers one of the best ways to do this. This is indicated

that the respondents' were not outward-looking and were poorly informed, a trend identified previously (see section 6.3.3.2).

To compare the various industry future revenue contributions to South African fixed line and mobile telecommunications operators, Medians of the responses were used to draw comparisons between the two. Figure 6.17 a graphically illustrates a comparison of important industry contributions to future South African fixed line and mobile telecommunications operators' revenues.

FIGURE 6.17 GRAPHIC COMPARISON OF IMPORTANT INDUSTRY CONTRIBUTION TO FUTURE SOUTH AFRICAN FIXED LINE AND MOBILE TELECOMMUNICATIONS OPERATORS REVENUES



OBSERVATIONS

As indicated in figure 6.17, all the sectors have a Median greater than or equal to 3 (neither agree nor disagree). This was a good indication that all the sectors had a contribution to make to fixed line telecommunications operators' revenues. The banking sector, however, would make a greater contribution to fixed line telecommunications operator revenues as discussed previously.

A significant finding was that was made is that the Manufacturing, Health, Insurance and Retailing sectors would be important future revenue contribution areas for both fixed line and mobile telecommunications operators. This implied that competition between fixed line and mobile operators would intensify in future as both groups competed against each other for increased market share. However, these market segments could also provide an ideal opportunity for fixed line and mobile operators to form synergies and provide combined fixed mobile products and services. The Mining and Local Government sectors would not make a significant contribution to mobile telecommunications operator revenues and these two sectors could possibly be neglected.

Nevertheless, these sectors were important for future revenue contributions to fixed line telecommunication operators and therefore would provide them with an opportunity to establish niche market positions in these sectors without increasing the competitive pace. Similarly, the building sector would be more important to mobile than fixed line telecommunications operators and mobile operators would possibly target this sector as a niche market in future.

To enable fixed line telecommunications operators to establish dominant leadership positions across all the sectors, they would have to establish a strong capability in mobile communications, which is quite possible through the establishment of strategic alliances and partnerships. Telkom, for example, already owns 50% of Vodacom and should be working closely with Vodacom to develop new combined fixed wireless solutions. This implies that it is very possible and should be such that two market leaders combine their capabilities to establish

synergies so that jointly they can disrupt the industry and create new value for their customer that is shared between them.

Next, the respondents' perceptions of the major factors of influence in the South African business environment will be discussed.

6.5.9 Major factors of influence in the South African business environment

In the same way as change in the telecommunications business environment is bringing about new opportunities and threats to telecommunications operators, so are changes taking place in the South African business environments and bringing about opportunities and threats for South African organizations. South African organizations are also being influenced by multiple changes. Some of these changes are positive for telecommunications operators because they create new marketing opportunities that the telecommunications operator can exploit. To identify the major factors that are influencing South African organizations, the respondents' were given a definition for each business organization (see to question 3.7 of questionnaire in Appendix C) as well as a list of factors influencing these South African organizations and were asked to state their opinions (using a scale of 1 to 5, where 1 = least influence and 5 = greatest influence) on whether these factors had least or great influence on various South African organizations. Tables 6.44, 6.45, 6.46 and 6.47 represent the respondents' perceptions of the factors of influence on each of the categories of South African organizations. The respondents' perceptions of the factors of influence on each of the South African organizations will be discussed next.

6.5.9.1 Corporates

Table 6.44 depicts the respondent Mean responses and ranking for the major factors of influence on South African corporates.

TABLE 6.44 MAJOR FACTORS OF INFLUENCE ON SOUTH AFRICAN CORPORATES

Factor of change (Rank)	N	Minimum	Maximum	Mean	Std.deviation
Competition (1)	149	1	5	4.56	.808
Government regulations (7)	152	1	5	4.01	1.058
Customer sophistication and changing needs (5)	149	2	5	4.33	.757
Internet (4)	151	1	5	4.36	.933
ICT (6)	150	1	5	4.26	.965
Economic conditions (3)	150	1	5	4.39	.889
Global competition (2)	149	1	5	4.50	

OBSERVATIONS

The results displayed in table 6.44 above indicate that the majority of the respondents' felt each of the factors listed had an influence on South African corporate organizations. However, some factors had a higher degree of influence over corporates, as depicted in table 6.45 below.

TABLE 6.45 FACTORS OF INFLUENCE ON SOUTH AFRICAN CORPORATES IN ORDER OF IMPORTANCE

Factors of influence	Rank
• Competition ($\mu = 4.56$);	1
• Global competition ($\mu = 4.50$);	2
• Economic conditions ($\mu = 4.39$);	3
• Internet ($\mu = 4.36$);	4
• Customer sophistication and changing needs ($\mu = 4.33$);	5
• ICT ($\mu = 4.26$)	6
• Government regulations ($\mu = 4.01$)	7

These findings indicate that business environmental change is dominant in the corporate market and therefore is creating many new corporate business needs for ICT products and services in South Africa. Competition (ranked 1), global competition (ranked 2) and economic conditions (ranked 3) were regarded as the top three factors that had the highest influence on the corporate market in South Africa. These factors can be seen as the major drivers of change in the corporate market. Although ranked 4 and 6, respectively, the Internet and ICT are equally

important drivers of change because Ericsson (2001), Slywotzky (2000) and Mckinlay (1996) point out that these are the elements that are promoting competition between organizations. This implies that corporates will be a good market for converged ICT products and services.

6.5.9.2 Government

Table 6.46 represents the respondents' perceptions of the factors that have an influence on the South African government organizations.

TABLE 6.46 MAJOR FACTORS OF INFLUENCE ON SOUTH AFRICAN GOVERNMENT ORGANIZATIONS

Factor of influence (Rank)	N	Minimum	Maximum	Mean	Std deviation
Competition (7)	150	1	5	2.93	1.475
Government regulations (4)	150	1	5	3.31	1.488
Customer sophistication and changing needs (5)	153	1	5	3.28	1.150
Internet (3)	152	1	5	3.62	1.085
ICT (1)	152	1	5	3.81	1.040
Economic conditions (2)	151	1	5	3.74	1.231
Global competition (6)	151	1	5	3.03	1.306

OBSERVATIONS

From Table 6.46, it is clear that ICT (ranked number 1), Economic conditions (ranked 2) and Internet (ranked 3) were the factors perceived to have the most influence on South African government organizations. As was expected, competition (ranked 6) and global competition (ranked 7) had the least influence on South African government organizations because, traditionally, government organizations in South Africa were not structured for competition and because of their parastatal status were given monopolistic characteristics. However, the South African government's privatisation of state-owned assets (for example Telkom) would result in a drive by these organizations to become competitive.

It was to be expected that ICT, Internet and economic conditions should be regarded as the most important drivers of change for South African government organizations. The literature review pointed out that ICT and Internet (e-commerce) are enablers of economic development because of the access these provide to the free flow of information and would be critically important to Government organizations that see their role as promoting the welfare of the South African Government. Economic conditions would also be regarded as a critically important factor of influence on government organizations because they are the instruments through which the Government exercises some of its macro economic policies, (e.g. in South Africa: economic empowerment and Government spending. In a poor economic climate, the Government generally increases spending through its state organizations to promote the economy.

6.5.9.3 Business

Table 6.47 represents the respondents' perceptions of the major factors that influence South African government organizations.

TABLE 6.47 MAJOR FACTORS OF INFLUENCE ON SOUTH AFRICAN BUSINESS

Factor of change (Rank)	N	Minimum	Maximum	Mean	Std deviation
Competition (2)	151	1	5	4.36	.778
Government regulations (6)	152	1	5	3.91	.945
Customer sophistication and changing needs (5)	150	1	5	4.25	.787
Internet (3)	151	1	5	4.32	.875
ICT (4)	151	1	5	4.31	.842
Economic conditions (1)	150	2	5	4.46	.711
Global competition (6)	150	1	5	3.99	.938

OBSERVATIONS

Given that Telkom is a parastatal, it was to be expected that the respondents' would perceive economic conditions ($\mu = 4.39$) as having the highest influence on South African business organizations. This is followed by competition ($\mu = 4.36$), Internet ($\mu = 4.32$), ICT ($\mu = 4.31$),

Customer sophistication and changing needs ($\mu = 4.25$), Global competition ($\mu = 3.99$) and Government regulations ($\mu = 3.91$). All these factors have a direct bearing on the business organizations' need for new ICT products and services and therefore are creating new opportunities for fixed line telecommunications operators. For example, the poor economic climate in the late 1990's and early 2000 put South African organizations under competitive strain to adapt and become globally efficient and effective. To achieve this objective, South African organizations are turning to ICT to create efficiency and effectiveness in their value chains (Ericsson, 2001). This drive for South African organizations to achieve greater global efficiency and effectiveness will continue in future as competition intensifies across all industries.

6.5.9.4 Small Medium Micro Enterprises

Table 6.48 illustrates a summary of the respondents' perceptions of the factors that have an influence on the South African SMMEs.

TABLE 6.48 MAJOR FACTORS OF INFLUENCE ON SOUTH AFRICAN SMMEs

Factor of change (Rank)	N	Minimum	Maximum	Mean	Std deviation
Competition (3)	152	1	5	4.06	.998
Government regulations (6)	151	1	5	3.72	1.022
Customer sophistication and changing needs (5)	151	1	5	3.90	.971
Internet (2)	150	1	5	4.10	1.035
ICT (4)	152	1	5	4.02	1.013
Economic conditions (1)	150	1	5	4.43	.823
Global competition (6)	148	1	5	3.41	1.148

OBSERVATIONS

As in the case of the South African businesses discussed earlier, the majority of the respondents' were of the opinion that all the factors of influence on SMMEs listed had a high level of influence on the SMMEs in South Africa. According to the respondents' perceptions, the factors that have the highest influence on SMMEs in South Africa were ranked as follows:

- **Rank 1:** Economic conditions ($\mu = 4.39$)
- **Rank 2:** Internet; ($\mu = 4.31$)
- **Rank 3:** Competition ($\mu = 4.06$)
- **Rank 4:** ICT ($\mu = 4.02$)
- **Rank 5:** Customer sophistication and changing needs ($\mu = 3.90$)
- **Rank 6:** Government regulation ($\mu = 3.72$)
- **Rank 7:** Global competition ($\mu = 3.41$)

6.5.9.5 Major factors of influence - general overall observations

Table 6.49 depicts the main factors that influence the different categories of South African organizations and their level of influence.

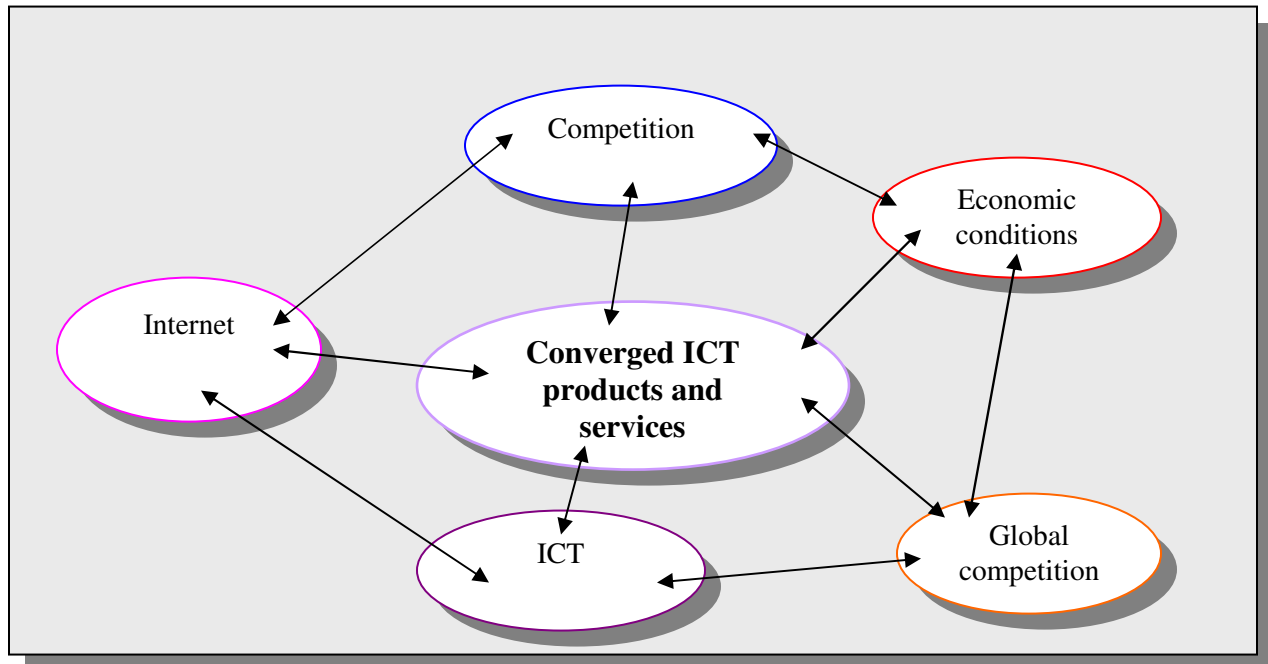
TABLE 6.49 SUMMARY OF MAIN FACTORS OF INFLUENCE ON DIFFERENT CATEGORIES OF SOUTH AFRICAN ORGANIZATIONS

Factor (Rank)	Corporates (μ)	Business (μ)	Government (μ)	SMMEs (μ)
Competition	4.56	4.36	2.93	4.06
Government regulations	4.01	3.91	3.31	3.72
Customer sophistication and changing needs	4.33	4.25	3.28	3.90
Internet	4.36	4.32	3.62	4.10
ICT	4.26	4.31	3.81	4.02
Economic conditions	4.39	4.46	3.74	4.43
Global competition	4.50	3.99	3.03	3.41

OBSERVATIONS

From table 6.49 it is clear that the factor that influences South African corporates the most is competition ($\mu = 4.56$). Economic conditions have the highest level of influence on South African business ($\mu = 4.46$) and SMMEs ($\mu = 4.43$), while South African government organizations are influenced the most by ICT ($\mu = 3.81$). Each of these business environmental change factors is linked directly to the need for converged ICT products and services as indicated in figure 6. 18 below.

FIGURE 6.18 LINK BETWEEN CONVERGED ICT PRODUCTS AND SERVICES AND BUSINESS CHANGE



This question was parametric therefore Cronbach's Alpha (α) was used to test the reliability of the scale (see section 5.11). In this case α measured .93 and was well above the limit of .70, which indicated that the scale was highly reliable. Factor analysis indicated that five components had an eigenvalue greater than 1 and therefore formed five separate factors, reflecting that five concepts were being measured. This thus indicated that the validity for this scale was low.

Having discussed the respondents' perceptions of the major factors influencing the South African business environment, their perceptions of the current products and services important to South African organizations, will be assess next.

6.5.10 Current importance of ICT products and services to South African organizations

This section reports on the research findings that aimed to discover the new ICT products and services that the respondents' felt were currently importance to South African organizations. The literature review emphasises the importance of ICT to organizations. Therefore the researcher felt it necessary to provide the respondents' with a list of important ICT products and services

identified from the literature review and to assess their perceptions of the current importance of each of these products and services for the different South African organizations using a 5-point scale where 1 = Extremely important, 2 = Important, 3 = Neither important nor unimportant, 4 = Unimportant and 5 = Not important at all (see question 3.9 of questionnaire in Appendix C). Table 6.50 depicts the respondents' perceptions of the current importance of ICT products and services to South African corporates.

TABLE 6.50 CURRENT IMPORTANT ICT PRODUCTS AND SERVICES FOR SOUTH AFRICAN CORPORATES

Products and services SA corporates	Median	Number of respondents'		Important to extremely important		Neutral		Unimportant to not important at all	
		No	%	No	%	No	%	No	%
CRM products services	1	153	94	146	95	2	1.3	5	3
Internet services	1	151	93	136	90	7	4.6	8	5
Mobile services	2	154	95	125	81	17	11	12	8
Service level agreements	1	154	95	171	92	18	11.8	16	11
System security	1	154	95	144	94	2	1.3	8	5
System integration	1	154	95	141	92	6	3.9	7	5
Wide area networking	1	154	95	143	93	4	2.6	7	5
Voice network	1	154	95	133	86	14	9.1	7	5
Call centres	1	154	95	130	84	10	6.5	14	9
Remote LAN	2	154	95	132	86	14	9.1	8	5
New delivery channels	1	151	96	129	85	14	9.3	8	5
ATM	2	151	96	115	76	16	10.6	20	13
Point of sale (POS)	2	151	96	114	76	16	10.6	21	14
Branches teller automation	2	151	96	117	78	18	11.9	16	10
Broker/Agent support	2	151	96	111	74	28	18.5	12	8
Ecommerce	1	154	95	141	92	4	2.6	9	6
E-learning	1	152	93	131	86	13	8.6	8	5
IT services	1	152	93	143	94	2	1.3	7	5

OBSERVATIONS

Table 6.50 represents the respondents’ perceptions of the ICT products and services currently important to South African corporations such as banks, insurance companies, manufacturers and mining houses. As can be noted from the Median, which narrowly ranges between 1 (extremely important) and 2 (important), all the ICT products and services were recognised as being of current importance. However, some ICT products and services were seen as currently more important than others. Table 6.51 represents the important ICT products and services and their level of importance for South African corporates.

TABLE 6.51 SUMMARY OF CURRENTLY IMPORTANT ICT PRODUCTS AND SERVICES FOR SOUTH AFRICAN CORPORATES

<i>Extremely Important (Median=1)</i>	<i>Important (Median=2)</i>
<ul style="list-style-type: none"> • <i>Customer Relationship Management products and services</i> • <i>Internet services</i> • <i>Service Level Agreements</i> • <i>System security</i> • <i>System integration</i> • <i>Wide Area Networking</i> • <i>Voice network</i> • <i>Call centres</i> • <i>New delivery channels</i> • <i>E-commerce</i> • <i>E-learning</i> • <i>IT services</i> 	<ul style="list-style-type: none"> • <i>Mobile services</i> • <i>Remote LAN</i> • <i>ATM (Automated Teller Machine)</i> • <i>(POS) Point of sale</i> • <i>Branches teller automation</i> • <i>Broker/Agent support</i>

Table 6.52 depicts the respondents’ perceptions of the current important ICT products and services for the South African Government.

TABLE 6.52 CURRENT IMPORTANT ICT PRODUCTS AND SERVICES FOR THE SOUTH AFRICAN GOVERNMENT

Factors of influence On SA Government	Median	Respondents'		Important to Extremely Important		Neutral		Unimportant to Not Important at all	
		No	%	No	%	No	%	No	%
CRM products and services	2	152	94	103	68	28	18.4	21	14
Internet services	2	150	92	107	71	26	17.3	17	11
Mobile services	2	153	94	93	61	40	26.1	20	13
Service Level Agreements	1	153	94	119	78	18	11.8	16	10
System security	1	153	94	132	86	12	7.8	9	6
System integration	1	153	94	121	79	18	11.8	14	9
Wide Area Networking	1	153	94	122	80	19	12.4	12	8
Voice network	1	153	94	129	84	15	9.8	11	7
Call centres	2	153	94	110	72	27	17.6	16	10
Remote LAN	2	153	94	104	68	36	23.5	13	8
New delivery channels	2	150	92	100	67	36	24	14	9
ATM	3	150	92	68	45	43	28.7	39	26
(POS) Point of sale	2	153	94	77	50	26	17.3	47	30
Branches teller automation	3	150	92	74	49	47	31.3	29	19
Broker/Agent support	3	150	92	72	48	54	36	24	16
E-commerce	2	153	94	108	71	27	17.6	18	12
E-learning	2	152	94	136	89	22	14.5	14	9
IT services	1	151	94	128	84	13	8.6	10	7

OBSERVATIONS

Table 6.52 depicts the respondents' perceptions of the ICT products and services that are currently important to South African government organizations. The Median, ranges between 1 (extremely important) and 3 (neither important nor unimportant). The majority of the ICT products and services were recognised as being of current importance (Median <3). However, some ICT products and services were regarded as currently more important (Median = 1) than others. Table 6.53 illustrates the important ICT products and services and their current level of importance for South African government organizations.

TABLE 6.53 SUMMARY OF CURRENTLY IMPORTANT ICT PRODUCTS AND SERVICES FOR SOUTH AFRICAN GOVERNMENT ORGANIZATIONS

<i>Current ICT Products and services for South African Government organizations</i>		
<i>Extremely Important (Median=1) Rank 1</i>	<i>Important (Median=2) Rank 2</i>	<i>Neither important nor unimportant (Median=3) Rank 3</i>
<ul style="list-style-type: none"> • Service level agreements • System security • System integration • Wide area networking • Voice network • IT services 	<ul style="list-style-type: none"> • CRM products and services • Internet services • Mobile services • Call centres • Remote LAN • New delivery channels • (POS) Point of sale • E-commerce • E-learning 	<ul style="list-style-type: none"> • ATM • Branches teller automation • Broker/Agent support

Table 6.54 represents the respondents' opinions on the current importance of ICT products and services to South African businesses.

TABLE 6.54 CURRENT IMPORTANT ICT PRODUCTS AND SERVICES FOR SOUTH AFRICAN BUSINESS

Factors of influence on businesses	Median	Respondents'		Important to extremely important		Neutral		Unimportant to not important at all	
		No	%	No	%	No	%	No	%
CRM products and services	1	152	93	142	93	4	3	6	4
Internet services	1	150	92	132	88	11	7	7	5
Mobile services	2	153	94	126	82	16	11	12	7
Service level areements	1	153	94	130	85	14	9	9	6
System security	1	153	94	143	93	1	1	9	6
System integration	1	153	94	133	87	10	7	10	7
Wide area networking	1	153	94	133	87	10	7	10	7
Voice network	1	153	94	124	81	16	11	13	9
Call centres	2	153	94	114	75	26	17	13	9
Remote LAN	2	153	94	117	76	23	15	12	8
New delivery channels	2	150	92	123	82	18	12	9	6
ATM	2	150	92	100	67	26	17	24	16
(POS) Point of sale	2	150	92	122	81	10	7	18	12
Branches teller automation	2	150	92	116	77	16	10	18	12
Broker/Agent support	2	150	92	100	67	38	25	12	8
E-commerce	1	153	94	139	91	5	3	9	6
E-learning	2	152	94	121	80	21	14	10	7
IT services	1	151	93	143	95	3	2	10	7

OBSERVATIONS

Table 6.54 depicts the respondents' perceptions of the ICT products and services currently important to South African businesses. As can be noted from the Median, which narrowly ranges between 1 (extremely important) and 2 (important), all the ICT products and services were recognised as being of current importance. None of the ICT products and services had a Median equal to or greater than 3. However as expected, some ICT products and services were perceived as currently more important (Median = 1) than others. Table 6.55 represents the important ICT products and services and their current level of importance for South African corporates.

TABLE 6.55 SUMMARY OF CURRENTLY IMPORTANT ICT PRODUCTS AND SERVICES FOR SOUTH AFRICAN BUSINESS ORGANIZATIONS

<i>ICT Products and services for business organizations</i>	
<i>Extremely important (Median=1)</i>	<i>Important (Median=2)</i>
<ul style="list-style-type: none"> • CRM products and services • Internet services • Service level agreements • System security • System integration • Wide area networking • Voice network • E-commerce • IT services 	<ul style="list-style-type: none"> • Mobile services • Call centres • Remote LAN • New delivery channels • ATM • (POS) Point of sale • Branches teller automation • Broker/Agent support • E-learning

Table 6.56 depicts the respondents' views on the current importance of ICT products and services to South African SMMEs.

