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THE DEVELOPMENT OF NEW SERVICES

**NEW PRODUCT DEVELOPMENT PRACTICES
IN THE FINANCIAL SERVICES INDUSTRY:
A MODEL OF SUCCESSFUL DETERMINANTS FOR NPD**

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ABSTRACT

THE DEVELOPMENT OF NEW SERVICES

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Building Societies

The combined environmental effects of technological change, increasing competition, new legislation and increasingly demanding consumers have created pressure within the financial services industry for change. One outcome has been a proliferation of new products in the marketplace. This research explores new product development within one subset of this industry -- building societies.

By combining the new product development, service marketing and financial services literature, a foundation has been developed for an empirical study into the development practices and the characteristics of successful and unsuccessful new products. The determinants of success and failure for new product development have been examined utilizing a comparative methodology, and subsequently a discriminant model has been developed that successfully classifies successful and unsuccessful new products.

By determining how new products are actually developed, the findings support previous claims that intangibility, inseparability, heterogeneity and perishability do have an effect on the development process. Further, the level of sophistication of the development activities is lower than in previously reported research. Notable variations from the development process for tangible new products are the inclusion of system design, system testing and personnel training stages. The majority of societies have been found to lack strategic integration of the development process, to apply different measures of success and to prefer qualitative market research techniques over quantitative approaches. As well, considerable variation exists in the organizational approaches used to manage the process, although organizational related variables were found to have a strong impact upon the predictability of a successful outcome for a new product.

TABLE OF CONTENTS

	Page
1. INTRODUCTION	1
1.1 Introduction	1
1.2 Success and Failure Rates For New Products.	1
1.3 Financial Services Industry	4
1.4 Research Problems	5
1.5 The Research Questions	6
1.6 Definitions	7
1.6.1 Service	7
1.6.2 Product	8
1.6.3 Financial Products	8
1.6.4 Development Process	9
1.7 Delimitations of the Study	9
1.8 The Importance of the Study	10
2. NEW PRODUCTS	12
2.1 Introduction	12
2.2 New Products Defined	13
2.3 New Product Development Models	14
2.4 Organising for New Product Development	36
2.5 Conclusion	39
3. SERVICE MARKETING -- A REVIEW	40
3.1 Introduction	40
3.2 Differences Between Goods and Services	41
3.3 Intangibility	42
3.4 Inseparability	46
3.5 Heterogeneity	49
3.6 Perishability	52
3.7 Opposition to Treating Services Differently	57
3.8 Empirical Findings	60
3.8.1 Summary	64
3.9 The Growth of Service Marketing	64
3.10 The Effect of Service Traits on New Product Development	67
3.10.1 Intangibility	67
3.10.2 Inseparability	70
3.10.3 Heterogeneity	71
3.10.4 Perishability	72
3.10.5 Summary	73
3.11 Status of New Service Development Literature.	74
3.12 New Service Development Process Models	77
3.12.1 Shostack	77
3.12.2 Donnelly et al and Johnson et al	79
3.12.3 Scheuing and Johnson	81
3.13 Conclusion	83
4. THE PERSONAL FINANCIAL SERVICES INDUSTRY	86
4.1 Introduction	86

	Page
4.2 Clearing Banks	88
4.3 Savings Banks	89
4.4 Insurance Companies	90
4.5 Finance Companies	90
4.6 Girobank	91
4.7 Building Societies	92
4.7.1 The First 200 Years	92
4.7.2 Post 1980	95
4.8 Environmental Change and New Service Development	102
4.8.1 Introduction	102
4.8.2 Legislative Change	104
4.8.2.1 The Building Societies Act	105
4.8.2.2 The Financial Services Act	107
4.8.3 Competition	109
4.8.4 Technology	110
4.8.5 The Consumer	112
4.9 Environmental Change and New Services: An Exploratory Study	114
4.9.1 Methodology	114
4.9.2 The Findings	115
4.10 Literature On The New Service Development Process	119
4.11 Conclusion	123
5. METHODOLOGY	125
5.1 Introduction	125
5.2 Methodological Approach	125
5.3 Research Questions	131
5.4 Hypotheses	132
5.5 Success and Failure	143
5.6 Propositions	154
5.7 Sample Framework	157
5.8 Data Collection Instrument and Method	161
5.8.1 Phase One	161
5.8.2 Phase Two	162
5.9 Pilot Study	163
5.10 Survey Response	165
5.11 Data Analysis	167
5.12 Summary	169
6. RESEARCH RESULTS	170
6.1 Introduction	170
6.2 Results of Hypothesis Tests	171
6.2.1 Hypothesis No. 1	171
6.2.2 Hypothesis No. 2	175
6.2.3 Hypothesis No. 3	177
6.3 Process Stages	179
6.3.1 Hypothesis Nos. 4, 5 & 6	179
6.3.2 Hypothesis No. 7	181
6.3.3 Hypothesis No. 8	185
6.3.4 Hypothesis No. 9	190

	Page
6.3.5 Hypothesis No. 10	195
6.3.6 Hypothesis No. 11	197
6.3.7 Hypothesis No. 12	201
6.4 Summary	202
7. PREDICTING SUCCESS AND FAILURE	203
7.1 Introduction	203
7.2 Measures of Success	203
7.2.1 Hypothesis No. H13	203
7.2.2 Hypothesis No. H14	207
7.3 Analysis of the Predictive Variables For Success & Failure	208
7.4 Univariate Analysis	209
7.5 Multivariate Analysis	217
7.6 Reliability	218
7.7 Factor Analysis	220
7.7.1 Variables	220
7.7.2 Factor Method	223
7.7.3 Factor Extraction	225
7.7.4 Factor Analysis Results	227
7.7.5 Factor Scores	233
7.8 Discriminant Analysis	234
7.8.1 Hypothesis H15	234
7.8.2 Derivation	235
7.8.3 Forced Entry Approach	236
7.8.4 Wilks Stepwise Analysis	242
7.8.5 Wilks Stepwise Results	243
7.8.6 Validation	247
7.8.7 Interpretation of Discriminant Function	249
7.9 Propositions	251
8. CONCLUSION AND IMPLICATIONS	255
8.1 Purpose of the Study	255
8.2 Implications for New Service Development Theory	256
8.2.1 New Product Process Implications	257
8.2.2 Service Marketing Implications	259
8.3 Implications for Organisational Theory	261
8.3.1 Service Marketing Implications	262
8.4 Implications for Financial Services Theory	264
8.5 Limitations of the Research	265
8.5.1 Conceptual	265
8.5.2 Methodological	266
8.5.3 Summary	267
8.6 Future Research	268
8.7 Conclusion	269
APPENDIX	271
A. Building Society Statistics	272
B. National & Provincial Building Society (N&P)	275
C. Survey Questionnaire	313
D. T-Test Results For Question Six	328
E. Item-Total Correlations for NPD Activities	329

	Page
F. Occurrence of NPD Activities	330
G. NPD Activities Comparison	332
H Means For The Success & Failure Variables . . .	333
I Commnality Values For The Final Factor Solution	339
BIBLIOGRAPHY	340

List of Tables

Table	Page
1.1 Financial Services Contribution to GDP and Employment	5
2.1 New Product Categories	15
2.2 New Product Process Activities	31
2.3 Types of Organisational Structures For NPD	37
3.1 Chronological Listing of References Addressing the Unique Characteristics of Services	55
3.2 Recently Published Texts on Service Marketing	66
4.1 Progress of Building Societies From 1895 to 1980	95
4.2 Building Societies: Evolution in the 1980's	96
4.3 Market Shares in Personal Sector Liquid Assets	99
4.4 Shares of the U.K. Mortgage Market	102
4.5 Financial Product Innovations	103
4.6 Summary of New Provisions Under BSA 1986	107
4.7 Total New Service Launches	116
4.8 New Service Launches By Building Societies	117
4.9 New Service Launches By Banks	117
4.10 New Service Development	119
5.1 Survey Response Rates	166
6.1 New Product Orientation	172
6.2 Affect of Assets on Means	173
6.3 New Product Idea Source	174
6.4 New Product Orientation by Assets	174
6.5 Strategic Integration of NPD	176
6.6 Types of New Product Development Process in Use.	178
6.7 Group Versus Individual NP Screening	180
6.8 Preliminary Market Assessment Techniques	182
6.9 Correlation Matrix For Preliminary Assessment Techniques	183
6.10 Preliminary Market Assessment By Asset Base	184
6.11 Types of Market Research Used	187
6.12 Frequency of Market Research Techniques by Assets	189
6.13 New Product Development Activities	192
6.14 Reported Success Rates	196
6.15 Comparative Levels of Success	197
6.16 Approaches to Managing New Product Development	198
6.17 2-Tail Probabilities of the T-Test	199
6.18 Effect of Asset Size on NPD Management	200
6.19 Average Years of Experience	201
7.1 Most Important Performance Criteria For Success.	205
7.2 New Product Contribution to Sales and Gross Profit	206
7.3 New Product Failure Rates	208
7.4 Variable Results for Success and Failure	211
7.5 Scheffé Tests for Success and Failure	216
7.6 Reliability Analysis for Success and Failure Variables	219
7.7 Factor Eigenvalues and Variance	226
7.8 The Results of the Factor Analysis	229
7.9 Discriminant Function Coefficients (Forced Entry)	238
7.10 Canonical Discriminant Function	239

List of Tables

Table	Page
7.11 Classification Results (Forced Entry)	241
7.12 Discriminant Function Coefficients (Stepwise). . .	243
7.13 Canonical Discriminant Function	245
7.14 Classification Results (Stepwise)	246
7.15 Classification Results (U-Method)	249
7.16 Stepwise Coefficients and Structure Correlations	250

List of Figures

Figure		Page
2.1	Booz, Allen and Hamilton's NPD Models	19
2.2	Urban and Hauser NPD Model	22
2.3	Wind's NPD Process	24
2.4	Crawford's NPD Model	26
2.5	Risk Management Model	27
2.6	Cooper's Seven-Stage Process Model	29
2.7	Stage-Gate New Product Process	33
3.1	Summary of Principal Marketing Issues Created by the Unique Traits of Services	47
3.2	Scale of Elemental Dominance	59
3.3	Shostack's New Service Development Model	78
3.4	New Service Development Models	80
3.5	Scheuing & Johnson New Service Development Model.	82
4.1	Percentage Change in Assets and Employees	97
4.2	Number of New Branches	98
5.1	A Combined Deductive and Inductive Model127
5.2	Research Methodology and Data Analysis129
5.3	Definitions of Success/Failure in Tangible NP Research144
5.4	Discriminating Success Factors For Tangible Products151
5.5	Issues Affecting NPD In A Service Setting153
5.6	The Interaction Process in New Product Development155
5.7	Selection of a Homogeneous Sample Population160
6.1	Comparison of NPD Activities194

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CHAPTER 1

INTRODUCTION

The critical importance of product development to competitive success is unquestionable. However, despite extensive studies on what to do, managers are continually seeking to improve their procedures. The need for further research in this area is urgent.

Johne, Axel and Snelson, Patricia, 1989

Introduction

The continual development of new products is generally accepted as a requirement for the growth and prosperity of companies in today's marketing environment. Consequently, the literature is rich with information on the various aspects of developing tangible new products. It is, therefore, reasonable to expect that in the service industries, new product development is also considered an important component of the continued prosperity of a firm. However, the literature on service marketing and, in particular, new service development is sparse [Easingwood 1986 and Scheuing and Johnson 1989b]. This research will help fill some shortcomings in this area by examining new service development in the financial services industry. The principal objective of the study is to create a predictive model that incorporates the unique characteristics of services and discriminates the success factors for new services.

Success and Failure Rates For New Products

Successful new products are a prerequisite for a

company's long-term profitability and future expansion [Cooper and Kleinschmidt 1990]. In the past two decades, an increasing number of products have been launched each year [Lin 1986]. This trend can be expected to continue as product life cycles continue to decrease due to mounting external pressures, such as increasing diffusion of new technology, heightening competition and rapidly changing consumer needs. Correspondingly, the high cost to companies of adapting to these changes in the marketplace creates increasing pressure to develop and successfully launch new products at a still more rapid pace to remain competitive [Alder, Riggs and Wheelwright 1989].

It is expected that new product development will be increasingly relied upon by managers to generate profits. In 1986, for example, it was estimated that 32 per cent of corporate profit was generated by products that did not exist five years previously [Cooper 1987b]. Similar figures have also been reported by Booz, Allan and Hamilton [1982].

It is not surprising, therefore, that given the activity level of new product development and its increasing importance to management, the literature contains an abundance of empirical research dealing with the success and failure of physical new products [for example Rothwell et al. 1974; Cooper 1979a,b; Booz-Allen and Hamilton 1982; Maidique and Zirger 1984; Cooper and Kleinschmidt 1986, 1987c, 1990 and Johne and Snelson 1988d].

The findings, however, do not reflect a strong new product success rate. Despite the continued surge in development activity and a number of research efforts into the causes of success and failure, there appears to have been little improvement in the success rate of new products launched over the past 30 years.

Jones [1985] has stated that a problem continually plaguing today's management is the high failure rates of new products. However, from predominantly U.S. based studies, the actual failure rate for new products is unclear. Booz, Allan and Hamilton [1968] suggested that between 30 and 40 percent of new consumer and industrial goods fail. Crawford [1977], in a review of published failure rates from earlier sources, found that estimates of failure ranged from a low of 20 percent in a study conducted by the U.S. Conference Board to a high of 90 percent in another study by the U.S. Department of Commerce. The 1980's have brought forth no empirical evidence of an improvement in success rates.

A second Booz, Allan and Hamilton [1982] report noted no improvement in the success rate of new products since their study 14 years earlier. Only 65 percent of commercialized products were classified as successes. This performance record has been further confirmed by Lin [1986] in another U.S. based study which shows a 36 percent failure rate. Cooper [1982], in a Canadian study, reported a 41 percent failure rate, while Edgett, Shipley and Forbes [1990] reported a failure rate of 45 percent among a sample

of British firms. The general consensus of research to date is that the failure rate for physical new products is more than one-third of the total.

Although this discussion is widespread as it applies to new physical products, very little mention has been made of success/failure rates for new product development in service industries. This is consistent with the scarcity of literature on new product development in these industries. The Booz-Allen and Hamilton study of 1982 included services but did not separate service industries from others in the analysis. Davis [1988] considered a successful new service, but analyzed it from the perspective of low technology versus high technology, rather than in an intangible versus tangible product context.

As demonstrated above, new physical products are expected to play an increasing role in the future profitability of firms that produce them, and the level of new product development activity is expected to continue increasing [Booz-Allen and Hamilton 1982; and Cooper 1987b]. If firms can improve their success rates, then they should be able to gain strong competitive advantages in an increasingly competitive environment. The same is true of firms in service industries.

Financial Services Industry

The financial services industry makes a significant contribution to the economy of the United Kingdom. During

the 1980's, the industry experienced a period of strong growth, which continued uninterrupted even during the economic turbulence experienced in the earlier part of the 1980's.

As Table 1.1 illustrates, the economic importance of this industry is reflected in its increasing contribution to the Gross Domestic Product. In 1988, 19.1 percent of the GDP was accounted for by financial services, a 66 percent increase over a ten year period. Further, employment in this sector accounted for 11.2 percent of the employed workforce in 1988, and it has contributed 959,000 new jobs over a ten year period beginning in 1978.

TABLE 1.1

FINANCIAL SERVICES CONTRIBUTION TO GDP AND EMPLOYMENT

Year	GDP* (000,000's)	Total GDP (%)	Number of Employees (000's)	Total Employed (%)
1978	17,061	11.5%	1,569	6.9%
1979	21,019	12.2	1,647	7.1
1980	24,776	12.4	1,695	7.4
1981	27,962	12.8	1,739	7.9
1982	32,068	13.5	1,798	8.4
1983	36,056	13.9	1,875	8.9
1984	40,188	14.4	1,969	9.3
1985	47,465	15.6	2,083	9.7
1986	55,590	17.3	2,202	10.2
1987	63,903	18.1	2,337	10.7
1988	76,922	19.1	2,528	11.2

* The contribution to the Gross Domestic Product before providing for depreciation but after providing for stock appreciation.

Source: CSO Blue Book 1989;
CSO Annual Abstract of Statistics 1990

Research Problems

The financial services industry is in a period of

rapid change. Throughout the 1980's and into the 1990's deregulation, changing consumer needs, increased competition and new technology have placed pressure on financial institutions to adapt their marketing practices [Hooley and Mann 1988 and Edgett and Thwaites 1990a,b].

As a result, the process of developing and launching new services has achieved greater importance. This is evidenced by the increasing number of new financial services which have been launched over the last few years.

The marketing literature, while treating the development of physical products in depth, has failed to apply the same rigour to new service development. This research is designed to help fill the void in the literature. It examines the financial services industry and addresses some of the issues in new product development that are unique to service industries.

These issues revolve around several questions: Is the development process inherently different for new services than it is for physical products? What is the development process and organisational structure of new service development? What contributes to the success and failure of new services? How do these factors, when combined with the changing market environment, affect the development process? Can a predictive model be developed that will enhance the success ratio for new service development?

The Research Questions

This research proposes to examine the existing service

development process in financial institutions and to develop a predictive model. This model is intended to improve the success ratio for new service development and, thereby, increase the likelihood of successful market launches.

The Research Questions

1. What is the current approach used for the new product development process for building societies as a subset of the financial services industry?
2. Is the development process different for this sector of the service industry versus previously reported new product development processes?
3. What are the current organisational structures used for new product development in building societies?
4. What traits are inherent in the successful development of a new service within the building society sector?
5. What traits are inherent in the unsuccessful development of a new service within the building society sector?
6. How do the traits of successful and unsuccessful new products relate to and/or affect the new product development process?

Definitions

For the purpose of this research the following terms are defined:

Service The term service is used in the context of normal usage as defined by Kotler [1988]:

A **service** is any act or performance that one party can offer to another that is

essentially intangible and does not result in the ownership of anything. Its production may or may not be tied to a physical product.

Product The use of the word 'product' as a generic term has been used by authors involved in new product development and for service marketing. For example, Urban and Hauser [1980] and Lovelock [1984b] both use the term product in the generic sense to refer to services. This practise is now accepted generally in the literature, as Buttle [1989] has clearly stated:

The generic term 'product' is increasingly used to encompass both goods and services.

The use of product as a generic term was further confirmed during exploratory interviews by the author with marketing managers in financial service institutions.

Thus the word "product" will be used as a generic term to describe the various offerings of the financial services industry, as Meidan [1984] has stated:

The 'products' of a bank are essentially services.

Financial Products Services that are offered by financial institutions are considered to be financial products. More specifically, Meidan [1984] has defined products:

...as a service or package of services that: (i) is typically provided for any one customer by one bank only (that is the customer does not normally purchase different parts of the package from different banks), and is aimed at a particular market.

This definition will be expanded to include all

financial services institutions, not just banks.

Development Process Urban and Hauser [1980] have described a development process as a sequential decision process. This definition will be expanded upon to be defined as a strategic decision process consisting of a number of detectable stages. As "product" and "service" are interchangeable words, the terms "new product development process" and "new service development process" are also interchangeable in meaning.

Delimitations of the Study

This research will focus only on the financial services industry. By restricting the population of the study to this part of the service sector, a more specific analysis will ensue. The population base will be further restricted to the United Kingdom. Although financial services comprise a global industry, variations due to culture and government regulations, combined with a lack of previous research in this area, present problems in cross-cultural studies that are outside the boundaries of this research.

This study is further restricted to examining new service development for consumer financial products and will not address new service development for commercial financial services.

Thus, the predictive model will be restricted; but it is believed that, given the sparse background support in the literature and the pioneering nature of this study, a

narrow focus will produce results that are more beneficial than if the research base was broadened.

The Importance of the Study

The importance of this research can be supported from two perspectives: The obvious need for service marketing research, and an evolving financial services environment.

To date, very little research has been conducted into service marketing, and even less has been conducted on the application of new service development models. This is evidenced in a recent article by Philip Burger, which reported on a colloquium of academics and practitioners in new product development. One of the topics considered was service marketing, and the issue was: "Are the processes involved in developing new services the same as those for products?" [Burger 1989].

The financial services industry in the U.K. is undergoing rapid change, which can be attributed to two main causes: deregulation and competition. Recent changes to the Building Societies Act (1986) and the Financial Services Act (1988) have permitted banks, building societies, insurance companies and other financial institutions in the United Kingdom to conduct business in markets that were previously restricted domains. The level of competition has, thus, increased significantly among domestic companies; while at the same time, increased foreign competition has placed additional pressure on the market place.

These changes have placed pressure on marketing managers in the financial sector to develop and launch new arrays of service products in order to expand existing markets and to defend against competitive movement. Thus, marketing departments in financial institutions are facing the same problem marketing managers face in the more traditional areas of product development: The high cost of new service development, and the risk of new service failures.

This research will address some of the key issues, or factors, in the development of new financial services. These factors will be used to create a new service model that will help increase management's success rate in developing new services. This will serve to reduce service development costs and improve the ability of financial institutions to compete.

CHAPTER 2

NEW PRODUCTS

The development and introduction of new products to the marketplace are vital to corporate profitability and growth.

Booz, Allen and Hamilton [1982]

Introduction

The development of new products, and the field of innovation in general, has for some time attracted considerable attention from scholars and practitioners alike. As a result, the scope of literature on this subject area is enormous. By 1967, over 1,200 articles on these topics had been identified. This number increased to approximately 2,750 publications by 1977; and by 1983, there were over 3,000 [Rogers 1967, 1983 and Rogers, Williams and West 1977]. This high level of activity has continued into the 1990's. Unfortunately, the equally high level of new product failures, discussed in the previous chapter, indicates that the diffusion of this research to practitioners has not been effective.

The focus of this chapter, however, is not to provide a comprehensive review of the new product literature, but to present necessary background for research into the new product development process for financial services. To accomplish this, some of the principal works produced in three specific areas will be examined. First, the question of what constitutes a "new" product will be discussed; this will be followed by an analysis of the major models for the

new product development process; finally, this chapter will explore the various organisational structures that can be used in developing new products.

New Products Defined

In an inquiry into new product development, the starting point must rest with a definition of the term "new". As is the case in many terminology issues, however, the literature does not demonstrate unanimous agreement on a definition.