TABLE 6.56 CURRENT IMPORTANT ICT PRODUCTS AND SERVICES FOR SOUTH AFRICAN SMMEs

Factors of influence on SA SMMEs	Median	Respondents'		Important to extremely important		Neutral		Unimportant to not important at all	
		No	%	No	%	No	%	No	%
CRM products and services	1	152	93	130	86	15	10	7	5
Internet services	2	150	92	120	80	17	11	13	9
Mobile services	2	153	94	118	77	22	14	13	9
Service level agreements	2	153	94	97	63	37	24	19	12
System security	2	153	94	123	80	18	12	12	8
System integration	2	152	94	107	70	28	18	17	11
Wide area networking	2	153	94	88	58	44	29	21	14
Voice network	2	153	94	124	81	16	11	13	9
Call centres	2	153	94	82	54	42	28	29	19
Remote LAN	2	153	94	93	61	27	18	33	21
New delivery channels	2	150	94	104	70	30	20	16	11
ATM	2	150	94	78	52	30	20	42	28
(POS) Point of sale	2	150	94	106	71	25	17	19	13
Branches teller Automation	2	150	92	84	56	30	20	36	23
Broker/Agent support	2	150	92	82	55	47	31	21	14
E-commerce	2	152	93	121	80	17	11	14	9
E-learning	2	151	93	87	58	37	25	27	18
IT services	2	151	93	122	81	16	11	13	9

OBSERVATIONS

Table 6.56 depicts the respondents' perceptions of the ICT products and services currently important to South African SMMEs. As can be seen from the Median for each product or service listed, only CRM has a Median of 1 (extremely important). All the other products and services are regarded as important (Median = 2). The size of an organization influences its ICT needs and, in contrast to business and corporates, SMMEs are regarded small. SMMEs were unlikely to have a current need for advanced ICT products and services at present or in the future, for two main reasons. Firstly, the costs to maintain such expensive ICT products and services would

be a serious restraint and second, to once an SMME outgrows its SMME status it would become a business organization and its future needs would be relevant to business organizations (see section 6.4.11). Clearly, the respondents' regarded the future ICT products and services for SMMEs as important (Median = 2) but none were regarded as extremely important. Table 6.57, depicts the important ICT products and services and their current level of importance for South African SMME's as identified from table 6.56.

TABLE 6.57 SUMMARY OF CURRENTLY IMPORTANT ICT PRODUCTS AND SERVICES FOR SOUTH AFRICAN SMME'S

<i>ICT products and services for SMMEs</i>	
<i>Extremely Important (Median=1)</i>	<i>Important (Median=2)</i>
<ul style="list-style-type: none"> • CRM products and services 	<ul style="list-style-type: none"> • Internet services • Mobile services • Service Level Agreements • System security • System integration • Wide area networking • Voice network • Call centres • Remote LAN • New delivery channels • ATM • (POS) Point of sale • Branches teller automation • Broker/Agent support • E-commerce • E-learning • IT services

This section discussed the different ICT products and services of current importance to South African organizations, with special reference to the respondents' perceptions. The respondents' perceptions of the future ICT products and services required by South African organizations will be discussed next.

6.5.11 ICT products and services required by South African organizations in future

The respondents' were provided with a list of ICT products and services for this question and asked to state their opinions on the future importance of each of these ICT products and services for the different South African organizations. Table 6.58 represents the respondents' perceptions of the future ICT products and services that would be required by South African corporates.

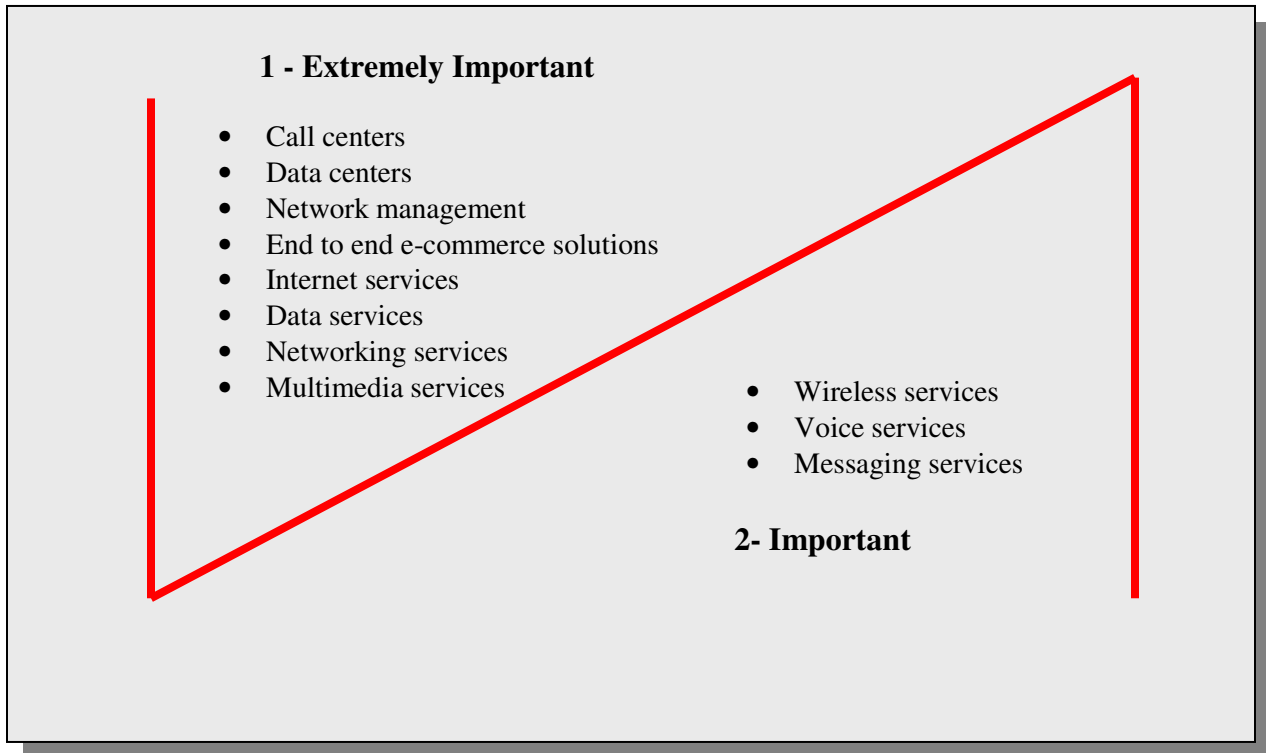
TABLE 6.58 FUTURE ICT PRODUCTS AND SERVICES FOR SOUTH AFRICAN CORPORATES

Future ICT products and services for SA corporates	Median	Respondents'		Important to extremely important		Neutral		Unimportant to not Important at all	
		No	%	No	%	No	%	No	%
Call centres	1	157	96.3	134	85	7	5	16	10
Data centres	1	157	96.3	137	87	6	4	14	9
Network management	1	157	96.3	140	89	4	3	13	8
Internet services	1	157	96.3	136	87	7	5	14	9
End-to-end e-commerce solutions	1	157	95.7	93	59	35	22	28	18
Virtual Private Networks	1	156	95.7	129	83	14	9	13	8
Data services	1	156	95.7	135	87	5	3	16	10
Networking services	1	156	95.7	139	89	4	3	16	10
Multimedia services	1	155	95.1	121	78	14	9	20	13
Wireless services	2	156	95.7	111	71	26	17	19	12
Voice services	2	155	95.1	119	77	20	13	16	10
Messaging services	2	152	93.3	107	70	25	16	20	13

OBSERVATIONS

As can be noted from Table 6.58 above, none of the products listed were regarded as unimportant or neither important nor unimportant. All the ICT products and services listed were regarded as being of future importance to South African corporates. However, as indicated in figure 6.19, some products and services were regarded as more important than others.

FIGURE 6.19 ILLUSTRATION OF IMPORTANT FUTURE CORPORATE ICT PRODUCTS AND SERVICES



The respondents' regarded wireless services, voice services and messaging services as important and not extremely important. This contrasted with the literature review finding that network intelligence was not only moving to the edge of the network but was also becoming mobile.

Table 6.59 presents the respondents' perceptions of the future ICT products and services requirements of the South African Government.

TABLE 6.59 FUTURE ICT PRODUCTS AND SERVICES FOR SOUTH AFRICAN GOVERNMENT

Future ICT products and services for SA Government	Median	Respondents'		Important to extremely important		Neutral		Unimportant to not important at all	
		No	%	No	%	No	%	No	%
Call centres	2	156	96	104	67	25	16	7	4
Data centres	1	156	96	118	76	19	12	21	13
Network management	2	156	96	116	74	25	16	15	10
Internet services	2	156	96	114	73	21	14	21	13
End-to-end e-commerce solutions	2	156	96	93	60	35	22	28	18
Virtual Private Networks	2	156	96	109	70	29	19	18	12
Data services	1	156	96	118	76	22	14	16	10
Networking services	2	156	96	120	77	18	12	18	12
Multimedia services	2	155	96	93	60	33	21	29	19
Wireless services	2	156	96	93	60	38	24	25	16
Voice services	2	155	96	114	74	19	12	22	14
Messaging services	2	152	93	84	55	41	27	27	18

OBSERVATIONS

From table 6.59 it is clear that there were notably few listed ICT products and services that respondents' felt would be extremely important to South African government organizations in future. Nevertheless, all the products and services listed were regarded as being important for government organizations in future. In this regard, the two products and services identified as being extremely important (Median = 1) were Data centres and Data services. These are essentially network-centric products and services (depend on network availability) and the Government, like any other organization, is dependent on these services. Because of the vast volumes of data that the Government handles, Data centres (places where large volumes of data are stored) and the associated services responsible for processing, retrieving and storing data are important for the Government. This does not mean that the other ICT products and services will not be important for the Government in future. As indicated in table 6.59, these products and services are important for the future.

Table 6.60 represents the respondents' views on the future importance of ICT products and services to South African businesses.

TABLE 6.60 FUTURE ICT PRODUCTS AND SERVICES FOR SOUTH AFRICAN BUSINESS

Future Products and services for SA business	Median	Respondents'		Extremely important to important		Neutral		Unimportant to not important at all	
		No	%	No	%	No	%	No	%
Call centres	2	156	96	112	72	27	17	17	11
Data centres	2	156	95	119	76	26	17	11	7
Network management	2	155	95	121	78	20	13	14	9
Internet services	1	155	95	133	86	7	5	15	10
End-to-end e-commerce solutions	1	155	95	129	83	11	7	15	10
Virtual Private Networks	2	155	95	108	60	27	17	20	13
Data services	1	155	95	131	85	13	8	11	7
Networking services	2	155	95	128	83	14	9	13	8
Multimedia services	2	154	95	115	75	25	16	14	9
Wireless services	2	155	95	113	73	27	17	15	10
Voice services	2	154	95	120	78	21	13	13	8
Messaging services	2	151	93	106	70	27	18	18	12

OBSERVATIONS

As illustrated in table 6.60 above, the respondents' indicated that Internet services, End-to-end e-commerce solutions and Data services will be extremely important (Median = 1) to South African business organizations in future. All the other services listed were perceived to be important to South African businesses in future. This is indicated that the respondents' perceived of that South African business organizations would have an important need for Internet services, possibly because the Internet will facilitate both access and transfer of information between the organization and its external stakeholders such as shareholders, suppliers and customers. E-commerce solutions will also be an important future requirement for South African businesses as

the need to transact with customers and other parties becomes vital. Data services would also naturally be regarded as very important to South African businesses in future because of their need to capture, analyse, interpret and transfer huge volumes of data including but not limited to customer data. However, although regarded as important (Median = 4) call centres were not seen as extremely important to South African businesses in future, despite the fact that many businesses are turning to call centres as a low cost solution for interfacing with customers.

Table 6.61 depicts the respondents' perceptions of ICT products and services that would be important to South African SMMEs in future.

TABLE 6.61 FUTURE ICT PRODUCTS AND SERVICES FOR SOUTH AFRICAN SMMES

Future Products and services for SA SMMEs	Median	Respondents'		Important to extremely important		Neutral		Unimportant to not important at all	
		No	%	No	%	No	%	No	%
Call centres	2	156	96	84	54	32	20.5	40	26
Data centres	2	155	95	89	57	36	23.2	30	19
Network management	2	156	96	98	63	32	20.5	26	17
Internet services	2	155	95	134	86	14	9	16	10
End-to-end E-commerce solutions	2	155	95	108	70	30	19.4	17	11
Virtual Private Networks	2	155	95	85	55	28	18.1	42	27
Data services	2	155	95	116	75	26	16.8	13	8
Networking services	2	155	95	99	64	37	23.9	19	12
Multimedia services	2	153	94	87	57	38	24.8	28	18
Wireless services	2	155	95	105	68	26	16.8	24	15
Voice services	2	154	95	119	77	16	10.4	19	12
Messaging services	2	151	93	105	70	26	17.2	20	13

OBSERVATIONS

Table 6.61 represents the respondents' perceptions of ICT products and services that would be important to SMMEs in future. As can be seen, all the products and services listed in table 6.66 are regarded as important (Median = 2) for SMMEs in future. None of these products and services was regarded as extremely important to SMMEs in future, perhaps because SMMEs operate on a small scale and many of the ICT products and services such as networking, network management, call centres, data centres, and virtual private networks are applicable to large-scale organizations. However, some ICT products and services, such as Internet, voice services, messaging services and end-to-end e-commerce, are critical for SMMEs because they enable them to operate equally efficiently and effectively as large organizations, yet the respondents' did not regard them as very important.

Having identified the respondents' perceptions of the ICT products and services of importance to the different South African organizations in future, the next section examines their perceptions of other ICT products and services that South African fixed line telecommunications service providers should offer customers.

6.5.12 Respondents' perceptions of some of the products and services that fixed line telecommunications service providers should provide to customers

An important outcome of the primary research phase was to identify the ICT products and services that telecommunications service providers should provide to customers. Hence, question 13 of the questionnaire (see questionnaire in Appendix C) provided a list of ICT products and services and the respondents' were asked for their perceptions of whether telecommunications service providers should provide these services to customers. Table 6.62 depicts the respondents' responses.

TABLE 6.62 ICT PRODUCTS AND SERVICES TELECOMMUNICATIONS SERVICE PROVIDERS SHOULD PROVIDE TO CUSTOMERS

Products and services	Median	Number of respondents'		No		Yes		Don't know	
		No	%	No	%	No	%	No	%
Smart cards for financial services	2	159	98	52	32	94	59	13	8
Digital cable TV	2	159	98	24	15	123	77	12	8
Electronic telephone transacting	2	159	98	2	1	154	97	3	2
Call centres	2	158	97	12	8	144	91	2	1
Video conferencing	2	159	98	1	>1	157	99	1	>1
Electronic data interchanges	2	159	98	2	1	155	98	2	1
ATM's	2	158	97	46	29	101	64	11	7
Data storage/hostage	2	158	97	4	3	150	95	4	3
Electronic financial processing	2	159	98	22	14	131	82	6	4
Electronic bill processing	2	157	96	10	6	141	90	6	4
Fixed mobile services	2	150	92	1	>1	140	93	9	6

OBSERVATIONS

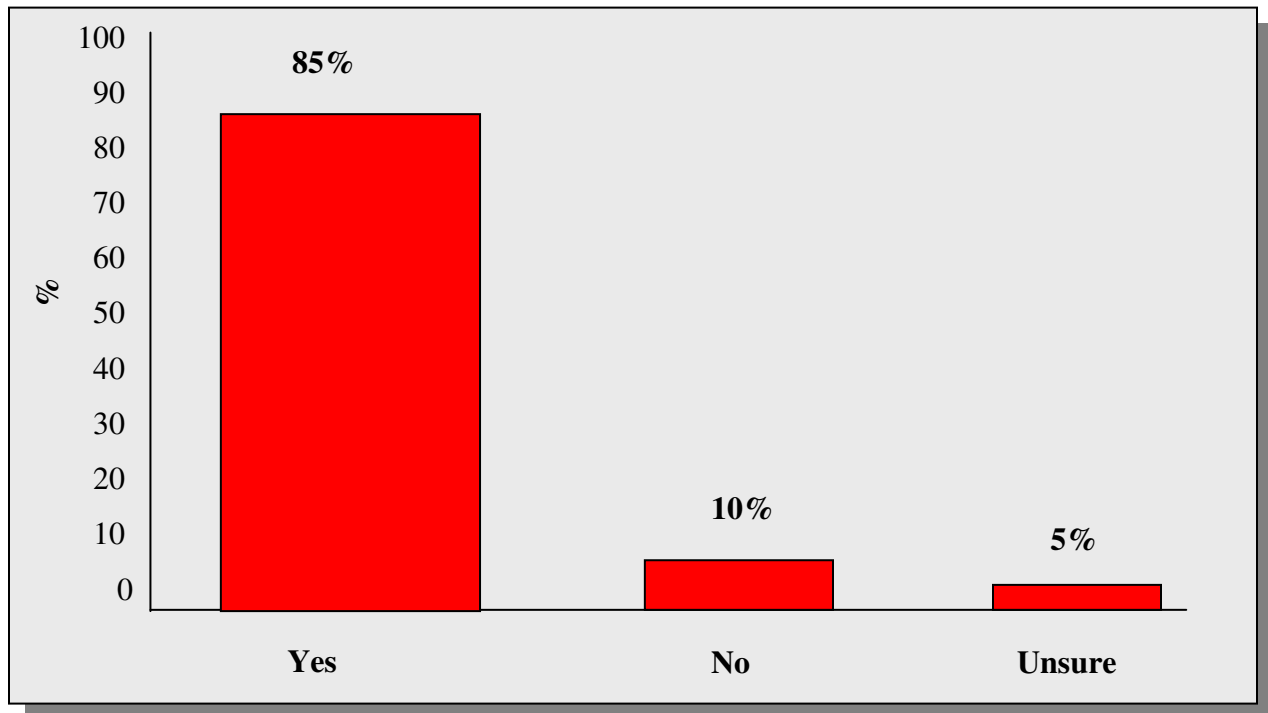
From table 6.62 it is clear that the majority of the respondents' felt that telecommunications service providers should provide all the ICT products and services that are listed in table 6.67 to customers (Median = 2). However, electronic telephone transacting (97%), electronic data interchange (98%), data storage/hostage (95%), electronic bill processing (90%) and fixed mobile services (93%) drew more 'yes' responses than others. These findings concur with the findings in the literature review that telecommunications operators, especially fixed line operators, need to offer many other value-added products and services to supplement their revenues from the existing fixed line.

6.5.13 Growth of telecommunications reseller market in South Africa

The literature review pointed out that in the UK and other countries, the deregulation of the telecommunications industry led to the establishment of resellers of telecommunication products and services (see chapter 3, section 3.2.5.2). The reseller market also represents a new market segment for telecommunications products and services would therefore be a potential new

marketing opportunity for South African fixed line telecommunications operators. As a result of the deregulation of the telecommunications industry in South Africa, it was important to determine the respondents' perceptions of resellers with respect to two areas namely Did they believe that the South African telecommunication market would allow the development of resellers and, if so, how many? Therefore the respondents' were asked to give their opinions on these areas. Figure 6.20 depicts the respondents' responses.

FIGURE 6.20 WILL THE SOUTH AFRICAN TELECOMMUNICATIONS MARKET OPEN TO RESELLERS?



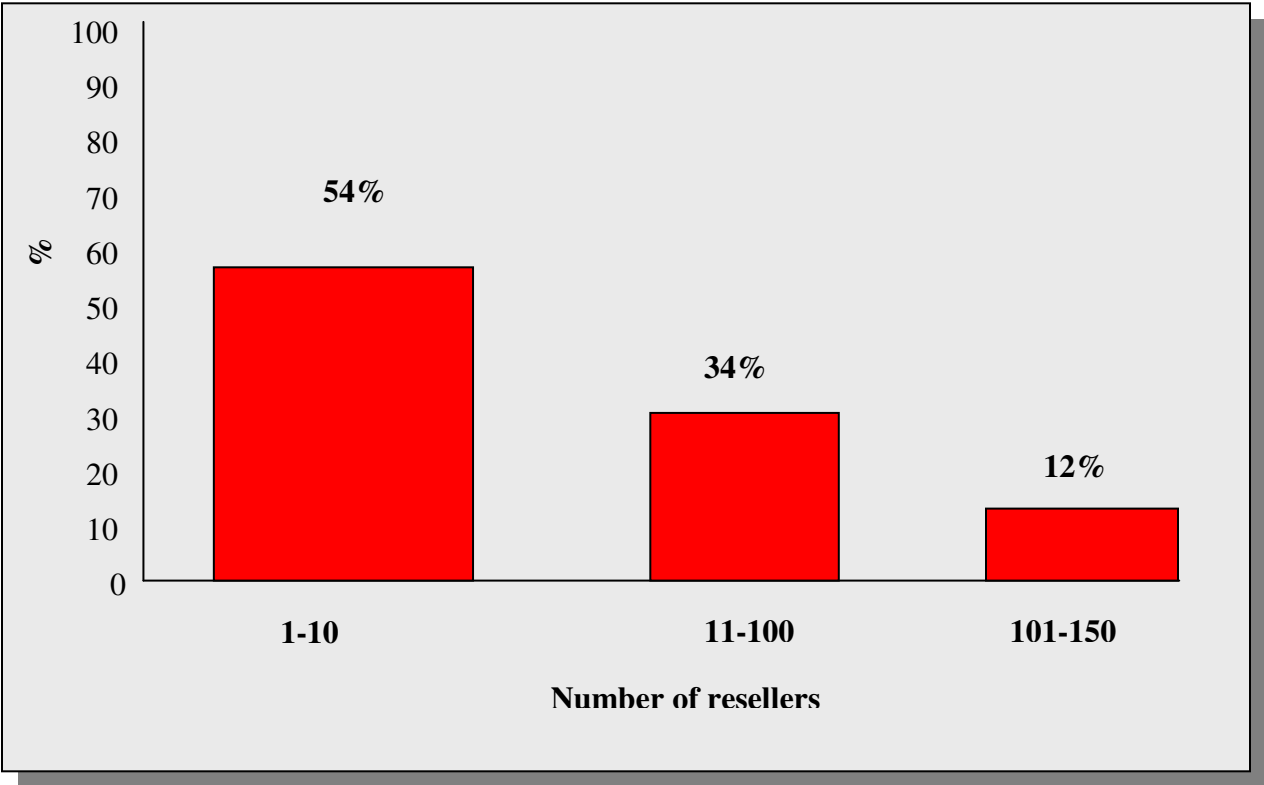
OBSERVATIONS

Figure 6.20 above reveals that most of the respondents' (85%) were of the opinion that the telecommunications market in South Africa would open up to resellers. This indicated that South African fixed line telecommunications operators, such as Telkom, should prepare to offer wholesale telecommunications products and services to the wholesale telecommunications market in South Africa. The emergence and growth of the reseller telecommunications market in South Africa will have a great impact on competitiveness in the industry and lead to the introduction of innovative marketing tactics that make use of price, differentiation or focus as the

core tactic as new entrants compete for market share. As a result the reseller market segment will become an important segment for fixed line telecommunications operators. Since wholesale will be constrained by regulatory factors, fixed line telecommunications operators will have to compete on differentiating themselves from each other. In this regard, Gordon (1998) points out that the most successful way of competing under such circumstances would be through identifying, selecting and forming long-lasting customer relationships with these customers.

Figure 6.21 depicts the respondents' responses to the number of resellers they thought would exist in the South African telecommunications market.

FIGURE 6.21 RESPONDENTS' PERCEPTIONS OF THE FUTURE NUMBER OF RESELLERS IN SOUTH AFRICA



OBSERVATIONS

Most of the respondents' (54%) believed that there would be between 1 and 10 resellers in the South African telecommunication market, 34% felt that this number would be between 11 and

100 and 12% thought that the number of resellers would be between 101 and 150. These findings did not correlate with the findings in the literature review that in Western European countries such as the UK, hundreds of resellers mushroomed after deregulation (see chapter 4, section 4.14.1). Uglow and Ghambir (2000) point out the importance of the reseller market in the UK and state that incumbent fixed line telecommunications operators should provide all products and services to wholesale customers to avoid the resellers going over to competitors. As bulk buyers of ICT products and services, wholesalers will become a major customer group in the South African telecommunication market. Therefore, it will be important for Telkom to build relationships with wholesale customers in the early stages of their development to ensure that they remain loyal to Telkom. Furthermore Telkom will have to be flexible and gear itself to provide wholesale to these customers because as Wallage (1998) points out, a lack in these factors will cause wholesale customers to move over to the competitors.

6.5.14 Respondents' perceptions of the wholesale products and services that Telkom should provide

To identify which telecommunications products and services Telkom should provide to resellers, the respondents' were given a list of telecommunications products and services and asked to indicate which products and services Telkom should provide wholesale to resellers (see question 3.20 of questionnaire in Appendix C). Table 6.63 represents the Medians for respondents' perceptions of the wholesale ICT products and services that Telkom should provide.

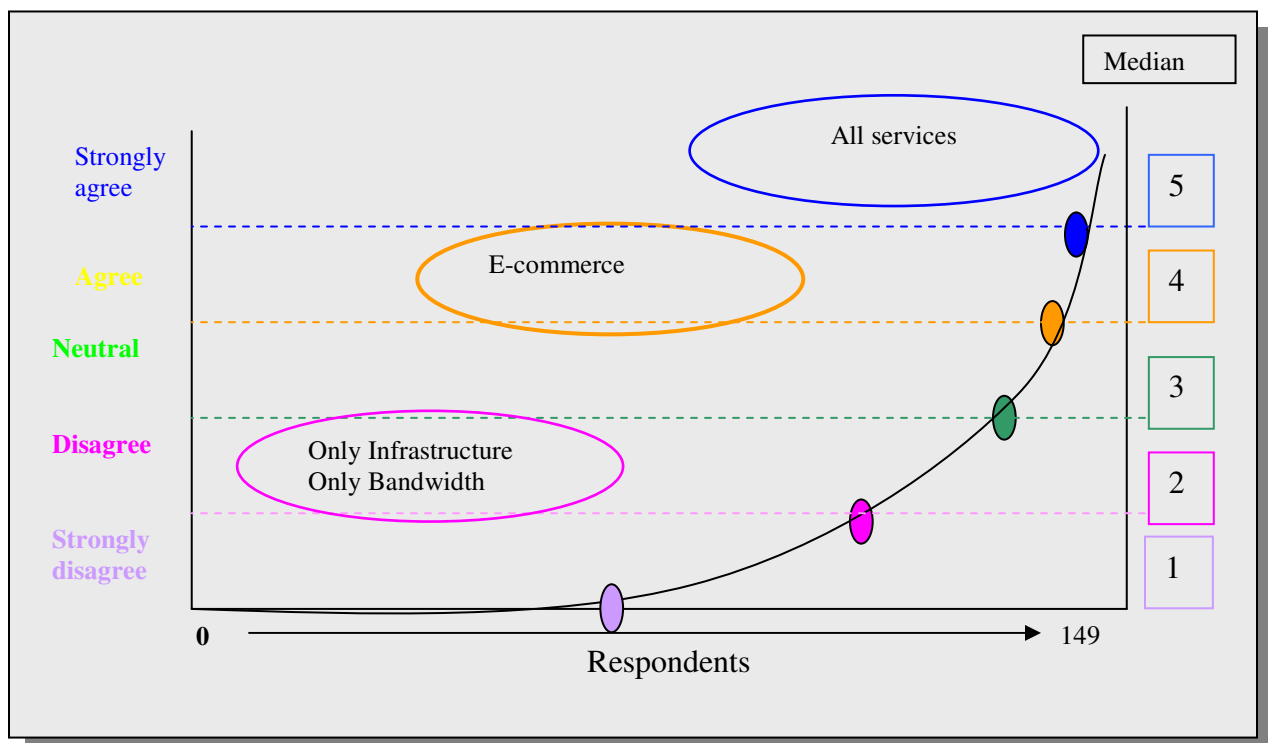
TABLE 6.63 WHOLESALE PRODUCTS AND SERVICES TELKOM SHOULD PROVIDE

Product/Services	Number of respondents'	Missing	Minimum	Maximum	Median
Only infrastructure	146	17	1	5	2
Only bandwidth	146	17	1	5	2
E-commerce	149	14	1	5	4
Internet services	149	14	1	5	5
Data services	148	15	1	5	5
Networking services	149	14	1	5	5
All of the above	137	26	1	5	5

OBSERVATIONS

As can be observed from Table 6.63 above Telkom management believes that Telkom should provide all the following products and services: Infrastructure, E-commerce, Internet services, Data services and Networking services. Telkom managers are in disagreement (Median = 2) that Telkom should provide only bandwidth or only Infrastructure. Figure 6.22, provides a graphical summary of the products and services that Telkom should provide.

FIGURE 6.22 RESPONDENTS' PERCEPTIONS OF WHOLESALE PRODUCTS AND SERVICES TELKOM SHOULD PROVIDE



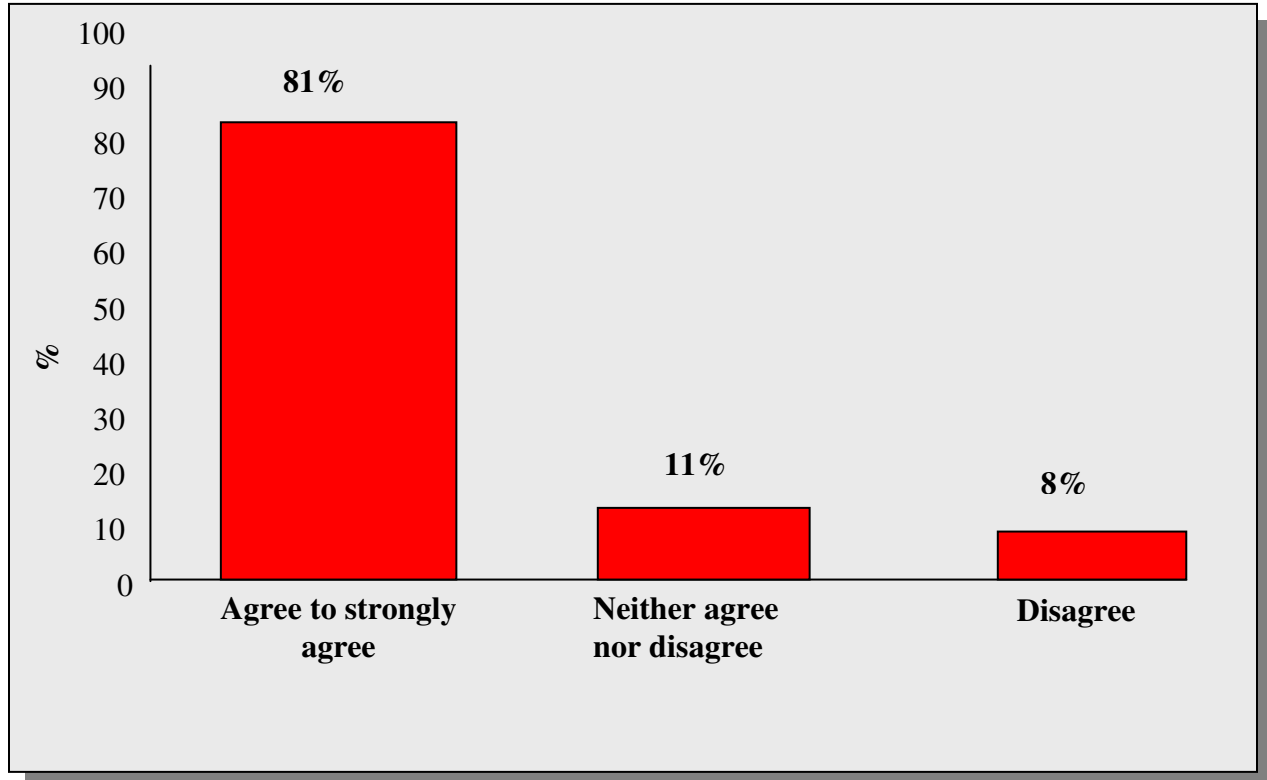
As indicated in figure 6.22, Telkom management believe that Telkom should offer all products and services and should not offer only bandwidth or infrastructure. This finding is consistent with the findings in the literature (see chapter 4, section 4.14.1), which pointed out that incumbent fixed line telecommunication operators should provide all products and services to wholesale buyers. This may be explained by the fact that if Telkom were to offer piecemeal services such as bandwidth or infrastructure only, it could seriously threaten Telkom's competitive positioning in a liberalised telecommunications market because customers would

view Telkom as an organization that wants to retain its monopoly of the value added components of the South African ICT market and Telkom may face increasing pressure from social, regulatory and business pressure groups such as ISPA, ICASA and other consumer groups. At the same time, such a move would help to position the SNO favourably in the market especially if it provides open access to all products and services in its portfolio. This has been the experience of European incumbent fixed line telecommunication operators where wholesale service providers have turned to the incumbent's competitors because of price differentials and product and service access and non-preparedness to offer wholesale products and services on the part of the incumbent (Wallage, 1998). This means that Telkom should not only provide access to all products and services in its range to wholesale customers, but also that Telkom should be prepared operationally to provide wholesale products and services. Telkom should and must not view wholesalers as competitors, but rather as partner customers that will add value to Telkom through the additional retail customers they bring into Telkom's network in the medium to longer term.

6.5.15 Telkom's development of mobile services

The literature review indicated mobile as an important area where many new marketing opportunities for telecommunication service providers is emerging are in the area of mobile communications. In fact customers substituting mobile phones for fixed line phones, for voice communications, caused the erosion of Telkom's fixed line voice revenues. Therefore mobile communications is a new marketing opportunity that fixed line telecommunication operators in South Africa should exploit. It was important therefore to establish whether Telkom management felt that Telkom should develop mobile services. Hence Telkom management were asked to give their opinion on whether they felt Telkom should develop mobile services. The Telkom management responses for this question are reflected in figure 6.23 below.

FIGURE 6.23 RESPONDENTS' RESPONSES TO WHETHER TELKOM SHOULD DEVELOP MOBILE SERVICES



OBSERVATIONS

As indicated in figure 6.23, 81% of the respondents' agreed that Telkom should develop mobile services, 8% disagreed and 11% did not agree or disagree. This revealed that most of the Telkom managers regard mobile services as an area of opportunity that Telkom should pursue. This concurred with the finding in the literature review that many new opportunities (such as mobile voice/Internet telephony and wireless LANs) were arising in the mobile communications environment. Moreover, the literature review also emphasised the worldwide trend for traditional fixed line services to migrate towards becoming mobile. For example fixed line telephone banking is gradually being replaced by mobile phone banking, and Internet services over mobile phones in Japan. The literature reviewed also showed that in many countries such as the United Kingdom, Greece, Czechoslovakia, Malaysia, United States, Portugal, Philippines and Hungary, the fixed line telecommunication business model consists of a combination of fixed line and mobile services.

6.6 STRATEGIC MARKETING FOR SOUTH AFRICAN FIXED LINE TELECOMMUNICATIONS OPERATORS

In the previous sections the results of the respondent's perceptions and feelings of the changes that were taking place in the South African telecommunications business environment and the new ICT products and services that fixed line telecommunication operators such as Telkom should offer was presented and analysed. In this section the results of the respondents' perceptions to a number of questions posed during the empirical research phase (refer to section D of questionnaire in Appendix C) to determine a market strategy that fixed line telecommunication operators should pursue is presented, analysed and discussed.

6.6.1 Respondents' perceptions of Telkom's organizational capabilities

One of the most important areas that an organization needs to carefully evaluate before pursuing a particular market strategy is the organizations capability. The reason why this is so important is because as Baker and Hart (1999) have suggested, an organization should know its capabilities and limitations before embarking on any new ambitious initiatives. If an organization undertakes any new projects without carefully screening its capabilities it could be disastrous and costly in the longer term because of a lack of resources and capabilities. There needs to be a match between organizational capability and the pursuance of new marketing opportunities. Therefore, Telkom management were given a list of Telkom organizational capabilities and they were asked to state their opinions on whether they thought these capabilities were a weakness or strength to Telkom (see section D, question 4.1 in questionnaire, in Appendix C).

Table 6.64 provides a summary of the respondents' perceptions of Telkom's organizational capabilities.

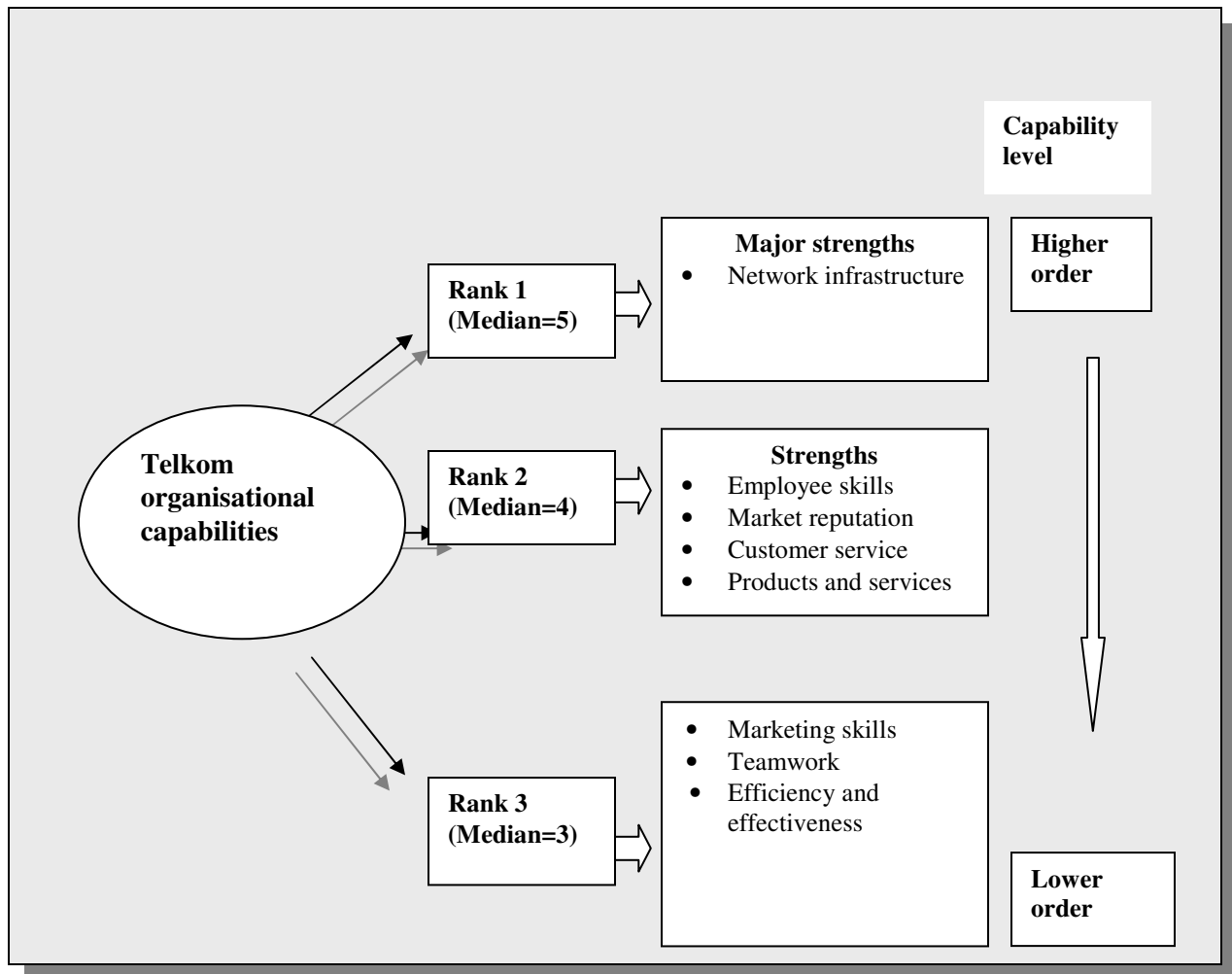
TABLE 6.64 RESPONDENTS' PERCEPTIONS OF TELKOM'S ORGANIZATIONAL CAPABILITIES

Organizational capabilities	Number of respondents'	Minimum	Maximum	Median
Employee skills	158	1	5	4
Network infrastructure	158	1	5	5
Market reputation	158	1	5	4
Efficiency and effectiveness	158	1	5	3
Marketing and sales skills	158	1	5	3
Teamwork	158	1	5	3
Customer service	158	1	5	4
IT services capability	158	1	5	4
Products and Services	158	1	5	4

OBSERVATIONS

The following observations are made from the data presented in Table 6.64: From all the organizational capabilities that were listed, Telkom's major strength (Median = 5) lies in its network infrastructure. This has been recognised previously as a Telkom competitive advantage (see section 6.3.25). Employee skills (Median = 4), market reputation (Median = 4), customer service (Median = 4), I.T. services (Median = 4) and products and services (Median = 4) are regarded as areas where Telkom possesses strengths while the areas of efficiency and effectiveness (Median = 3), marketing skills (Median = 3) and teamwork (Median = 3) are regarded as neutral or lower ranked organizational capabilities of Telkom. Figure 6.23 provides a graphical illustration of Telkom's organizational capabilities.

FIGURE 6.24 TELKOM'S ORGANIZATIONAL CAPABILITIES



As indicated in figure 6.24 above, Telkom's organizational capabilities can be clustered into higher order and lower order capabilities, according to the Median assigned to each variable. Figure 6.24 clearly indicates the areas where Telkom has high order capabilities as well as those where Telkom's capabilities are lower ordered. Telkom's weaknesses are a serious cause for concern because these are critical areas generally regarded as the areas where an organization can create sustainable competitive advantages as they are difficult for competitors to replicate in a short time period. Efficiency and effectiveness is a critical requirement for a capital-intensive organization such as Telkom. Czepiel (1992) maintains that a sustainable competitive advantage is dependent on an organization's ability to consistently deliver superior value to customers over a protracted period and a key ingredient for doing this is efficiency and effectiveness. Furthermore, at a time when the South African telecommunications sector is being

liberalised and new competitors are entering the market, Telkom will be heavily dependent on its marketing capabilities to prevent or minimize major market share losses. During this period Telkom must consistently deliver superior value to customers. Of the three lower order capabilities, lack of teamwork stands out as the most serious because as Senge (1994) points out none of the organizations objectives can be achieved without synergy, teamwork and a shared vision.

6.6.2 Respondents' perceptions of the meaning of strategy

Different managers view the concept of strategy differently. Consequently, it was important to examine the respondents' perceptions and interpretations of the term "strategy". Therefore the respondents' were given a list of ten definitions of strategy taken from the literature review (see table 6.62) and asked to select the definition they believed best described the term 'strategy' (see question 4.2 of questionnaire in Appendix C). The respondents' responses to this question are represented in table 6.65.

TABLE 6.65 RESPONDENTS' PERCEPTIONS OF THE DEFINITION OF THE STRATEGY CONCEPT

DEFINITION	N	%
1. Is used to explain the underlying principles for an organization's existence	3	1.9
2. Relating to a process in which an organization scans and analyses its environment and resources to achieve the following: identify and select opportunities in terms of the market that it services and the products it uses to serve them with, and evaluate its internal resources and contrives decisions for resource investment to secure identified objectives.	63	40
3. Is the large-scale planning and direction of operations	2	9
4. Is a set of plans constructed in response to what adversaries might do	0	1
5. Is the pattern of major objectives, purposes, or goals and essential policies and plans for achieving those goals	18	11
6. Involves planning, organising, directing and controlling of strategy-related decisions and actions of an enterprise	11	7
7. Is a pattern or plan that integrates an organization's major goals, policies, and action sequences into a cohesive whole	15	9
8. Is the planning actions taken by an organization in response to its environment	5	3
9. Is a "fit" with organizational or environmental factors and the psychological profile of its managers	0	0
10. Is proactively thinking, engaging, shaping and crafting the organization's future by challenging the constructs of traditional paradigms and changing the rules of engagement	41	26
TOTAL	158	97

OBSERVATIONS

As indicated in table 6.65, the respondents' responses indicate that the term "strategy" has two major meanings:

- *Of the respondents', 40% believed that "strategy" is "Relating to a process in which an organization scans and analyses its environment and resources to achieve the following: identify and select opportunities in terms of the market that it services and the products it uses to serve them with, and evaluate its internal resources and contrive decisions for*

resource investment to secure identified objectives”. This correlates with Pearce and Robinson (2000) and Marx et al’s (1998) definitions.

- *Another 26% felt that the term “strategy” is defined as “Is proactively thinking, engaging, shaping and crafting the organization’s future by challenging the constructs of traditional paradigms and changing the rules of engagement”. This concurs with Hamel and Prahalad’s (2001) definition.*

This was a significant finding because it indicates how the respondents’ perceive organizational strategy. A large percentage of the respondents’ (40%) view strategy as a linear process in which the organization’s environment is scanned to find opportunities in the markets that the organization serves with its products, and to match these opportunities to the organization’s resources to achieve its objectives. This approach is reactive rather than proactive and typical of the competitive behaviours displayed by the oligarchist. Another group of the respondents’ (26%) regarded “strategy” as recreating the future. This approach is favoured by academics that see the role of organizational technocrats as creatively reconstructing the future by creating new products and services that break with traditional ways of doing things, such as the cellular telephony and other wireless communications. MTN, Vodacom and Sony are good examples of maverick organizations that strive to recreate the future. These organizations follow a pragmatic approach to reconstructing the future by practising the philosophy of “if it can be thought, it can be created”.

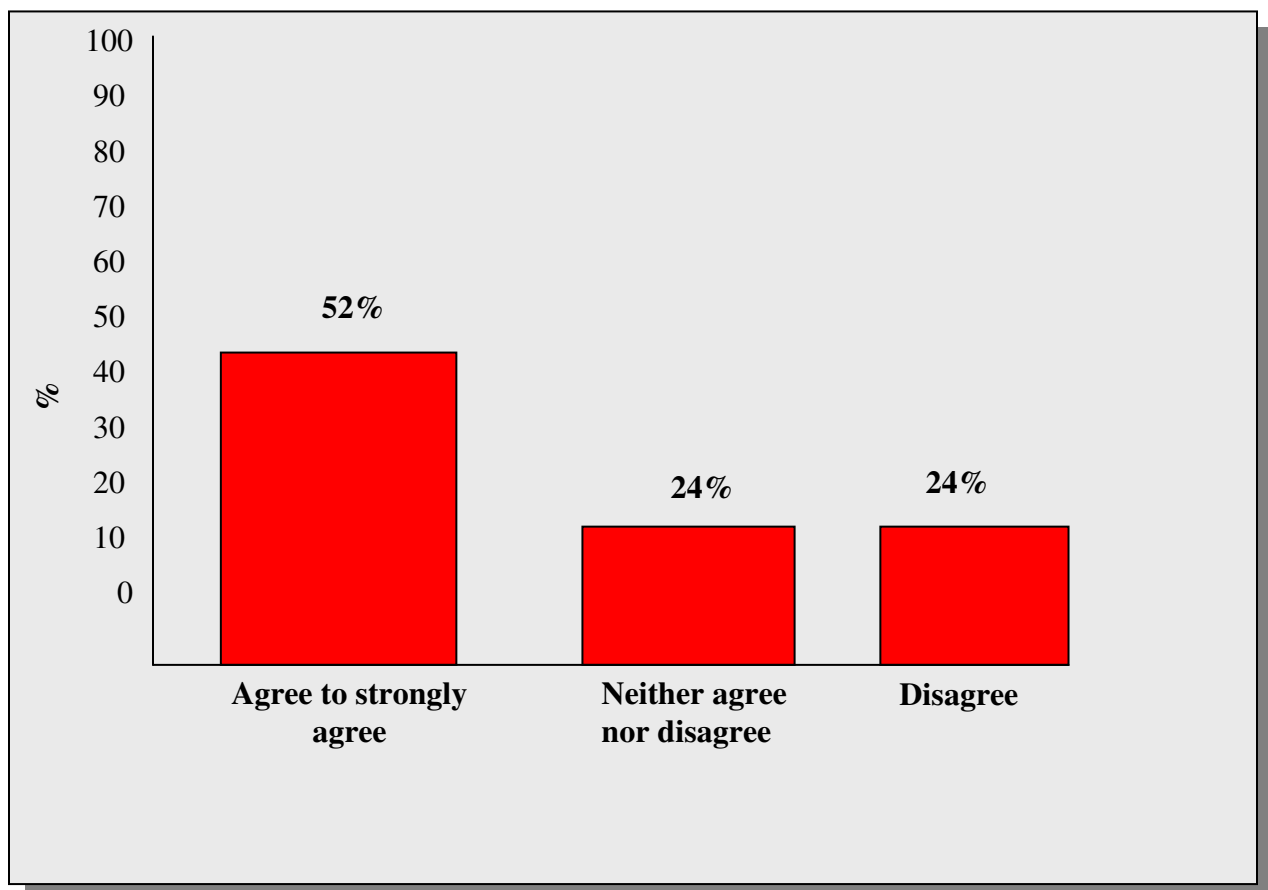
These two groups of respondents’ sharply contradict each other. Some of the respondents’ favour a reactive incremental approach to strategy and others favour a strategic approach disconnected from incremental planning and more revolutionary. According to Hamel and Prahalad (1996), such an approach is more likely to lead to major breakthroughs in product and service innovations. At the same time, the risks are high. Thomas (2000) and Robbins (1998) point out that such differences in strategic thinking can lead to a breakdown of organizational culture and to cross-functional non-cooperation. This may be the reason why the respondents’ regard Telkom’s organizational culture as a weakness (see section 6.3.25). This difference of opinion on organizational strategy is a recipe for mediocrity and could have serious negative long-term consequences for Telkom.