One of the earliest definitions was provided by Ansoff [1957] in his well-known matrix for a diversification strategy and later adopted by Booz, Allen and Hamilton [1968]. Their thesis was that new products can be examined from two perspectives: the degree of market newness, and the degree of technological newness. This led to a classification of four types of new products: improved products, market extensions, product line extensions and innovative diversification.

Wasson [1960, 1971, 1974] has considered classifying new products from the consumer's perspective. However, as Crawford [1983] has noted, this approach leads to the identification of classes that are not related to the actual product; for example, credibility of benefits.

Another approach to a categorization scheme, this time from a product perspective, has been presented by Calantone and Cooper [1981]. Cluster analysis was used to identify nine groups of new product projects, each with a success

and failure ratio. However, this approach is more appropriate for predicting the success or failure of a new product than for defining the term, "new".

A more firm-specific viewpoint has been presented by most other authors, which has perhaps been most simply, yet most comprehensively, put by Johnson and Jones [1957], Booz, Allen and Hamilton [1968], and later stated by Crawford [1983]: "A new product is one which is new to the firm". This definition can be expanded to include major changes in concept, product or package [Van Camp 1968].

Heany [1983] expands on the firm-specific view by recognising that different types of new products will incur different degrees of market risk. A spectrum is used, which is anchored at each end with low and high, representing the extent of the product-innovation. This spectrum, however, incorporates a very broad definition of "new", which results in a blurring of the distinction between when something is a new product for the company and when it is a completely new venture.

Perhaps the most well-known definition was presented in 1982 by Booz, Allen and Hamilton. Their six types of new products encompass the earlier, firm-specific variations put forth by Gerlack and Wainright [1968], Marvin [1972] and Kraushar [1977]. The Booz, Allen and Hamilton definition differentiates degrees of newness: newness to the market, and newness to the company. Table 2.1 lists the six categories that Booz, Allen and Hamilton have identified in their research and shows how each

compares in percentage terms to the total numbers of new products introduced to the marketplace.

Table 2.1

NEW PRODUCT CATEGORIES

New-to-the-World (10% of total new introductions)	<ul style="list-style-type: none">- New products that create an entirely new market.- First of their kind.
New Product Lines (20% of total)	<ul style="list-style-type: none">- New products that, for the first time, allow a company to enter an established market.- Not new to market, new to company.
Additions to Existing Product Lines (26% of total)	<ul style="list-style-type: none">- New products that supplement a company's established product lines.- Not new to market, but new to company and fits into existing product lines.
Improvements to/ Revisions to Existing Products (26% of total)	<ul style="list-style-type: none">- New products that provide improved performance or greater perceived value, and replace existing products.- New and improved type.
Repositioning (7% of total)	<ul style="list-style-type: none">- Existing products that are targeted to new markets, or market segments.- Retargeting of the product.
Cost Reductions (11% of total)	<ul style="list-style-type: none">- New products that provide similar performance at lower cost.

Source: Booz, Allen and Hamilton 1982 and Cooper 1987b

The above categories include repositioning which, in a strict sense, does not refer to a new product, since it is not new to the company. Thus, the above classifications could be described as taking too wide an interpretation.

However, the repositioning category accounts for only seven percent of all new products and, therefore, has a small impact on the marketplace. In fact, the findings indicate that for most firms "new" products are of the addition or improvement/revision type, and that there are few truly innovative products reaching the marketplace.

Recently, the concept of a generic product development map has been introduced. This "mapping" approach separates products into two types: core and leveraged. The core products are the established or standard product offering, while the leveraged products are divided into four sub-groups of new products: enhanced (additions of distinctive features); customized (for specific customers); hybrid (new design by merging two core products); and, cost-reduced (for the low end of the market) [Wheelwright and Sasser 1989]. This concept of mapping has some merit for companies with mature products in industries characterized by long product life cycles; however, it is too restrictive for a universally applied definition of "new". For example, this mapping approach would not be applicable for companies operating in industries with short product life cycles, such as the high technology sectors.

Another approach, which builds upon earlier work by Gisser [1972], classifies new products as "old" and "new". The difference between the two types is in whether or not the company is developing a product that is new to the company, or whether the product is a redevelopment of an existing product line [Johne and Snelson 1988a,b,c,d,

1989]. This approach, however, is a simplification of the eight categories presented by Booz, Allen and Hamilton [1982]. Nevertheless, this method does allow for the discussion on new product development to focus around activities that are a low risk to the firm (the old category) and those that have inherent risk of rejection in the marketplace (the new category).

The different approaches to explaining what a "new" product is are dependent upon the focus of the individual research study. The two broad approaches are consumer-oriented and firm-specific. Consumer-oriented definitions are favoured when the consumer's perception of a new product will influence the research findings. A firm-specific approach is appropriate to define "new" when the research focus is directed inside a company [Baker 1983]. This study addresses the new product development process itself, and thus, a firm-specific approach is the most suitable.

New Product Development Models

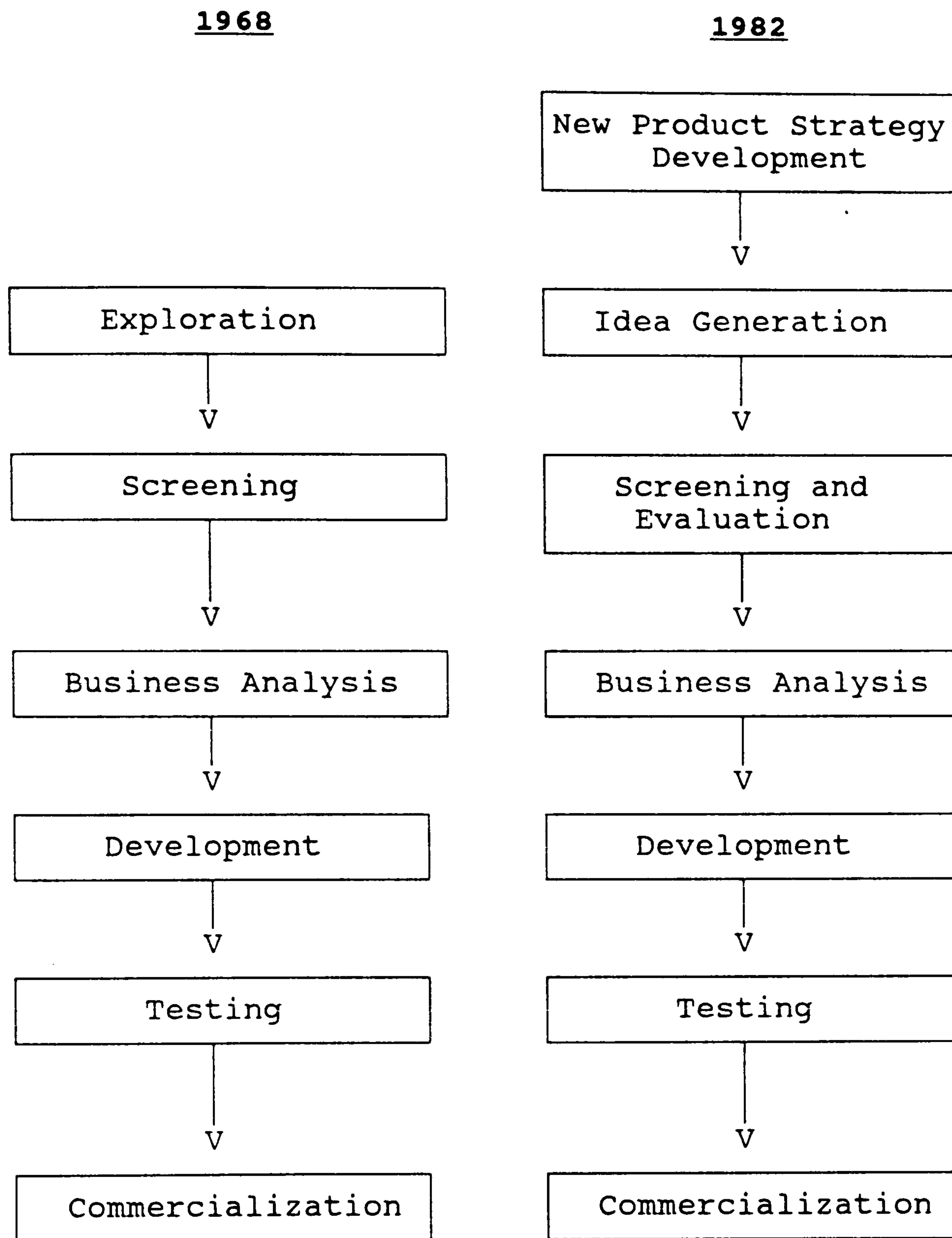
The most common approach to illustrating the new product development process is to describe it in a model [Saren 1984], which may take the form of sequential stages using a flow chart schematic. Models may apply to industrial or consumer products, and they may be descriptive or normative. Despite wide variations in the types of products referred to by the models presented in the literature, most models were found to be basically the

same, with any variations being applicable to both consumer and industrial products.

The most widely cited new product development model was advanced by Booz, Allen and Hamilton in 1968 and updated in 1982, with the addition of a stage. The 1968 and 1982 versions are presented in Figure 2.1. These models embody most of the earlier work in the area; for example, Johnson and Jones [1957], Gisser [1965], Hanan [1970], Wasson [1971], Baker and McTavish [1976], Klompmaker, Hughes and Haley [1976], and Kotler [1982]. No writers have since disagreed with Booz, Allen and Hamilton [Moore 1987], although a number have discussed various aspects of the specific stages in the models such as the screening process or idea generation. Among these are: Von Hippel [1978], Cooper [1981a], Cooper and de Brentani [1984], Saren [1984], de Brentani [1986], Vandermerwe [1987], Wind and Mahajan [1988], Johne and Snelson [1988d], McGuinness and Conway [1989], and Sowery [1989].

Figure 2.1

BOOZ, ALLEN AND HAMILTON'S NPD MODELS



The Booz, Allen and Hamilton model is the result of research into over 13,000 new products from industrial and consumer goods companies. Each stage in the model represents a phase of the development process. Industry sectors, and firms within these sectors, will adapt individual stages to fit their specific needs; however,

each of the seven stages must be passed in sequence, as described below [Booz, Allen and Hamilton 1968, 1982].

1. **New Product Strategy Development** - Identify the strategic business requirements that the new product should satisfy.
2. **Idea Generation** - Search for product ideas to meet strategic objectives.
3. **Screening & Evaluation** - A quick analysis to determine which ideas are pertinent and merit more detailed study.
4. **Business Analysis** - The expansion of the idea, through creative analysis, into a concrete business recommendation, including product features and a program for the product.
5. **Development** - Turning the idea-on-paper into a product-in-hand, demonstrable and producible.
6. **Testing** - The commercial experiments necessary to verify earlier business judgements.
7. **Commercialization** - Launching the product in full-scale production and sale, committing the company's reputation and resources.

Sommers [1982], of Booz, Allen and Hamilton, recommends consumer tests in each stage, beginning with idea generation.

The principal difficulty with all the models, up to and including Booz Allen and Hamilton, is their lack of flexibility: each stage is self-contained. They do not allow for simultaneous development at certain points in the process; nor do the stages accommodate the concept of refinements that are required constantly as information is

augmented. Possible consumer initiation of the process is also not captured. In addition, provision is not made for re-evaluation of the project as it moves through the process, so that poor products may be eliminated.

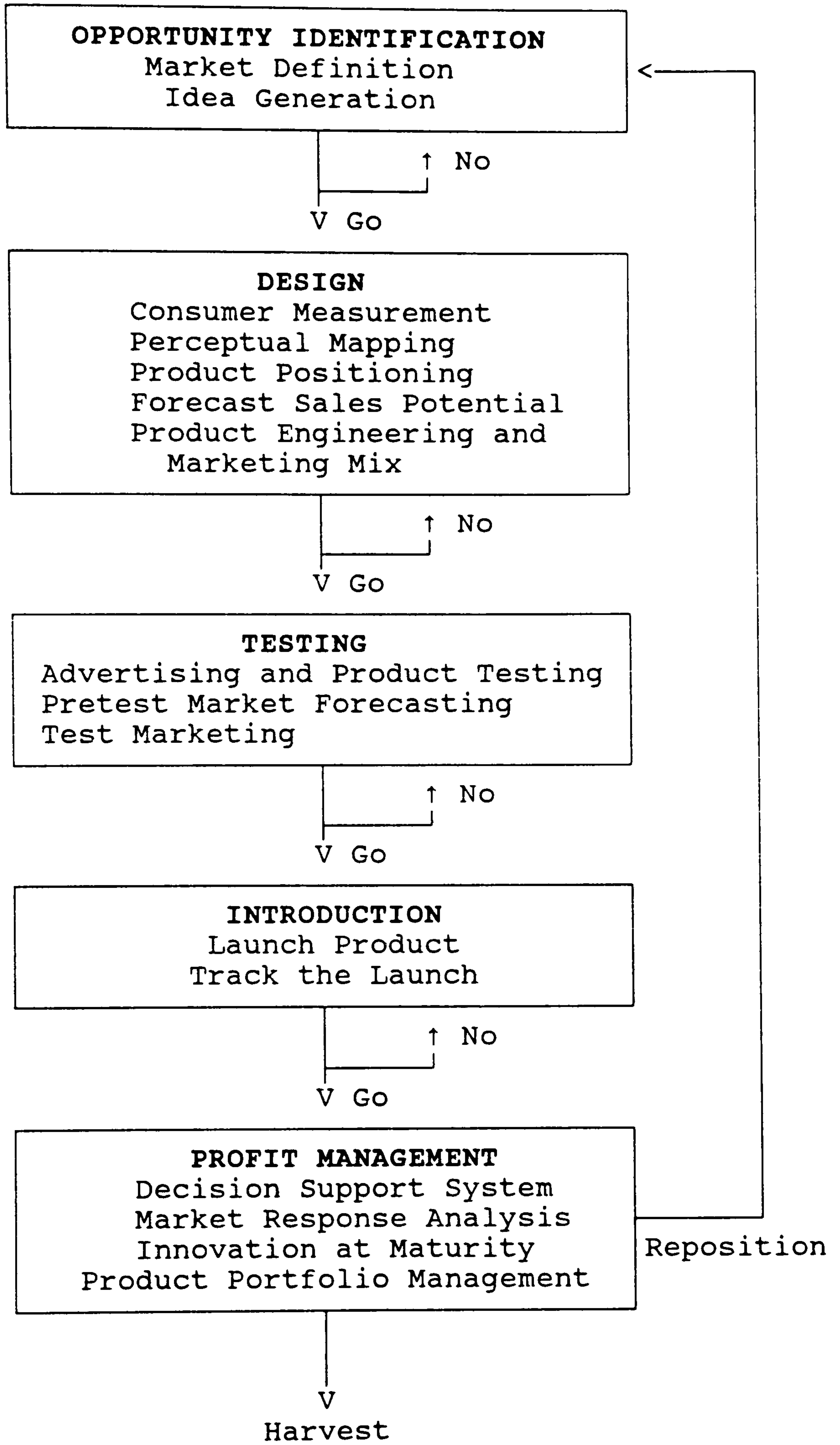
The notable exception in this respect is King [1973], who incorporated reverse directions into his model to reflect continual product redevelopment. However, King's model oversimplifies the product development stage and reflects a strong orientation toward promotional and branding development, rather than toward development of product features. In addition, King leaves the business analysis to the last step before commencement of the product launch. This could result in large expenditures on a project that might have been eliminated by an analysis earlier in the process.

In the early 1980's, three more models were introduced by Urban and Hauser [1980], Crawford [1983], and Wind [1982]. Each has contributed to the new product development process; however, their overall thrusts are similar to the models developed by Booz, Allen and Hamilton.

The Urban and Hauser model in Figure 2.2 introduces continual evaluation of the project in the form of go/no-go decisions. This model also stresses the importance of a long-term perspective in product development by including a profit management stage after the product is successfully launched. This ensures, "periodic strategy modifications to maintain maximum profitability", as the product progresses through its life cycle.

Figure 2.2

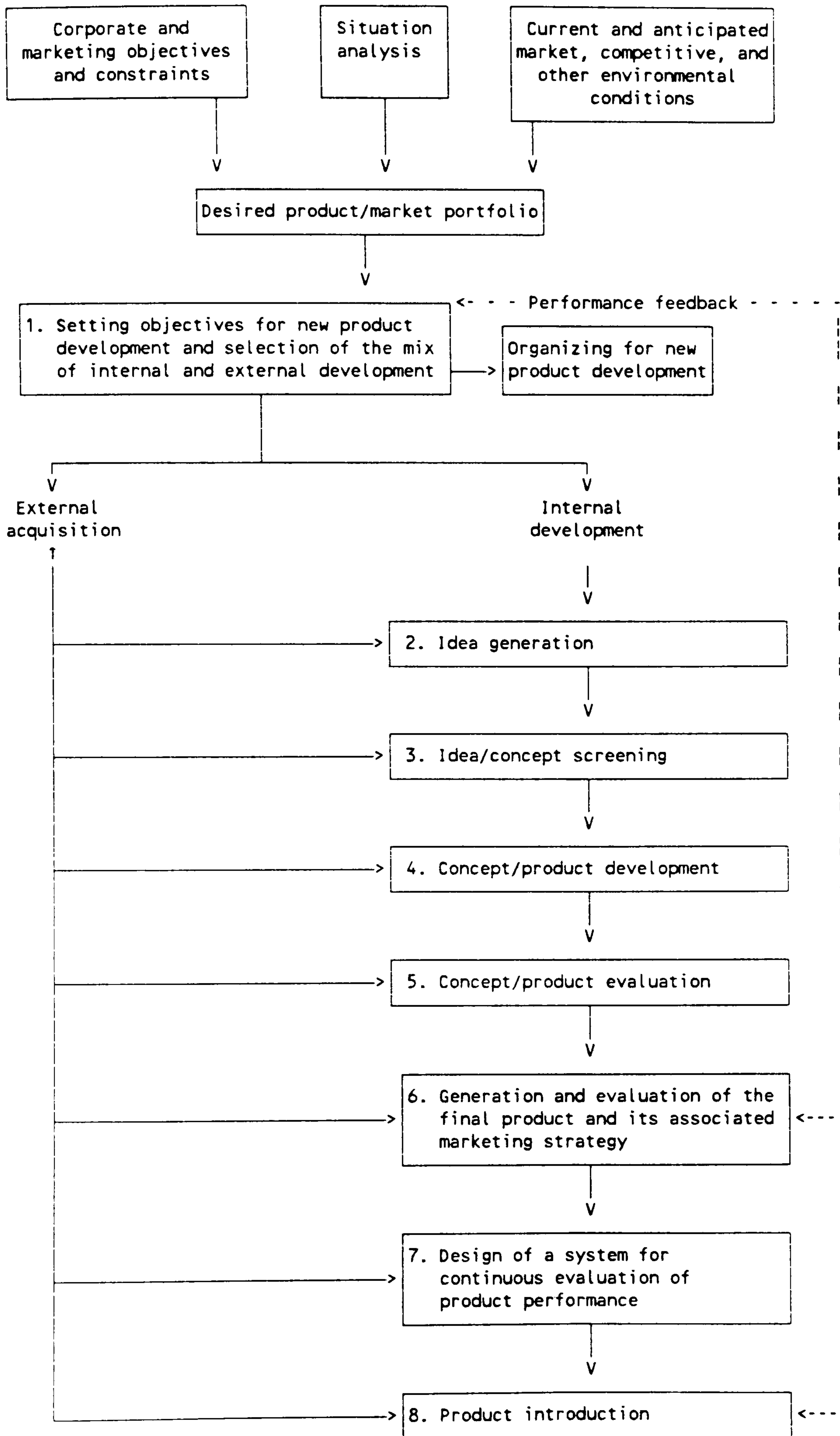
URBAN AND HAUSER NPD MODEL



Wind's [1982] model, presented in Figure 2.3, is more flexible than those previously discussed. It recognizes that a firm can obtain products that are new to the company through acquisition as well as by internal development. Several other differences from previous models can also be detected. Wind incorporates the need for concept testing and includes more detail at earlier stages in the process, before the company has invested significant resources. The most noticeable difference from previous models is the inclusion of a stage for organising for the new product. This model is the first to recognise the need to incorporate the organisational issues that revolve around product development into the actual development model. However, the placing of this stage before the idea generation stage implies using the same fixed organisational structure for all new products. This may be too rigid an approach, as different types of new products may require varied organisational structures for successful and timely development.