In the next section the respondents' perceptions of Telkom's strategy is discussed.

6.6.3 Respondents' understanding of Telkom's strategy

Another important area that required investigation was the respondents' understanding of the Telkom strategy. The literature review indicated that management's understanding of an organizations' strategy is a critical requirement for an organization to succeed. Therefore it was necessary to evaluate Telkom management's understanding of Telkom's organizational strategy. Hence the respondents' were asked whether they understood Telkom's organizational strategy in the primary research survey (see question 4.3 of questionnaire in Appendix C). Figure 6.25 depicts the respondents' responses.

FIGURE 6.25 TELKOM MANAGEMENT'S UNDERSTANDING OF TELKOM'S ORGANIZATIONAL STRATEGY



OBSERVATIONS

Figure 6.25 indicates clearly that more respondents' agreed that they understood Telkom's organizational strategy than those who disagreed. The overall findings indicate that 52% of the respondents' felt that they understood Telkom's strategy; 24% neither agreed nor disagreed and 24% disagreed. The Median for this question was 4 (agree) and indicated that the respondents' (as managers) understood Telkom's organizational strategy.

6.6.4 Competitors that will threaten Telkom the most

Chapter 3 discussed some of the main competitors that compete against Telkom, which indicated that a number of competitors would pose a serious threat to Telkom's competitive market positioning in the South African ICT market. To identify competitors that the respondents' believed would threaten Telkom the most, they were given a list of competitors from the literature review and asked to state their perceptions of which of these competitors would threaten Telkom the most (see section C question 3.16 of questionnaire in Appendix C). Table 6.66 represents the Kruskal Wallis mean rankings for the different service organizations' perceptions of the competitors that would threaten Telkom the most.

TABLE 6.66 SERVICE ORGANIZATION MEAN RANKS OF COMPETITORS THAT WILL THREATEN TELKOM THE MOST

Competitor		Strategic Planning	Government Relations	Information Technology	Marketing and Sales	Technology and Network services
SNO	N	4	10	40	25	75
	Mean Rank	103.75	74.65	80.56	101.22 (1)	66.94
VAN's	N	4	10	40	25	75
	Mean Rank	103.00	84.50	78.36	93.40	69.45
Cellular/Mobile	N	4	10	40	25	75
	Mean Rank	96.50	99.80	90.74 (1)	78.20	66.22
Sentech	N	4	10	40	25	75
	Mean Rank	106.38 (1)	101.95 (1)	68.24	93.14	72.43 (1)
Test Statistic						
	SNO	VAN's	Cellular/Mobile	Sentech		
Chi square	14.735	8.359	14.261	11.615		
Df	4	4	4	4		
Asymp.Sig	.005	.079	.007	.020		

OBSERVATIONS

The Kruskal Wallis non-parametric test was used to obtain the Telkom service organizations' mean ranks for the different competitors. As indicated in table 6.66, some Telkom service organizations ranked competitors differently to others. According to each service organizations rankings, the competitors that would threaten Telkom the most were as follows:

- *Strategic Planning (106.38), Government Relations (101.95) and Technology and Network Services (72.43) ranked Sentech as the organization that would threaten Telkom the most.*
- *Marketing and Sales (101.22) ranked the SNO as the competitor that would threaten Telkom the most.*
- *Information Technology (90.74) ranked the cellular/mobile operators as the main threat to Telkom.*

These findings confirmed a lack of communication between service organizations at Telkom. Given Sentech's impressive product and services portfolio (see chapter 3, section 3.4.1.3), it was to be expected that Strategic Planning, Government Relations and Technology and Network Services would regard Sentech as the organization that threatens Telkom the most. This may possibly be because Sentech's licence allows Sentech to provide international gateway services. In addition, since Sentech's position on voice services is not clearly spelled out, Telkom management in these service organizations may see this as granting Sentech the right to provide voice services as well. Given the impressive nature of Sentech's wireless infrastructure (see chapter 3, section 3.4.1.2), this would seriously threaten Telkom.

The Kruskal Wallis non-parametric tests found significant differences in the rankings between the different Telkom service organizations for the SNO (.005), Sentech (.020), VANs (.079) and cellular/mobile (.007) competitors at a 95% level of significance.

These findings lend support to the argument that competitors will take market share away from Telkom and threaten its future market position. This implies an urgency for fixed line telecommunications operators like Telkom to explore new revenue-generating opportunities to supplement their existing revenues because existing revenues will be depleted by competition.

The respondents' perceptions of Telkom's competitive strategy or posture will be discussed next.

6.6.5 Telkom's competitive strategy/posture

Chapter 4 discussed the different competitive strategies for fixed line telecommunication operators were discussed (see section 4.7). A major element in strategic marketing for South African fixed line telecommunications operators is to determine the competitive strategy or posture that they should adopt to compete in the market. An understanding of an organization's competitive posture provides insight into the basis on which the organization will compete. Consequently, the respondents' were asked for their views on what competitive strategy Telkom should adopt to compete in the South African ICT market (see question 4.5 of questionnaire in

Appendix C). Table 6.67 depicts the respondents' perceptions of the strategy that Telkom should adopt.

TABLE 6.67 PERCEPTIONS OF COMPETITIVE STRATEGY TELKOM SHOULD ADOPT

Competitive strategy (Rank)	Valid	Missing	Median
Being the lowest cost operator (2)	147	16	4
Differentiating itself from competitors (on service, product quality) (1)	148	15	5
Focusing on niche markets (like Corporates and Business) (2)	147	16	4
Pre-emptive move (be a first mover in new markets and new products) (1)	147	16	5
Revolutionary (create new products and services that change the rules of the industry) (1)	147	16	5
Synergy (working closely across service organizations to deliver value to customers) (1)	147	16	5
All of the above (2)	100	63	4
None of the above (3)	47	116	1

OBSERVATIONS

Table 6.67 indicates that there was strong agreement (Median = 5) that Telkom should compete using the following competitive strategies:

- *Differentiation (Median = 5) - by differentiating itself through its service and product offerings.*
- *Pre-emptive move strategy (Median = 5) - by being the first mover into new markets or being first to introduce new products and services in the market.*
- *Revolutionary strategy (Median = 5) - disrupting the telecommunications market by creating revolutionary new products and services.*
- *Synergy (Median = 5) - working closely together with all service organizations to deliver value to customers.*

At the same time, the respondents' agreed (Median = 4) that Telkom should compete on being lowest cost producer, focusing on niche markets and employing all the strategies listed to compete. However, the respondents' strongly disagreed (Median = 1) that Telkom should not use any of the strategies listed. The so-called proactive strategies (differentiation, pre-emptive move and revolutionary) were the most highly ranked as strategies that Telkom should adopt to

compete in the market. This implied that the respondents' felt Telkom was currently reactive in the areas of new market and product development and that a new proactive competitive approach was needed.

This is significant because Du Plessis et al (2001) point out that for an organization to adopt a pre-emptive move strategy, three considerations should be considered (see chapter 4, section 4.7.4), namely innovation (being in possession of some competitive advantage such as new products or markets that competitors do not have, and having an organizational culture that allows experimentation and innovation); resource commitment (high levels of resource commitments require risk taking), and pre-emptive move assumptions (taking on a major initiative without confirming that the assumptions underlying the decision are true).

The earlier primary research findings (see section 6.5.1) revealed on Telkom capabilities and highlighted important areas where Telkom did not have a competitive advantage relative to its competitors, namely efficiency and effectiveness, organizational culture and teamwork. All these capability areas are inherent requirements for competing using a pre-emptive move, revolutionary or differentiation strategy. Aaker (1998) maintains that all strategies should be revolutionary. The literature review also indicated that the term "strategy" itself implies revolutionary thinking. Figure 6.26 indicates strategy that the respondents' imply Telkom should adopt to compete successfully in the ICT market.

6.6.6 Telkom stakeholder group relationships

The literature review also described, the importance for fixed line telecommunication operators to build sound relationships with key stakeholder groups (see chapter 4, section 4.11). The researcher wished to assess the respondents' perceptions of Telkom's relationships with each of its stakeholder groups to identify the level at which the respondents' felt Telkom had developed sound stakeholder relationships. The respondents' responses will be discussed next. Table 6.68 represents the respondents' perceptions of Telkom's stakeholder relationships.

TABLE 6.68 RESPONDENTS' PERCEPTIONS OF TELKOM'S STAKEHOLDER RELATIONSHIPS

Stakeholder	Valid	Missing	Median
Employees	157	6	3
Suppliers	157	6	4
Shareholders	155	8	4
South African communities	157	6	4
Department of communications	156	7	4
Customers (residential)	157	6	3
Customers (business and corporates)	157	6	4
Customers (Government)	155	8	4

OBSERVATIONS

As depicted in table 6.68, the respondents' perceived Telkom's relationships with some stakeholder groups to be good (Median = 4). The main trend reflected that Telkom has good relationships with the following stakeholder groups: Suppliers (Median = 4), Shareholders (Median = 4), South African communities (Median = 4), Corporate customers (Median = 4) and the South African Government (Median = 4). This indicated that Telkom's relationships with these stakeholders are an advantage to the organization. The respondents' emphasised Telkom's good relationships with some of its major customers, such as the South African Government, South African communities and corporate customers. This could be recognised by competitors as an important sustainable competitive advantage that Telkom could use to defend itself against any market attacks. It is also emphasises that Telkom is concentrating on developing solid

customer relationships with a variety of stakeholders thereby promoting long-term customer loyalty, possibly because the stakeholder groups that have formed good relationships with Telkom will be reluctant to migrate to competitors and will remain loyal to Telkom.

However Telkom's relationships with residential customers (Median = 3) are less than good. This implied that Telkom was not inclined to build strong customer relationships with its residential customers probably because Telkom management views this segment as generating the least revenue contribution in future to the fixed line operators revenues (see section 6.4.6). Cannie and Caplan (1992) point out that, customers must never be seen against the initial revenue that they bring in, instead the customer's revenue and profitability must be viewed against the life-time value of the customer. This implies that Telkom's current view on residential customers is short-sighted, especially if the example of the UK where residential customers account for a large proportion of fixed line Internet users, is considered.

Telkom's relationship with its employees (Median = 3) is also perceived to be less than good (Median = 4). This is significant because, according to Haskett et al (1994), customer satisfaction is largely influenced by the value of services created and that satisfied, loyal and productive employees create that value (see chapter 4, section 4.11.1). This means that if Telkom's relationships with its employees continue to be less than good, in the near future Telkom will cease to create value for customers.

6.6.7 Respondents' perceptions of Telkom in general

Using a battery of ten general statements, Telkom management were asked to rate Telkom using a scale of 1 to 5, where 1 = extremely poor and 5 = excellent on a number of broad areas to obtain an overall general snapshot of Telkom and its competitive capabilities (see question 4.9 of questionnaire in Appendix C). This question was relevant because the answers to this question provide a general overview of Telkom. Table 6.69 provides a summary of the respondent's responses to this question.

TABLE 6.69 MEANS AND RANKING OF RESPONDENTS' PERCEPTIONS OF TELKOM IN GENERAL

Organizational factor (Rank)	N	Minimum	Maximum	Mean	Std. Deviation
Futuristic thinking (3)	153	1	5	3.39	1.059
New product and service capability (4)	155	1	5	3.21	.965
Proactivity (6)	154	1	5	3.14	.980
Customer relationships (2)	155	1	5	3.42	.859
Treatment of employees (5)	155	1	5	3.19	1.007
Organizational leadership (1)	155	1	5	3.45	.854
Decision making speed (7)	155	1	5	2.54	1.040
Management understanding of strategy (5)	155	1	5	3.19	.924
New business area development (6)	152	1	5	3.14	.900

OBSERVATIONS

As indicated in table 6.69, that respondents' ranked each organizational factor as follows:

- *Organizational leadership - ranked 1*
- *Customer relationships - ranked 2*
- *Futuristic thinking - ranked 3*
- *New product and services capability - ranked 4*
- *Treatment of employees and management understanding of Telkom strategy - ranked 5*
- *Proactivity and new business area development - ranked 6*
- *Decision making speed - ranked 7*

These findings are significant especially in the light of the fact that Telkom was slow to react to changes in its business environment and that to date Telkom has not created any innovative products and/or services that have transformed African telecommunications industry. The literature review indicated that Telkom lags far behind organizations such as Vodacom, MTN and Didata in organizational leadership. It is also significant to note that customer relationships are ranked 2, although in the previous question respondents' indicated that Telkom's relationships with corporate customers were good and those with residential customers were less than good. Furthermore, an organization that is futuristic in its thinking, would be proactive and have identified the threats that faced its fixed line business much earlier and started developing

new business areas to ensure the continuation of its current streams of revenue. This implies that ranking futuristic thinking as number 3 is not realistic and that the respondents' did not really understand the question. Decision-making speed is ranked last and this is in sharp contrast to ranking organizational leadership first. In organizations, such as General Electric, Sony, Vodacom and MTN, that have highly rated leadership, decision-making speed is rapid and is highly ranked. Thus there is no correlation between ranking organizational leadership highly while decision-making speed is ranked the lowest. The respondents' could have interpreted organizational leadership as themselves and therefore have been biased in their responses. This implies that bias might have entered the results for this question and that the results may not be valid.

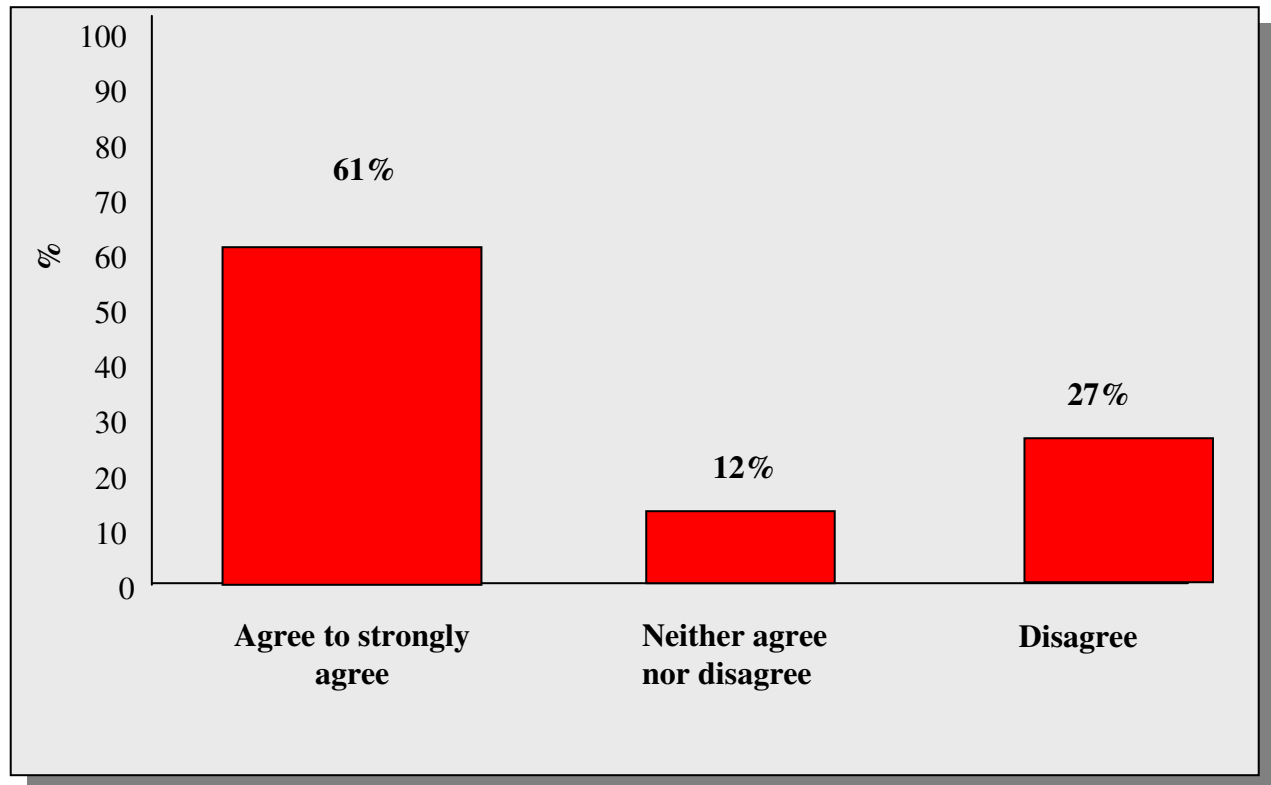
Because of the parametric nature of this question, Cronbach's Alpha (α) was used to test the reliability of the scale (see chapter 5, section 5.11). Alpha (α) in this case was found to be .8913 and was well above the recommended .70, which indicated that the scale for this question was highly reliable.

The next section will discuss the important question of whether Telkom knew the type of organization it wanted to become in 10 years' time.

6.6.8 Telkom knows the kind of organization it wants to become in ten years' time

Hamel and Prahalad (1994) point out that organizations that want to create the future and are thinking strategically know the kind of organization they want to become in ten years time. Consequently, to determine whether Telkom knew the kind of organization it wanted to become in ten years time, the respondents' were asked for their perceptions of whether Telkom knew the kind of organization it wanted to become in ten years. Figure 6.27 below represents the respondents' perceptions of whether Telkom knows the kind of organization it wants to be in ten years.

FIGURE 6.27 RESPONDENTS' PERCEPTIONS OF WHETHER TELKOM KNOWS THE KIND OF ORGANIZATION IT WANTS TO BECOME IN TEN YEARS' TIME



OBSERVATIONS

From figure 6.27 it is clear that 61% of the respondents' agreed that Telkom knew the kind of organization it wanted to become in future; 27% disagreed and 12% were unsure.

This was a significant finding because it indicates that although some of the respondents' indicated that Telkom was undirected (not knowing where it was going), the majority indicated that Telkom knew the kind of organization it wanted to become in future, which suggests that Telkom is thinking strategically and wants to create the future. However, this does not correlate with the findings in the literature review that Telkom has been slow to react to the new marketing opportunities arising in its business environment. The literature review also implied that Telkom lacks innovation. Furthermore, earlier findings indicated that Telkom lacks some critical competitive advantages, such as cross-functional teamwork, marketing ability and efficiencies

and effectiveness, which are important for competing in the South African telecommunications business environment (see section 6.5.1).

The reliability and validity are evaluated and briefly discussed next.

6.7 RELIABILITY

Reliability is very important for trusting the research results (see chapter 5, section 5.11). Therefore it was critically important for the researcher to determine the reliability of the measuring instrument. The measuring instrument was constructed using both metric and parametric questions. However, non-parametric questions were the most commonly used questions. Only two parametric questions were used in the measuring instrument (see questions 3.3 and 3.7 of questionnaire in Appendix C). Therefore, to test for reliability, two reliability-testing methods were employed.

Parametric questions were tested using Cronbach's Alpha (α). In the case of the non-parametric questions, non-parametric Spearman's Correlation coefficient was employed (see chapter 5, section 5.11). With the exception of a few questions, in all the parametric questions tested, Alpha (α) was greater than .70 and was therefore within the limits of acceptability as stated by Holm and Llewellyn (in Leedy et al, 1997), thereby indicating that these questions were highly reliable.

6.8 VALIDITY

To test for validity, cluster analysis was used for the non-parametric questions and factor analysis for the parametric questions (see chapter 5, section 5.11). The validity tests conducted on the scale items, however, indicated a low validity, thereby indicating that this study had a high level of reliability but validity was low.

6.9 CONCLUSION

This chapter discussed the research results. The research results were presented and analysed using tables, graphs and, where necessary, other descriptive statistics to illustrate the findings. This was done in such a manner that the data extracted provided answers to the primary and secondary research objectives. First, an analysis of the Telkom SA respondent profiles was given. The data that aimed to determine the major changes taking place in the South African telecommunications business environment was presented, analysed and discussed. Then, using top and bottom box scores, where necessary, to reflect the major trends in the data, the major drivers of change in the South African telecommunications business environment creating new marketing opportunities for South African fixed line telecommunication operators were analysed and discussed. Thereafter, the research results were used to identify some of the new marketing opportunities arising for South African fixed line telecommunication operators in South Africa. The chapter concluded by discussing primary data to determine a market strategy that South African fixed line telecommunications service providers should adopt to take advantage of the new marketing opportunities arising in the South African telecommunications business environment. It should also be mentioned that a possible shortcoming in the research was that although the questionnaire was subjected to pretests before being administered, and the necessary revisions were made no statistical tests were performed on the pilot tests data to determine the validity of the scale. Chapter 7 concludes the study and makes recommendations for future research.

CHAPTER 7

CONCLUSIONS AND RECOMMENDATIONS

7.1 INTRODUCTION

The research results were presented, analysed and discussed in chapter 6. This chapter presents conclusions and makes recommendations for market strategy and future research based on the findings of this study.

At the time of writing, Telkom SA is the only fixed line telecommunication operator in South Africa therefore this chapter answers the research objectives in relation to Telkom SA. The research objectives are reviewed and then discussed in light of the data obtained, beginning with the changes taking place in the South African telecommunications business environment and their implications for Telkom SA followed by a discussion of the major drivers of change creating new marketing opportunities for Telkom SA, and some of the new marketing opportunities arising are identified and discussed. Finally, recommendations on market strategy for Telkom SA are presented and a number of recommendations for future areas of research in strategic telecommunication marketing will be presented.

7.2 RESEARCH OBJECTIVES REVIEWED

This chapter concludes the research process. The primary research objective of this study was to determine new marketing opportunities for fixed line telecommunications operators in South Africa (see discussion in section 7.3). In addition the researcher wished to

- identify the changes taking place in the telecommunications business environment in South Africa (see section 7.4)
- analyse the major drivers of change that are creating new marketing opportunities in the South African telecommunications sector (see section 7.5)

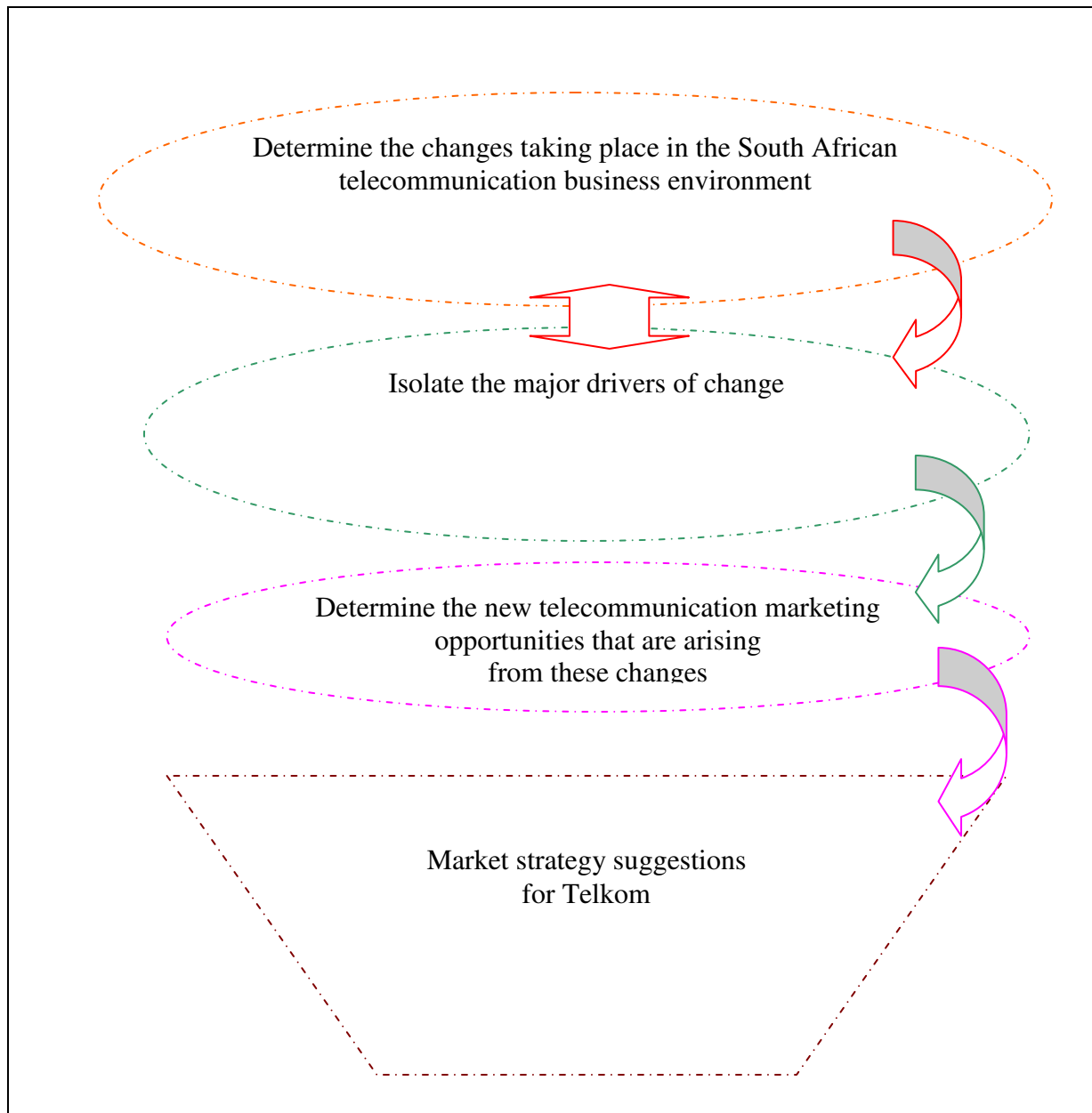
- identify new marketing opportunities arising for fixed line telecommunications service providers in South Africa (see section 7.6)
- make recommendations for market strategy for South African fixed line telecommunication operators to take advantage of the new marketing opportunities (see section 7.7)
- make recommendations for future research in the area of strategic telecommunication marketing (see section 7.8).

The primary research objective of this study will be discussed next followed by the secondary research objectives.

7.3 NEW MARKETING OPPORTUNITIES FOR TELKOM

To identify new marketing opportunities and threats in the South African telecommunications sector for Telkom SA, a strategic evaluation approach was used, and a number of important steps proposed by Dillon, Madden and Firtle (1994) were followed. Figure 7.1 graphically depicts the approach used to achieve the primary research objective.

FIGURE 7.1 PROBLEM RESOLUTION APPROACH



As depicted in figure 7.1, the steps followed to achieve the central objective of this thesis were: (1) determine the changes taking place in the South African telecommunications business landscape, (2) identify the new marketing opportunities for South African fixed line telecommunication operators, (3) identify a potential market strategy for South African fixed line telecommunication operators, in order to exploit new opportunities in future, and (4) identify

future areas of research in the area of strategic telecommunications marketing. The achievement of the primary objective relied on achieving the secondary research objectives.

7.4 CHANGES TAKING PLACE IN THE SA TELECOMMUNICATIONS BUSINESS ENVIRONMENT AND THE EMERGENT OPPORTUNITIES AND THREATS

The discussions of the South African telecommunications business environment highlighted many changes taking place in both the macro and market environments that have a direct influence on Telkom (see chapter 2 and 3). This section presents the conclusions about the changes taking place in the South African telecommunication business environment.

7.4.1 Political/regulatory environment

The study found several significant changes in the South African telecommunications regulatory environment. Firstly, The South African telecommunications sector is rapidly being liberalised. *This has serious implications for Telkom SA because new telecommunication regulation has opened the sector to new competitors (such as the SNO, SMME's, VAN's, Sentech and cellular operators) thereby increasing the market rivalry and competitive intensity within the South African telecommunications market. It is also removing the monopolistic protection previously enjoyed by Telkom. This means that in future Telkom will have to become competitive and think strategically (something it has not done until now) or face destruction*

VAN's rights have been extended to offer value-added services, excluding voice services, directly to customers allowing them to capitalise on the provision of value-added products and services to Telkom's most profitable customers, namely corporates and business. *Telkom has been slow to react to this new opportunity area and therefore is a market follower. Its market position has been reduced to providing network infrastructure, while VAN's, who have the first mover advantage, have made huge profits from offering value-added services using Telkom infrastructure. With the global trend of price reductions in voice and bandwidth, Telkom's future revenue is seriously threatened. Telkom's approach to the market in value-added services indicates that Telkom is reactive and lacks strategic thinking capabilities, a trend that has been identified from the primary research in section 6.4.14, which showed that Telkom is myopic.*

Telecommunications regulation introduces resellers into the South African fixed line telecommunication market. *This will have a direct impact on Telkom in several ways: (1) A new market segment (telecommunication business organizations) has been created that buys telecommunications products and services from Telkom (and in future from the SNO and Sentech) and resells to end-users. (2) This increases the pressure on Telkom to improve its products and services offerings to these customers because of their bargaining power in the market (see section 3.2.5.2). (3) Success in this market segment will depend on whether Telkom views the resellers as customers or competitors. If as customers, then resellers can be regarded as a major opportunity for Telkom to expand its current market share by using resellers to expand its distribution channels. If as competitors, this will be a serious threat to Telkom because, as pointed out in section 4.14.1, resellers will move over to Telkoms competitors to obtain the products and services they require.*

New market entrants, such as Sentech and the SNO, were granted licences to offer international gateway services together with Telkom and the three cellular operators (MTN, Vodacom and Cell C). *This is a serious threat to Telkom's revenues because the international market revenue derived from interconnections will now have to be shared with these competitors, thereby further reducing Telkom's existing revenues.*

New legislation (such as the Telecommunications Amendment Bill, No. 65 of 2001) introduced carrier selection and pre-selection to provide telecommunication customers with a choice of service providers in future. *This means that in future (2005) all customers will have a selection of service providers to choose from (intensifying the rivalry within the industry) and will do so according to their perception of where they receive the most value.*

Mandatory service obligations were placed on all telecommunication operators to provide telecommunications services in under-serviced areas forcing Telkom to provide services in some non-profitable market areas and increasing the rate of churn (customers that terminate their services because they cannot afford to maintain their accounts). *This will have a serious negative impact on Telkom because it will incur high capital expenditure on fixed line network rollout with low levels of return and will have to recoup these costs through cross-subsidising with the*

profitable market segments. This will add to its costs to compete and will result in Telkom losing any price advantages it may have or wishes to build in the market.

Telkom and the SNO were licensed to provide fixed mobile services but these were limited to specific geographic locations *thereby opening new marketing opportunities that provide Telkom with an opportunity to expand its fixed line capability to strategic mobile capability within confined areas.*

The majority of the respondents' in the empirical research phase indicated that Government regulations would have a great influence on telecommunication operators in South Africa. Furthermore they also believed that the South African Government would continue with its policy of forcing Telkom to provide telecommunication services to non-profitable market segments. *This implies that Telkom will suffer serious reductions in its fixed line revenues and will have to identify new revenue-generating opportunities to supplement its existing revenues. This increases the need for Telkom to explore new marketing opportunities, such as a move into mobile telephony and value-added and converged ICT products and services, new markets in Africa such as Nigeria, Cameroon, Democratic Republic of Congo, Botswana, Tanzania, Mozambique, Swaziland, Zaire, Zambia and Lesotho.*

The existing regulatory framework is clearly segmented into telecommunications and broadcasting and does not facilitate convergence. *In the near future convergence legislation for telecommunications and broadcasting will be introduced in South Africa that will alter the licence status of all the ICT players. For example, mobile operators licences could possibly be amended for them to provide fixed line services and fixed line operators might be allowed to provide mobile services.*

7.4.2 Economic environment

With regard to changes affecting the South African economic environment, the study found that the global economic environment was in a state of recession. *This implies that competition in the South African telecommunications market will become much more aggressive as competitors*

from the IT, Mobile, broadcasting and VAN sectors compete to increase their revenues and market shares. The pace of innovation in these areas will increasingly pressure Telkom to think strategically, which it has not done until now.

The primary research indicated that the majority of Telkom management (89%) were convinced that a slowdown in the global economy would negatively effect fixed line telecommunication growth worldwide (see section 6.3.1), thereby signalling a warning to Telkom to expect declining revenues from its fixed line network. Moreover, it was found that most of Telkom management (79%) perceived a slowdown in the global economy to have a negative impact on telecommunications growth in South Africa, *indicating that under the present economic circumstances Telkom's revenues and long term survival are seriously threatened and emphasizing the urgent need for Telkom to look for new revenue-generating opportunities because the SNO will seriously threaten its market share.*

Most Telkom managers (70%) believed a revival in the global economy would only take place in 2004/2005, *signifying that the 2003/2004 financial year would be a difficult period for Telkom and once more emphasizing the need for Telkom to identify new revenue-generating opportunities.*

There were no significant differences between management and top management perceptions of the economic environment, thus indicating *that these two groups shared the same beliefs regarding the effects of the economy on Telkom.*

The economy will play a major role in determining the future profitability of the telecommunications sector in South Africa. *Poor economic conditions will cause all market players to adopt much more aggressive positions as they compete to maintain and capture market share. This will lead to industry shakeout as weaker (less strategic and innovative) participants drop out of the market.*

7.4.3 Social environment

With regard to the social environment, the study found that technological innovations, such as the Internet, have transformed the social trading patterns of global communities and reduced geographic location for competition to a level of insignificance. This has led to the *need for individuals and businesses alike to turn to ICT as a strategic enabler and opens many new marketing opportunities that Telkom must exploit.*

Organizations worldwide are using ICT to compete effectively and efficiently in national and global markets. This has led and is leading to mass retrenchments that impact directly on society and *to the growth of a vibrant South African SMME market segment that have their own ICT requirements, creating new marketing opportunities for Telkom to take advantage of.*

The role of ICT and its level of penetration in South Africa is an important determinant for ICT demand in South Africa because *ICT is limited to the more affluent societies and most poor communities in South Africa did and do not even have access to basic communication facilities. The successful marketing of ICT products and services, such as e-commerce and the Internet, depends on increased penetration of ICT in South Africa.*

South African state schools and higher education institutions are embracing ICT for teaching and learning (see chapter 2, section 2.10) thereby *creating new market spaces for Telkom to provide ICT products and services such as e-learning, to this segment.*

Many SMME's are home-based and require various ICT products and services for commercial activities. This supports the findings of Tustin (2001) that massive retrenchments and unemployment in South Africa are leading to the growth of a vibrant SMME sector. The study found that most of the Telkom managers (82%) believed SMME's would in future grow in South Africa (see chapter 6, section 6.3.7), *reinforcing the expectation that this market will become a significant market force in future for Telkom to provide ICT products and services.*

Customer communication patterns are changing and *they are now seeking convenience, lifestyle and fashion that provide non-restriction, freedom of movement and expression, benefits that the mobile phone is able to offer. These benefits cannot be augmented to the core fixed line service because of its fixed nature.*

7.4.4 Technological environment

The research findings indicated that technological changes are taking place in the South African telecommunications business environment. Telecommunications, IT and broadcasting are converging, creating new ICT products and services, such as LAN's, WAN's, intranets, data warehousing, extranets, e-commerce and multimedia which, are being demanded by South African organizations, including traditional fixed line and mobile voice and data products and services to enhance their business effectiveness and efficiency. *Although Telkom is the owner of fixed line telecommunication infrastructure in South Africa, until now it has been slow to react to these changing business needs. Competitors of Telkom have seen the gap and established leading positions in this market thus indicating that Telkom is a market follower rather than a market leader.*

The fixed line is gradually becoming obsolete for voice services and cellular is rapidly being substituted for fixed line voice services, and the future trend will be for Internet and other value-added services, such as video conferencing and other multimedia applications, to switch over to mobile networks and mobile phones (see chapter 1, sections 1.4.3 and 3.7.2.1). The study found that most of the Telkom managers (77%) believed fixed line voice revenues were being eradicated by mobile telephony, indicating a major threat to traditional Telkom business, and signalling Telkom to act immediately on moving in the direction of mobile communications. Although Telkom management indicated that mobile communications would in future be replace fixed line, Telkom has not acted proactively to build its position in this market, indicating Telkom's myopia in identifying future opportunities thereby implying that Telkom management are reactionary and not thinking strategically.

Wireless technologies (for example “Bluetooth” - see chapter 2, section 2.11) is replacing the fixed line for some ICT applications at customers premises and *will further reduce Telkom’s fixed line revenues in future, indicating a serious threat to Telkom.*

New developments in technology, such as general packet radio switching (GPRS), are *making mobile devices, such as cell phones and personal digital assistants (PDA’s), more intelligent thus allowing these to provide customers with a variety of mobile telecommunications services (see chapter 1, section 1.4.3) and is encouraging customers to switch from fixed to mobile telecommunications products and services, thus placing greater pressure on Telkom to adopt a revolutionary strategic approach, which until now it has failed to do.*

The study found that the speed of capital velocity for IT is much higher than in other industries (*see chapter 2, section 2.11*). This implies that IT hardware and software has to be replaced more often and is a major expense to South African organizations. *This creates an opportunity for Telkom to provide IT services to their customers at lower costs because of economies of scale and because the the study found that Telkom management believe IT is a core organizational capability that Telkom possesses (see chapter 6, section 6.6.1).*

The study found that *businesses are turning to the Internet to transact, which highlights the trend for all organizations to use Internet services in future.*

The study identified the high call costs as another barrier to entry. *This is preventing Telkom from increasing the usage of its network and growing its revenues.*

7.4.5 South African telecommunications market environment

The telecommunications market business environment was discussed in chapter 3. This section discusses the changes that are taking place in the South African telecommunications market environment is presented. Here the main conclusions about the changes taking place in the South African telecommunications market environment in terms of the buyers (residential, business and corporate, government, and wholesale) and suppliers.

7.4.5.1 Buyers

(1) Residential

The telecommunications needs of sophisticated residential customers is increasing and they are beginning to demand more advanced ICT products and services thus *creating new opportunities for Telkom to grow its existing market share in this market by providing innovative products, such as packaged Internet voice and data products, and services, such as providing data storage facilities on its network that are available anywhere, anytime and high speed broadband services such as ISDN and DSL.*

Residential customers are gradually beginning to use the Internet thereby *reflecting the potential growth of the South African Internet market and providing a motivation for Telkom to grow this market by (1) establishing a strong Internet brand and market presence, (2) targeting non-users through creating awareness and price cuts, and (3) identifying innovative residential user applications to increase the use of the Internet, such as home security, Internet shopping and electronic libraries.*

South African residential customers fixed line telecommunication needs are gradually moving towards mobile telephony for voice communications thus projecting the *future trend for voice to migrate towards mobile communications and pointing out the decline stage for residential fixed voice products and services. This indicates that Telkom must adopt a proactive approach and move into mobile communications, innovate new products and services for fixed line and mobile applications and identify alternative uses for the residential fixed line.*

According to most Telkom managers, Teleworking/telecommuting will increase in future thus *representing a niche market opportunity for Telkom to pre-emptively target in future. Telkom must proactively identify the future needs of this market and develop innovative products and services that satisfy customers.*

(2) Business and corporate markets

Businesses and corporates are beginning to rely on converged ICT products and services to transact with and build customer relationships and to achieve efficiency and effectiveness across their value chains. VAN's such as Didata and Comparex have established themselves as market leaders in providing value-added network services to this market because of Telkom's marketing myopia. *As a result Telkom is losing out on the most valuable portion of telecommunication network revenue contribution. This means that Telkom is a market follower and if it hopes to build its market in this area, which it must, then it will have to segment the market carefully, deploy research and development initiatives strategically and challenge its conventional wisdom.*

Business and corporate market segments are the most important market segments in terms of revenue contribution to Telkom. *Therefore it is critical for Telkom to adopt a market challenger position in the value-added network services market with the intention of establishing a strong leadership position in future. This will involve lodging a full-scale direct attack on the current market leaders such as Didata, Comparex and AST and directly attacking those organizations that are under- resourced, insufficiently financed or simply reactive in this market. This strategy will be subject to high risk. Telkom must expect these organizations to retaliate with price cutting, new product offerings or mass advertising campaigns to promote their products. However, the current economic climate has weakened these competitors' financial strengths and this may be an opportune moment (while their stock prices are low) for Telkom to acquire one or more of these competitors and to lodge a full-scale attack on the others. This will give Telkom an immediate competitive advantage because it will also acquire their customer base (increased market share), experience, and add to Telkom's IT capability.*

The findings indicate that the future trend is for fixed line telecommunications to move to mobile applications. This will also apply to business and corporate users as part of their strategies to build customer relationships and efficiency and effectiveness in their businesses. *This means that Telkom's future revenues will be threatened by mobile operators who are currently engaged in research and development activities to offer various value-added services and products to this market. This stresses the need for Telkom to move into mobile cellular communications.*

An important future trend identified in the study is the convergence of ICT and financial services. The study found that financial services are becoming enabled using ICT. *Therefore Telkom must apply a revolutionary strategy that incorporates the strategies of synergy, pre-emptive move, differentiation, cost leadership and focus on the development of converged financial information communication technology (FICT) products and services. Telkom should also consider forming a strategic alliance or partnership with a financial services organization to implement converged FICT products and services.*

(3) Government

The South African Government is using ICT for a number of applications thereby *making this an important market segment for Telkom to provide ICT products and services for two reasons (1) The South African Government is a major shareholder in Telkom and it is important for Telkom to maintain good relationships with this stakeholder. (2) Telkom has a very good brand reputation with South African communities. However, it should be noted that millions of South Africans are still without basic access to communications and this will be a major stumbling block to the Government's achieving its objectives. Therefore, Telkom should follow a first mover strategy in under serviced areas by taking advantage new SMME entrants to the market and exploring various strategic options in under serviced areas such as divest, liquidate, leasing of infrastructure, forming joint ventures and partnerships with SMME's or competing directly with these competitors. Telkom's strategic options will depend on two important considerations namely, the size and profitability of the underserviced area. It should also actively promote ICT by establishing awareness campaigns and mass advertising and actively participating in the development of SMME's. This will lead to sustainable long-term revenue generation from its investments in under serviced areas.*

Most Government ICT systems are legacy systems that are causing poor service levels and inefficiency in government organizations thereby *providing Telkom with an opportunity to build strong customer relationships by assisting the Government with the provision and implementation of ICT (such as providing ICT consulting) while taking advantage of the many government opportunities created.*

The South African Government has established nine provinces in South Africa, making communications a necessity for interdepartmental communication. The Government has initiated a number of ICT projects, such as Info.com 2025, Gauteng on line, national transport information system (Natis), electronic government (e-Government) and the national income tax system (“Nits”), to quicken the pace of ICT usage among South African citizens and to increase the efficiency and effectiveness of the South African state machinery, making this market segment a *major market for providing ICT products and services, such as LAN’s, WAN’s, network security, Internet, Intranet, website development and maintenance, and one that Telkom can exploit to unlock value.* Most of these projects were worth millions of Rands. *Telkom’s failure to secure any of these contracts is a good example why Telkom management regard Telkom’s competitors as superior to Telkom in the areas of organizational processes, customer service, distribution channels, new products and services, organizational culture and innovation, which were identified from the empirical research (see chapter 6, section 6.4.14). Telkom must develop these capabilities to take advantage of the opportunities arising in the government market segment. As the market leader in fixed line telecommunications, Telkom must aggressively defend its existing market position. Furthermore, it should provide price incentives and develop new products and services, such as e-commerce and networking.*

(4) Wholesale

The ISP’s, VAN’s, corporate and business markets *will be targeted by the SNO and other ICT market participants because of this market’s potential to contribute to telecommunication operators revenues. This will be a serious threat to Telkom’s survival therefore Telkom must defend and grow this market segment by providing price incentives, positioning itself firmly, continuously innovating its products and services, building solid customer relationships and adopting a proactive stance.*

The entry of SMME’s in the South African telecommunications market will threaten Telkom, *because their geographic areas of operation have not been properly identified thus making them a serious threat because the way the Act defines their markets means that they can provide telecommunication products and services in urban areas with less than 5% teledensity, such as*

flats and buildings. To overcome this threat Telkom must forge closer links with SMME's and use them to develop a strong distribution channel for its products and services in some under serviced areas. In this way Telkom will reduce network maintenance costs by leasing infrastructure to SMME's and protect its overall market share in these areas.

The study found that the United States, the United Kingdom, France and Germany, after deregulation of the telecommunications sector the market opened up to many telecommunication resellers. *The same trend can be expected in South Africa, although most of the Telkom managers (54%) indicated that the number of resellers that would emerge in South Africa would be between 1 and 10. This again highlights Telkom management's myopia and explains why Telkom has not followed a revolutionary strategy.*

Telecommunication equipment suppliers are discussed next.

7.4.5.2 Suppliers

The South African telecommunications equipment-manufacturing sector is the largest and most advanced in Africa but is relatively small in comparison to the international telecommunications equipment sectors of developed countries such as the United States, Japan, Sweden and France that have *annual turnovers ranging between \$12 billion and \$26 billion. The South African telecommunications manufacturing sector has an annual turnover of just R3 billion. This means that the South African suppliers are open to being influenced by international telecommunications suppliers.*

The South African telecommunications manufacturing industry is dominated by a number of large organizations, such as Siemens SA, Altech Telecoms (AAT), Grintek Telekom (Grinaker), and Telephone Manufacturers SA (Pty) Ltd (TEMSA), that have foreign owners or are of foreign origin. As the only fixed line telecommunications operator in South Africa, Telkom is the main buyer of telecommunications equipment and has a great influence on the telecommunications manufacturing industry providing it with a competitive advantage in the market. *This implies that Telkom can influence these suppliers to manufacture innovative telecommunication products*

and services that alter the shape and value created by the industry, thereby changing the industry rules on Telkom's terms. However, Telkom is a follower in purchasing telecommunication equipment products and services and accepts the technologies that these organizations provide without challenging their conventional wisdoms.

Global telecommunication operators, such as British Telecom and AT&T, are beginning to procure equipment and services from telecommunications, IT and broadcasting (content) suppliers thus *reflecting the changing trend of technology in favour of ICT convergence. This is important because the implications for Telkom are that the international experience indicates the future for fixed line telecommunications is in offering converged ICT products and services. Therefore it will be important for Telkom to align itself with these organizations by creating closer ties, forming strategic partnerships and exploring joint ventures with them. However, Telkom should be aware that there is a cultural match between itself and its strategic partners.*

Suppliers appear to be providing telecommunications and IT technology to all the telecommunication operators in South Africa, *making it difficult for telecommunication operators such as Telkom to use technology as a basis for creating sustainable competitive advantages because all the ICT participants have access to these ICT technologies. This makes it very difficult to differentiate its products and services on the basis of technology. This means, then, that Telkom cannot use technology as a differentiating factor.*

Alcatel Altech Telecoms (AAT), Ericsson SA, Grintek and other suppliers provide both fixed and wireless equipment and technology to South African telecommunications operators *This implies that Telkom can use its relationships with these suppliers to build strategic capability in the area of fixed and mobile communications and find ways to exclude competitors from gaining access to these fixed wireless technologies, such as integrating the suppliers into the Telkom value chain by establishing proprietary innovative products and services jointly owned by Telkom and the suppliers.*

Most ICT suppliers are operating in Africa thus *highlighting the many opportunities that exist there for ICT applications. The study found that Africa is a new market opportunity for ICT.*

However, Telkom must be cautious in approaching the African market because the mobile operators have a first mover advantage in this market as well as a sustainable competitive advantage over fixed line telecommunications.

Telkom managers generally felt that the following suppliers were important to Telkom (see chapter 3, section 3.2.6): Marconi (60%); Alcatel Altech Telecomms (70%); Grintek (54%); Cisco (68%); Siemens (76%); Spescom (49%) and Sun Microsystems (48%). *This implies that these suppliers are important to Telkom and it will have to build solid relationships with each of them by forming alliances and partnerships and locking them into agreements that withhold their technologies from Telkom's competitors. As mentioned Telkom should strive to leverage these suppliers in such a manner that it can use technology as a basis for differentiating its products and services from competitors and build up sustainable competitive advantages.*

The South African government policy favouring black economic empowerment (BEE) participation in the South African telecommunications manufacturing sector is gradually leading to a minor shift in favour of SMME telecommunications manufacturing enterprises that have 51% or more BEE ownership. *This means that Telkom must be careful not to exclude these suppliers from participating in the industry because this will contribute to unemployment and could force the government to introduce legislation that forces Telkom to open its doors to these suppliers. Therefore Telkom must be carefully selective in closing out suppliers.*

7.4.5.3 South African telecommunications market rivalry

Many ICT organizations are using customer relationship management to form long lasting relationships with customers thereby *making it difficult for Telkom to capture market share.*

New entrants such as Sentech, Multichoice, MTN, Vodacom, Cell C and the SNO are serious threats to Telkom. (1) *Sentech's licence allows it to provide international gateway and multimedia services thus bypassing Telkom's network and is an area where true value can be unlocked, for example by providing broadband content services such as tele-education, video on demand and Internet using very small aperture terminals (VSAT).* (2) *It removes Telkom's*

monopoly over international gateway services to switch international traffic thereby dividing the international traffic market share between Telkom, Sentech, MTN, Vodacom, Cell C and later the SNO and will directly challenge Telkom's leadership position in this market.