Figure 2.3

WIND'S NPD PROCESS

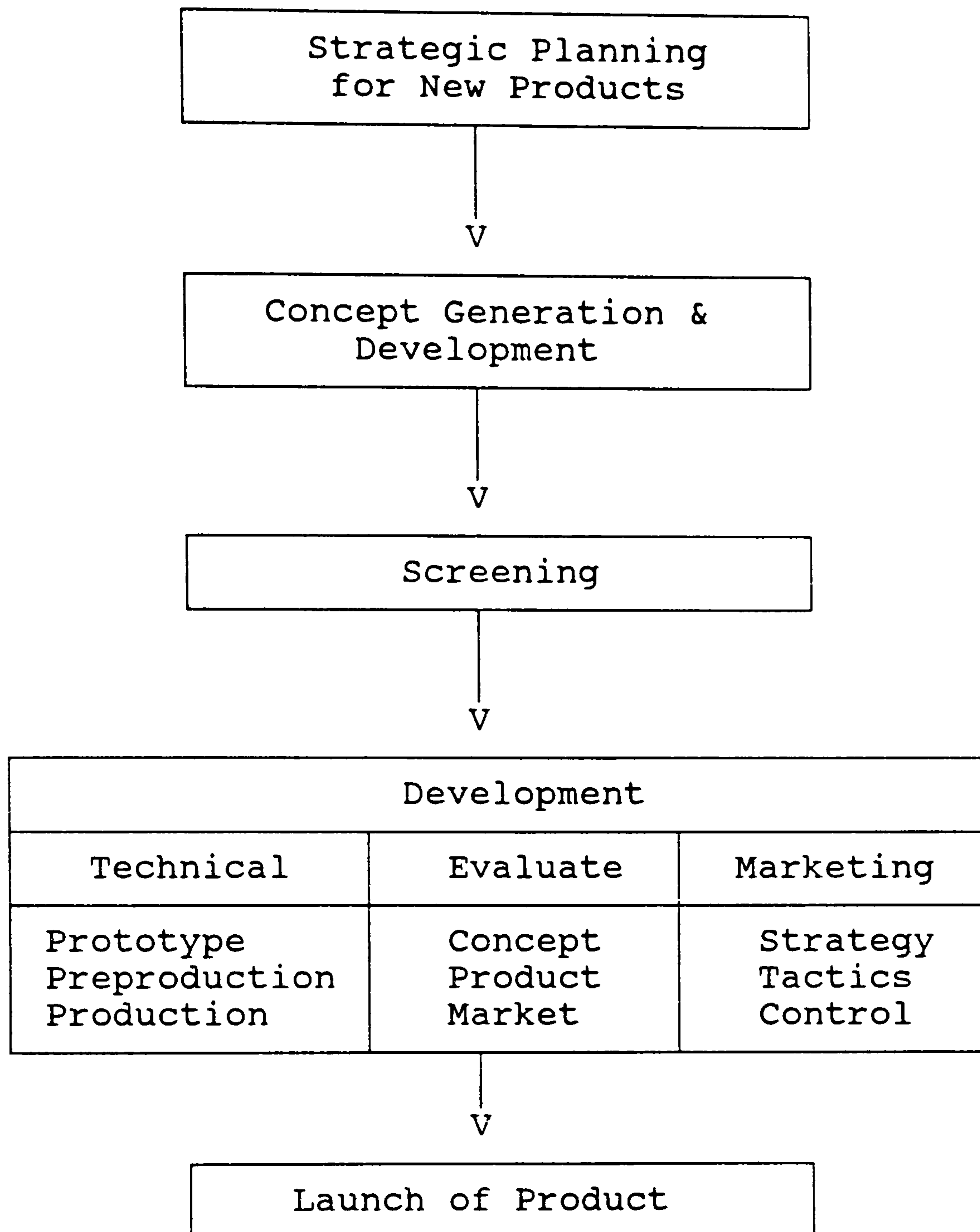


The Crawford [1983] new product model is displayed in Figure 2.4. Crawford cautions that the model will need to be adapted for each industry and for each firm within the industry. This recognises a need for flexibility that most of the earlier models have not allowed for. The importance of the strategic planning phase is also strongly stressed. This reflects Crawford's earlier research [1980] into the importance of strategic planning at senior levels for product development. Crawford suggests a product innovation charter to provide direction in new product development activities.

Crawford's model also differs from its predecessors by breaking the sequential decision pattern followed by Urban and Hauser, Booz, Allen and Hamilton, and Wind. Instead, Crawford allows for parallel development of the physical product, the business plan, and the marketing plan. As with the other models, the main criticism of this one is that it still presents the activities to be undertaken as a series of steps, without permitting feedback and revisions of the new product.

Figure 2.4

CRAWFORD'S NPD MODEL

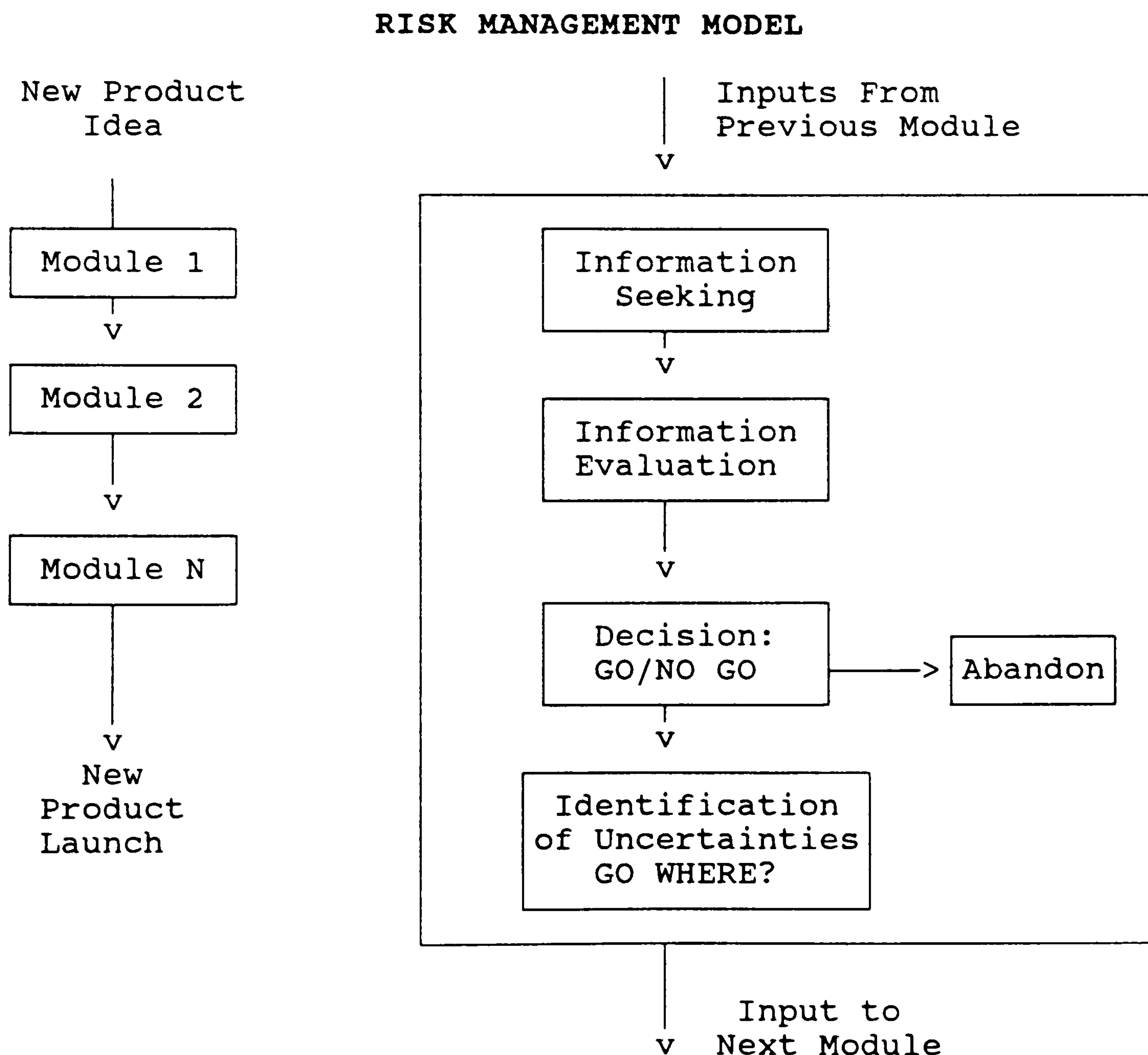


In the 1980's Cooper published over 30 articles on various aspects of new product development, including the results of two major research projects: Phases I and II of Project NewProd. Cooper has developed several models to describe the new product development process, each more comprehensive than the last. By suggesting an approach that can be used to construct a flow model, he addresses the need for risk management [Cooper and Moore 1979 and

Cooper 1981b].

Similar to the Urban and Hauser [1980] approach, a series of go/no-go decisions have been added to the standard sequential model, and the idea of a chain of modules is incorporated. Each module represents a stage in the development process and reduces risk by ensuring enough information is gathered and analyzed at each stage to enable a go/no-go decision before the project proceeds any further. Before the module is completed, all areas of uncertainty are identified for discussion as to how to proceed. Figure 2.5 illustrates the risk management model.

Figure 2.5

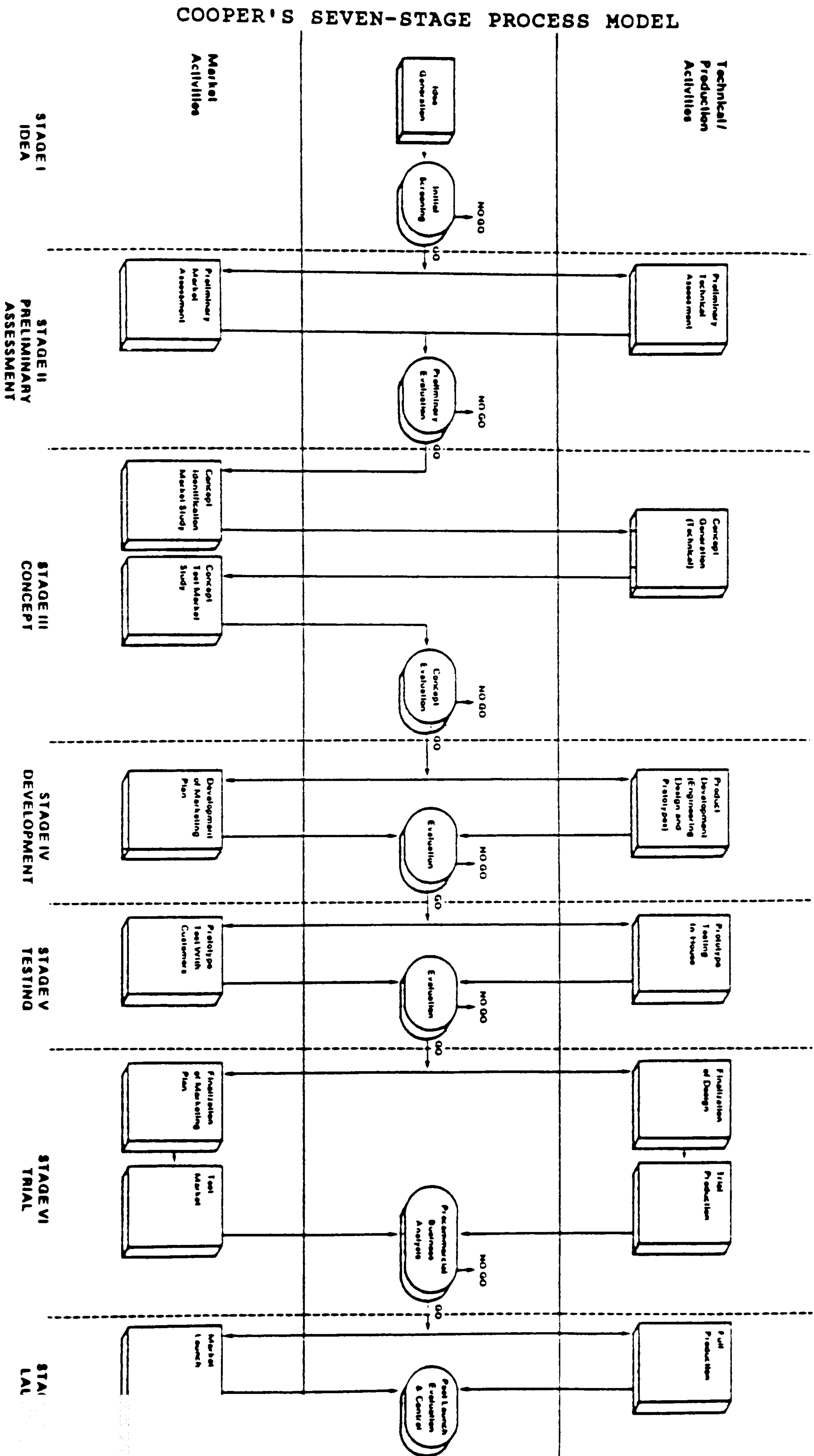


Cooper [1983a, 1987b] expanded further upon his earlier models to develop the one presented in Figure 2.6. This model is a risk reduction strategy that uses a series of go/no-go decisions and fulfils three additional process requirements:

1. that it be sufficiently specific and detailed and yet not pedantic;
2. that it be strongly market oriented;
3. that it be multidisciplinary and foster internal communication.

This approach differs from those by other scholars in its separation of the marketing and technical/production activities. Cooper's approach recognizes that various departments within a company work simultaneously on a project, and that they need to remain in constant communication with each other throughout the project to help ensure the resulting product will be market oriented. Each phase incorporates a joint decision regarding the continual feasibility of the project. This encourages joint commitment and helps to stop a potential failure from reaching the market. Cooper's third principal difference from the Booz, Allen and Hamilton type of model is in waiting until after the idea generation stage to match strategic objectives to the project. This permits a wider range of ideas by not placing obstacles in front of the creative phase. The Cooper model also incorporates consumer research at each stage of the process after concept generation.

Figure 2.6



In further empirical research, Cooper has discovered that the traditional representation of development process models as a series of segmented activities, with each stage ending before the next begins, is inaccurate [Cooper 1983b]. He concludes that the new product process is,

...not the sequential or series process so often portrayed in the literature. Rather, we see a more complex process, with many activities overlapping or undertaken in parallel.

Even though nonsequential activities occur, Cooper has found that the more successful new product processes still include the activities listed in previous process models, and that successful product development maintains a balance between technical/production activities and market oriented activities.

In Project NewProd Phase II, the list of process activities was expanded to 13 and is presented in Table 2.2 [Cooper and Kleinschmidt 1986].

Table 2.2

NEW PRODUCT PROCESS ACTIVITIES

Activity	Description
1. Initial screening	The initial go/no-go decision, where it was first decided to allocate funds to the proposed new product idea.
2. Preliminary Market Assessment	An initial, preliminary, but non scientific, market assessment; a first and quick look at the market.
3. Preliminary Technical Assessment	An initial, preliminary appraisal of the technical merits and difficulties of the project.
4. Detailed Market Study/Market Research	Marketing research, involving a reasonable sample of respondents, a formal design, and a consistent data collection procedure.
5. Business/Financial Analysis	A financial or business analysis leading to a go/no-go decision prior to product development.
6. Product Development	The actual design and development of the product, resulting in, e.g., a prototype or sample product.
7. In-house Product Testing	Testing the product in-house: in the lab or under controlled conditions (as opposed to in the field or with customers).
8. Customer Tests of Product	Testing the product under real-life conditions, e.g., with customers and/or in the field.
9. Test Market/Trial Sell	A test market or trial sell of the product -- trying to sell the product but to a limited or test set of customers.
10. Trial Production	A trial production run to test the production facilities.
11. Precommercialization Business Analysis	A financial or business analysis, following product development but prior to full-scale launch.
12. Production Start-up	The start-up of full-scale or commercial production.
13. Market Launch	Launch of the product, on a full-scale and/or commercial basis: an identifiable set of marketing activities specific to this product.

Cooper [1988b, 1990] has further refined his earlier new product process model as a result of the analysis from Phase II of Project NewProd. This new model, called the Stage-Gate Process is displayed in Figure 2.7.

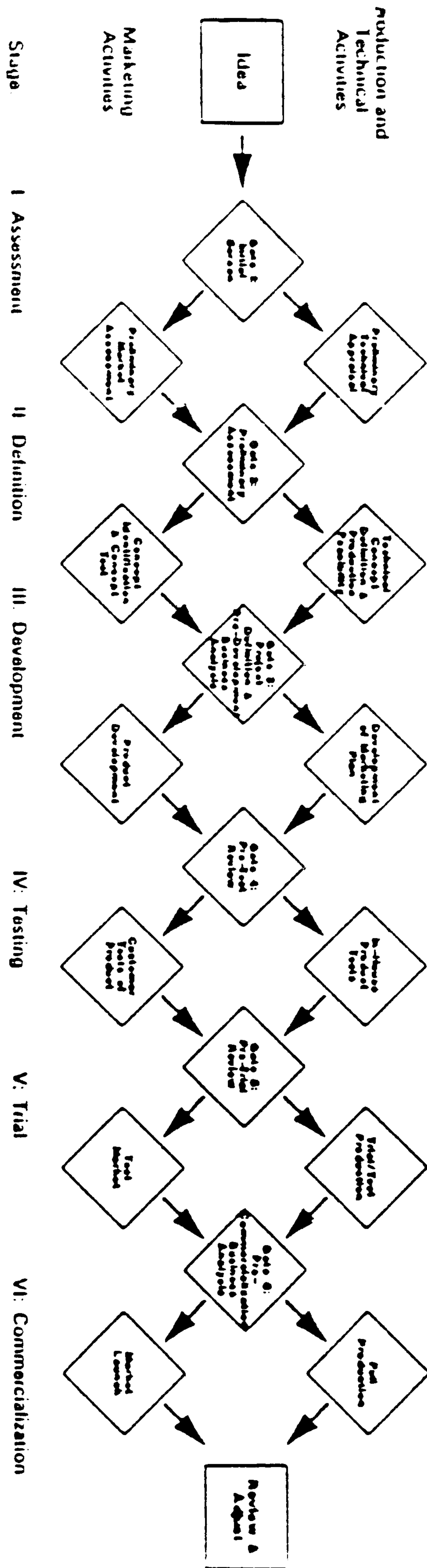
In this model, the go/no-go decision for each stage has been expanded to include a hold phase (go/kill/hold). These decisions are now termed evaluation points, or "gates". As Cooper notes, the purpose of these gates is to act as, "check points to ensure the quality of execution of process activities". Each gate has its own screening measures and criteria that lead to the next stage in the process. In effect, this controls the process to ensure all the critical activities are complete and the quality is sufficient before the next stage begins.

This model also stresses the need for parallel development. Cooper argues that this approach is needed to reduce development time, to decrease the probability of critical activities not being conducted, to allow each activity to support the other, and to develop a multi-functioned approach.

The model is presented in generic form, with the rationale that it will need to be modified to suit individual firms.

Figure 2.7

STAGE-GATE NEW PRODUCT PROCESS



It should be noted that all of Cooper's models are based on empirical research on Canadian industrial firms. They have not been tested on consumer products or in other sectors such as service industries.

This section has reviewed the new product development process models that are most prominent in the literature. It is generally assumed that companies active in new product development will follow one of these; although, more recently it has been recognized that these models should serve only as generic descriptions of the process, and that each firm should tailor its product development activities to suit its unique needs [Wind 1982, Cooper and Kleinschmidt 1986 and Cooper 1988b].

However, empirical evidence indicates that firms are not fully utilizing new product models. Feldman and Page [1984] found that the development process in the companies they surveyed had little formality and did not represent any normative models. Their study, however, was restricted to nine firms in the American electronics industry. Another American study found a lack of formality in the development process, but did find that most firms used a systematic informal process [Moore 1987]. These later findings showed a better relationship to the standard new product development process than the Feldman and Page study, but reflected less usage of models than the Booz, Allen and Hamilton [1982] study. Nevertheless, the conclusions from the Moore study cannot be generalised due to a small sample size of 25 firms. In another small

study, Davis [1988] found, by analyzing three case studies, that the firms with product failures deviated from development process models. A larger study of 252 new products by Cooper and Kleinschmidt [1986] found the use of all the prescribed stages in the development process to be lacking in most firms. The study also found that in many cases where management believed they had in place a systematic development process, what happened in actuality was often very different. The study did find, however, that "successful projects featured significantly more activities -- a much more complete process -- than did failures".

The traditional step-by-step sequence for the development process has recently been called into question. It has been suggested that a parallel approach may be more appropriate for today's new product environment [Cooper 1988b and Johne and Snelson 1988d]. As Johne and Snelson have indicated, "Further empirical work is urgently required in this important operational area." Wind and Mahajan [1988] agree, noting that the number and cost of new product introductions is increasing but little attention has been paid to the entire new product development process.

Organising for New Product Development

The fact that a wide range of organisational structures exist for developing new products is not surprising, considering that organisation has been identified as a contributing factor to the success of new products [Booz, Allen and Hamilton 1968, 1982]. Most of the literature in this area agrees that a management approach is required in new product development that differs from that used in the day-to-day operations of a company [Johnson and Jones 1957, Booz, Allen and Hamilton 1968, 1982, Urban and Hauser 1980, Crawford 1983, Maidique 1982 and Cooper 1987b].

Johne [1985] has identified a number of organisational structures for new product development and has divided these methods into those more appropriate for radical innovation and those more suitable for incremental product innovation. Aside from terminology issues, the list is fairly comprehensive of the various types of organisation that are discussed in the literature under a variety of titles. Table 2.3 lists Johne's techniques.

Table 2.3

TYPES OF ORGANISATIONAL STRUCTURES FOR NPD

Radical Product Innovation

1. New Venture Group or Department
2. New Venture Team

Incremental Product Innovation

1. Standing New Product Committee
 2. Temporary New Product Committee
 3. New Product Department (staff)
 4. New Product Department
 5. Marketing Department
 - New Product Group
 - New Product Managers
 6. Technical Department
 7. Marketing Department Led Project Team
 8. Technical Department Led Project Team
 9. Inter-Departmental Project Team
 10. Modular Matrix
-

Given the large number of organisational methods for new product development, the question arises as to which is the best approach to use. Sands [1983], in a comprehensive review of the pros and cons of a large number of techniques, concluded that there is no best approach to organising for new product development. Other scholars have reached similar conclusions and suggest that differing approaches are needed for differing types of new products [Souder 1978; Duncan 1979; Booz, Allen and Hamilton 1982; Crawford 1983 and Johne and Snelson 1988d].

Although one technique may not have a superior advantage over the others, several factors have been identified as improving the new product development process. Souder [1978], in an empirical study of successes and failures of new products and the types of

organisational structures used, found that a team approach was the most effective. The need to integrate more than one department into the process and the need for involvement of more than one person in the project has been supported by Johnson and Jones [1957] and Cooper [1987b]. The need for a product champion has also been advocated as necessary to ensure a project will be completed in a timely fashion [Roberts and Fusfield 1981 and Knight 1987].

The matrix approach, which was strongly advocated in the 1970's, has more recently been discounted as a less effective approach [Peters and Waterman 1982]. The functional matrix approach in particular was found to be ineffective in a study by Larson and Gobeli [1988, 1989]; although other non-functional matrix approaches were found to have no measurable differences in terms of their effectiveness.

The necessity for recognising the informal structures in operation during new product development has been raised by Johne [1985], together with the possibility that different structures may be appropriate at different phases in the development process [Johne 1984]. Johne found that companies active in product innovation used very loose structures at the earlier, more creative stages in the development process, but that as the process entered the prototype stage, structures became more formal.

From the literature to date, it is clear that many organisational issues remain to be answered. However, it can be concluded that there is no best approach to

organising for new product development, and that managers need to address this issue on a project-by-project basis.

Conclusion

In this chapter the definition of a "new" product was examined, and it was found that the approach most accepted is that if the product is new to the firm, it is considered a "new" product. A number of models for the new product development process were also examined. It was found that the sequential decision style prevalent up to the mid-1980's is now being questioned, and that many new questions arise; for example: If the new product development process is not sequential but, indeed parallel, what stages in the process are involved and what is the proper, or best, way to capture this type of process in a model? Organisational structures have been identified as important for new product success; but, again, the literature on this subject raises more questions than it can presently answer: Do different types of new products require different types of organisational structures? Should the organisational structure be dynamic as the product moves through its development?

In summary, although research into new product development for physical products has been plentiful, particularly in the industrial product category, there still remain many areas for research by academics and practitioners alike.

CHAPTER 3

SERVICE MARKETING -- A REVIEW

Services marketing is becoming a recognized and accepted subset of the marketing discipline. Given the growth of the service sector in economies throughout the world, and the almost universal belief by scholars working in this area that services marketing is in certain key respects different from goods marketing, ...an acceleration of academic interest and research activity in services marketing in the years immediately ahead is to be expected and is necessary because far more questions than answers exist at this time.

Zeithaml, Parasuraman and Berry [1985]

Introduction

The question of whether the marketing of services is different from the marketing of goods has been a matter for debate in the marketing literature for the past thirty years. However, as Zeithaml et al suggest in the excerpt above, the majority of scholars now accept that the debate is over, and that there are, indeed, distinctions to be made between services and goods. Consequently, the focus has shifted to asking if these differences require specialized marketing strategies, and if even the organisational structures of service companies need to be adapted to accommodate these differences.

The first part of this chapter will review features that are said to distinguish services from goods, and the debate on the validity of this distinction. The second part of the chapter will focus on the effects these peculiar characteristics have on marketing strategy and

organisational structure as well as on the discussion in the literature about new product development for service industries.

By conducting a thorough review of the current status of service marketing theory and its implications for new product development, a theoretical overview is constructed to provide a framework for this particular study. The infancy of in depth scholarly activity in the various aspects of service marketing is reflected in the near absence, until recently, of service articles in top rated marketing publications. The majority of scholarly literature on this subject is found in conference proceedings and lesser recognised journals. This is, in part, a reflection of the low number of empirical studies that have been conducted to test the theories put forth by many of the world's leading marketing scholars during the late 1970s and the 1980s.

Differences Between Goods and Services

The debate centring on the differences between goods and services began with the attempt to classify services [Regan 1963] and the resulting question of how to define the term. The surrounding discussion led to the identification of four characteristics that are now commonly cited as the factors that distinguish services from goods: intangibility, inseparability, heterogeneity and perishability. Each of these factors and the marketing difficulties arising from them will be discussed

individually although it is often the case that a particular marketing problem is common to two or more of the service properties. For example, marketing obstacles arising from the heterogeneity of services can be closely related to their intangibility and inseparability. This section concludes with a detailed chronological listing of the majority of scholars who have written on this subject (Table 3.1). Although the list seems to indicate extensive activity in service research, a closer examination confirms the lack of empirical studies in refereed "A" type journals.

Intangibility

Generally, the literature holds that intangibility, the most commonly cited property of services, causes a substantial marketing difference between services and goods [Berry 1980 and Orsini 1987]. This trait has been described as the fundamental distinguishing characteristic of services, from which all other differences emerge [Bateson 1979 and Zeithaml, Parasuraman and Berry 1985]. Klein and Lewis [1985] add that intangibility is the only property common to all services.

Given the apparent importance of the term 'intangibility', a closer look at its definition, from the perspective of the marketing literature, is required. The following three quotations encapsulate the literature:

Services are intangible. They cannot be seen, tasted, felt, heard or smelled before they are bought.

Kotler and Bloom, 1984

Because services are performances, rather than objects, they cannot be seen, felt, tasted, or touched in the same manner in which goods can be sensed.

Zeithaml, Parasuraman and Berry, 1985

Services by their very nature are physically intangible, they cannot be touched, tasted, smelt or seen. This contrasts with the physical substance or tangibility of goods. In addition to their physical intangibility, services can also be difficult for the mind to grasp and thus can be mentally intangible.

Bateson, 1977

The majority of marketing scholars concur with the above interpretations of the intangibility of services; for example: Regan 1963, Rathmell 1966, 1974, Judd 1968, Johnson 1970, Wilson 1972, George and Barksdale 1974, Hostage 1975, Shostack 1977, 1984a,b, 1987, Gronroos 1978, 1979, Gummesson 1978, and Lovelock 1984a.

'Intangibility' implies that a service is experienced; it is rendered; physical ownership cannot occur. Thus, the conceptual boundaries of marketing must be expanded to accommodate this property of services [Shostack 1977]. Several areas of marketing have been identified in the literature as needing adjustment to achieve this accommodation.

One such adjustment arises from the consumer's difficulty in evaluating an intangible service offering [Zeithaml 1981]. Marketing strategy must, therefore, make the offering more nearly tangible, an opposite approach to the one commonly used for physical goods [Rushton and Carson 1985]. The use of cues is put forward as one method [Shostack 1977, Gronroos 1980 and Zeithaml 1981]. For

example, by ensuring that staff appearance is consistent (by issuing uniforms), a service firm can prompt the consumer to associate the tangible cue: the uniform, with the intangible, the service. By using such an approach, McDonald's Restaurants, for example, have made their golden arches a symbol recognized the world over as representative of a particular kind of service [Berry 1980]. Image creation has also been identified as particularly important for service industries [Thomas 1978], especially in retailing [Besson and Jackson 1975 and George 1977]. The development of brand names for services has recently been discussed as a useful method of establishing an image in the marketplace [Onkvisit and Shaw 1989]. Each of these approaches gives the consumer something tangible with which to associate the service and, thereby, makes the process of pre- and post-service evaluation easier.

The enhancement of the provider-client relationship becomes increasingly important to service companies, as this interaction is very often the only impression customers retain of a company [Hostage 1975, George 1977, Berry 1986b]. Gronroos [1978, 1979] has stated that the consumer interaction process must be carefully managed to lessen the effect of intangibility. By controlling the tangible aspect -- the delivery phase of the service in which the customer is involved -- a service company will help ensure the client retains a favourable impression of the service, and the company. This increases the probability of developing a lasting relationship and repeat

business.

The service pricing issue is also complicated by intangibility, because the customer cannot employ the same evaluative criteria he/she would for a tangible product. Thus, consumers have more difficulty in measuring the monetary value of the transaction both pre- and post-service. The customer will very often judge the perceived quality, or the expected satisfaction he/she will receive from the service, by the price that is charged without having the benefit of a tangible comparison between competing services. Price, therefore, becomes an important standard [Schlissel 1977 and Berry 1980].

Advertising for a service must also address the tangibility problem [George and Berry 1981]. Service companies need to solve specific difficulties in developing communication strategies. Problems arise as to how to communicate a firm's willingness and ability to provide a service, in how to have consumers understand that they can and should make use of a service, and in communicating the value of the service being offered [Calonius 1989].

Distribution channels for services also need to be treated differently than the traditional channel concepts used for goods. A distinction is required between the actual production of the service and its distribution [Donnelly 1976]. In some cases, delivery does not entail direct contact with the customer. In these situations (e.g. telephone banking), the service organisation must ensure access and availability for its customers. This

accentuates the importance of being aware of the separation that can occur between production and distribution. Cross and Walker [1987] have suggested developing franchises as an effective method of increasing access to and availability of some services; for example, a chain of restaurants. In this case, franchises would allow increased control over the tangible aspects of the service and reduce the impact of heterogeneity (to be discussed later).

The marketing problems that are created by intangibility and the other three unique traits of services (subsequently discussed) are provided in Figure 3.1

Inseparability

Another distinctive feature of services is the inseparability of service production from consumption [Rathmell 1974 and Lovelock, Langeard, Bateson and Eiglier 1981]. A definition of service inseparability has been developed by Kotler [1982]:

A service is inseparable from the source that provides it. Its very act of being created requires the source, whether person or machine, to be present. In other words production and consumption occur simultaneously with services. This is in contrast to a product which exists whether or not its source is present.

Figure 3.1

**SUMMARY OF PRINCIPAL MARKETING ISSUES
CREATED BY THE UNIQUE TRAITS OF SERVICES**

Intangibility	<p>Need to</p> <ul style="list-style-type: none">- increase the degree of tangibility- develop cues, image and brands- control the delivery phase- ensure access and availability of distribution system <p>How to</p> <ul style="list-style-type: none">- enhance client relationship- control the consumer interaction process- develop appropriate price/quality relationships- overcome consumer difficulties in evaluating quality- develop effective communication strategies
Inseparability	<p>Need to</p> <ul style="list-style-type: none">- address instantaneous production and consumption- address consumer involvement in production- develop service quality standards- coordinate demand and supply problems- address internal marketing issues- manage continuous and immediate consumer feedback- address issue of sales and production people being one-in-the-same <p>How to</p> <ul style="list-style-type: none">- integrate consumers into the production process- market a service before the consumer experiences it- control the service encounter- overcome international/cultural problems
Heterogeneity	<p>Need to</p> <ul style="list-style-type: none">- address quality control issues- determine proper balance between humans and machines <p>How to</p> <ul style="list-style-type: none">- standardize service offerings- control output- develop performance standards- reduce consumer's perception of risk- control the service encounter- integrate internal marketing- develop multi distribution channels
Perishability	<p>Need to</p> <ul style="list-style-type: none">- determine appropriate pricing strategy to offset demand and supply problems- determine appropriate level of automation <p>How to</p> <ul style="list-style-type: none">- deal with demand fluctuations- deal with lack of inventories- manage capacity restrictions- develop international markets- develop a level of efficiency- develop barriers to entry- address distribution restrictions

The issue of simultaneous production and consumption has been well documented by marketing scholars; for example, Regan [1963], Johnson [1970], Donnelly [1976], Bateson [1977], Carman and Langeard [1980], Levitt [1981], Lovelock [1983b], Shostack [1985], Berry [1986a], Schmenner [1986] and Parasuraman and Varadarajan [1988]. Table 3.1 provides a more detailed listing of authors who have written on this subject.

The trait of inseparability in services has led to the identification of several problems that arise when marketing strategy for services is being developed. Very often, a service is first sold, then produced and consumed. This is contrary to the process that occurs with goods, which are usually produced first, then sold and consumed. Consequently, means must be devised to successfully market the service before the consumer has had any experience of it. Complications due to the service's intangibility also arise here.

Next, marketers must consider that, in service industries, sales and production personnel are often one-and-the-same [Lovelock 1981], and that the consumer of a service may also be involved in its production [Bateson 1977, Booms and Bitner 1981]. Orsini [1987] notes that simultaneous production and consumption of services requires that the consumer's presence be integrated into the process. Customer-contact personnel thus become the key people in the organisation [Davidson 1978]. Consequently, there is a need for a high level of attention

to the service encounter and for internally-oriented strategic service planning [Heskett 1987], or internal marketing [Gronroos 1981]. Through these steps, greater importance is placed on controlling the service encounter [Suprenant and Solomon 1987], and on the development of high standards of service quality, practices that have also been identified as important in overcoming the intangibility problem. The SERVQUAL program developed by Parasuraman, Zeithaml and Berry [1988] is an example of how service quality standards may be measured. The interaction of the client with the producer of the service generates benefits as well, since the process entails a link of constant communication between the two [Middleton 1983]. This allows for continuous and immediate feedback.

Inseparability also requires that particular attention be paid to the co-ordination of demand and supply, as difficulties can arise due to the need to produce and deliver services simultaneously [Sasser 1976, Gronroos 1978 and Berry, Zeithaml and Parasuraman 1984]. For example, managers need to develop staff schedules to ensure there is adequate personnel to meet the needs of customers at the time the demand for the services arises. Finally, multinational and multicultural environments will intensify the inseparability problem, since cultural preferences in services vary [Nicoulaud 1989].

Heterogeneity

The term 'heterogeneity', used in the service context,

means that services are difficult to standardize. There appears to be consensus in the literature on this point: Regan 1963, Rathmell 1966, Johnson 1970, Sasser 1976, Bateson 1977 1979, Levitt 1981, Booms and Bitner 1981, Lovelock 1983a,b, Kotler and Bloom 1984, Parasuraman et al 1985, and McAlexander and Schouten 1987. Zeithaml, Parasuraman and Berry [1985] have provided a definition of heterogeneity that reflects the interpretation put forth by most writers on the subject:

Heterogeneity concerns the potential for high variability in the performance of services. The quality and essence of a service can vary from producer to producer, from customer to customer, and from day to day. Heterogeneity in service output is a particular problem for labour intensive services.

This lack of homogeneity in services persists throughout the entire new product development process, including the design, production and delivery stages [Nicoulaud 1989]. This makes it harder to control the output of service organisations than it is to control the output of those producing tangible products.

Buttle [1989] has identified the problem of quality assurance in service delivery as the principal marketing problem arising from the heterogeneous nature of services. However, marketers, practitioners and scholars, have had difficulty developing performance standards [Rathmell 1966, 1974, Sasser 1976 and Lovelock et al 1981]. Due to the absence of such standards, consumers perceive a greater risk in purchasing services than they do in purchasing goods [Guseman and Gillett 1981 and Zeithaml 1981];

although it has been recognized that the level of risk is dependent on whether the service is delivered by a human or a machine [Levitt 1976, and Thomas 1978].

This difficulty brought about by heterogeneity affects three categories, although each is not mutually exclusive: the service encounter, productivity and service quality.

As with intangibility and inseparability, one approach to minimising the effect of heterogeneity is controlling the service encounter [Berry 1980, Blackman 1985, Czepiel, Solomon and Surprenant 1985, Solomon, Surprenant, Czepiel and Gutman 1985, and Surprenant and Solomon 1987]. One means of control is adopting uniform production procedures and increasing the amount of automation. This approach has been repeatedly advocated by Levitt [1972, 1976, 1981] as a means of reducing the degree of variability in each service offering, thus, gaining more consistency.

During the latter half of the 1980's, the concept of service quality became an established issue and gained a respected position in the literature. One marketing approach arising from this discussion is the integration of a service quality system into the strategic planning of an organisation [Lewis 1989]. The need for mechanisms to aid in the development of service quality within service organisations has been well discussed [Zeithaml 1981, Lovelock 1985, Parasuraman, Zeithaml and Berry 1985, Surprenant and Solomon 1987, Lewis 1989]. Berry, Parasuraman and Zeithaml [1981, 1984, 1985(2), 1988(2)] have written a series of articles that are supported by

empirical evidence and have culminated in the SERVQUAL model for testing the level of service quality inside an organisation. A need for developing an approach, termed internal marketing, in order to promote the concept of service quality throughout the organisation, has also been identified [Sasser and Arbeit 1976, George 1977, Berry 1980, Gronroos 1981, 1982, 1983, 1984, and Heskett 1987].

Finally, the lack of homogeneity in service offerings has led Boom and Bitner [1981] to advocate expanding the four P's to include Participants and Process to underscore the importance of developing a more uniform service delivery system.

Perishability

Services are perishable in the sense that they cannot be stored for use at a later date. They, therefore, must be consumed when produced [Judd 1968, Johnson 1970 and Rathmell 1974, Besson and Jackson 1975, Thomas 1978, Kotler 1982 and Kotler and Bloom 1984]. This is the dominant marketing problem arising from perishability [Sasser 1976 and Bateson 1977]. For example, a dentist cannot store an hour of time if no patient currently requires his/her service. A bank cannot store an empty safety deposit box; if it is not rented for a particular month, then the lost revenue is forfeited forever. Rushton and Carson [1985] have summed up the importance of perishability:

Services cannot be produced before required and then stored to meet demand. If a service is not used when available then the service capacity is wasted.

Without the ability to stockpile and achieve the flexibility to fluctuating demand that physical goods allow, service organisations are more seriously affected by changes in demand [Rathmell 1974]. For example, peak-loads, excess demand and scheduling difficulties need to be addressed in marketing strategies for services.

Sasser [1976, 1979] suggests that demand and capacity be managed to better meet the needs of service organisations. Possibilities include using peak period and off-peak pricing, developing non-peak demand, developing complementary services, creating reservation systems and using part-time employees. Berry, Zeithaml and Parasuraman [1984] and Lovelock [1981] have concurred that matching supply and demand is an important aspect of developing marketing strategies for services. Nicoulaud [1989], however, points out that in international markets these techniques cannot always be applied, due to legal and cultural differences that might not allow some procedures to be used.

The development of different pricing tactics has also been identified as a strategic issue for demand/supply difficulties as they relate to perishability [Schlissel 1977, Parasuraman and Varadarajan 1988, and Morris and Fuller 1989].

As with the marketing problems associated with the three preceding properties of services, the argument has been presented that, in order to overcome the difficulties of perishability, there is a need to develop more of a

production orientation in services by standardizing the product offering; for example, McDonald's Restaurants [Levitt 1972]. Levitt [1976] has also advocated developing a higher standard of efficiency in operation and utilizing more automation.

Distribution channels, too, are affected by the perishable nature of services [Donnelly 1976]. This has been cited as one reason for the development of short distribution channels in service industries [Baranoff and Donnelly 1970]. However, McIntyre and Sudhir [1988] have demonstrated that service channels are not always short or non-existent and have suggested that service channel management is necessary, although approaches are required that differ from traditional channel management.

The inability of many service firms to develop effective barriers to entry from the competition has also been attributed to the perishability of services [Thomas 1978], because of the difficulty in obtaining patents.

Table 3.1

CHRONOLOGICAL LISTING OF REFERENCES
ADDRESSING THE UNIQUE CHARACTERISTICS
OF SERVICES

Author(s)	Year	Intangibility	Heterogeneity	Perishability	Inseparability	Empirical
Regan	1963	X	X	X	X	
Rathmell	1966	X	X	X	X	
Judd	1968	X		X	X	
Baranoff & Donnelly	1970	X		X	X	
Cooke	1970	X		X		
Johnson	1970	X	X	X	X	
Mapel	1970	X				
Wilson	1972	X				
Green, Langeard & Favell	1974	X			X	
George & Barksdale	1974	X			X	X
Rathmell	1974	X	X	X	X	
Bessom & Jackson	1975	X		X	X	
Hostage	1975	X				
Wyckham, Fitzroy & Mandry	1975	X	X	X	X	
Donnelly	1976	X			X	
Sasser	1976	X	X	X	X	
Sasser & Arbeit	1976	X	X	X	X	
Bateson	1977	X	X	X	X	
George	1977	X	X		X	
Schlissel	1977	X	X	X	X	X
Shostack	1977	X				
Weinberger & Brown	1977	X	X	X	X	X
Davidson	1978			X		
Gronroos	1978	X		X		X
Gunnesson	1978	X				
Thomas	1978	X		X	X	
Bateson	1979	X	X	X	X	
Davis, Gultinan & Jones	1979	X	X	X	X	X
Gronroos	1979	X			X	X
Lovelock & Young	1979			X	X	
Berry	1980	X	X	X	X	
Carman & Langeard	1980	X	X		X	
Gronroos	1980	X			X	
Kelly & George	1980	X			X	X
Upah	1980	X		X	X	
Beckwith & Fitzgerald	1981	X			X	
Bell	1981a	X				
Bell	1981b				X	
Booms & Bitner	1981	X	X	X	X	
Brown & Fern	1981	X	X	X	X	X
Enis & Roering	1981	X				
Fisk	1981	X				
George & Berry	1981	X			X	
Gronroos	1981				X	
Guseman & Gillett	1981	X	X	X	X	
Levitt	1981	X			X	
Lovelock	1981	X		X	X	
Lovelock et al	1981			X	X	X
Murphy & Robinson	1981	X		X		
Sandeman	1981	X				
Zeithaml	1981	X	X		X	
Kotler	1982	X	X	X	X	
Orsini & Marymount	1982	X			X	X
Shostack	1982	X				

Table 3.1 - Continued

CHRONOLOGICAL LISTING OF REFERENCES
ADDRESSING THE UNIQUE CHARACTERISTICS
OF SERVICES

Author(s)	Year	Intangibility	Heterogeneity	Perishability	Inseparability	Empirical
Blois	1983	X		X	X	
Dixon & Smith	1983	X	X	X	X	
Lovelock	1983a	X		X	X	
Lovelock	1983b	X	X	X	X	
Middleton	1983	X	X	X	X	
Robinson	1983	X	X	X	X	
Uhl & Upah	1983	X		X	X	
Berry et al	1984	X	X	X	X	
Foxall	1984	X	X	X	X	
Gronroos	1984				X	X
Krentler & Guiltinan	1984	X				X
Lovelock	1984a	X	X	X		
Lovelock	1984b			X		
Schneider & Bowen	1984	X			X	
Shostack	1984a	X			X	
Blackman	1985	X			X	
Hooley & Cowell	1985	X				X
Lovelock	1985				X	
Parasuraman et al	1985	X	X		X	
Rushton & Carson	1985	X	X	X	X	X
Shostack	1985				X	
Solomon et al	1985		X		X	
Zeithaml et al	1985	X	X	X	X	X
Berry	1986a	X			X	
Buttle	1986	X	X	X	X	
Easingwood	1986	X	X	X	X	X
Magrath	1986	X		X	X	
Schmenner	1986				X	
Bitner & Zeithaml	1987	X	X	X	X	
Cross & Walker	1987	X	X		X	
McAlexander & Schouten	1987	X	X	X	X	
Orsini	1987	X			X	
Shostack	1987	X				
Suprenant & Solomon	1987				X	X
Wheiler	1987	X		X		X
Cowell	1988	X	X	X	X	
Flipo	1988	X				
Gronroos	1988				X	
McIntyre & Sudhir	1988	X	X	X	X	
Parasuraman & Varadarajan	1988	X	X	X	X	X
Parasuraman et al	1988	X	X		X	
de Brentani	1989a	X	X	X	X	X
de Brentani	1989b	X	X	X	X	X
Delene & Lyth	1989				X	
Easingwood & Mahajan	1989	X	X	X	X	
Gronroos	1989				X	
Morris & Fuller	1989	X		X		X
Nicoulaud	1989	X	X	X	X	
Onkvisit & Shaw	1989	X				
Shams & Hales	1989	X	X	X	X	
Warren et al	1989	X				
Murray & Schlacter	1990	X	X	X	X	X

Opposition to Treating Services Differently

The majority of marketing literature supports the four distinguishing properties of services and argues for the resulting need to market them differently than goods; however, a small minority of scholars has opposed the suggestion that a distinct approach is required.