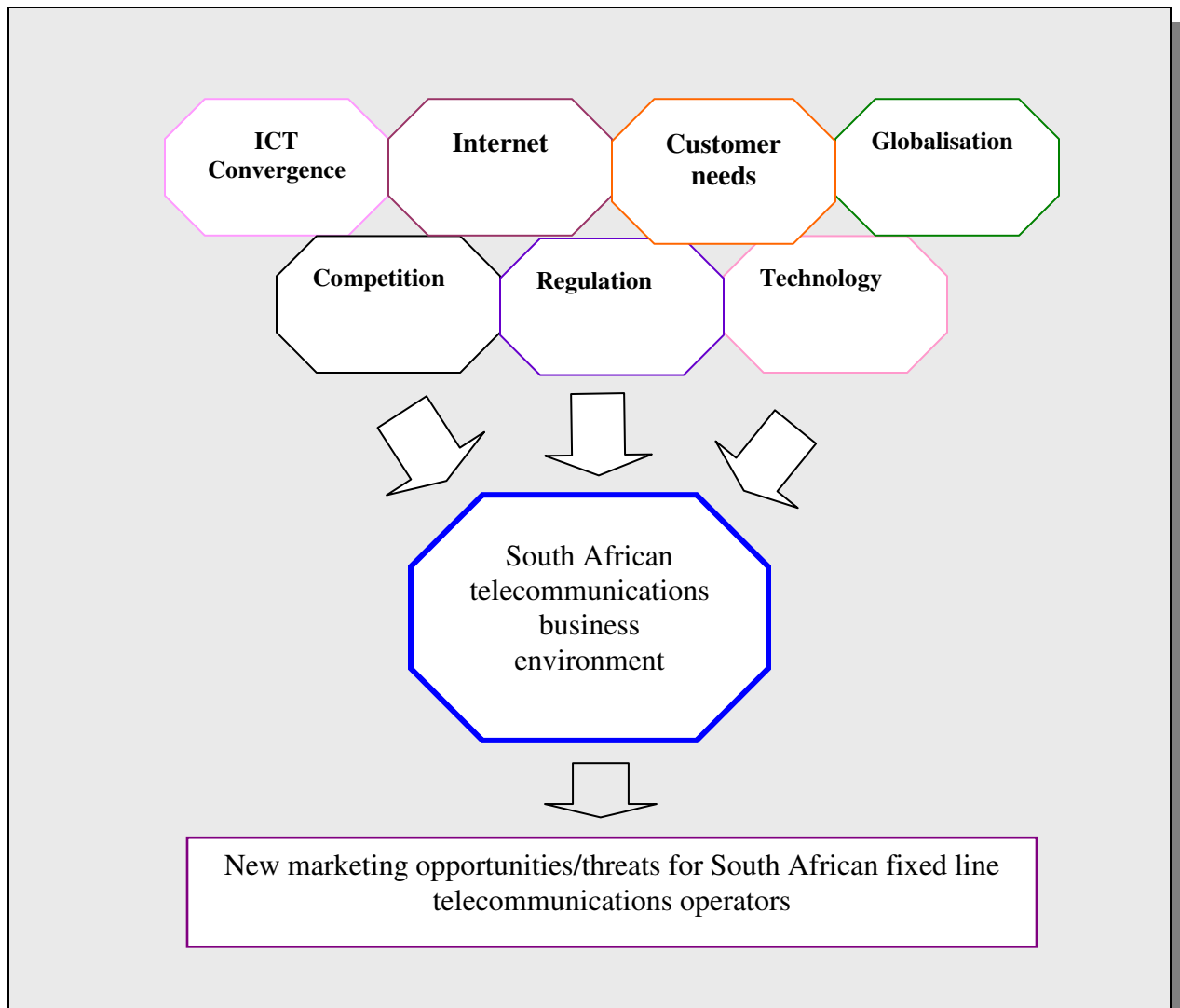
7.4.5.4 Summary

This section aimed to achieve the secondary objective of identifying the changes taking place in the South African telecommunications business environment. Therefore, it looked at the changes taking place in the South African telecommunications business environment and drew conclusions from them. Clearly, the South African telecommunications business environment is undergoing major disruptive change in the political, economic, social, technological, market and competitive business environments. The findings on the changes taking place in the South African fixed line telecommunication business environment indicated that the changing South African telecommunications business environment was being driven by a number of factors. These major factors or drivers will be discussed next.

7.5 MAJOR CHANGE DRIVERS CREATING NEW MARKETING OPPORTUNITIES IN THE SOUTH AFRICAN TELECOMMUNICATIONS SECTOR

This section discusses the major drivers of change that are creating new marketing opportunities for Telkom. Figure 7.2 depicts the main drivers of change in the South African telecommunications business environment identified in the study.

FIGURE 7.2 MAIN DRIVERS OF CHANGE IN THE TELECOMMUNICATIONS BUSINESS ENVIRONMENT IN SOUTH AFRICA



From figure 7.2, the main drivers of change that can be isolated in the South African telecommunications business environment are ICT convergence, competition, technology, globalisation, customer needs, and the Internet.

(1) ICT convergence is creating many new user applications and has resulted in new ICT products and services that customers value. *Telkom has been reactive in capturing the market in these new ICT opportunity areas and can be classified as a market follower. This is a threat to Telkom because its future survival is dependent on its ability to be a first mover and being agile, flexible and innovative to move into new products, services and markets.*

(2) Competition. For many decades Telkom SA held the monopoly over telecommunications in South Africa. The gradual deregulation of the telecommunication market together with changes in technology such as cellular and wireless technologies, as well as new innovations such as the Internet and network communications, have changed the South African telecommunications business environment by bringing down the industry barriers of telecommunications, IT and broadcasting. Changes in telecommunication regulation have also led to increased competition within the sector. This has resulted in an increase in the number of competitors operating within the ICT sector. *The effect of this is that Telkom has been reduced to being a network operator providing connectivity which global trends show is becoming a commodity with declining revenue and therefore is a follower in the most profitable end of the market.*

(3) Regulation. Telecommunications in South Africa had been highly regulated until the early 1990's (see chapter 2). In order to increase telecommunication penetration and introduce competition in the telecommunications environment, a number of new regulations, such as the Telecommunications Act 103 of 1996 and Telecommunications Amendment Bill No. 65 of 2001, were introduced. Telecommunication regulation also introduced the licensing of cellular telecommunications operators, such as Vodacom, MTN and Cell C, and VAN's such as Dimension Data. A Second National Operator would also be licensed in 2003. *This has a major impact on Telkom in the following ways: (1) Telkom's market power, as a fixed line monopoly and market leader, will be challenged. (2) Its voice revenues are under serious threat of providing diminishing returns at an accelerated rate as its fixed network becomes a commodity. (3) Telkom will need to identify new revenue-generating opportunities to stimulate its fixed line network in which it has invested heavily.*

(4) Technology. Of all the major drivers of change in the South African telecommunications business environment, technology affects this sector the most. Changing technology has created new substitute products and services, such as wireless communications, new user applications, such as video on demand and e-commerce, networking such as Wide Area Networks (WAN's) and Local Area Networks (LAN's) and a host of other distributed computing products and services. Technology has revolutionised the South African telecommunications market. Technological innovation has also broken down the barriers that once existed between the

telecommunications, IT and broadcasting sectors thus resulting in the formation of an ICT sector with a number of competitors offering a multitude of converged value-adding ICT products and services. *This affects Telkom both positively and negatively. The negative effects are that Telkom has invested heavily in fixed line infrastructure and technologies that are threatened by wireless technologies, such as cellular that is being substituted for voice and in future data communications. The positive effects are that new user applications that generate significant value for customers, such as networking, e-commerce, applications services, network security, video conferencing, video on demand and other applications, have been created to provide new revenue opportunities for Telkom.*

(5) Globalisation. Traditional borders separating countries are being removed thereby causing the competitive pace between global organizations to increase. *The study found that communications is a major enabler of global integration thereby creating needs for many ICT products and services. These developments are an opportunity for Telkom to provide various ICT products and services to the market and generate revenue from its fixed line network.*

(6) Customer needs. The findings indicate that customer mobility is becoming synonymous with communications. Voice, data and multimedia are starting to converge on mobile networks. *This is an opportunity for and a threat to Telkom. It is a threat to Telkom because as mobile technology evolves, it will render the fixed line obsolete. It is also an opportunity for Telkom because Telkom can and should leverage its 50% holding in Vodacom to gain a firm hold in mobile communications and the African markets currently held by Vodacom.*

(7) Internet. One of the greatest inventions to come about in the last century has been the Internet. It is undoubtedly one of the most significant drivers creating change in the South African telecommunications business environment. The Internet makes it possible to place information at anyone's disposal. *Providing Internet access services such as service provision and application services such as e-commerce web site development and maintenance, and extranets is an opportunity for Telkom.*

The study found that the changes taking place in the South African business environment together with the main drivers of these changes are creating many new marketing opportunities for Telkom. New marketing opportunities that are emerging for Telkom are identified and discussed next.

7.6 IDENTIFYING NEW MARKETING OPPORTUNITIES ARISING FOR FIXED LINE TELECOMMUNICATIONS SERVICE PROVIDERS IN SOUTH AFRICA

The study identified several new marketing opportunities being created from the changing South African telecommunications business environment.

7.6.1 Understanding where the new value resides

As a point of departure, it is critical to understand where future value resides in the South African telecommunications business environment. The study found that *future values* in telecommunications *reside in two main areas*. The two areas are: (1) *Value added products and services*. (2) *Mobile communications*

7.6.2 Value-added products and services

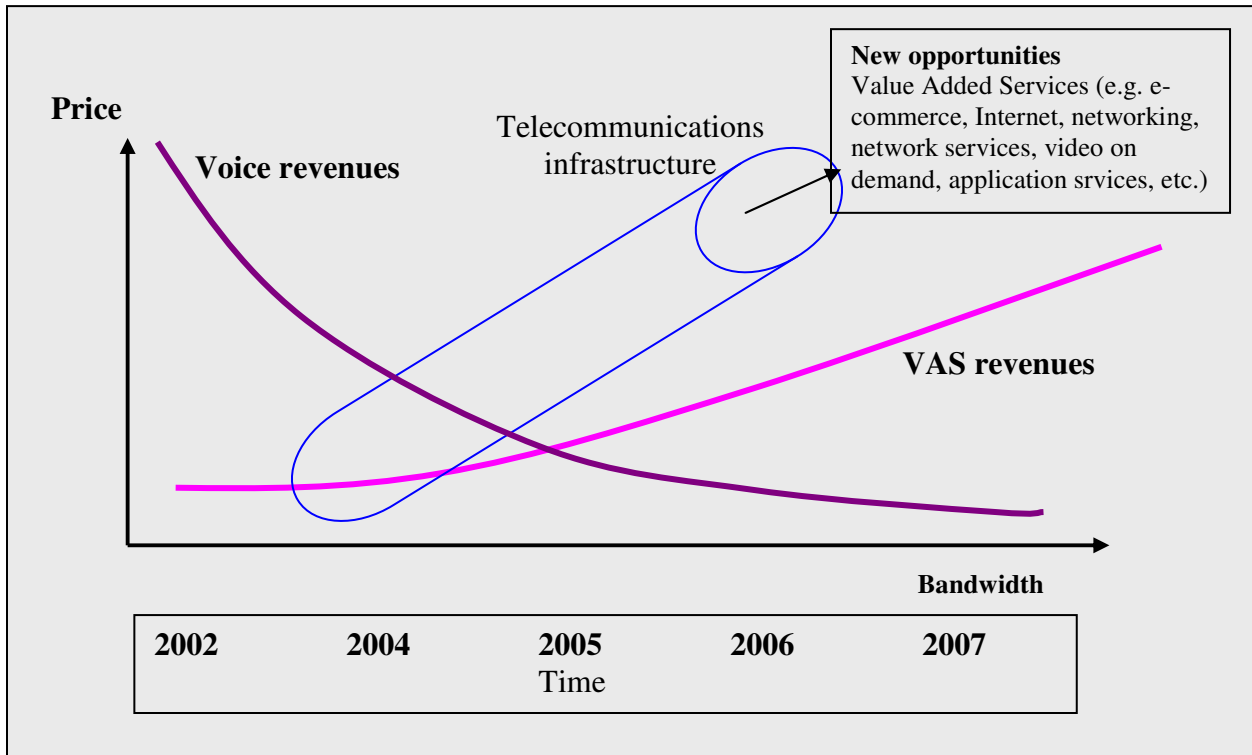
In the past Telkom derived the bulk of its revenues from voice network traffic that flowed across its fixed line network. However, deregulation, competition from cellular operators, IT organizations, VAN's, globalisation, technology and other factors have changed the way that value is created in the telecommunication network. Figure 7.3 graphically illustrates where the new marketing opportunities for Telkom reside.

Figure 7.3 indicates the following trends:

- The worldwide trend is for voice revenues to decrease and data services to increase.
- Bandwidth supply will begin to explode as more competitors enter the market.
- Prices charged for bandwidth decline towards zero but never touch zero because there will always be a charge for bandwidth (infrastructure).

- New value is created from the value-added converged ICT products and services (such as video on demand, e-commerce applications and application services) that flow across the network infrastructure.
- Revenues generated from value-added products and services increase and eventually overtake voice revenues.

FIGURE 7.3: FUTURE VALUE FOR FIXED LINE TELECOMMUNICATION OPERATORS



Apart from the value-added products and services market, new value is being created for telecommunications customers and operators alike in the area of mobile communications.

7.6.3 Telecommunications products, services and markets for Telkom

This study examined the telecommunications products, services and market sectors that present new opportunities for Telkom SA.

Table 7.1 depicts the products and services that the Telkom managers felt Telkom should offer and those they should not.

TABLE 7.1 NEW PRODUCTS AND SERVICES FOR FIXED LINE TELECOMMUNICATIONS OPERATORS

PRODUCTS AND SERVICES	Corporates	Business	Government	SMME's
CRM products and services	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
Internet services	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
Mobile services	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
Service Level Agreements	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
System security	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
System integration	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
Wide Area Networking	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
Voice network	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
Call centres	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
Remote LAN	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
New delivery channels	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
ATM	<i>no</i>	<i>no</i>	<i>no</i>	<i>no</i>
(POS) Point of sale	<i>no</i>	<i>no</i>	<i>no</i>	<i>no</i>
Branches teller automation	<i>no</i>	<i>no</i>	<i>no</i>	<i>no</i>
Broker/Agent support	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
Supply chain automation systems	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
E-commerce	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
E-learning	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
IT services	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>

The study found the following current ICT needs of South African organizations (Corporates, Government, Business and SMME's):

- customer relationship management ICT products and services
- Internet services (for example, web portals/web sites/web transacting)
- mobile services

- system security
- system integration
- wide area networks (WAN's)
- voice networks
- call centres
- remote and wireless LAN's
- electronic commerce applications
- electronic learning
- IT services

According to the Telkom managers, the following ICT products and services would be needed by South African organizations (Corporates, Government, Business and SMME's) in future:

- call centres
- data centres
- Internet services
- network management
- end-to-end e-commerce solutions
- virtual private networks (VPN's)
- data services
- networking services
- multimedia services (for example, e-learning)
- wireless services (for example, wireless LAN's)
- voice services
- messaging services

The Telkom managers believed that Telkom should provide the following products and services to the market currently:

- Digital cable television
- Electronic telephone transacting
- Call centres

- Video conferencing solutions
- Electronic data interchange
- Data storage and hosting services
- Electronic financial processing services
- Electronic bill presentment and processing
- Supply chain automation systems
- Fixed mobile services
- Project management
- System integration
- Web development services

Telkom managers perceived the following as important for Telkom to offer customers in future:

- Customer relationship management systems
- Internet services, such as web portals, web site hosting and web transacting services
- Mobile services
- Fixed line voice services
- System security services
- System integration
- WAN's
- Mobile voice/data/Internet and network services
- Call centres
- Wireless LAN's
- Electronic financial processing services
- Electronic teller automation services
- Electronic broker support and agent support
- IT services
- Wholesale ICT products and services

According to the Telkom managers the corporate market, business market, SMME market, reseller market and residential market would be important for Telkom in future.

An interesting finding of the study was that the Telkom management did not identify the international and Government segments as being very important future markets, because Telkom currently obtains a large percentage of its fixed line revenues from these segments. Furthermore, the study indicated that the African communication market is a potentially large market. The Telkom managers possibly recognise that providing fixed line telecommunications services in Africa is cumbersome and would not solve the immediate communication needs of Africans in sharp contrast to wireless communications that could.

The various sectors or industries in the South African telecommunications business environment contribute varying amounts to Telkom revenues. According to the Telkom managers, the financial services sector (banking, insurance) and retail sectors will contribute the highest to Telkom revenues in South Africa. *This means that Telkom must be proactive in these markets by developing innovative products and services that create value for these customers. At the same time, Telkom must form high-level customer relationships with them where new value is created and shared.*

7.6.4 Summary

The study found that although Telkom is under serious threat of becoming obsolete because of the changes taking place in the telecommunications business environment, there are many new marketing opportunities for Telkom. The main drivers of change in the South African telecommunications business environment are ICT convergence, competition, regulation, technology, Internet and globalisation. These drivers are creating many new marketing opportunities that Telkom can exploit. The study found that there are many new marketing opportunities for Telkom in South Africa, which are being created from change taking place in the South African telecommunications business environment.

Market strategy for Telkom will be discussed next.

7.7 RECOMMENDATIONS ON MARKET STRATEGY FOR SOUTH AFRICAN FIXED LINE TELECOMMUNICATION OPERATORS

Chapter 4 dealt with strategic marketing for fixed line telecommunication operators in South Africa. The researcher makes the following strategic marketing recommendations based on the findings of this study.

7.7.1 Corporate strategy

Applied corporate strategy implies much more than linear planning. The Telkom managers were given a list of ten possible definitions of strategy from the literature (see question 4.2 of questionnaire in Appendix C) and asked to select the definition they believed best described the term “strategy”. Of the respondents, 40% believed strategy was a linear process and only 26% believed strategy was about proactively recreating the future. This is a major weakness in Telkom management’s capabilities because it indicates that a large percentage of management don’t know what it means to be strategic. Telkom should be *applying strategic thinking* to the *strategic planning process* and instigating *innovation, rebellion and disruption* into the organization to *recreate* the industry (what Telkom should be doing). *Therefore, Telkom management must unlearn linear planning and be reoriented with the true meaning of strategy and what it means to be strategic.*

Strategy is about asking the right questions. The study found that Telkom is not asking the right questions. Telkom should ask questions such as *who* and *where* do we want to be as an organization *in ten years’ time*, in *what ways can we reshape the ICT industry to our advantage*, what *new functionalities* and *value should our organization create for customers* and importantly *what are the new core competencies that we should be building?*

Strategy is an inclusive process. The strategic management process should be an *inclusive process* involving the organization’s managers and should *not be limited to a discrete few.*

According to Hamel (1998) and Prahalad (in Kurtzman, 1996) the true meaning of strategy is

- Strategy is revolution. (*Therefore, Telkom must not be reactive it must revolutionise.*)

- Strategy is discovery. *(Therefore, Telkom must discover new opportunities that create value for customers and itself and recreate the future.)*
- Strategy is innovation. *(Telkom must constantly innovate its products and services to new levels that qualify to be called revolutionary.)*
- Strategy is changing the norms and rules of the industry. *(Telkom should strive to change the existing rules of the industry and create new rules.)*

In chapter 4, section 4.3.1 strategy was defined as *proactively thinking, engaging, shaping and crafting the organizations future by challenging the constructs of traditional paradigms and changing the rules of engagement*. The study found that Telkom is reactionary and a market follower. *(Therefore Telkom must change its reactionary market approach, learn to look beyond its existing paradigms and robustly change the rules of engagement.)* To do this, it must change its management culture to think creatively, promote and inspire innovation and it must encourage and reward lateral thinking. Furthermore it should seek *to put **processes in place that encourage strategic thinking***.

The primary research indicated that some Telkom managers do not understand Telkom's strategy. For example, question 4.3 of the questionnaire (see questionnaire in Appendix C) stated that Telkom had a clearly defined strategy that was understood by its management and the respondents were asked to state their agreement with this statement. The findings indicate that 48% were either unsure or disagreed with the statement. This is a weakness for Telkom because as Robbins (1998) and Senge (1994) maintain to create a shared understanding of where the organization is and where it intends going in future the organizational strategy must be understood by all the organization's employees. *(Therefore this problem needs to be investigated further and an internal **communication strategy that tackles this problem and includes the principles of information sharing across all service organizations needs to be quickly implemented.**)*

Strategic thinking is dependent on quality and reliable information. *Organizations that want to become intelligent and wish to constructively and proactively recreate the future must develop sophisticated living market and competitor intelligence process systems that are capable of*

sensing the slightest changes in their environment and of anticipating and successfully predicting competitor and customer behaviours. The study found that an *imperative* for the design and development of successful South African fixed line operator market strategy is the *observation of the competitive behaviours of competitors* that exist in the South African telecommunications market and to counteract their strategic advances with better and more innovative strategic advances

7.7.2 Market strategy for Telkom SA

Fixed line telecommunication market strategy is developed from two major components. These components: the identification of sustainable competitive advantages and strategic options that consists of five options (competitive strategy development, market positioning strategies, strategies over the life cycle of an organization, relationship building strategies for developing strong relationships with key stakeholder groups and strategies for operating at a global level).

7.7.3 Sustainable competitive advantage

Sustainable competitive advantages are those competitive advantages that an organization has over its competitors and which are not easily copied and are *sustainable over a period of time*. The study found that the different Telkom managers across service organizations have different perceptions about which competitors were the most competitive in the South African ICT market and did not understand what a competitive advantage was (see chapter 6, sections 6.4.12, 6.4.13 and 6.6.7). Question 2.4 (see questionnaire in Appendix C) required the Telkom managers to rate Telkom's competitive advantages in comparison to its competitors. Question 2.5 (see questionnaire in Appendix C) required the respondents to assess the most competitive company listed against Telkom. Question 4.8 required them to rate Telkom on a number of sustainable competitive advantage areas. In their responses to all these questions, there was a conflict between what they perceived to be a competitive advantage and what a competitive advantage actually is. This means that the Telkom managers do not understand business concepts such as competition and competitive advantage.