The principal thrust of the opposition is that any differences between goods and services are a matter of degree [Wyckham, Fitzroy and Mandry 1975]. The argument these academics have put forth centres on the theme that services are just another type of product class; thus, any unique characteristics that exist are similar to those found among other product classes. Subsequent authors, however, have found no support for this claim, and have instead found strong support to the contrary [Bateson 1977 Uhl and Upah 1983 and Zeithaml, Parasuraman and Berry 1985]. Further, marketers have -- and do -- take a wider perspective than simply marketing a product by its product class. For example, different marketing strategies are used for consumer than industrial marketing, and for domestic than international marketing.

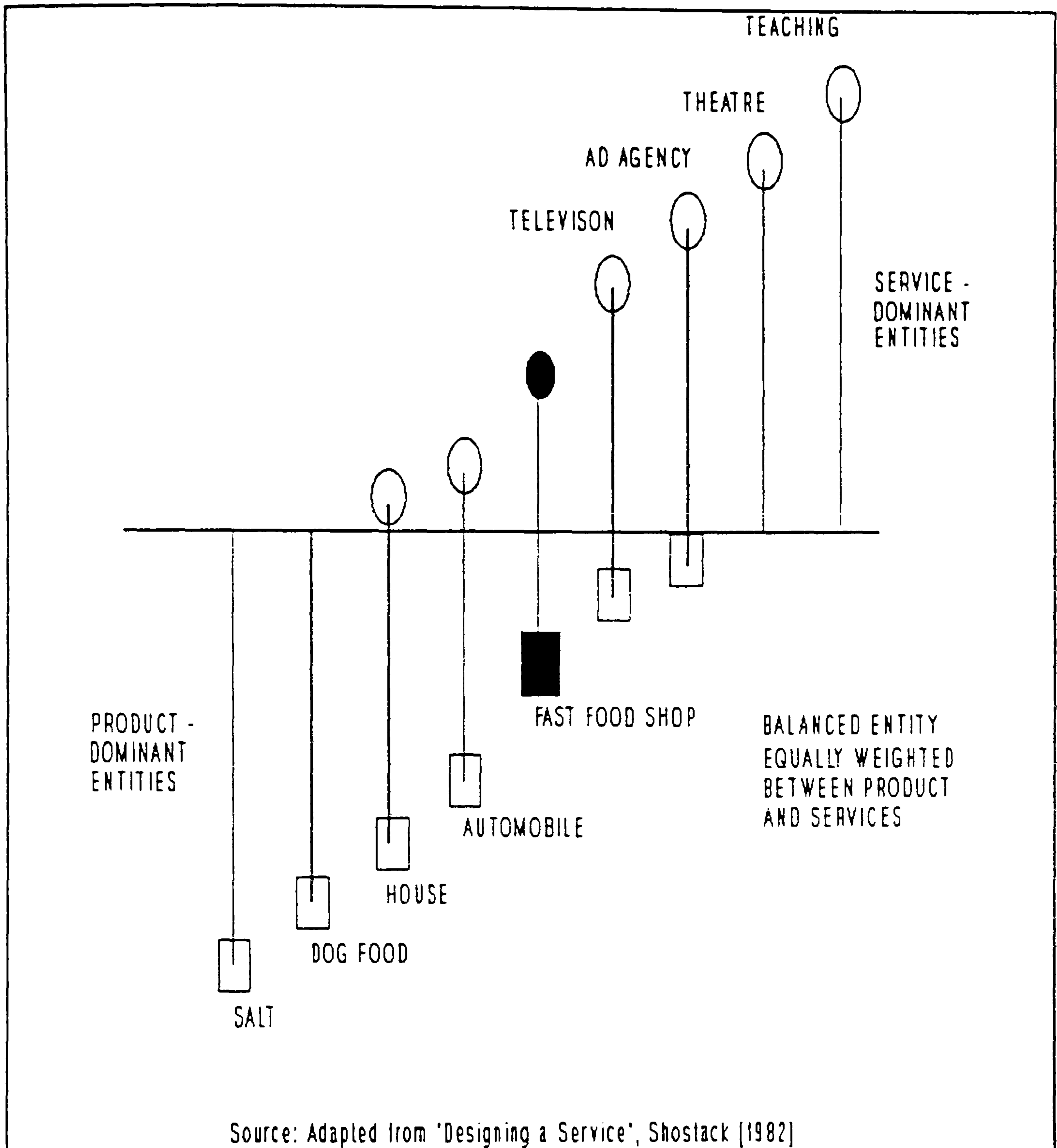
A second argument suggests that whether a product is tangible or intangible is irrelevant; it is the product benefits, not its features that are marketed [Enis and Roering 1981]. This line of thought has been discounted by most scholars whose thinking has been summarized by Rushton and Carson [1985] in the argument that the property of intangibility does matter for three principal reasons:

- 1.) it has a direct influence on customers;
- 2.) it affects the marketing of product benefits;
- 3.) it has a direct impact on marketing techniques and practices.

A third view contrary to that held by most marketing academics has been presented by Foxall [1984] and Middleton [1983]. These authors suggest that the four differences do not, by themselves, present a strong enough argument for developing a separate approach to the marketing of services. They argue that consumers purchase services which may or may not include physical entities. This assertion, however, has been well countered in the service literature [Shostack 1977, 1981, 1982, and Lovelock 1984a], where the issue has been addressed as degrees of difference between tangible goods and intangible services and is illustrated on a continuum [Shostack 1981]. The model suggests that, indeed, there is an overlap of tangibility and intangibility in some goods and services as entities approach the middle of the scale, but this overlap disappears as each returns to its respective end of the continuum. Thus, the issue is shown to be a matter of the degree of intangibility, and it is demonstrated that not all services are absolutely intangible. By the same token, however, the continuum shows that all services have at least some degree of intangibility. Figure 3.2 illustrates Shostack model of continuum.

Figure 3.2

SCALE OF ELEMENTAL DOMINANCE



Shams and Hales [1989] argue against the separation of goods and services by presenting their view through a product continuum as well. They argue that Shostack's version of the continuum still retains the goods/service

distinction, whereas it is more desirable to use a uniform product continuum. However, upon comparing Shams' and Hales' model with Shostack's, it appears the only point that separates the two is terminology. Conceptually, the Shams-Hales continuum is the same as Shostack's. Thus, the position of the latter two authors fails to support the argument against marketing services differently than goods.

These four arguments present the entire case against accepting that services are different from goods. None of the four survives close scrutiny, and all have failed to provide any form of empirical support for their respective claims.

Empirical Findings

Although there is now a substantial body of marketing literature addressing the issue of whether goods and services differ from each other, the majority of the material is of a descriptive nature and deals with definitional and conceptual issues. Even without strong empirical evidence, however, the majority of marketing academics have supported the premise that the marketing of services is different from the marketing of goods, and that there are four fundamental differences to be addressed. Although scarce and nonexperimental, some empirical investigations have been conducted into the differences between goods and services marketing. A review of these empirical studies reveals general agreement that service industries do approach marketing differently than goods

oriented firms.

In a study conducted by George and Barksdale [1974], major differences were found to exist between the ways in which goods and services firms approach marketing. Service firms were found to be less marketing oriented, less structured in terms of the marketing function, and less willing to spend money on marketing. In a study of 323 American companies, Parasuraman, Berry and Zeithaml [1983] also concluded that service firms were not as market oriented as goods firms. Hooley and Cowell [1985], in a study of 320 British firms, found as well that service firms were lagging behind product companies in marketing. Service firms were found to be less sensitive to environmental and market factors, less likely to undertake marketing research, and less receptive to the use of strategic planning tools.

In another study by Zeithaml, Parasuraman and Berry [1985], the practices, strategies and problems of service firms were examined. Fluctuating demand was found to be the most serious problem, followed by costing and quality issues. The study also found that the body of theoretical marketing literature corresponded closely with the actual practices and strategies used by the sample firms.

A number of empirical studies have also concluded that product intangibility has a profound effect on marketing practices [Rushton and Carson 1985]. In a survey of 285 sales representatives in three separate service industries, Kelly and George [1980] found that differences exist

between the selling of goods and services as a result of service intangibility. The study concluded that greater importance is placed on the service organisation's reputation, and that the sales force must promote the reputation of the organisation more to help offset the intangibility of the service. It has also been found that the need for personal selling is greater in service industries [Parasuraman and Varadarajan 1988]. In a study examining the sales relationship in service selling, from a customer's point of view, Crosby, Evans and Cowles [1990] found that relationship quality is important in developing a lasting interrelationship between a client and firm, confirming Berry's [1983] theoretical input.

In a large consumer study, management of the provider-client interface (the service encounter) was found to be important [Krentler and Gultinan 1984]. From an industrial marketing perspective, another study determined that intangibility made it harder for a customer to evaluate the service in relation to quality. This was further complicated by the effect of inseparability, since a service cannot be inspected prior to purchase [Wheiler 1987].

Further effects of inseparability were identified in a study of 323 firms across 11 different service industries by Berry, Zeithaml and Parasuraman [1984]. Fluctuating demand was identified as a problem in a wide range of these firms. It was found that service organisations tend more often to respond to fluctuating demand by using employee-

related strategies instead of marketing strategies.

In a controlled experiment, a simulation method was used to examine the effect of the interaction between the consumer and the supplier of the service (a service encounter) [Surprenant and Solomon 1987]. By changing the employees' behaviour, variations were detected in how the subjects evaluated both the employees and the institution. This implied that controlling the service encounter can be beneficial in mitigating the effects of inseparability. Similar findings have been reported by Bitner [1990]. In a study examining service failures, physical surroundings and employee responses helped to migrate the consumer's perceptions.

Studies have also been conducted to determine if the consumer perceives the purchasing of a service differently than the purchasing of goods. It has been determined that consumers require more information about services than they do about goods [Weinberger and Brown 1977 and Murray 1991]. Murphy and Ross [1986] have ascertained that one type of consumer, the information seeker, is more critical of service firms than are other types of individuals. Consumers also tend to seek out family, friends and associates for advice more often when purchasing a service, due to the lack of tangible evidence that can be used to help evaluate the purchase decision [Orsini and Marymount 1982]. Murray and Schlacter [1990] in a controlled experiment confirmed that consumers do perceive a higher risk level when purchasing a service.

Summary: In summary, the four traits -- intangibility, inseparability, heterogeneity and perishability -- have all received extensive theoretical examination, with a consensus in favour of the need to conduct marketing practices for services differently than those for tangible goods. The few empirical studies, reported in the literature to date, confirm the unique traits of services. Although encouraging as examples of research progress in the field, these studies are lacking in cross-industry and cross-cultural depth; as well as in the converse, singular industry depth. The need for validation of the limited empirical findings through follow-up research studies is also evident, which is reflective of the infancy of empirical work in this subject area.

The Growth of Service Marketing

"Widespread interest in the marketing of services among both academics and practitioners is a relatively recent phenomenon." [Lovelock 1983a]. Accordingly, the number of empirical studies is small. However, indications from these findings seem to support the increasing body of conceptual literature in the claim that there are distinct differences between the marketing of services and the marketing of goods.

Therefore, interest in the marketing of services is rapidly growing among academics and practitioners. Researchers at the Marketing Science Institute have designated consumer services as a priority area for

research [Weinberger and Brown 1977]. The American Marketing Association has conducted a series of conferences dedicated to various aspects of service marketing. In 1983, commitment of the American Marketing Association was demonstrated by the formation of a Service Marketing Planning Committee. Kelly [1983] stated the purpose:

I am charging this committee with recommending policy, plans and options to help the AMA become the primary organization in services marketing in the world.

There are now scholarly journals dedicated to the services industry and services marketing. For example:

Service Industries Journal
The Journal of Service Marketing
Journal of Professional Services Marketing
The International Journal of Bank Marketing
International Journal of Service Industry Management

Articles addressing the various aspects of service marketing have also been published in most of the other marketing journals.

Support for treating the marketing of services separately can also be found in the sudden surge of books that were published in the 1980's on service marketing and targeted toward both academics and practitioners. The following is a list of some recently published texts:

Table 3.2

RECENTLY PUBLISHED TEXTS ON SERVICE MARKETING

<u>Text</u>	<u>Author(s)</u>
<u>Managing Services Marketing: Text and Readings</u>	Bateson
<u>Service Management Effectiveness</u>	Bowen et al
<u>Service Quality</u>	Berry, Bennet and Brown
<u>Handbook of Marketing and Selling Bank Services</u>	Cheese, Day and Wills
<u>The Marketing of Services</u>	Cowell
<u>The Service Encounter</u>	Czepiel et al
<u>The New Service Economy</u>	Gershuny and Miles
<u>Profitable Service Marketing</u>	Johnson et al
<u>Management in Services Industry</u>	Jones (ed)
<u>Marketing for Nonprofit Organizations</u>	Kotler
<u>Marketing Professional Services</u>	Kotler and Bloom
<u>Managing Services:</u>	
<u>Marketing, Operations and Human Resources</u>	Lovelock
<u>Services Marketing</u>	Lovelock
<u>Bank Marketing Management</u>	Meidan

The first part of this chapter has examined the debate over whether service marketing is different from product marketing. The literature revealed four principal characteristics of services that separate them from goods: intangibility, inseparability, heterogeneity and perishability. The existence of each of these features was supported in the literature by marketing scholars. A small minority of authors have disagreed with the concept of a separate approach to service marketing. Upon closer examination of their arguments, however, it is found that they cannot be substantiated. Empirical studies and the marketing community are supportive of the concept that differences do exist between goods and services, and that marketing programs and applications must be adapted to meet the needs of the service industry. Lovelock [1983b] has,

perhaps, best summed up the direction marketing scholars should now be considering:

Service marketing at this point is beginning to mature as a field of study. We should be moving away from trying to determine what is "different" about marketing in the service sector and towards understanding research that offers insights to practising managers. The key to this latter approach lies in avoiding over-generalization about services and instead focusing research efforts on specific marketing problems that are faced by specific categories of services.

The Effect of Service Traits on New Product Development

This section will examine the effects of intangibility, inseparability, heterogeneity and perishability on the new product development process in the service sector. Although there is a paucity of documentation on the subject due to the relative newness of the subject matter, a limited amount of work has been conducted in the area. The findings tend to support the idea that the new product development process for services is affected by their unique traits.

Intangibility: A contributing factor to the risk inherent in the new product development process for services is their intangible nature. The development and market launch of many new services can be conducted very quickly, because there is less need for the large capital investments in production facilities that are required for many new physical products. Thus, the new service development process can be conducted too quickly [Shostack

1984a]. The process can also be done haphazardly, which can result in poor performance once the new product is on the market [de Brentani 1989a and Shostack 1984a].

It is often desirable to speed up the development process in service industries due to the threat of competitive reaction; and it is relatively easy for a competitor to copy a new service very early after the initial launch period [de Brentani 1989a, Easingwood 1986 and Carman and Langeard 1980]. The ease with which new services can be launched may result in their proliferation. As a result, the customer may become confused, and existing profitable operations may also be cannibalized. These effects have been detected in the financial services sector, and in the passenger rail industry [Cowell 1988 and Easingwood 1986]. Similarly, as Easingwood has identified, a large surge of new services in the marketplace will create an information overload with the operations staff and with the consumer. This, in turn, inhibits new product idea generation from two important sources: front-line staff and customers.

Intangibility also gives rise to difficulties in conducting research and development (R&D), as well as for conducting marketing research. R&D is complicated by the absence of a physical prototype to market test [Thomas 1978], and patents cannot be obtained [Cowell 1988]. In test marketing, consumers cannot see the service, and they often experience difficulty conceptualizing it. As a result, qualitative research is required more often for

services than for physical products [Thomas 1978 and Cowell 1988]. Similar difficulties are experienced at the concept testing stage [Murphy and Robinson 1981].

Initial market penetration for a new service is often more difficult to achieve than for a physical product, as the consumer cannot evaluate the offering before actually making a purchase. Thus, the cost of the introduction stage is high [Thomas 1978 and de Brentani 1989a]. Zeithaml [1981] has indicated that this slow diffusion level for an innovation must be planned for, and that care must be taken to speed up the process. Generation of tangibility can be used as one way to counter the potentially slow adoption process. The new service design, therefore, must include methods to ensure that tangibility is incorporated into the process [Shostack 1984a and Warren, Abercrombie and Berl 1989]; for example, adjusting the promotional strategy to include introductory price discounts.

The adoption process can also be sped up by successfully linking the new service to the corporation's reputation or to the corporation's image [Besson 1972, Thomas 1978, Langeard and Eiglier 1983 and Easingwood 1986]. Associating the consumer's previous experience with the new one he/she will have; or linking the new service with the favourable position the company may have in the consumer's perception of an industry, can offset the negative effects of intangibility on pre-purchase evaluation of the service. This linking of the service with reputation and image will also have an impact on the

establishing of a company's objectives for new product development, since it will want to ensure that a new product upholds the corporate identity [Easingwood 1986]. This aspect of new service development usually does not apply to nonservice new products because the number of channel members in the distribution systems makes a link between the product and the manufacturer less likely to occur in the customer's mind.

Finally, de Brentani [1989a] has found that intangibility affects the way in which a firm measures new product development performance. More service firms were discovered to measure success by sales volume and market share instead of profit. In addition, new services were often found not to be expected to earn a profit. Instead, they were used to increase the sales of existing services that the company offered, a form of cross-selling.

Inseparability: The simultaneous production and consumption of services means that the organisational structures of service firms more seriously affect the new product development process than those of firms that produce tangible goods. New service development is an interactive process; therefore, it involves all departments in the firm [Booms, Davis and Guseman 1984, Shostack 1984a and Easingwood 1986], because each has a specific part to play in the delivery of the service.

Staff in operations departments have been identified as particularly important to the development process, because of the critical role they play in the production

and delivery of a new service [de Brentani 1989a, Easingwood 1986]. Thus, it is not surprising that the delivery system has been identified as having significantly more importance for service firms than for goods firms in the development of successful launch strategy [Besson 1972, Boom and Bitner 1981, Lovelock 1984c and Easingwood 1986]. Short distribution channels for services mean that consumer evaluation of new services is directly affected by how well employees produce and deliver. Easingwood [1986] has also found that the post launch stage of the new service development process is harder to evaluate. Determining costs and the cost allocation process are problematic due to the intermingling of the new product with other products already being offered.

Heterogeneity: The inseparability of production and consumption is further complicated by the fact service delivery is not standardized. There is a dependence each time the service is performed upon who delivers the new service and how it is delivered to the consumer. Quality control becomes a factor in the success of the service launch. As de Brentani [1989a] has noted, the critical issue resulting from heterogeneity is how to develop a system that achieves a suitable degree of standardization and/or level of customisation in the service. This issue is important because, unlike the development of tangible products, new service development processes present more opportunity for customisation. It is possible to develop services that differ marginally from each other, or are

tailored to the customer. This offers potential for unique selling advantages over competing service companies. Use of this advantage is particularly evident in highly innovative services [de Brentani 1989a, Cowell 1988, Shostack 1987, and Easingwood 1986].

As with intangibility, heterogeneity contributes to difficulties in concept testing. Each time the service is delivered, the quality is affected by the delivery system and the people involved [Cowell 1988]. To overcome this variability during testing, extensive monitoring and control procedures are required. However, this leads to test results that are not an accurate reflection of the actual service, since the effects of heterogeneity that will be present in the actual launch will have been removed.

Perishability: The fact that services cannot be inventoried combines with the simultaneity of production and consumption to create additional obstacles for new service development. Demand/supply difficulties, as well as production efficiency problems, arise [de Brentani 1989a]. Because a new service offering must be integrated with existing ones, more planning is required for new services than for launches of physical products to compensate for the lack of flexibility in service production. This entails that a higher level of departmental integration between operations, employee training and marketing is required to develop a production and delivery system that will avoid wasted service capacity

[Levitt 1981]. It has been further suggested by Levitt that the design phase of the development process should include the necessary consideration for the appropriate mix of human and machine delivery to help offset the problems of perishability and inseparability.

On the positive side, the perishable aspect of services provides the opportunity to develop new services that help to fill the gap created by uneven supply/demand needs, and to develop new offerings that will help utilize service capacity in off-peak periods [Berry 1980 and Lovelock 1983a].

Summary: More questions than answers exist in the new product development process for services. However, research to date indicates that the new product development process for the service industry is affected by the unique characteristics of services. These effects include the actual stages in the development process and the need to integrate other functional groups in the organisation with the process. A model developed later, in Chapter 5, attempts to capture, among other things, this need for internal marketing.

Recently, Easingwood [1986], the first researcher to provide empirical evidence of the effects that the unique traits of services have on the new service development process, stated the direction that further research in new service development should take. This stated need for in depth investigation has not yet been met by Marketing researchers.

Future research should attempt to formalize some of the observations so that they can be compared with practices in nonservice sectors. However, of comparable interest is finding out how individual service sectors, such as the financial or travel/transport sectors, adapt to the special characteristics, not just of the entire service economy, but also of their own particular service sector.

Easingwood 1986

Status of New Service Development Literature

Despite a wealth of information about new product development for tangible goods, very little research has been conducted to date into new product development in the service industries. The previous section has identified, however, that the distinct traits of services do affect some areas of the development process. Nevertheless, it is apparent that the marketing community has not yet met the need for research into the process of new service development.

In the period before 1975, marketing literature that mentioned new service development centred on innovation and focused on consumer perspectives, rather than the actual development process [Nevers 1972, Peterson, Rudelius and Wood 1972, and Green, Langeard and Favell 1974].