7.7.4 Strategic options

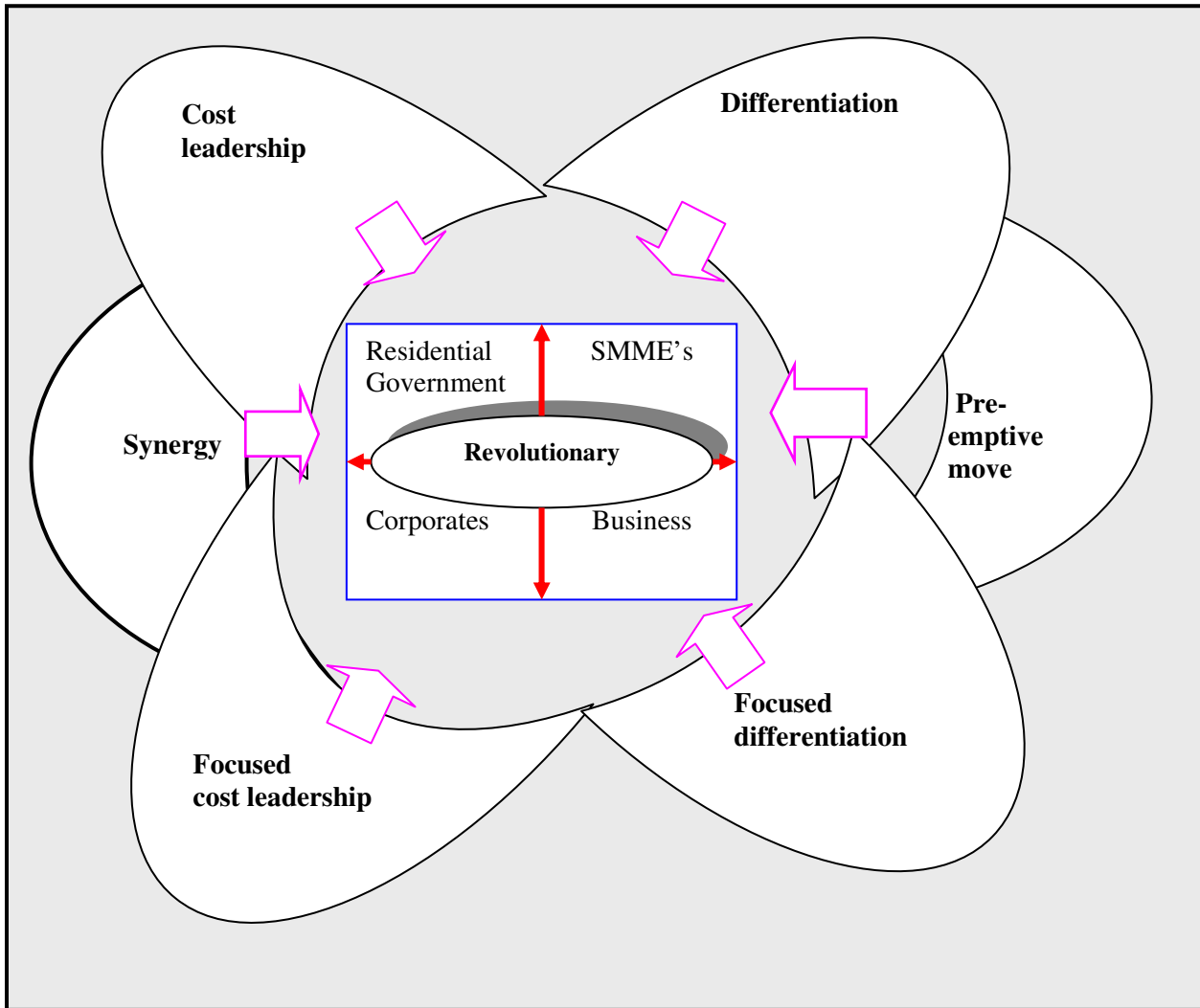
Telkom has a number of strategic options from which it can select to compete in the market.

Competitive strategy

The competitive strategy options that Telkom can select are reflected in figure 7.4. As depicted in figure 7.4, Telkom is confronted by multiple competitive strategies. Porter (1979) contends that an organization cannot be all things to all people, and must *choose* between *either* a cost leadership, differentiation or focus strategy. This is especially true for Telkom SA. The very nature of the South African ICT industry demands that Telkom be selective in choosing a market strategy for *each* of the multiple market segments. The main reason for this is that the nature of ICT products and services is not the same. Customer groupings have their own specialised requirements.

As reflected in figure 7.4, the competitive strategies Telkom can employ should be applied to all ICT market segments. *However, competitive strategies will differ from one market segment to another.* For example, in the highly competitive corporate market segment, customers place a high value on service and network availability and are less price elastic whereas in the residential market customers are price sensitive and value low prices. In this regard it is true that Telkom is faced with Porter's (1979) three options: cost leadership, differentiation and focus. Therefore one important conclusion that can be made is that Telkom *should select one of these competitive strategies best suited to a particular market segment.*

FIGURE 7.4 COMPETITIVE STRATEGY OPTIONS FOR TELKOM SA



The study also identified three additional competitive strategies that have a direct influence on South African fixed line telecommunication operators, namely synergy, pre-emptive move and revolutionary strategy (see chapter 4, sections 4.7.4, 4.7.5 and 4.7.6). Unlike Porter's (1979) three competitive strategies that are unrelated to each other, these three competitive strategies are not only *complementary* to Porter's strategies but are also *fundamental to any Telkom competitive strategy*. Therefore it can be concluded that

- Each market segment for fixed line telecommunications is unique and the competitive strategy applied depends on the needs of customers and the competitors that serve that market. ***Therefore Telkom must select the competitive strategy that best suits the individual market.***

- It is always an advantage to be a cost leader. However, a cost leadership strategy is not always the best strategy to use because in an ICT market such as South Africa, where there are a few players, competition based on lowering prices for a commodity product, such as telecommunications, can have a disastrous effect on the whole market and eventually eliminate the profits in the market. *Therefore, a more sensible strategy will be for the all the players to collaborate with each other or to compete using a differentiation strategy where they differentiate on the basis of their products and services.*
- Bandwidth is becoming a commodity. *Therefore Telkom should concentrate its efforts on differentiating its product and service offerings in the market and focusing on niche markets where competitors have established market leadership positions. It must also engage synergy, pre-emptive move and revolutionary strategies in its market strategy.*
- Cost advantages are always beneficial. *Telkom should strive to minimize costs by eliminating waste from the value chain.*
- Revolution should be the core of any telecommunications operator's competitive strategy. *Telecommunications operators should seek to revolutionise the industry by creating new innovative products and services that disrupt the existing rules in the industry and create new ones.*
- Timing plays a critical role in establishing market leadership. *Telecommunications operators should follow a pre-emptive move strategy to establish market leadership positions in new geographical areas, such as Africa and in new product and services development.*
- A synergy, pre-emptive move and revolution strategy should be interwoven (integrated) with any of Porter's (1979) three generic strategies. *Telkom should incorporate the three strategies into the main generic strategy selected.*
- There can only be *one market leader* in the South African fixed line telecommunications market and at this moment it is Telkom. *If Telkom does not become strategic (i.e. become innovative, disruptive, rule breaking and change the gameplan) when the SNO enters the market in 2003, it will become a market follower.*
- Market leaders generally have the capability to influence all the other market players in the industry. *Telkom has the ability to influence other players but is losing its bargaining power.*
- The market leader is very *vulnerable* because it is always under threat from other market players and therefore it must *always be aware* of what is happening in the market and has to

constantly defend its market leadership position. *Telkom is being attacked by its competitors but is reactive to the market. Therefore it must change its market strategy towards becoming much more proactive by identifying ways to compensate for any loss of market share, for example, finding new markets; contemplating how best to protect its existing markets; becoming obsessed with finding ways to increase its market share; finding new innovative revenue generating products and services that customers value.* Telkom has failed to do any of this.

- The study found that fixed line telecommunication incumbents can easily be unseated from their leadership positions by new market entrants that are *innovative and disruptive*, a serious threat that faces Telkom because of its current sluggish and reactive behaviour in the market.
- A market follower strategy can be an equally *profitable* strategy for Telkom. A market follower strategy is sometimes sensible, especially when the costs and other dangers associated with competing directly against the market leader are considered. Therefore, in those areas where Telkom is a market follower, it must carefully evaluate the risks attached to lodging a direct attack against the market leader, because it could be disastrous, and would require the build up of sustainable competitive advantages. The study found that Telkom *lacks sustainable competitive advantages against its competitors in the value added network services market.* A sensible strategy for Telkom will be to follow the market leaders in the value-added network market, build up its sustainable competitive advantages, reevaluate its competitor sustainable competitive advantages, and if satisfied, lodge a direct attack on the market leader.
- It is important for market followers to identify their weaknesses and vulnerability and protect their market share (see chapter 4, section 4.9.3). According to the findings in chapter 6, section 6.6.1, *Telkom is weak in the areas of marketing skills, efficiency and effectiveness, and teamwork. Hence, these are the areas where Telkom should concentrate its efforts to develop strengths. Lack of teamwork is a serious threat to the development of Telkom's organizational capabilities. To follow a synergy strategy, Telkom must ensure that teamwork is developed into a sustainable competitive advantage. Some of the ways that Telkom can achieve this are by forming cross-functional teams, creating process teams that require input from different functional units, rotating product development champions between the*

different Telkom service organizations and rotating management and executives between the different service organizations.

- A market niche strategy involves the identification of telecommunications market segments that other competitors in the market have ignored, largely because they appear risky, small and may be unappealing, such as for example, farms and smallholdings and even some urban areas where there is less than 5% teledensity. Many areas in the South African telecommunications business market qualify for using this strategy. However, because of the high costs to serve these small numbers of customers, it is generally unprofitable. This means that Telkom would be losing out on these market segments. Therefore, Telkom should employ a pre-emptive move strategy, using the SMME resellers to distribute its products and services offerings through building channel relationships with them. In this relationship, SMME's would lease network infrastructure and buy products and services from Telkom at wholesale prices and, in turn, resell to small customers. This strategy will provide Telkom with an *advantage and capability to react quickly to the new market opportunities and potential threats* that arise in the market without compromising its position. Market niching provides an *opportunity* for Telkom to *generate revenues and gain experience* while it *builds up its capability* to compete in the larger more lucrative markets such as value added network services and mobile communications.
- The study found that a market niche strategy can be a very *profitable strategy and that it is not limited to smaller organizations*. It was found that many large organizations use this strategy where they feel the *costs involved in securing a high position in a highly competitive market segment does not warrant an aggressive posture*.
- A niche market strategy is not without *danger*. One of the main threats that can have a serious impact on niche market players in the fixed line telecommunications environment is the changing nature of the telecommunication market brought about by increased competition and/or new technological innovations that can cause existing technologies to become obsolete (such as what is happening in Telkom's environment).

7.7.5 RECOMMENDATIONS

From the findings it is evident that Telkom is facing a serious threat of becoming obsolete if it does not adapt to the changes taking place in the telecommunications business environment. Despite these threats, the study found that Telkom is faced with an abundance of new marketing opportunities. The researcher makes the following recommendations for Telkom that will aid in overcoming the business environmental threats and leverage the new marketing opportunities arising, thereby enabling Telkom to survive and prosper in future.

(1) Complacency will result in the death of Telkom. *Therefore, Telkom must avoid complacency at all costs and must inculcate a culture of competitiveness, innovation and disruption into the organizations thinking.*

(2) Telkom's values have remained the same and are not changing in line with reflecting the changes taking place in the South African telecommunications business environment. *Although Telkom's present values are relevant if it is to change its culture to become innovative it must include a new value that inspires innovation among its employees.*

(3) The value derived from fixed line voice services is rapidly being depleted. *Therefore Telkom should reduce its capital expenditure in building fixed line telecommunication network infrastructure for voice services. Instead, it should start focussing on building capacity and capability in future technologies such as IT networking services, broadband, mobile and wireless.*

(4) New competitors (such as MTN, Vodacom, Cell C, SNO, Sentech and VAN's) are entering the ICT market. *This means that as the current fixed line market leader, Telkom will have to strategically position itself in this market in the following ways: (1) protect its present market share, (2) grow its markets and (3) expand its market share. Telkom must also become revolutionary in its market strategy by developing innovative ICT products and services that are valued by the market. To do this, Telkom needs to strategically differentiate itself from competitors in the products and services that it offers. It should also adopt a revolutionary strategy that integrates cost leadership, differentiation, focus, synergy, and pre-emptive move supporting strategies that are aligned to the needs of the different market segments.*

(5) Legislation that forces Telkom to provide services in non-profitable areas and new convergence legislation that allows cross-sector service and applications provisioning e.g. cellular operators and broadcasting companies such as Sentech providing fixed line services and infrastructure, will seriously affect Telkom's profitability. ***To avoid this, Telkom must identify the areas that will yield value in future and it must use its position in the sector to influence legislation to its maximum benefit.***

(6) New marketing opportunities have been created by legislation for Telkom to provide fixed mobile services. ***Telkom must use this marketing opportunity innovatively to create sustainable competitive advantages by developing state of the art fixed mobile products and services.***

(7) The findings indicate that fixed line telecommunications will in future become a commodity. Therefore ***Telkom should adopt a focused differentiation market strategy, differentiating on the basis of products and services offered, quality of services and markets served. At the same time, Telkom must develop new capabilities in the areas of IT (to provide value-added IT products and services), cellular (to take advantage of mobile opportunities) and networking (to take advantage of network products and services opportunities in the South African ICT market).***

(8) New market entrants are dividing Telkom's share of the South African ICT market. ***Therefore, to maintain and grow its market share, Telkom will have to behave competitively, innovatively and strategically and it must manage its relationships with customers selectively (identify those profitable customers that it should serve, and build long term relationships with them).***

(9) The existing cost of calls is a barrier to market growth. ***Telkom must reduce call costs, especially for Internet. In the short term, this will affect Telkom's cash cow revenues but in the long term will lead to market share growth and strong revenue generation. It will also benefit the economy by facilitating economic growth, leading to increased calls and network usage. Furthermore, by lowering the barriers to entry into the Internet, the South African electronic customer base will be expanded, thereby growing the ICT market and provide Telkom with a constant annuity stream of subscription base income.***

(10) IT is a major cost to business organizations. This creates an opportunity for Telkom to provide IT services to their customers at lower costs because of economies of scale and because the research showed that Telkom management believe IT is a core organizational capability that

Telkom possesses and should exploit in future. *Therefore, Telkom must explore providing IT services as a complete value added service to its telecommunications network.*

(11) Suppliers play a key role in forming sustainable competitive advantages. *Therefore, Telkom must form selective alliances and partnerships with key suppliers and lock out competitors from gaining access to their technologies. Furthermore, Telkom must become aggressive in its selection of vendors and must force technology vendors to provide innovative technologies and products and services solutions that give Telkom a sustainable competitive advantage in the market. At the same time, Telkom must move closer to those suppliers that are at the cutting edge of new technology and should collaborate on new ICT product and service developments by forming closer strategic working relationships, strategic joint ventures and partnerships and create strategic knowledge forums such as “think tanks” that inspire innovation and strategic thinking.*

(12) Trends indicate that fixed line voice revenues are being destroyed by mobile. *To avoid revenue damage, Telkom should gradually begin divesting from the fixed line telecommunication voice market in South Africa and, as Aaker (1998) maintains adopt a “wait and see” attitude to see what happens in the market when competition intensifies. They should explore new applications for the fixed line that are not voice related, such as exploiting the intelligent home concept.*

(13) The Internet is becoming a compulsory requirement for business worldwide, highlighting the importance for Telkom to build a strong Internet brand and capability in this area and to position itself as a market leader for Internet products and services.

(14) The findings indicate that costs are a barrier to entry into technology for some customers (e.g. residential) *therefore, Telkom must apply a revolutionary strategy to overcome this barrier such as forging partnerships with IT hardware organizations and financial institutions such as Khula Enterprises and develop packaged IT and communications solutions to increase the level of IT adoption in South Africa.* In this way Telkom will generate long-term revenues from annuity income created through the increased volume of calls that flow across its network and increase the number of users in the market for these products and services.

(15) The WAN and LAN environment forms the basic platform for providing value added ICT products and services. *Therefore, Telkom must aggressively market LAN's and WAN's and it*

should explore the acquisition of a VAN organization that already has an established customer base and capability in this area.

(16) Marketing and competitive intelligence are critical requirements for corporate strategy development. *Therefore, Telkom should ensure that marketing intelligence and competitive intelligence proactively channel information about the telecommunications market and competitive landscape directly into the strategic management process and should make a weighted contribution to strategic direction.*

(17) The study found that the African continent provides many opportunities for providing ICT. *To take advantage of these opportunities, Telkom must employ a synergy strategy by relying on its 50% ownership of Vodacom to supply the African and local markets with converged mobile ICT products and services and act as a channel for mobile products and services in South Africa. Furthermore, Telkom must explore new revenue generating opportunities in Africa such as hubbing (routing African continent traffic through its network), providing consultancy in technical and management services, exploiting data and other non network value-added services through forming strategic alliances and partnerships or on its own.*

(18) Resellers will become an important market segment in the near future. *Telkom should form closer relationships with this market and integrate these downstream resellers into its distribution channels as a means of protecting and expanding its market share.*

(19) What must Telkom do in the short term? *In the short term, Telkom should pursue a milking strategy to secure as much revenue as possible by milking its assets and building capital reserves for future investment. To achieve this it must look for innovative ways to generate revenue over its existing network (for example provide free e-mail or Internet services to all customers and charge for downloading information, provide packaged fixed and mobile voice and data products and services) that is, change the products and pricing mix.*

(20) The study found that new value is being created at the periphery of the fixed line telecommunication network in the form of value-added products and services (for example Internet services, e-commerce applications, e-procurement systems, etc.). *To take advantage of these opportunities, Telkom should identify the value-added products and services that create value for customers and should provide these in innovative ways to its customers.*

(21) There is sufficient evidence from the findings to suggest that CRM is critical for success in a highly competitive South African telecommunications business environment. *Telkom must*

therefore strive to build solid long lasting customer relationships in which value is created and shared between the organization and its profitable customers.

(22) Innovation is a key success factor for future survival and growth. *Therefore, Telkom must include innovation as an important value of the organization and must aggressively promote and reward employee innovation.*

(23) The future belongs to those organizations that will produce innovative ideas that lead to new discoveries. *Telkom should initiate and implement multiple processes that stimulate the growth of new ideas, such as the creation and implementation of strategic “think tanks” consisting of high achievers and creative employees across all Telkom service organizations that are mandated to develop new ideas.*

(24) Understanding the customer’s business is a necessity to create value for them. *Therefore, Telkom must ensure that their employees understand the customers business at every level and are able to create value for their customer that is, getting close to the customers to research their needs. Although the research showed that CRM should be used to manage customer relationships, the research also showed that Telkom should rather use customer managed relationships where the customer is allowed to manage the relationship in terms of expressing their ICT requirements.*

(25) Supplier relationships are critical for establishing sustainable competitive advantages. *Therefore Telkom should forge close relationships with key suppliers and lock them into long-term relationships that shut competitors out and deprive them of technology.*

(26) IT is an important component for providing ICT solutions. *Telkom must exploit its capabilities and strategic partnerships in IT to take advantage of convergence.*

(27) The existing return on investment for fixed line operators is too high and discourages investments in new projects with lower returns. *Telkom must establish new companies outside its organization with lower cost structures to venture into innovative and revolutionary business initiatives.*

(28) Sustainable competitive advantages (SCA’s) will be very important for Telkom in future. *Telkom must build sustainable competitive advantages by establishing strategic partnerships and alliances with world-class value-added and broadcasting content service provider organizations to develop disruptive technologies and new user applications.*

(29) Mobile capability is a necessity for future success. *Telkom must ensure that it acquires the capability and competence to provide mobile services either through strategic partnering or total ownership of a cellular licence.*

(30) Relationships with stakeholders are key for success. *Therefore, to ensure that it is successful, Telkom should constantly strive to build excellent stakeholder relationships with all stakeholders.*

(31) The South African telecommunications business environment is becoming increasingly competitive. *To ensure its survival, Telkom must learn how to create the future by creating tomorrow's products and services that customers will value. To enable Telkom to do this it must develop its organizational processes to facilitate and encourage innovation and value creation for customers, must enhance its technological capabilities through synergistic supplier relationship strategies, internal cross-functional teamwork and invest in the development of human assets. It must change the culture of its management, promote a culture of innovation and lateral thinking, reward strategic thinking, empower employees, allow risk-taking, remove bureaucracy from decision making and encourage honesty without punishing critical thinking.*

(32) Skilled employees that understand the principles of business are a basic requirement to compete effectively in the ICT sector. *Human resources development initiatives at Telkom should focus on both technology and business understanding. Therefore all Telkom employees should be technically skilled and business oriented. This will enable them to understand how the organization can satisfy the communications needs of its customers and create value for them. If Telkom is to become competitive and strategic thinking, it must initiate a management development programme that is mandatory for Telkom managers to attend, which teaches strategic management concepts and basic business principles.*

(33) Excellent customer service is dependant on happy and productive employees. *Employees should be valued and treated well especially if Telkom wants to provide excellent customer services because as Heskett et al (1994) point out, customer service is dependant on employee well-being. Therefore, Telkom must identify the causes of employee dissatisfaction and resolve these immediately. Open, honest communication is required to remove mistrust between Telkom management and its employees.*

(34) Marketing is not the major driver of corporate strategy meaning that Telkom is not marketing orientated *Therefore, marketing should provide direct input into the fixed line telecommunication organization's corporate strategy. Market intelligence and competitive intelligence should be used constructively at the executive management level to identify and understand customers and competitors and what they are doing in the industry, how they are changing the industry and in what ways their actions impact the organization.*

These are the main recommendations that can be made for South African fixed line telecommunication operators. Recommendations for future research are made next.

7.8 NEW AREAS FOR FUTURE RESEARCH

Due to the scope of the research project not all areas could be addressed in detail. However, a number of other research areas that would make a valuable contribution to the existing body of knowledge were uncovered. Some of these new areas for future research are stated here.

- (1) Evaluating how ICT can be used by South African organizations to market their products and services.
- (2) Comparing Telkom to the cellular operators and examining their individual marketing approaches in the South African telecommunications industry and determining why South African cellular operators are more innovative.
- (3) There is a strong relationship between economic development and ICT. The role that ICT can play in promoting economic development in South Africa and the value that telecommunications operators can derive from this must be investigated.
- (4) Resellers of ICT products and services will increase in South Africa in future. A study is needed to evaluate the role of resellers in marketing ICT in South Africa.
- (5) The study found that the cellular telecommunications market in South Africa was in the growth stage. A complementary study to this one is determining the new marketing opportunities for cellular operators in South Africa.
- (6) The research identified a major gap in ICT penetration in Africa. An important area that will make a substantial contribution to research is establishing how South African telecommunication

operators can contribute to the development of ICT on the African continent and evaluating the benefits that South African telecommunication operators can derive from this.

7.9 CONCLUSION

This study has focused on the new marketing opportunities for Telkom and covered a broad number of areas. Since there are no South African studies on the central issues identified here, and because the South African telecommunications industry is undergoing rapid change, this study will make a valuable contribution to the existing body of knowledge on South African telecommunications. It will be especially important to Telkom and the SNO, new fixed line telecommunications enterprises such as SMME's and other telecommunications operators in other parts of the world, such as Africa. It will also be beneficial to other researchers interested in understanding new marketing opportunities for South African fixed line telecommunications operators.

The study identified the changes taking place in the South African telecommunications business environment. The major drivers of change creating new marketing opportunities in the South African telecommunications sector were also identified and analysed and the new marketing opportunities arising for Telkom were discussed and strategic market strategy recommendations were made. A number of new areas for further research were also identified and outlined. Therefore, this study has achieved the objectives that were set out in chapter 1. Only time will tell how Telkom will make use of these opportunities.

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APPENDIX

APPENDIX A

MEMORANDUM FOR OBTAINING PERMISSION TO CONDUCT STUDY IN PARTICULAR AREA OF RESEARCH



MEMORANDUM

TO: Nicolene Rossouw
Executive: Marketing Intelligence

FROM: Fuaad Ali
Senior Manager: Marketing Intelligence

SUBJECT: Request for permission to conduct study

DATE: 13 March 2002

Dear Nicolene,

I am presently enrolled at the University of South Africa for the degree of Doctor of Commerce: Business Management at my own cost. The topic for my research is:

“NEW PRODUCT AND SERVICES OPPORTUNITIES FOR TELECOMMUNICATIONS OPERATORS IN SOUTH AFRICA: A STRATEGIC MARKETING APPROACH”*

Permission to undertake this research topic is urgently requested from you. In order to ensure that the information and research findings remain confidential, I have requested the university to treat the thesis confidentially. This means that the information and research findings will not be made available anyone.

The value that Telkom SA will derive from this research effort will be the findings of the research. Furthermore, it will contribute to my personal development and the knowledge that I acquire will be used to Telkom’s best advantage.

The reasons for my selection of this topic are:

- I enjoy this area of research

- I am interested in new development and thinking in the area of new product development and trends for telecommunications services
- I would be able to apply my knowledge to Telkom SA's advantage

In carrying out this research, I undertake to ensure that all information will not be disclosed to anyone outside the university.

I would sincerely appreciate it if authority can be conveyed to me to proceed.

Thanking you

Fuaad Ali
Senior Manager: Marketing Intelligence

*** NOTE:** The topic was changed later to "NEW MARKETING OPPORTUNITIES FOR FIXED LINE TELECOMMUNICATION OPERATORS IN SOUTH AFRICA: A STRATEGIC EVALUATION".