The post-1975 period has brought increased activity in the literature; however, it tends to be fragmented. Examination of the diffusion of innovation from a consumer's perspective has been further examined by Vinson and McVandon [1978], Zeithaml [1981], Woodside, Sanderson and Brodie [1988], Sanderson, Brodie and Woodside [1989], and Warren, Abercrombie and Berl [1989]. The innovation

process for services has been examined from the perspective of management by Meyers [1984] and Schwartz [1984]. The increasing impact of new technology on new services has been identified by Quinn and Gagnon [1986], and Ghosh and Craig [1986] have presented an approach to location analysis for new services. Additionally, Parasuraman and Varadarajan [1988] have found empirical support for the contention that future dependence on new products is expected to continue in the service industry. The strategic management of service development, from the perspective of which markets should be developed, has been examined by Langeard and Eiglier [1983]. The need for a separate look at new product development for the service industry has been the most common area of discussion (see previous section), although most of the authors have failed to present new models, or to offer improvements to existing product models.

Development processes for two new services have been described using case studies, but both provide only cursory overviews of the process, instead of the traditional in-depth case analysis. This limits their contribution to knowledge of the new service development process. The first author [Robinson 1983], provided an examination of a new business service for a cable TV firm; but, the study was limited to the market research and business analysis stages of the process. The second case by Scarbrough and Lannon [1989], about a bank's start-up of a home and office banking system, provides very little information about the

detailed development process and, instead, takes a macro perspective of the process.

Murphy and Robinson [1981] have discussed the application of the concept test to new service development. Although their article presents little new information, it does provide one of the first examples in the literature of an application of traditional product development practices in a service setting. How industrial service firms measure success was investigated by de Brentani [1989b]. The study concluded that the unique traits of a service firm did influence the measurement of success and how the new service performance was measured.

Shostack [1981, 1982, 1984a], in elaborations of an earlier article [1977], has examined the design stage of services and has presented the concept of molecular modelling and blueprinting to offset the effects of intangibility in new service development. Molecular modelling involves providing a framework for identifying and visualizing on paper the elements of the service, and the interaction among these elements. The objective of this approach is to show structures and relationships within the new service. After the components of the new service are identified, the blueprinting phase is used to examine the sequence and interrelationship of these elements. This involves mapping out the operational process in a diagram form. The advantage of this approach is that it allows experiment by changing either an element of the new service or an aspect of the sequence, and

illustrates on paper the effect these changes will have. The intangible idea is, thus, made tangible and decisions are forced by outlining the process on paper in a detailed graphic form instead of in a simply descriptive fashion. The end result is a clear idea of the new service at an early stage in the development process.

New Service Development Process Models

Model development for new services has received only limited attention from marketing scholars. Only four models are to be found in the literature. None of these has been empirically tested. This section will review each of these models in the sequence of their development.

Shostack: Relying on earlier experience as a consultant, Shostack [1984b] has developed a model for new service development based on what she has identified as four characteristics essential to the development process: It must be objective, precise, fact-driven and methodological. Figure 3.3 presents the stages of the model and provides an interpretation of each stage. This model incorporates the blueprinting concept developed in Shostack's earlier articles.

Although Shostack uses different terminology, her model parallels the well-known Booz, Allan, Hamilton [1982] model discussed in Chapter 2: Idea Generation (First Phase Definition), Screening and Evaluation (First Phase Analysis, Second Phase Analysis), Development (Second Phase Synthesis), Testing (First Phase Implementation), and

Commercialization (Market Introduction).

FIGURE 3.3

SHOSTACK'S NEW SERVICE DEVELOPMENT MODEL

	First Phase Definition	- Brief description of new service: verbal or written.
First Level Stage	First Phase Analysis	- Information-gathering process begins.
	First Phase Synthesis	- Basic boundaries for the service are drawn.
	Second Phase Definition	- Detailed written definition.
Second Level Stage	Second Phase Analysis	- Specifics are critiqued. - Focused market research is conducted.
	Third Phase Synthesis	- Develop final pre-implementation blueprint. - Pre-launch preparation.
	First Phase Implementation	- Operational functions are put in place. - Operation test conducted.
The Final Stage	Second Phase Implementation	- Finalize marketing mix plans.
	Market Introduction	- Launch service.
	Post-Introduction Audit	- Evaluate implementation stage, make corrections. - Possible modifications and/or enhancements are identified.

Source: Adapted from "Service Design in the Operating Environment", Shostack 1984b

Shostack's model does not appear to provide for the depth of the new product process found in earlier new product models. A detailed business analysis is not called for in the model; nor are performance measures, or

objectives. In addition, there does not seem to be any integration of the new service with corporate planning, and the marketing mix is not pre-tested for consumer acceptance.

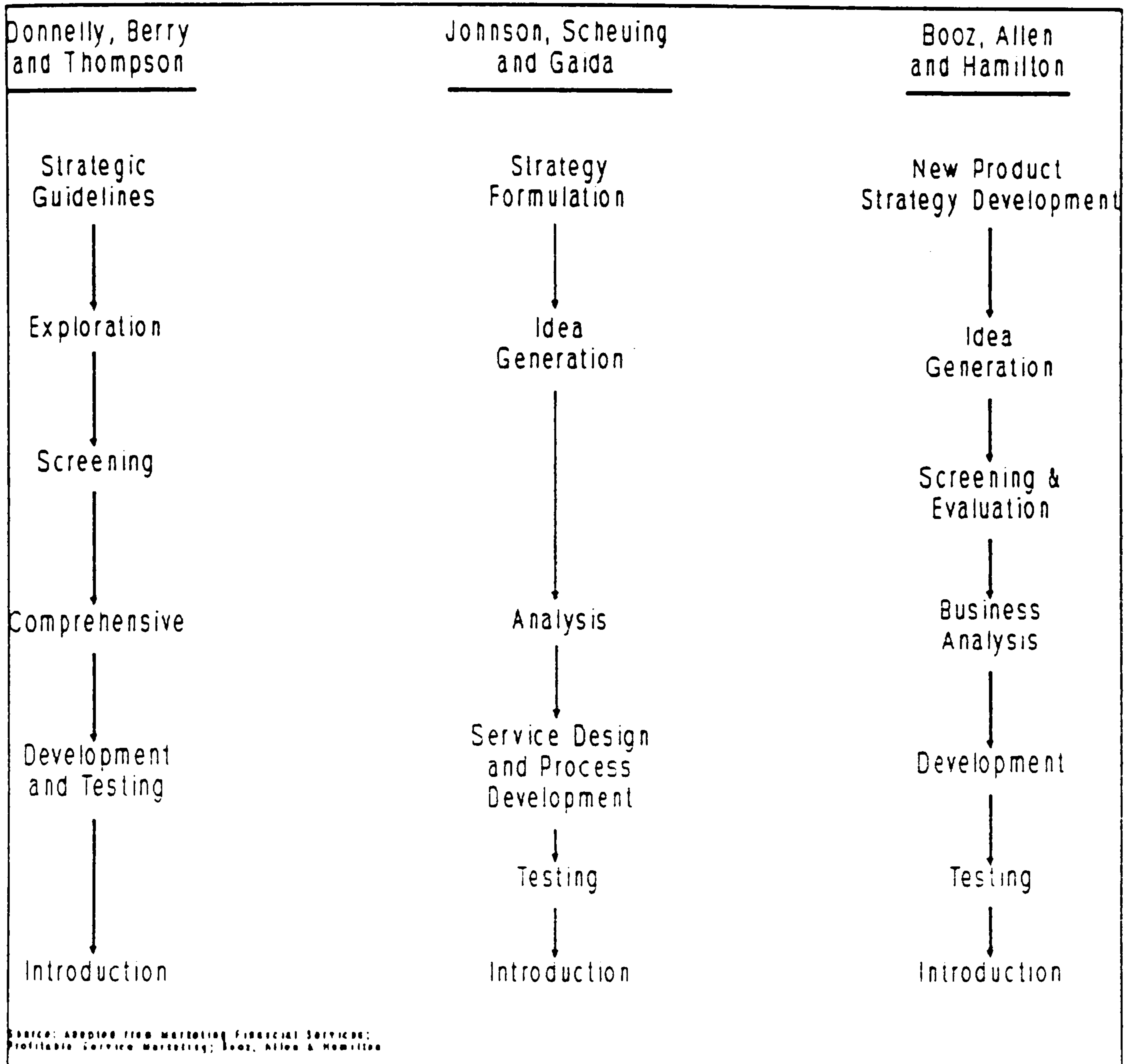
In summary, although it introduces the novel concept of blueprinting, Shostack's model is deficient. It does not seem to meet the four characteristics Shostack has identified as being necessary for the successful development of a new service model, and it has not been empirically tested.

Chase [1983] has suggested that Shostack's approach of using the traditional manufacturing concept of blueprinting is too restrictive, and that it fails to incorporate into the process the effects of interaction with the consumer. Similar concerns have been expressed by Lovelock [1984a]. He suggests that the use of blueprints will tend to focus management's attention on operational issues, instead of maintaining a balance between these concerns and those of marketing -- consumer satisfaction.

Donnelly et al and Johnson et al: Two other normative models for the new service development process have been proposed in the literature. These models, developed by Donnelly, Berry and Thompson [1985] and Johnson, Scheuing and Gaida [1986] are presented in Figure 3.4. For ease of comparison the Booz, Allan and Hamilton model developed in 1982 is reproduced in Figure 3.4.

Figure 3.4

NEW SERVICE DEVELOPMENT MODELS



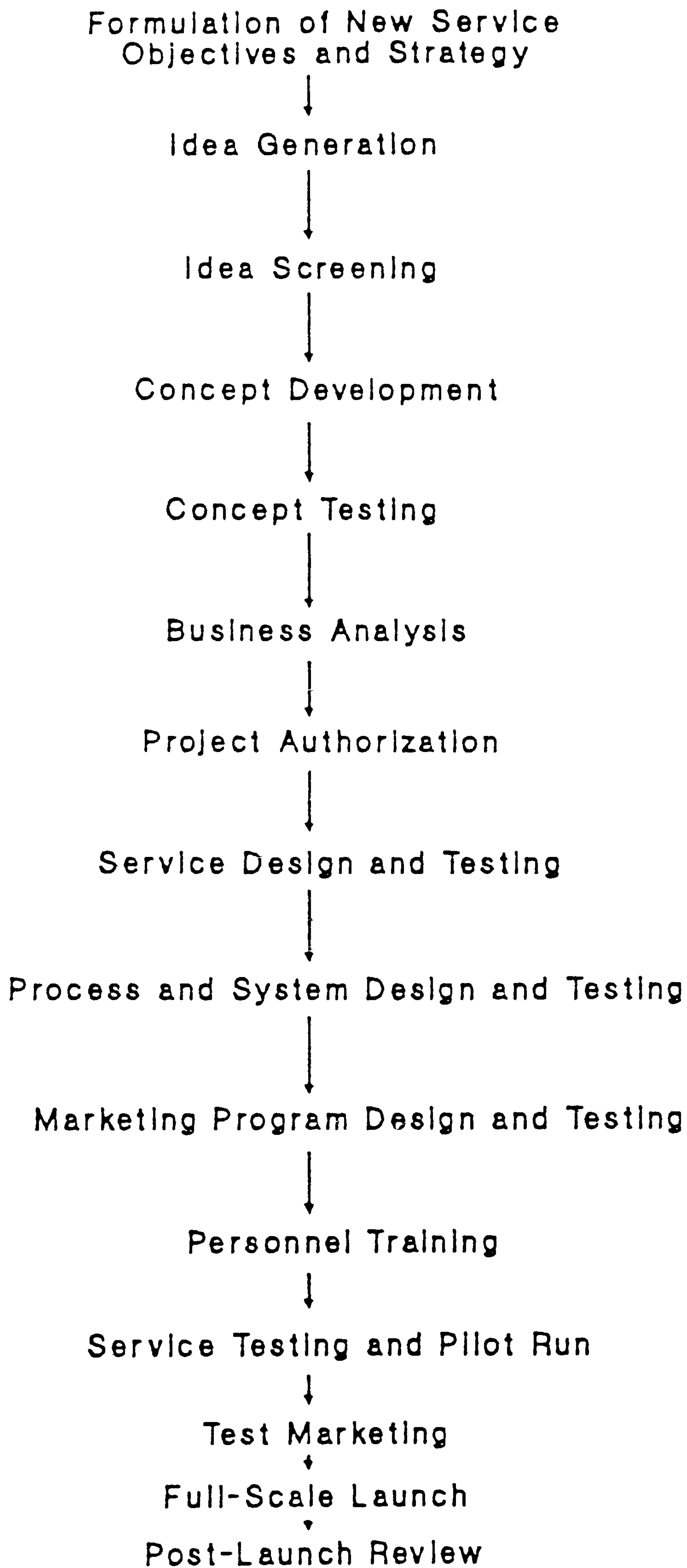
Upon examination, the newer models are also found to closely parallel the one developed by Booz, Allan and Hamilton. Donnelly et al have combined the development and testing processes into one step and have replaced the term 'business analysis' with 'comprehensive'. Johnson et

al have combined the screening and evaluation steps with the business analysis to reflect only one stage, 'analysis'. This model does, however, segment the development stage to keep the design of the service separate from the process of the service. But, neither model has been tested empirically, and, neither accounts for the added complexity of developing a service from an intangible idea. In addition, the difficulties of conducting market research for a new service in the early stages of the development process are not reflected in either model. The importance of the post-evaluation stage after the introduction of the service into the marketplace is not mentioned by either set of authors.

Scheuing and Johnson: The most recent new service development model in the literature has been developed by Scheuing and Johnson [1987, 1989a,b], as illustrated in Figure 3.5.

Figure 3.5

SCHUING AND JOHNSON
NEW SERVICE DEVELOPMENT MODEL



This model reflects the first attempt at an empirically based model of the new service development process. Unfortunately it is derived from a survey with only 66 respondents. It is also restricted to firms in the United States, and has not been tested for reliability. The model maintains the general steps found in most of the models developed for physical products, but has been expanded to include some of the unique needs of the service industry. It also reflects the complexity inherent in designing new services, as identified by Shostack [1977]. However, as the authors themselves have stated, this model is only a good first attempt at describing the new product development process in the service industry:

To be of true benefit to the service marketing community beyond the mere stimulation of critical thinking, this model needs to be tested empirically in more service industries and revised in accordance with the results of such investigation.

Conclusion

This chapter has reviewed the status of service marketing as a subset of the marketing discipline. The debate that has predominated in the marketing literature for the last two decades has resulted in most marketing scholars agreeing that there are significant differences between goods and services, and that marketing for service industries requires a special approach in accordance with the unique traits of services. Accordingly a variety of factors have been identified as affecting the new product

development process for services. To date, however, only four new service development models exist in the marketing literature, and all four have been found lacking. This reflects the relative newness of the subject area and the need for further research. Empirical research in the service sector on marketing issues, including the new service development process, has so far been limited. Cowell [1988] has summed up the status of current research in a recent article:

The area of new service development is poorly documented. Further empirical studies are required to enable more detailed and in depth comparisons with practices in new product development. Also needed are more exhaustive new service development studies within specific service sectors such as financial services, professional services ... to add to our knowledge of this critical area of marketing practice.

As Cowell suggests, limited empirical investigation has been conducted in this important economic sector of industrialised nations. The high failure rate reported for tangible products combined with the extensive amount of research conducted into tangible new product development indicates the importance of this type of research. Considering the theoretical implications of the unique traits of services, parallel needs can be expected to exist in a service environment.

However, the diverse environmental and industry backgrounds of the different types of service enterprises, combined with the lack of strong empirical evidence from previous researchers to build upon, suggests that

generalisations may present inherent risks to a researcher. Thus, as Cowell [1988] suggests, in depth, specific service sector studies are first needed. This study attempts to focus on one industry sector --financial services -- to provide controls for these diverse factors and, thereby build a foundation for research in new service development.

CHAPTER 4

THE PERSONAL FINANCIAL SERVICES INDUSTRY

Introduction

The history of financial institutions in the United Kingdom dates at least as far back as the Sixteenth Century with the establishment of the first private banks. Since that time, a diverse financial services industry has evolved with sectors to suit the needs of a variety of business and private clients. This network of financial services falls under the umbrella of the Bank of England, the nation's central bank.

Originally, the private banks served merchants, manufacturers and the wealthy classes. Building societies were established in the late Eighteenth Century to finance construction of homes for the less affluent and later began to take savings deposits. Trustee Savings Banks (TSBs) and the Post Office Savings Bank were established in the Nineteenth Century to invest savings in public sector debt. These institutions offered alternatives to banks, which were accepting small deposits by this time, and to building society share and savings accounts. In the years after the First World War, finance houses emerged as providers of short-term credit for consumer goods. During the same period, insurance annuities became another method of saving for the ordinary consumer. In 1968, the National Girobank was introduced at Post Office outlets as a cash transferral system for payment of bills, primarily for consumers

without bank accounts. In the past two decades banks from other countries have also begun to play a significant part in the market for financial services to Britain's consumers.

Financial institutions touch the lives of the majority of British citizens. In 1986, 68 percent of British adults had current accounts with banks, and 60 percent had building society savings accounts. Meanwhile, 35 percent of adults had bank credit cards and 35 percent had mortgages [Beadle 1988]. Government statistics indicate the contribution to Britain's economy by financial institutions has grown steadily. By 1988, the financial services industry was a major contributor to Britain's Gross Domestic Product, having accounted for 19.1 percent of the GDP, and 11.2 percent of the workforce [CSO Blue Book 1989]. This represents an increase of 7.6 percent in contribution to the GDP and a 4.3 percent rise in employment over the previous decade.

Although the lines denoting which financial institutions offered which services were once clearly drawn, those lines have all but disappeared in the past two decades, largely due to changes in legislation. As a result, competition among financial institutions has accelerated greatly. As competition has heightened, so has the drive to develop and launch new services that appeal to increasingly sophisticated consumers. This challenge is particularly relevant to building societies, which are the focus of this research, as they emerge from their

traditional roles as providers of savings and mortgage services to become active competitors -- not only for these services, but for whole ranges of consumer banking products.

This chapter will briefly trace the history of the personal financial services industry in Britain, -- particularly as it applies to the building society movement and will, then, discuss the ways in which the personal financial services sector has adapted to its ever-changing environment. Results of an exploratory survey to confirm the proliferation of new services will be presented; and the chapter will conclude with a review of the literature on the development of new financial services. The need for additional research in this particular branch of new service development is evidenced by the lack of literature to date, despite the high level of activity in new service launches.

Clearing Banks

Clearing banks are the building societies' major competitor in the personal financial services market. In 1989, clearing banks held nearly 35 percent of the market for personal savings, compared to building societies' 53 percent; and the banks had gained almost 20 percent of the mortgage market, for which they had begun to actively compete in 1979. This gain in the mortgage market was largely at the expense of building societies, which lost 12 percent over the same period.

The first private banks were established in the Sixteenth Century by groups of businessmen, largely as a means of financing commerce. They would later become known as clearing banks. This term refers to their membership in the London Clearing House. Although not all retail banks are members of the Clearing House, the term "clearing bank" has come, since the 1980's, to denote all retail banks [Grady and Weale 1986].

The original private banks offered services to merchants, traders, manufacturers and the wealthy [Pressnell and Orbell 1985]. Although banking services to the public -- largely in the area of deposits and money transfer -- gradually took shape as the working classes became more affluent, it was not until the late 1960's that clearing banks began to aggressively seek out this sector of the market with new ranges of services [Stafford, 1982a].

In 1988 the top ten clearing banks in the U.K. held £743 billion in assets. They are led by the "Big Four": Barclays, Lloyds, Midland, and National Westminster.

Savings Banks

Trustee Savings Banks (TSBs) and the Post Office Savings Bank were established in the Nineteenth Century. These banks took personal savings and invested them in public sector debt. Although their services were very much alike in the beginning [Stafford, 1982a], their areas of specialty have since become separate. Since 1976, the

Trustee Savings Bank has been permitted to offer full banking services, and it has since become a retail bank. The TSB has 1,200 branches in the U.K., and had £13.6 billion in total assets in 1988. In 1972, the Post Office Savings Bank was renamed the National Savings Bank (NSB), although its services have remained unchanged. It operates through Post Office branches.

Insurance Companies

By the 1930's, consumers began seeking means other than bank accounts for investment of their savings. Collins [1988] attributes this shift, partly to the political and economic uncertainty of the times together with a desire to retain the real value of assets, and partly to a period of low bank interest rates during which investments other than bank savings paid higher returns. During this period, insurance annuities became popular repositories for savings, along with building societies and savings banks. Once a provider solely of security for the dependents of the insured, life insurance companies now deal chiefly in investment-related services. Recently, they have begun to offer endowment-type mortgages as well [Fifield 1989]. The insurance industry leaders are General Accident, Sun Alliance, Royal, and Provincial.

Finance Companies

In the period between the two World Wars, finance companies began offering short-term credit to consumers for

the purchase of goods [Collins 1988], but this type of financial service did not take hold in the personal financial services market until the 1950's and 1960's, when a strengthening economy, increasing financial awareness on the part of consumers, and the fading of the stigma attached to debt for other than mortgages allowed this type of service to grow quickly [Stafford 1982a and Collins 1988]. Since the 1980's, finance houses have been facing increasing competition from credit cards [Fifield 1989].

Girobank

By 1968, money transmittal for payment of bills had grown in importance for the ordinary consumer, so the National Girobank was established and run through more than 20,000 main and sub- post offices. This bank was designed to serve the 75 percent of the population which, at that time, did not have bank accounts [Stafford 1982a] by providing a fast and economical service for transferring money and maintaining records of customers' accounts. However, the Girobank's growth rate was far less than expected. Although the bank had forecast 1.5 million accounts by 1973, it had only 800,000 by 1980 and more than half of those were held by the public sector [Stafford 1982a]. In 1985, the National Girobank incorporated and became the Girobank PLC. Consistently with the Conservative government's initiative of privatization, the Girobank was sold to the Alliance & Leicester building society in 1990.

Building Societies

The First 200 Years: The building society movement began in 1775 in Birmingham [Cleary 1965] and quickly grew during the following century. The first building societies were formed as terminating mutual societies by small groups of people whose collective subscription fees provided funds to build a home for each member. Once this purpose was fulfilled, early building societies were disbanded. However, by the 1800's societies had begun to encourage, by paying interest, savings deposits from members who had surplus cash. They would, then, loan money for house purchase to other members at a higher rate of interest than that paid to savers. By doing this some societies were able to become permanent and to provide savings and mortgage services to greater numbers of clients. Nevertheless, all building societies continue to be owned by their members, or shareholders, and all earnings are re-invested for the benefit of members, rather than taken as profit, as is the practice with clearing banks.

The number of building societies peaked in 1895 at 3,642 with £41 million in total assets and shareholders numbering 631,000 [Boleat 1982]. However, the period between 1895 and 1918 marked the beginning of a decline in the number of societies. This was due partly to the termination of those that had fulfilled their initial purposes, and partly to the general economic instability of the times. By 1918, membership numbers remained much as they had been a generation earlier, at 625,000; and the

number of societies had declined to 1,336. However, the total assets had increased marginally to £68 million [Boleat 1982].

Between World Wars I and II, building societies experienced strong growth as consumers bought more homes in response to low interest rates and government rent controls that discouraged construction of new rental housing. By 1939 there were just over 2 million shareholders, and combined assets had grown to £773 million. But, the number of societies had continued to decline to 960 by this time.

The post World War II period brought continued prosperity for the movement. The need for new housing was acute, and government support in the form of a £100 million loan to building societies enabled them to increase loan portfolios. Their numbers continued to decline, but the generation of assets in the remaining societies continued to grow.

The continuing decline in numbers was, again, partly due to the termination of older societies; but merger activity had also begun to play a part. These mergers took two forms: 1.) smaller societies transferring their assets to larger ones; and, 2.) amalgamation of two societies to form larger societies [Drake 1989]. The result was an increasingly concentrated industry, with individual building societies having larger asset bases than their predecessors.

From the time they began paying interest on deposits, building societies had been the virtually unrivalled

suppliers of savings services to the general populace. This status changed in the 1960's, however, when clearing banks, which had previously paid little attention to small savings accounts, began to compete actively for personal deposits. After incurring a market share loss in the early 1970's due to higher interest rates offered by banks, building societies were able to meet the challenge. By the end of the 1970's, they had captured 46 percent of the personal savings market. This compared to 35 percent held by banks. This achievement has been attributed to the adoption by societies of two marketing strategies: 1.) increasing the distribution network from 985 branches in the 1960's to 5,700 by 1980; and, 2.) the use of promotional activities to generate consumer interest [Stafford 1982a].

The first 200 years in the history of the building society movement were, generally, years of prosperity despite decreases in the actual numbers of societies. Table 4.1 provides an overview of progress from 1895. However, the 1980's and the beginning of the 1990's have been an era of profound change in the financial services industry. The final effects of this change upon the continuing prosperity of building societies are yet to be seen.

Table 4.1

PROGRESS OF BUILDING SOCIETIES FROM 1895 TO 1980

Year	Number of Societies	Number of Branches	Number of Shareholders (000)	Total Assets (£M)
1895	3,642		631	41
1900	2,286		585	60
1910	1,723		626	76
1920	1,271		748	87
1930	1,026		1,449	371
1940	952	640	2,088	756
1950	819	750	2,256	1,256
1960	726	985	3,910	3,166
1970	481	2,016	10,265	10,819
1980	273	5,684	30,636	53,793

Source: Housing Finance, (1989) No. 4
New Legislation for Building Societies (1984)

Note: For the period 1940-1960, the number of branches is an estimate by the Building Societies Association.

Post 1980: The 1980's was a decade of change for building societies. The number of societies continued to decline to 106 by the end of 1989. However, the number of staff, branches and the value of the asset base increased throughout most of the same period. Table 4.2 provides yearly statistics.

Table 4.2

BUILDING SOCIETIES: EVOLUTION IN THE 1980'S

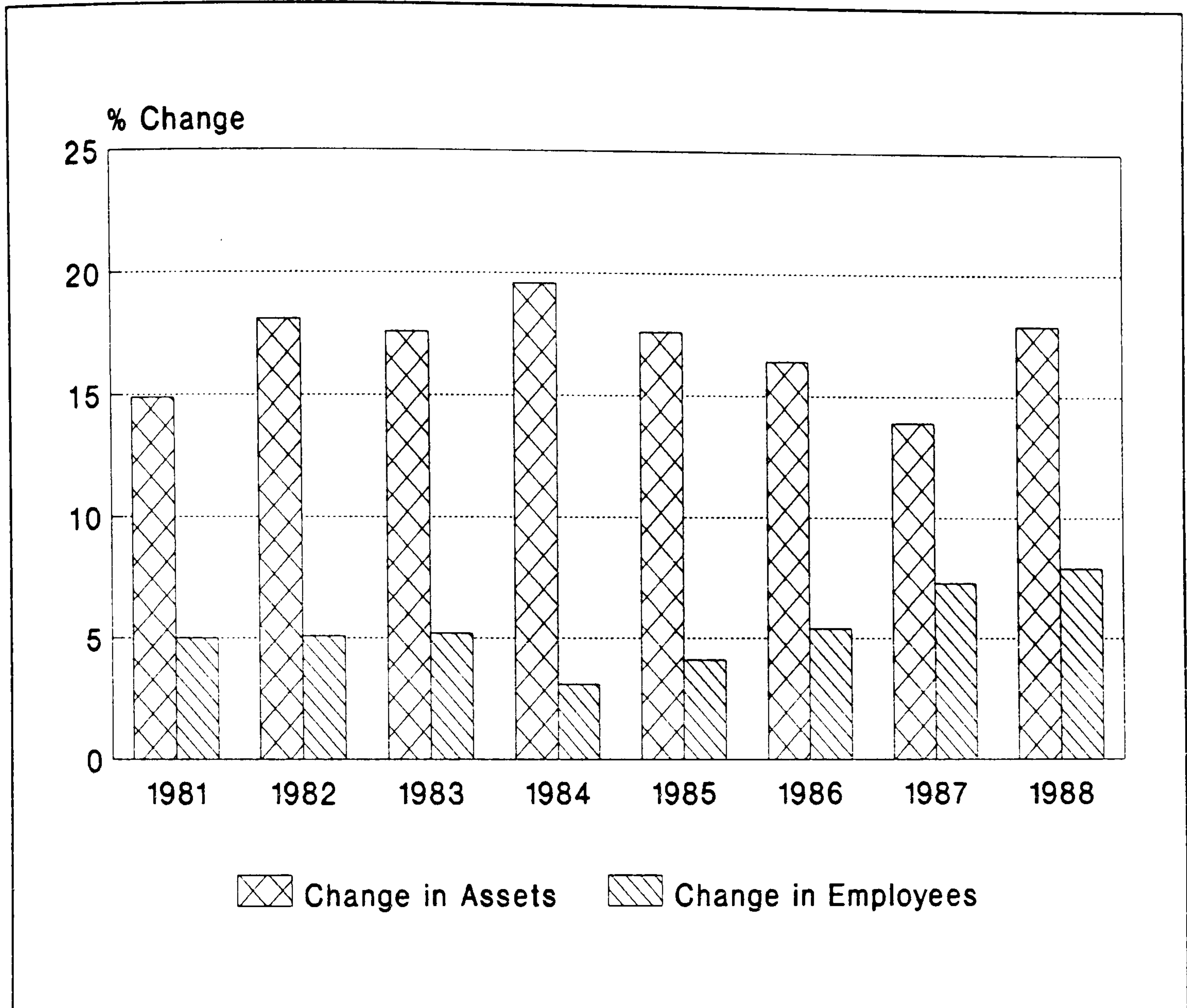
Year	Number of Societies	Number of Branches	Number of Shareholders (000)	Total Assets (£M)	Number of Employees (000)
1980	273	5,684	30,636	53,793	52,727
1981	253	6,162	33,338	61,815	55,337
1982	227	6,480	36,607	73,033	58,149
1983	206	6,643	37,711	85,869	61,192
1984	190	6,816	39,380	102,689	63,114
1985	167	6,926	39,996	120,763	65,691
1986	151	6,954	40,559	140,603	69,259
1987	138	6,962	41,966	160,097	74,294
1988	130	6,915	43,813	188,844	80,136
1989	106				

Source: Building Society Fact Book 1987
Housing Finance (1989) No. 4

The decrease over the decade in the number of societies is a reflection of increasing merger activity, the continuation of a trend that began after World War II. This explains, in part, why the asset base has continued to expand while the number of societies has decreased. The large increase in the number of people employed in this industry sector is attributed by the Building Societies Association to the large increase in the number of branches during the early 1980's, and the expansion of product offerings brought about by changes in legislation during the latter part of the decade. Figure 4.1 illustrates the change in assets and employees, in percentage terms, from year to year during the past decade.

Figure 4.1

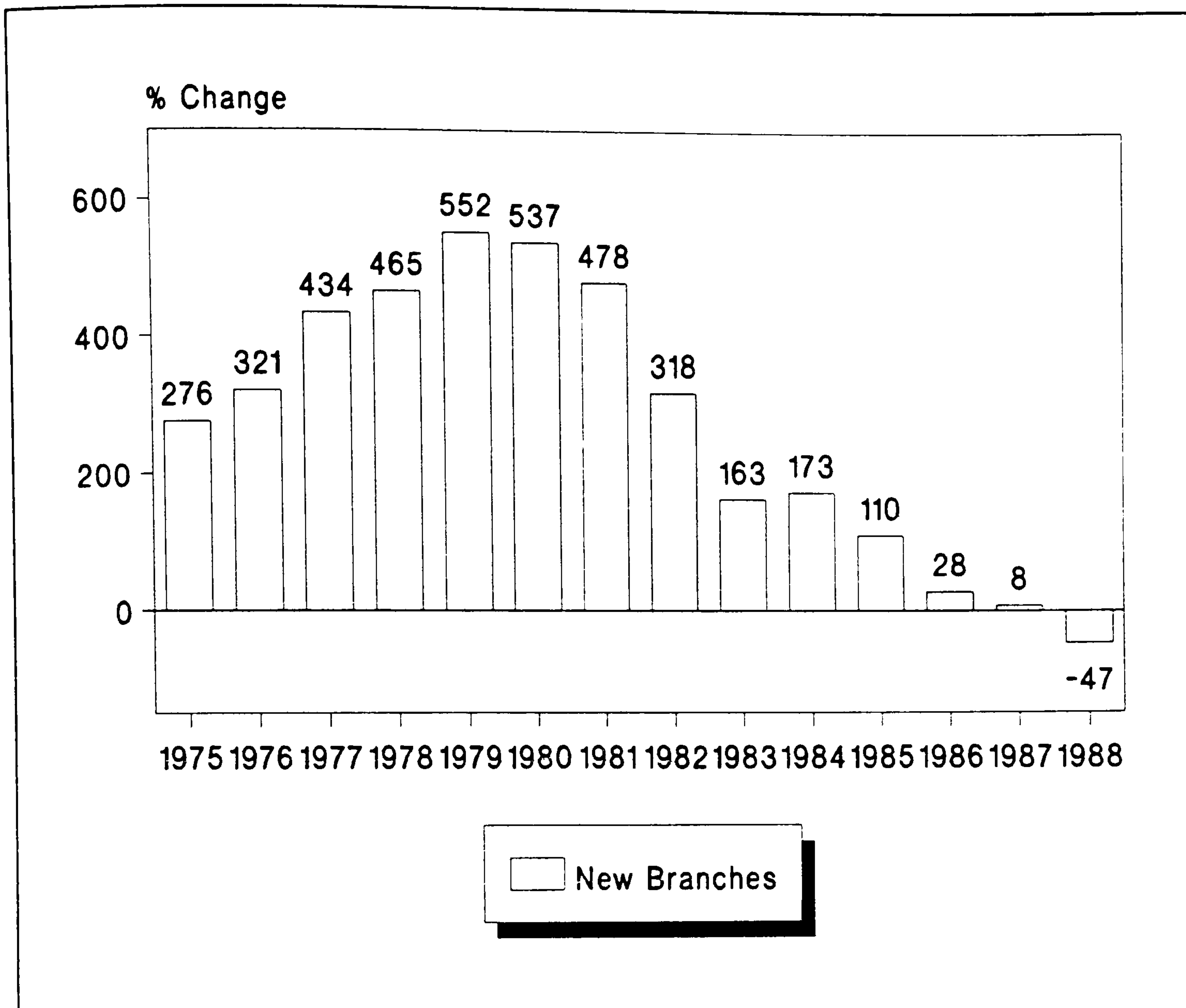
PERCENTAGE CHANGE IN ASSETS AND EMPLOYEES



In Figure 4.2 the number of new branches each year, beginning in 1975, is illustrated. The peak year for branch openings was 1979. This was followed by a gradual decline in the frequency of new openings until 1988, when more branches were closed than were opened. This trend has continued into the 1990's, as various building societies close unprofitable branches and those locations that are duplicated by mergers.

Figure 4.2

NUMBER OF NEW BRANCHES



A list of individual societies, their assets, numbers of shareholders and branches is provided in Appendix A.

Another measure of success for building societies is their relative standing in the personal sector liquid assets (savings) and mortgage markets. Developments in the savings market for the past 15 years are presented in Table 4.3. Building societies have been able to expand their percentage of the market from 38 percent to 53 percent during this period.

Table 4.3

MARKET SHARES IN PERSONAL SECTOR LIQUID ASSETS

Year	Building Societies (£M)	%	Monetary Sector (£M)	%	Deposits with Savings Banks (£M)	%	National Savings (£M)	%	Other (£M)	%	Total (£M)
1973	16,347	38	16,317	38	2,533	6	7,565	17	536	1.3	43,298
1974	18,316	38	19,290	40	2,595	5	7,554	16	435	0.9	48,190
1975	22,477	42	19,376	37	2,806	5	7,977	15	386	0.7	53,022
1976	25,778	49	20,733	39	3,281	6	8,417	16	350	0.8	58,560
1977	31,710	47	21,267	32	3,892	6	9,707	15	288	0.4	66,864
1978	36,609	47	24,489	32	4,463	6	11,233	15	353	0.5	77,147
1979	42,442	46	30,842	34	6,896	8	10,725	12	529	0.5	91,434
1980	49,617	46	37,407	35	7,652	7	12,101	11	593	0.6	107,370
1981	56,699	46	41,570	34	6,092	5	18,153	15	588	0.6	123,102
1982	66,993	48	51,622	37	--	-	21,673	15	388	0.3	140,676
1983	77,243	49	55,124	35	--	-	24,587	16	412	0.3	157,366
1984	90,492	51	58,972	33	--	-	27,903	16	422	0.3	177,789
1985	103,806	52	63,701	32	--	-	30,371	15	389	0.2	198,267
1986	115,653	52	71,759	33	--	-	32,556	15	361	0.2	220,329
1987	129,279	53	79,721	33	--	-	34,891	14	384	0.2	244,275
1988	149,442	53	96,439	34	--	-	36,280	13	371	0.1	282,532
1989Q1	154,349	53	101,219	35	--	-	36,004	12	366	0.1	291,938

Source: Financial Statistics (1990)

- Note:
1. Deposits with savings banks from 1982 onwards are included with National Savings.
 2. "Other" includes local authority temporary debt and tax instruments.
 3. "Monetary" sector includes, from 1982, the former banking sector, the Trustee Savings Banks and some small, previously non-reporting institutions.
 4. Although Abbey National building society became a public company in 1989, the 1989 figures do not reflect this change.

Having learned from the experience of having uncompetitive interest rates in the early 1970's, building societies began to develop new deposit-type products in the mid-1970's that offered higher rates of interest than traditional share accounts. Banks did not respond competitively until the early 1980's, when they adjusted their interest rates to more closely reflect the rates paid by building societies. During this period, the National Savings Bank also became more competitive by offering higher rates of interest and tax advantages, as the government used this vehicle to raise funds for the public debt. Building societies again responded by introducing

new products such as short notice accounts. Such new product development has been credited with the six percent increase in market share the societies gained between 1981 and 1985. During the same period the banks lost three percent. In 1985, banks responded by launching new, high interest checking accounts with a tiered structure of interest rates [Drake 1989]. This intensified the competition between banks and building societies that began in the 1960's, a struggle that has continued into the 1990's.

The 1980's also brought competition in the home mortgage market, as banks reacted to the relaxation of government controls over their reserve requirements. Initially, banks targeted the larger value mortgages, a market niche created by the practice of societies to charge premium interest rates on large mortgages. This enabled banks to gain a seven percent increase in their market share of the mortgage business between 1981 and 1983.

Consistently with a global trend, other financial institutions such as life assurance companies, foreign banks and newly formed mortgage corporations also moved into the U. K. mortgage market. The period after 1985 brought a surge of new mortgage products onto the marketplace as these financial institutions tried to gain market share. Fixed interest rate mortgages, special schemes for new buyers, equity linked mortgages and deferred interest payment mortgages were some of the new services offered.

This increase in competitive activity during the past decade has reduced the building societies' share of the mortgage market by 11 percent. At the same time, banks have gained 14 percent. Table 4.4 provides a 15-year summary of the market shares for each financial industry sector.

Despite their 11 percent loss in the mortgage market, building societies remained, at the end of the decade, the dominant force in mortgage lending, with a full 70 percent of the market. At the same time, the movement held 53 percent of personal savings. This indicates that, in general, building societies have adapted successfully to change throughout their long history. They have continually maintained a record of asset growth and profitability. However, the radical changes in the financial services industry in the 1980's have not yet been fully assimilated. As Edgett and Thwaites [1990b] have noted, "the changes within the financial services market over the last few years are likely to pose greater problems than societies have encountered previously". The following section examines these changes and their effects on the development of new financial services.

Table 4.4

SHARES OF THE U.K. MORTGAGE MARKET

Year	Building Societies (£M)	%	Monetary Sector (£M)	%	Local Authorities (£M)	%	Insurance Co. & Pension Funds (£M)	%	Other (£M)	%	Total (£M)
1973	14,624	77	1,160	6	1,696	9	1,317	7	159	0.8	18,956
1974	16,114	75	1,250	6	2,253	11	1,484	7	272	1.0	21,373
1975	18,882	76	1,310	5	2,872	12	1,533	6	405	2.0	25,002
1976	22,500	78	1,380	5	2,939	10	1,572	5	465	2	28,856
1977	26,600	80	1,520	5	2,943	9	1,580	5	483	1	33,126
1978	31,715	82	1,805	5	2,900	8	1,623	4	500	1	38,533
1979	36,986	82	2,403	5	3,193	7	1,854	4	572	1	45,001
1980	42,708	81	2,996	6	3,654	7	2,117	4	872	2	52,424
1981	49,039	79	5,444	9	3,917	6	2,205	4	1,383	2	62,060
1982	57,186	74	10,751	14	4,471	6	2,211	3	1,738	2	77,125
1983	68,114	74	14,845	16	4,327	5	2,336	3	1,759	2	91,650
1984	82,684	76	16,888	16	4,134	4	2,586	2	2,427	2	108,722
1985	97,397	76	21,111	17	3,632	3	2,786	2	2,911	2	127,838
1986	116,938	76	25,781	17	3,126	2	3,135	2	5,367	3	154,347
1987	131,518	72	35,893	20	2,693	1	3,904	2	9,368	5	183,376
1988	155,195	69	46,737	21	2,366	1	4,700	2	14,520	7	223,518
1989Q2	166,155	70	49,764	21	2,240	1	4,886	2	15,846	6	228,988

Source: Financial Statistics (1989)

Note: 1. "Monetary Sector" includes banks and Trustee Savings Banks.

2. "Other" includes other public sector and miscellaneous financial institutions.

3. Although Abbey National building society became a public company in 1989, the 1989 figures do not reflect this change.

Environmental Change and New Service Development

Introduction

The past decade in the U.K. financial services industry has been described by Davison, Watkins and Wright [1989] as a period of dynamic environmental change that has created turbulence in the marketplace. A changing environment has placed increasing pressure upon the financial sector to adapt existing marketing practices to suit new conditions. One outcome has been an increase in new service development and resulting market launches. Table 4.5 provides an overview of some of the product innovations that occurred during the 1980's; or, as indicated by Klemkosky [1989], originated in the 1970's but

have gained acceptance in the marketplace in the 1980's.

Table 4.5

FINANCIAL PRODUCT INNOVATIONS

<p>Market Instruments CD's - variable rate, zero coupon, indexed Sweep accounts - cash management accounts Money market deposit accounts Market index deposit accounts</p> <p>Notes YCAN - yield curve adjustable notes Medium-term notes PIN - portfolio income notes Step-down floating notes Deferred-pay notes Extendible notes</p> <p>Bonds Variable rate bonds Original-issue high-yield (junk) bonds Original-issue discount bonds - zero-coupon bonds Event risk-protected - STRIPS, TIGRs, CATS Event risk-protected bonds - poison pill bonds Exchange rate linked bonds Puttable bonds Pay-in-kind bonds - PIKs Insured bonds - credit enhanced bonds Asset backed bonds - CARs and CARDs</p> <p>Zero coupon convertible - (LYONs) Mortgage backed bonds Pass-throughs Collateralized mortgage obligations (CMOs) Real estate mortgage investments conduit (REMICs)</p> <p>Mortgages Adjustable-rate mortgages (ARMs) Shared appreciated mortgage (SAM) Reduction option loans (ROLs) Early ownership mortgage (EOMs) Home equity loan</p>	<p>Financial Futures Interest rate futures - Treasury bills, bonds Stock Index futures</p> <p>Options (Registered Exchanges) Equity options Index options Subindex options</p> <p>Loans Corporate loans Syndicated loans Swaps - interest rates & currency Interest protected loans - floors, caps</p> <p>Preferred Variable rate Convertible adjustable Auction rate</p> <p>Equity Unbundled stock units American Trusts - primes & scores Stock index participation certificates Stubs</p> <p>Mutual Funds High-yield bond funds Select industry stock funds International funds - bonds & stocks Option funds Country funds Money market funds Commodity funds Green funds</p>
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Previous research into the financial services sector has identified the individual environmental elements that are in flux and has addressed some of the impacts of these changes upon the marketing of financial services. Although the literature has not been centred on new service

development, a number of researchers have indirectly addressed new service development as a side issue to their research into environmental changes affecting the financial sector. One proposition continues to be identified: That there will be an increase in the level of new service development.

The four principal environmental factors that have affected new service development in the 1980's and early 1990's are addressed in this section. They are: legislative change, competition, technology, and the consumer.