APPENDIX B

LETTER TO THE REGISTRAR ACADEMIC AT UNISA REQUESTING THAT THIS STUDY IS TREATED CONFIDENTIALLY

Fuaad Ali
Student No: 5599016
P O Box 82036
Southdale
Johannesburg
2135
13 March 2002

The Registrar (Academic)
University of South Africa
P O Box 392
Pretoria
0001

Sir/Madam

Re: Request for doctoral thesis to be treated confidentially

I am presently enrolled for the degree of Doctor of Commerce: Business Management at UNISA. The topic for my thesis is titled:

NEW MARKETING OPPORTUNITIES FOR FIXED LINE TELECOMMUNICATIONS OPERATORS IN SOUTH AFRICA: A STRATEGIC EVALUATION

Telkom SA presently employs me and, as you may be aware Telkom is preparing for competition in the South African telecommunications market. I am bound by my company's code of ethics that requires that all information should be dealt with in the strictest confidence. Furthermore, I will be using secondary resources for information that could possibly disadvantage Telkom SA should it become known publicly.

I have considered doing another topic but decided against it, as I believe that I would be defeating the purpose of my study that is to grow in my field of interest. It is for these reasons that I request the University to treat my study with the strictest of confidence. It would also be appreciated if the procedure that will be used to ensure confidentiality could be forwarded to me so that I can show it to my superiors and obtain their approval to conduct the study.

My supervisor is Prof. Johan Strydom. He has agreed to treat the study confidentially should the University provide me this status.

Thanking you
Fuaad Ali (559 901 6)



APPENDIX C: SURVEY QUESTIONNAIRE

Fuaad Ali
Marketing Intelligence
Tel: (012) 311 7578
Fax: (012) 311 7132
E-mail: alif@telkom.co.za

Dear Sir/Madam

Re: Survey: New Marketing Opportunities for fixed line Telecommunication Operators in South Africa.

I am presently doing research entitled “New marketing opportunities for fixed line Telecommunication operators in South Africa: A strategic approach”. The purpose of this research effort is to determine the changes that are taking place in the SA Telecommunications business environment and to identify the potential threats and opportunities that are arising in this environment for Telkom. Once these potential opportunities and threats have been identified, it is hoped that a potential market strategy for Telkom will be developed.

You have been identified as an important resource to assist in this process. Attached, please find Survey questionnaire entitled “ New marketing opportunities for fixed line Telecommunication operators in South Africa. It would be highly appreciated if you could set aside a few minutes away from your busy schedule to complete this important questionnaire.

Total confidentiality is assured. You will remain anonymous. No names are required only your precious opinions. The results will be used for educational purposes and for Telkom management, only if requested. To request a copy of the results of the survey, please e-mail me at alif@telkom.co.za specifically stating that you would like to have a copy of the survey results. As soon as these become available they will be sent to you. If you do not specifically request this information, it will not be sent to you automatically.

Instructions: Please complete the survey questionnaire in full, either electronically by opening the document in MSWORD and electronically completing the questionnaire, saving in MSWORD format and sending it back by e-mail to alif@telkom.co.za as an attachment or alternatively, first print the survey questionnaire, complete in ink and fax it back to (012) 311-7928

I would be highly indebted to you if you could complete this questionnaire and return it to me by **25th October 2002**.

Thanking you for your kindness and cooperation in assisting me with this task.

Fuaad Ali

**NEW MARKETING OPPORTUNITIES FOR FIXED LINE TELECOMMUNICATION
OPERATORS IN SOUTH AFRICA
SURVEY QUESTIONNAIRE**

SECTION A: BIOGRAPHICAL INFORMATION

This section is for information purposes only. No part of this section will be discussed with anyone and you will remain anonymous.

1.1 Please indicate the position you hold in Telkom by selecting one of the following categories

- Junior Manager 1
- Manager/Specialist 2
- Senior Manager 3
- Executive 4
- Managing Executive 5
- Other (please specify):..... 6

1.2 In which Telkom service organization do you work?

- Technology and Network Services 1
- Information Technology 2
- Government Relations 3
- Sales & Marketing 4
- Strategic Planning 5

1.3 How many years have you worked in the Telecommunications industry?

- | | Telkom SA | Industry |
|---------------------------|----------------------------|----------------------------|
| Less than 1 yr | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| 1yr but less than 2 yrs | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| 2yrs but less than 4 yrs | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| 4 yrs but less than 6 yrs | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |
| 6 yrs and longer | <input type="checkbox"/> 5 | <input type="checkbox"/> 5 |

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2. SECTION B: SOUTH AFRICAN TELECOMMUNICATION BUSINESS ENVIRONMENT

2.1 Please rate the following statements on a scale of 1 to 5. Where 1=Strongly Disagree; 2=

Disagree; 3= Neither agree nor disagree; 4= Agree; 5=Strongly Agree, with the statement.

STATEMENT	RATING			
	Worldwide		In South Africa	
1. The slowdown in the global economy will negatively affect fixed line Telecommunication growth	2003/2004		2005/2006	
2. An improvement in the global economy will take place in:				
3. Business confidence in SA will improve and this will lead to an increase in demand for Telecommunications in SA				
4. Government pressure will force Telkom to provide Telecommunication services in predominantly non profitable areas				
5. Fixed line revenues are being destroyed by mobile telephony				
6. Customers will use the fixed line only for Internet and mobile phones for voice communication				
7. There are profitable Telecom opportunities for Telecommunication Operators in Africa	Fixed line		Mobile	
9. In future Consumers will use mobile Telecommunications in place of fixed line Telephones for voice, data and Internet				
10. Teleworking/Telecommuting (working between office and home) will increase in SA				
11. In order to survive in future Telkom will need revolutionary new converged Information Communication Technology products & services				
12. Telkom is dependent on new technology from suppliers				
13. There are profitable opportunities in Africa for this product/service. Please rate each product according to the scale given above.	Value Added Networks	E-comm	Mobile Telephony	Internet
14. Small Medium Micro Enterprises will grow in SA				
15. Competition will be positive for Telkom				
16. South African businesses are using Information Communication Technology to compete globally				
17. Mobile phones will be used for Internet application in 2 years time				
18. Social groups (e.g. Internet Service Provider Association)) will become more powerful as a force of change in SA				
19. Many future opportunities exist for Telecommunication operators	Fixed line		Mobile	

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2.2 On a scale of 1 to 5 please rate the following macro environment changes in terms of their influence on fixed and mobile Telecommunications in SA. Where 1=No influence at all, 2=Little influence, 3=Unsure, 4=Relative influence; 5=Strong influence.

MACRO ENVIRONMENT FACTORS	RATING	
	Fixed line	Mobile
1. Changes in SA regulatory environment		
2. Changes in Telecommunication technology (example IP)		
3. Changing customer needs		
4. Convergence (integration of voice, data and image)		
5. Economic conditions		
6. Government policies		
7. Competition from I.T companies		
8. Competition from SNO (Second National Operator)		
9. New Telecom players like resellers and Small Medium Micro Enterprises		
10. Globalisation		
11. Power of Social groups such as consumer groups/environment protection groups/Unions		

2.3. Please rank the following Information Communication Technology service providers in SA from of 1 to 13, in order of their market competitiveness, where 1 = Least competitive and 13 = Most competitive.

ICT SERVICE PROVIDERS	RANK
1. Didata	
2. Arivia.kom	
3. CS Holdings	
4. SNO (Second National Operator)	
5. Telkom SA	
6. AST	
7. Comparex	
8. Vodacom	
9. MTN	
10. Cell C	
11. Sentech	
12. Uunet	
13. Other (Please specify):	

2.4 Please use the following scale to rate Telkom’s competitive advantage over its competitors in each of the following dimensions (1 = Extremely weak, 2=Weak, 3=Unsure, 4=Strong, and 5 = Extremely strong)

COMPETITIVE ADVANTAGE	SCALE
1. Organizational processes	
2. Customer service	
3. Technical expertise	
4. New Products and Services	
5. Management capabilities	
6. Quality of employees	
7. Telecommunication Network	
8. Technology	
9. Product and Service distribution channels (example: Customer Service Branches, Call centres)	
11. Culture of organization	
12. Innovation	
13. International business experience	
14. Capability of Information Technology services	

2.5 If Telkom was not identified as the most competitive company in 2.4 above, please use the following scale (1 = Definitely superior to Telkom; 2=Superior to Telkom; 3 Neither superior nor weaker than Telkom; 4= Weaker than Telkom; and 5 = Definitely much weaker than Telkom) to assess the most competitive company as identified above in each dimension listed against Telkom.

Please state name of most competitive company:	
DIMENSION	SCALE
1. Organizational processes	
2. Customer service	
3. Technical expertise	
4. New Products and Services	
5. Management capabilities	
6. Quality of employees	
7. Telecommunication Network	
8. Technology	
9. Product and Service distribution channels (example: Customer Service Branches, Call centers)	
10. Culture of organization	
11. Innovation	
12. International business experience	

2.6 Please rate the following Telecommunication equipment Suppliers according to their importance to Telkom using a ranking of 1 to 5, where 1= Extremely important, 2= Important, 3=Neither important nor unimportant, 4= Unimportant and 5= Not important at all

SUPPLIER	RANK
1. Marconi Communication	
2. Alcatel Altech	
3. Grintek	
4. Cisco	
5. Ericsson	
6. Nortel	
7. Siemens	
8. 3 Com	
9. Spescom	
10. Sun Microsystem	
11. Other (please specify):	

3. SECTION C: NEW MARKETING OPPORTUNITIES FOR FIXED LINE TELECOMMUNICATION SERVICE PROVIDERS

3.1 Please rate each of the following statements on a scale of 1 to 5. Where 1=Strongly Disagree; 2= Disagree; 3= neither agree nor disagree; 4= Agree; 5=Strongly Agree, with the statement.

STATEMENT	RATING	
	SA	World
1. Change (for example, convergence, economic conditions, customer needs, etc.) in the SA business environment are creating new Marketing opportunities for fixed line Telecommunication Service providers		
2. Telecommunication customer needs are becoming more sophisticated in SA		
3. Fixed line Voice revenues will increase in future in SA		
4. Electronic financial data services offer good revenue opportunities for fixed line Telecommunication operators in SA		
5. In the near future data services revenues will overtake voice revenues in SA		
6. Telkom should provide wholesale products and services		
7. In the future Cellular and wireless will replace fixed line communication in SA		
8. Wireless Telecommunications offers more opportunities for service providers than fixed line services in SA		
9. Value added network products and services must be provided by Telkom to increase fixed line revenues		
10. Telkom should explore cable broadcasting opportunities (e.g. cable TV for the future)		
11. Telkom should provide I.T. services to customers		

3.2 How important do you think it is for fixed line Telecommunications service providers to find new revenue generating products and services? Please rate according to the following scale.

1. Definitely not important
unimportant
2. Not important
3. Neither important nor unimportant
4. Important
5. Extremely important

Not important at all	Relatively important	Neutral	Important	Extremely important
1	2	3	4	5

3.3 Please rate the following challenges in terms of importance for Global fixed and mobile Telecommunication service providers in the future on a scale of 1to 5, , where 1= Extremely important, 2= Important, 3=Neither important nor unimportant, 4= Unimportant and 5= Not important at all

FUTURE CHALLENGES	RATING	
	Fixed line	Mobile
1. Customer Relationships		
2. Internet		
3. Deregulation		
4. Competition		
5. Globalisation		
6. Convergence of Information & Communications		
7. Developing New network value added Products & Services (e.g. LAN, WAN, Network security, Data Centres, etc.)		
8. Managing Relationships with Customers		
9. Finding new ways to create value for customers		
10. Internet		
11. Deregulation of the Telecommunication industry in SA		
12. Competition in the SA Telecommunication industry		
13. Globalisation		
14. Convergence of Information Technology & Communications		
15. Developing New Products & Services		
16. Retaining skilled employees that create value		
17. Customer Relationship products and services		
18. Electronic Commerce products and services		
19. Mobile Commerce products and services		
20. Providing Application Service Products and services		
21. Networking		
22. ISP services		
23. Customer Relationship products and services		
24. Electronic Commerce products and services		
25. Mobile Commerce products and services		
26. Electronic financial processing services (providing services that enable electronic financial transactions to be carried out)		
27. Data Centres (providing storage space for data)		

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28. Voice services		
29. Network Security		
30. Wireless Local Area Networks		
31. Wireless communications (example, cellular services)		
32. Cable broadcasting		
33. Provide Information Technology services (e.g. shared IT services, IT skills, etc.)		

3.4 Please rank the following customer groups in order of future contribution to SA Telecommunication service providers profitability using a ranking of 1 to 6, where 1 = lowest contribution and 6 = highest contribution.

FUTURE MARKET SEGMENT CONTRIBUTION TO PROFIT	RANK	
	Fixed line	Mobile
1. Residential		
2. SMME's		
3. Corporates		
4. Resellers (buy wholesale and resell to end users)		
5. Business		
6. International		
7. Government		

3.5 When do you think remote working (also called working from home) will become a norm in SA? (Please mark one choice only)

(1) Less than 1 year	(2) 1 to 2 years	(3) 3 to 5 years	(4) 5 years +	(5) Never

3.6 Please rate each of the following industry areas in terms of importance as a source of revenue for Telecommunication service providers in SA for the future? Where 1= not important; 2= important; 3= neither important nor unimportant; 4=important and 5= very important. Fixed and mobile

INDUSTRY SECTOR SOURCE FOR FUTURE REVENUE	RATING	
	Fixed line	Mobile
1. Banking		
2. Mining		
3. Insurance		
4. Retailing		
5. Health		
6. Building		
7. Local Government		
8. Manufacturing		
9. Other (please specify):		

3.7 Which of the following factors in your opinion will have the greatest influence on the four types of organisations in South Africa in the future? Scale 1-5 (1 having least influence and 5 having highest influence)

DEFINITION: (Corporate=Businesses that have a turnover of more than R100 million. Business= Organisations that have an annual turnover of R11 million to R100 million and SMME are businesses that have an annual turnover of less than R11 million. Government= refers to all Government departments in South Africa).

FACTORS OF INFLUENCE ON SA BUSINESS	RATING			
	Corporate	Government	Business	SMME
1. Competition				
2. Government Regulations				
3. Customer sophistication/changing needs				
4. Internet (e.g. e-commerce/IP telephony, etc)				
5. Information Communication Technology				
6. Economic conditions				
7. Competing Globally				
8. Other Please specify:				

3.8 Which of the following Information Communications Technology products and services do you think will be important to South African organisations in the future? Please rate in order of importance for each organisation using a scale of 1 to 5, where 1= Extremely important, 2= Important, 3=Neither important nor unimportant, 4= Unimportant and 5= Not important at all

ICT PRODUCTS FOR SA ORGANISATIONS IN FUTURE	RATING			
	Corporate	Government	Business	SMME
1. Call centres				
2. Data Centres				
3. Network Management				
4. Internet Services				
5. End to End E-commerce solutions				
6. Virtual Private Networks				
7. Data services				
8. Networking services				
9. Multimedia Services				
10. Wireless Services				
11. Voice services				
12. Messaging services				

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3.9 Please rate the following ICT (information Communication Technology) needs in order of current importance to the four types of South African organisations? Scale 1 to 5, where 1= Extremely important, 2= Important, 3=Neither important nor unimportant, 4= Unimportant and 5= Not important at all

ICT NEEDS OF SA BUSINESS	RATING			
	Corporate	Government	Business	SMME's
1. Customer Relationship Management				
2. Internet services such as web portals/web sites/web transacting				
3. Mobile services				
4. Service Level Agreements				
5. System Security				
6. System integration				
7. Wide Area Networking				
8. Voice network				
9. Call centres				
10. Remote LAN				
11. New delivery channels				
12. ATM (Automated Teller Machines)				
13. POS (Point of Sale)				
14. Branches teller automation				
15. Broker/Agent support				
16. Electronic commerce				
17. Electronic Learning (providing desktop training to employees)				
18. Information Technology services				

3.10 Do you think Telecommunications services providers should provide the following products and/or services to customers?

PRODUCTS AND SERVICES	No	Yes	Don't know
1. Smart Cards for financial transacting			
2. Digital cable TV			
3. Electronic Telephone transacting			
4. Call centres			
5. Video conferencing			
6. Electronic Data Interchange			
7. ATM's (Automated Teller Machines)			
8. Data Storage/Hosting			
9. Electronic financial processing (processing financial transactions)			
10. Electronic Bill Processing (processing bills electronically on behalf of business customers)			
11. Fixed mobile services			

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3.11 Telecommunications service providers should provide the following services/products? Please rate each statement on a scale of 1 to 5, where 1 = Strongly disagree and 5 = Strongly Agree

PRODUCT/SERVICE	RATING			
	Corporate	Government	Business	SMM E
1. Total network solutions provider				
2. Technology partner/provide only some services or products				
3. Provide project management support				
4. Provide system integration				
5. Project management				
6. Web development (total solution, e.g. total e-commerce solution)				
7. Other: (Please specify):				

3.12 Please rate the following Telecommunication products and services in order of future importance for Telkom to provide. (Scale 1 to 5). where 1= Extremely important, 2= Important, 3=Neither important nor unimportant, 4= Unimportant and 5= Not important at all

FUTURE PRODUCTS/SERVICES	RATING			
	Corporate	Government	Business	SMME
1. Customer Relationship Management systems				
2. Internet services such as web portals/web sites/web transacting				
3. Mobile services				
4. Service Level Agreements				
5. Fixed line Voice services				
6. System Security				
7. System integration				
8. Wide Area Networks				
9. Mobile voice/data/Internet network services				
10. Call centres				
11. Wireless LAN				
12. New delivery channels				
13. Electronic financial processing services				
14. POS (Point of Sale)				
15. Branches teller automation				
16. Electronic Broker/Agent support				
17. Information Technology services (e.g. distributed computing)				

3.13 Do you think that the Telecommunication market in South Africa will open up to Telecommunication resellers that buy wholesale from network operators and sell retail to end users?

- Yes 1
- No 2
- Unsure 3

3.14 If your answer to question 3.13 above was no please skip this question and go to question 3.15. If you answered yes to question 3.13 above please indicate how many resellers you think will be in the South African Telecommunication market by 2005. Please select one of the following by placing an X next to your choice.

POSSIBLE NUMBER OF RESELLERS	
(1) 1 – 10	
(2) 11 – 100	
(3) 101 – 150	

3.15 Please check each of the statements below and state your agreement or disagreement that Telkom should provide each of the products/services listed to the following SA organisations, using a scale of 1 to 5, where 1= strongly disagree, 2=Disagree, 3=Neither agree nor disagree, 4=Agree and 5= strongly agree

PRODUCTS/SERVICES TELKOM SHOULD PROVIDE	RATING			
	Corporate	Government	Business	SMM E
1. Customer Relationship Management				
2. Internet services such as web portals/web sites/web transacting				
3. Mobile services				
4. Wireless Networks				
5. Electronic financial systems				
6. System Security				
7. System integration				
8. Wide Area Network				
9. Voice networks only				
10. Call centres				
11. Remote LAN				
12. Fixed/Wireless services				
13. POS (Point of Sale)				
14. Supply Chain Automation systems				
15. Fixed mobile services				

3.16 The following competitors will threaten Telkom the most (please rate according to scale: where 1= strongly disagree, 2=Disagree, 3=Neither agree nor disagree, 4=Agree and 5= strongly agree

COMPETITOR	RATING
1. Second National Operator (SNO)	
2. Value Added Network Services providers (VAN's)	
3. Cellular/Mobile Operators	
4. Sentech	
5. Other (please specify):	

3.17 Telkom should provide the following wholesale products and services: Please state your agreement with this statement using a scale of 1 to 5 where, where 1= strongly disagree, 2=Disagree, 3=Neither agree nor disagree, 4=Agree and 5= strongly agree

WHOLESALE PRODUCT/SERVICE	RATING
1. Only Infrastructure	
2. Only Bandwidth	
3. E-Commerce	
4. Internet Services	
5. Data Services	
6. Networking services	
7. All of the above	
8. Other (please specify):	

4. SECTION D: STRATEGIC MARKETING

4.1 Using a scale of 1 to 5, please rate Telkom's capabilities for each of the following factors, where 1 = Definitely a major weakness, 2=Weakness, 3=Neither a weakness nor strength, 4= Strength and 5 = Major strength.

TELKOM STRENGTH/WEAKNESS	RATING
1. Employee's skills	
2. Network infrastructure	
3. Market reputation (Brand)	
4. Efficiency and Effectiveness in delivering its products and services	
5. Marketing & Sales skills	
6. Teamwork (across service organization)	
7. Customer service	
8. I.T. Services capability	
9. Products & Services	

4.2 Please select one of the following definitions that best describes the term “strategy” according to your understanding

DEFINITION	CHOICE
1. Is used to explain the underlying principles for an organisations existence	
2. Relating to a process in which an organisation scans and analyses its environment and resources to achieve the following: Identify and select opportunities in terms of the market that it services and the products it uses to serve them with, and, evaluate its internal resources and contrives decisions for resource investment to secure identified objectives.	
3. Is the large scale planning and direction of operations	
4. Is a set of plans that are constructed in response to what adversaries might do	
5. Is the pattern of major objectives, purposes, or goals and essential policies and plans for achieving those goals	
6. Involves planning, organising, directing and controlling of strategy-related decisions and actions of an enterprise	
7. Is a pattern or plan that integrates an organisation’s major goals, policies, and action sequences into a cohesive whole	
8. Is the planning actions that are taken by an organisation in response to its environment	
9. Is a “fit” with organisational or environmental factors and the psychological profile of its managers	
10. Is proactively thinking, engaging, shaping and crafting the organisations future by challenging the constructs of traditional paradigms and changing the rules of engagement	

4.3 Telkom has a clearly defined strategy that is understood by its management. Please state your agreement with this statement using a scale of 1 to 5, where 1 = Strongly disagree; 2=Disagree; 3=Neither agree nor disagree; 4= Agree and 5 = Strongly agree)

1	2	3	4	5

4.4 Telkom should develop mobile services. Please state your agreement with this statement using a scale of 1 to 5, where 1 = Strongly disagree; 2= Disagree; 3=Neither agree nor disagree; 4= Agree and 5 = Strongly agree)

1	2	3	4	5

4.5 Telkom should compete on the following aspects of competitive strategy. Please state your agreement with this statement using a scale of 1 to 5, where 1 = Strongly disagree, 2=Disagree; 3=Neither agree nor disagree; 4=Agree and 5 = Strongly agree)

COMPETITIVE STRATEGY	RATING
Being the lowest cost operator	
Differentiating itself from competitors (on service, product quality)	
Focusing on niche markets (like Corporates & Business)	
Preamptive move (be a first mover in new markets and new products)	
Revolutionary (create new products and services that change the rules of the industry)	
Synergy (working closely across service organisations to deliver value to customers)	
All of the above	
None of the above	

4.6 Please rate Telkom relationships with the following stakeholder groups using a scale of 1 to 5, where 1 = Extremely poor; 2=Poor; 3 Neither good nor poor; 4=Good and 5 = Very good)

STAKEHOLDER GROUP RELATIONSHIPS	RATING
1. Employees	
2. Suppliers	
3. Shareholders	
4. South African Communities	
5. Department of Communications	
6. Customers (Residential)	
7. Customers (Business & Corporates)	
8. Customers (government)	

4.7 Telkom knows the kind of organization it wants to be in 10 Years from now. (Please indicate whether you, 1-Strongly disagree; 2=Disagree; 3=Neither agree nor disagree; 4=Agree; 5= Strongly agree)

1 Strongly Disagree	2. Disagree	3. Neither agree nor disagree	4. Agree	Strongly agree

4.8 Using a scale of 1 to 5, where 1 = extremely poor and 5 = excellent; please rate Telkom on each of the following statements:

SUSTAINABLE COMPETITIVE FACTOR	RATING
1. Futuristic in its thinking	
2. Ability to create new products and services that change the industry	
4. Proactivity	
5. Customer relationships	
6. Treatment of employees	
7. Organizational Leadership	
8. Decision making speed	
9. Management understanding of Telkom strategy	
10. Development of new business areas	

THANK YOU FOR YOUR TIME AND KINDNESS IN COMPLETING THIS QUESTIONNAIRE