Legislative Change

Changing legislation and the global trend toward deregulation have been recognized in the literature as having potential impacts on new service development. For example, Brooks [1987] has found that in the United States, the primary force driving change in the banking industry is deregulation. This deregulation has allowed for increased competition and the removal of some of the traditional barriers to market entry, which has permitted United States banks to pursue new opportunities [Lewis 1984, Brooks 1987 and Janson 1989]. Similar patterns have emerged in Canada [Rosenblatt et al 1988], the Middle East [Erol and El-Bdour 1989, and Yavas, Yasin, Wafa and Al-Qudsi 1990] and Asia [Young and Mun 1990] as legislative change has occurred. Countries of the European Community are also changing their respective domestic regulations in preparation for economic

integration in 1992 [Resnick 1989].

In the U.K., legislative changes have been said by Morgan [1989] to have "radically affected nearly all areas of the financial services sector". Deregulation is expected to increase diversification by banks [Wright and Watkins 1986] and other financial services institutions [Watkins and Wright 1986b]. Two recent pieces of legislation have acted as catalysts for new service development: The Building Societies Act 1986 (BSA) and the Financial Services Act 1986 (FSA). The combined effects of the two pieces of legislation are still being absorbed, but their importance has been identified by Thwaites [1989]. It is suggested that they will have a strong impact on allowing new or redesigned services to enter the marketplace.

By effectively removing many of the previous limitations in the scope of operation for the various industry sectors, the legislation has opened the marketplace for expansion by various types of financial institutions [Thwaites and Edgett 1991]. For example, building societies are now able to provide services that were formerly the restricted domain of the banks [Ennew, Wright and Watkins 1989a]. In a review of the BSA, Wright and Watkins [1987] found that, indeed, future growth for building societies was expected to be derived from new product development.

The Building Societies Act: The BSA was the government's response to the increasingly competitive

environment of the U.K. financial services industry that occurred during the first part of the decade. Before the Act, building societies were effectively at a competitive disadvantage due to government regulations that prohibited the societies from entering new product market areas while competitors were entering their markets. The Act removed many of these restrictions and enabled societies to enter into a wider range of services. The Act was further revised in February, 1988, to rectify inadvertent restrictions that arose from legal technicalities in the original version of the Act. The combined effect of the Act and its subsequent revisions was to allow societies to offer most bank-related services to individuals, and to offer a wider range of housing-related services. Activity is still restricted in the area of commercial financing.

The effect of the new Act was that, beginning in 1986, permission to develop a wider range of new services was given to building societies. A summary of the new areas into which they may now expand, and a corresponding list of potential new service ideas is shown in Table 4.6.

Table 4.6

SUMMARY OF NEW PROVISIONS UNDER BSA 1986

New Provision	Potential New Products
Money Transaction and Clearing	- ATM Overdrafts
Distribution of U.K. Currency	- Britannia Gold Coins
Foreign Exchange Services	- Travellers Cheques
Own Insurance Companies	- Life Insurance Products
Insurance Underwriting	- Car Insurance Products
Tax and Financial Planning	- Fee-based Advisory Service
Leasing and Hire Purchase	- Car Leasing Packages
Ownership of Stockbrokers	- Broker Related Services
Administration of Shares	- Develop Agency Broking and Principal Dealing Service
Share Registration	- Portfolio Management Service
Portfolio Management	- High Risk Investment Accounts
Act as a Nominee	
Ownership of Estate Agencies	- Property Listing Service
Conveyancing	
Arrange Wills	
Executor of Wills	- Estate Management Packages
Administrator for Estates	
Safe Deposit Facilities	
Family Trusts	- Pension Plan Products
Charitable Trusts	- Unit Trusts
Agents for Trustees	
Provide Unsecured Loans	- Credit Cards
	- Car Loans
	- Vacation Loans
Other:	
Development of Residential Land	
Acquisition of Mortgage-Backed Securities	

Note: Items under "New Provisions" column are adapted from:
Building Societies: The Regulatory Framework
Building Societies Fact Book 1987
An Introduction to the Building Societies Act 1986

The Financial Services Act: The Financial Services Act 1986, although a major piece of legislation for the financial services industry as a whole, does not affect building society share, deposit, and mortgage business.

However, as Boleat [1988] points out, it does affect all investment business that the societies may become involved in as a result of the BSA; for example:

- Endowment Insurance
- Mortgage Protection Policies
- Personal Pensions
- Personal Equity Plans
- Unit Trusts
- Wholesale Instruments
- Other investments in which the society may act as an appointed representative.

The principal aim of the FSA is to provide protection for consumers by ensuring that financial institutions operate in a professional manner with regard to their investment-related services. Societies, therefore, must be regulated by a Self-Regulatory Organization; or by a Securities and Investment Board; or they may elect instead to become appointed representatives of life insurance or unit trust companies. This choice between becoming independent intermediaries or appointed representatives has implications on how societies will develop the range of new investment/insurance products they are now permitted to market. By choosing the appointed representative route, societies can use the products the represented company already has on the market, with minimum changes in promotion and packaging to incorporate a society's brand. However, to choose the independent intermediary route means societies broker large numbers of products from a range of companies, or develop their own new products for the market.

Although the BSA primarily affected building societies, its effect on other types of financial

institutions was to increase competition, as building societies developed new products to enter previously restricted markets. The FSA, also affected the entire industry by establishing common standards and rules that now enable the consumer to better compare competing investment products, including those offered by building societies.

Competition

Competitive activity within the financial services industry has intensified world wide throughout the 1980's and into the early 1990's. In the United States market, Herman [1981], Sullivan [1981], and Dominguez and Page [1984] have identified the trend of increasing competition among existing institutions and the penetration of non-banks into the marketplace. This trend has been further confirmed by Reidenbach and Moak [1986], Crane and Eccles [1987], Janson [1989] and May [1987]. Similar increases in competitive activity exist in the U.K. [Stafford 1982b, Lewis 1981, 1984, Watkins and Wright 1986a, Ennew, Wright and Watkins 1989b, Scarbrough and Lannon 1989 and Watkins 1989a].

The increasingly competitive environment in the U.K. is a combined result of an increased presence of international banks as world banking becomes more aggressive [Kenyon and Mathur 1987, Turnbull 1982 and Wright and Watkins 1986], and increasing competition among domestic financial institutions, due, partly, to changes in

legislation [Lewis 1982, Watkins and Wright 1986b and Thwaites 1989]. The escalated rivalry for market share has been summarized by Davison and Watkins [1989] as "an increase in competition between suppliers for [the] consumers' limited savings/investment capital".

One result attributed to this activity is an increase in new or modified services [Davison, Watkins and Wright 1989, and Wright and Watkins 1987]. The drive to attract the consumer results in the need for broader product lines and expanded product offerings [Brooks 1987]. This often leads to copying of new products from institution to institution.

This reactive style of service development was confirmed in a recent study in the U.K. which showed that 39 percent of new services were instigated by the competition's product [Hooley and Mann 1988], while a study of United States banks and thrifts found that 78 percent of the respondents had drawn pertinent new product idea decision data from the competition [Kolari, Rose and Varadarajan 1986].

Technology

Concurrently with other environmental changes in the 1980's, technology has had an important impact on how financial institutions operate. Technological change has been experienced throughout the organisations, including the marketing departments, and can be expected to continue to have even greater influence in the 1990's.

The use of technology in the financial services industry has been previously documented by several authors; for example, Lewis [1984], Clark and Guscott [1986], Watkins and Wright [1986b], Morgan [1989], Stone and Clarkson [1989] and Thwaites [1989]. The application of technology has been identified by Brooks [1987] as the most important strategic issue for the industry. The United States banking industry alone spent \$20 billion on new technology in 1989 [Pare 1990].

Technology's impact upon the marketplace can be seen in the wide range of new services that it has made possible. Technology has aided new product development and created a need for innovation [Revell 1987]. Moutinho and Meidan [1989] identified nine different types of product innovations that have occurred in the financial sector as a result of technologically driven development. The introduction of an Electronic Funds Transfer System (EFTS) in the U.S. was documented by Vinson and McVandon as early as 1978. Similar developments have occurred with the development of electronic payment systems [Sartoris and Hill 1989] and with home banking [Tait and Davis 1989]. The Bank of Scotland used technology to develop a new service called Home and Office Banking [Scarborough and Lannon 1988, 1989]. Thus, it is no surprise that technology has been said to have caused innovative change within the financial services industry at an unprecedented rate [Klemkosky 1989], and that new service development will continue to be the byproduct of the increasing use of

new technology.

The Consumer

The consumer environment is always in flux; [Bareham, 1989] however, during the 1980's, the financial services industry has had to deal with a more knowledgeable and demanding customer than ever before [Watkins and Wright 1985 and Lewis 1989]. The combined effect of increasing wealth, higher wages, higher education levels, an aging society, and a younger generation that is comfortable with information technology has placed increasing pressure on the industry to adapt its operating and marketing practices.

The once-passive consumer has become increasingly critical of the products and services he/she receives [Janson 1989], and the changing consumer composition has altered what is required from the financial services industry. For example, more people than ever before have accounts at banks or building societies, and credit cards are now held by over one third of the U.K.'s population [Beadle, 1988]. As consumers demand newer and better products [Reidenbach and Moak 1986], financial institutions have responded by introducing new types of accounts and by launching different types of credit cards, for example.

A further example of the financial sector adapting to consumer pressure is the changing of banking hours. As consumer lifestyles have become increasingly busy, banks and building societies have been pressured into creating

extended operating hours. In fact, banks have been reluctant to change their hours of operation, and this reluctance has been credited, in part, for the banks' declining market share in personal savings [Fifiield 1989].

Although beginning to change, the U.K financial services sector has responded slowly to new consumer needs. However, the use of marketing research is increasing [Morgan, 1989], marketing practices are becoming more important to these institutions [Hooley and Mann, 1988], and techniques like market segmentation [Dominguez and Page 1984; Stanley, Moschis and Danko 1987; Joseph and Yorke 1989; Beadle 1988 and Roach 1989] and branding [Speed 1989] are becoming more popular. This indicates that the industry is becoming increasingly market oriented.

A number of studies have examined how consumers are reacting to the influx of new products onto the market. Horne and Martin [1981] measured the consumer's willingness to adopt an electronic funds transfer system (EFTS), and several studies have measured adoption of automated teller machines (ATM's) [Marshall and Heslop 1988, and Swinyard and Ghee 1987]. The findings indicate that younger consumers tend to favour technological changes, but that there is a level of resistance among older clients.

The combined effects of new legislation, increasing competition, changing technology and more demanding consumers are creating pressures on the financial sector to adapt their operations and to create new services. These new services will defend against competition; take

advantage of the market opportunities opened up by legislative changes; and provide the opportunity to utilize new markets and/or enhance operating profits.

Environmental Change and New Services: An Exploratory Study

Much of the preceding discussion has been based on the assumption that changing environmental conditions in the financial services sector have led to increased new product development and more frequent market launches. However, no empirical studies have been found to verify this assumption. Thus, an exploratory survey was conducted with the specific purpose of determining whether there is a high degree of new product development and launch activity. The results suggest that banks and building societies have reacted to the changing environment by offering more new services than ever before.

Methodology: A convenience sample of 16 building societies and 11 banks was selected. The category was restricted to personal financial products; such as accounts, mortgages, credit cards, bonds, loans and insurance. Because of the nature of the information required, personal interviews, with branch representatives, were used instead of either mail or telephone techniques, as it was felt the latter two methods would not provide enough information, nor allow for probing questions to be asked of the respondents. For example, it was found that with prompting, most respondents remembered recently

launched products that they had neglected to include in their initial responses.

For the purpose of this study, a new product was defined as any product that was new to an institution. Thus, the definition was not restricted to innovative products new to the marketplace. Products were included that were new-to-the-world, me-too (copied from competitors), and major redevelopments of existing products. However, products that had only minor changes and were subsequently relaunched were not included; for example, a mortgage or savings account that had only its rate of interest changed. The time frame was restricted to products that had been launched within the preceding two years.

The research objectives of this exploratory survey were twofold:

1. To determine if, in fact, there was a large amount of new product launches occurring; and,
2. To determine what types of new product launches were occurring.

Descriptive statistics in the form of contingency tables are used to present the findings of the survey.

The Findings: Table 4.7 provides an overview of the total number of new service launches by building societies and banks in the sample. Each time period is cumulative of all the previous time frames. For example, 111 new services have been launched during the last two years by

the 16 building societies; 67 of these were launched within the last 18 months; 57 were launched within one year; and 37 within the last six months. Sixty-two new services were launched by the 11 banks.

Table 4.7

TOTAL NEW SERVICE LAUNCHES

Time	Building Society	Bank
Within 6 months	37	17
Within 1 year	57	51
Within 18 months	67	54
Within 2 years	111	62

Over a two-year time span, 173 new services were launched onto the market by these 27 financial services companies. It can be concluded, therefore, that there is, in fact, a great deal of new service activity taking place in the personal financial services industry.

Table 4.8 outlines the new product activity found in the building societies and Table 4.9 provides the details for each bank.

Table 4.8

NEW SERVICE LAUNCHES BY BUILDING SOCIETIES

Building Society	Number of New Services			
	Within 6 Months	Within 1 Year	Within 18 Months	Within 2 Years
Alliance & Leicester	3	3	4	4
Bradford & Bingley	7	7	7	11
Britannia	5	5	7	11
Cheltenham & Gloucester	1	3	3	3
Halifax	2	7	7	10
Leamington Spa	0	0	0	3
Leeds & Holbeck	3	3	3	4
Leeds Permanent	3	4	4	19
National & Provincial	5	9	11	11
Nationwide Anglia	1	1	1	4
Newcastle	2	3	6	7
Northern Rock	1	2	2	4
Skipton	2	3	3	3
Town & Country	2	2	2	3
Woolwich	0	1	3	10
Yorkshire	0	4	4	4
TOTAL	37	57	67	111

NOTE: Each successive 6-month period is cumulative of the previous periods.
 Launches include accounts, bonds, loans, mortgages, insurance and credit cards.

Table 4.9

NEW SERVICE LAUNCHES BY BANKS

Bank	Number of New Services			
	Within 6 Months	Within 1 Year	Within 18 Months	Within 2 Years
Abby National	2	5	6	7
Barclays	1	7	8	9
Co-Operative	3	3	3	5
HFC	0	1	1	1
Bank of Ireland	1	1	1	2
Lloyds	2	7	7	7
Midland	0	6	6	6
NatWest	2	6	6	6
Royal Bank of Scotland	1	3	3	4
TSB	1	8	8	9
Yorkshire	4	4	5	6
TOTAL	17	51	54	62

NOTE: Each successive 6-month period is cumulative of the previous periods.
 Launches include accounts, bonds, loans, mortgages, insurance and credit cards.

Table 4.10 presents the number of new launches, by portfolio, for banks and building societies. New types of accounts represented 39 percent of the new service activity in the building societies and banks surveyed. Changes and additions to the mortgage portfolios of building societies amounted to 29 percent of their changes; and a further 29 percent of building society activity was in the account area. The main area of development for banks was also in accounts, with 56 percent of new services being of this type. Many of the new services offered by both types of institutions are a result of the legislative changes of the 1980's; for example, credit cards and bonds offered by building societies. The banks, facing more aggressive building societies, reacted with new competing products of their own.

The results shown in Tables 4.7 - 4.10 demonstrate that, indeed, the level of new service activity within the banks and building societies is high. Nevertheless, as the following section will demonstrate, research by scholars into the development process of new financial services has been limited.

Table 4.10

NEW SERVICE DEVELOPMENT

Product Category	Time Frame			
	Within 6 Months	Within 1 Year	Within 18 Months	Within 2 Years
<u>Accounts</u>				
Building Societies	12	17	19	32
Banks	10	27	29	35
<u>Bonds</u>				
Building Societies	5	5	7	8
Banks	0	4	4	4
<u>Loans</u>				
Building Societies	5	7	12	14
Banks	1	2	2	3
<u>Mortgages</u>				
Building Societies	9	19	20	32
Banks	3	7	7	8
<u>Insurance</u>				
Building Societies	5	7	7	21
Banks	1	4	4	4
<u>Credit Cards</u>				
Building Societies	1	2	2	4
Banks	2	7	8	8
TOTAL				
Building Societies	37	57	67	111
Banks	17	51	54	62

Literature On The New Service Development Process

Similar to the findings in Chapter 3 on the development process for new services in general, the literature is scarce on empirical examples of the development process for services in the financial sector. With the notable exception of two studies, reference to the new product development process in the financial services

literature is the byproduct of research that has concentrated on other subjects, or is the result of studies that concentrated on consumer adoption of new services; for example, Horne and Martin [1981], Mills and Gardner [1986], Marshall and Heslop [1988] and Swinyard and Ghee [1987]. New service development through branch expansion has also been examined by Gwin [1985].

In a case study on a new EFTS in the United States, Vinson and McVandon [1978] noted that qualitative research (focus groups) was used instead of quantitative methods. The study also found that in launching a relatively new banking concept, consumer education helped increase consumer acceptance of the new product. In another case study Scarbrough and Lannon [1988, 1989], although not presenting a comprehensive review of the development process, did explore the difficulties experienced by a U.K. bank in integrating a new technology product (home and office banking) into its IT system, and the resulting problems that occurred within other departments in the organisation.

The use by financial institutions of market research in the new product development process has also been examined in several empirical studies. All of the studies found that the use of such research was lacking. Herman [1981] found that only 52 percent of the banks in the United States had conducted market research studies on product development within the previous five years. Another American based study found that only 23 percent of

the respondents conducted product testing and only 21 percent conducted market testing [Reidenbach and Moak 1986]. Similarly, in another study of American banks, Scheuing and Johnson [1989b] found limited use of market research in the new product development process. However, it should be noted that their study had only 38 respondents.

In the United Kingdom, similarly poor use of market research has been found among banks and building societies. Limited use of concept testing and test markets was reported by Davison, Watkins and Wright [1989]. Morgan [1989] may have explained part of the reason for this. He found that only 39 percent of respondents actually had a formal marketing research unit, and that in 85 percent of this group, the units had been in existence for less than five years. In addition, a large number of these units had only one or two employees. Thus, it is not surprising to discover that only 19 percent of the respondents frequently conduct product test marketing and that 50 percent reported never instigating this type of research. This low use of market research has been further confirmed by Edgett and Thwaites [1990b].

Organisational factors have also been found to affect the new product development process. Ennew and Wright [1990] found that building societies expected to recruit more specialist management and planned to develop more flexible organisational structures during the following five years. This was partly in response to difficulties in

introducing new products; for example, in their ability to react quickly to the competition. Edgett and Thwaites [1990a], in a study on the degree of innovation in building societies, found that generally societies were not hiring enough specialists and people with experience from other industries to acquire the breadth of expertise required, although larger asset based societies had broken this trend. The need to hire management from other industries was confirmed in a study of commercial banks, in which banks that were more successful in product innovation were found to have adopted this practice [Johne and Harborne 1985]. The study further concluded that organisational structures that were flexible in the initiation stage of the new product development process but became more structured for the implementation phase were more successful.

From the launch perspective, only one study was found in the literature that identified success and failure traits for new financial services. It reflects the entire financial services industry and, thus, is not specific to building societies, although it is U.K. based. The five contributing factors to product success were, in descending order: superior product, effective sales force, competitive pricing, effective promotion, and no effective competition. Conversely, the five factors that made products unsuccessful were, in descending order of importance: problems with the product, uncompetitive pricing, ineffective promotion, inadequate sales force effort and

strong competition [Hooley and Mann 1988]. Unfortunately no other studies are available that expand upon the success/failure factors for personal financial products.

Finally, a macro perspective of the new product process by Scheuing and Johnson [1987, 1989a,b] has suggested, "that new product development may occur by chance in many financial institutions". Unfortunately the research did not try to identify whether the banks that had structured development processes were more successful than those that did not. However, it has been noted by Reidenbach and Moak [1986] "that top performing banks do have a more structured and formal new product development program than average or below-average performers" in the United States. This suggests that a structured new product development process can contribute to the success of an institution. However, no further research to support this claim has been conducted.

Conclusions

The environment in which the financial services industry of the United Kingdom operates has undergone a period of rapid change throughout the 1980's. Changes can be expected to continue, and to place continual pressure on marketing management of the 1990's.

The combined effects of changing legislation, increased competitive activity, rapidly changing technology, and increasingly demanding consumers will continue to generate pressure for the development of new

services. The pace of this development, and the resulting market launches, will continue to increase.

The literature on developing new tangible products is rich, as indicated in Chapter 2. Its adaptability to the service industry, however, is questionable, given the unique traits of services and their associated marketing problems, as discussed in Chapter 3. Upon examination of the literature it was found that little work has been conducted on the development of new services, and that even less has been done for the financial services industry specifically.

Chapter 4, after providing an overview of the British financial services industry and building societies in particular, has examined the environmental factors that are in flux and have led to repeated statements in the literature that new products are proliferating in the financial services sector. An exploratory study has confirmed this. But, despite the high level of activity among banks and building societies in developing and launching new services, literature that contributes to the knowledge about how to improve success in developing and launching new financial services is scarce.

In fact, the best summary of the literature on new product development for the service industry, and for the personal financial service sector, may well be the lack of such literature. Clearly, more research in these subject areas is required.

CHAPTER 5

METHODOLOGY

Introduction

There are two principal objectives of this research: The first is to explore how a specific financial service industry (building societies) approaches the development process for new products; the second is to determine the characteristics that distinguish between a successful and an unsuccessful new product in this service sector.

The objective of this chapter is to describe the methodology that is employed in this research. Accordingly, the research questions and the resulting definitional issues are discussed; the hypotheses are presented with theoretical support, and the research design is presented. Finally an overview is given of the principal quantitative data analysis techniques which will be used.

Methodological Approach

The methodology employed in this research is a combination of the traditional deductive approach and the less-used inductive approach to theory building. Amalgamation of the two approaches may at first seem incompatible, as each method uses differing assumptions for developing theory. However, as Zaltman, LeMasters and Heffring [1982] have illustrated in their "theory-in-use" technique, the two methods,

do in fact represent different stages to the overall process of developing and testing theories. [However] rather than choosing between theories or theory strategies, why not combine them into an ongoing process?

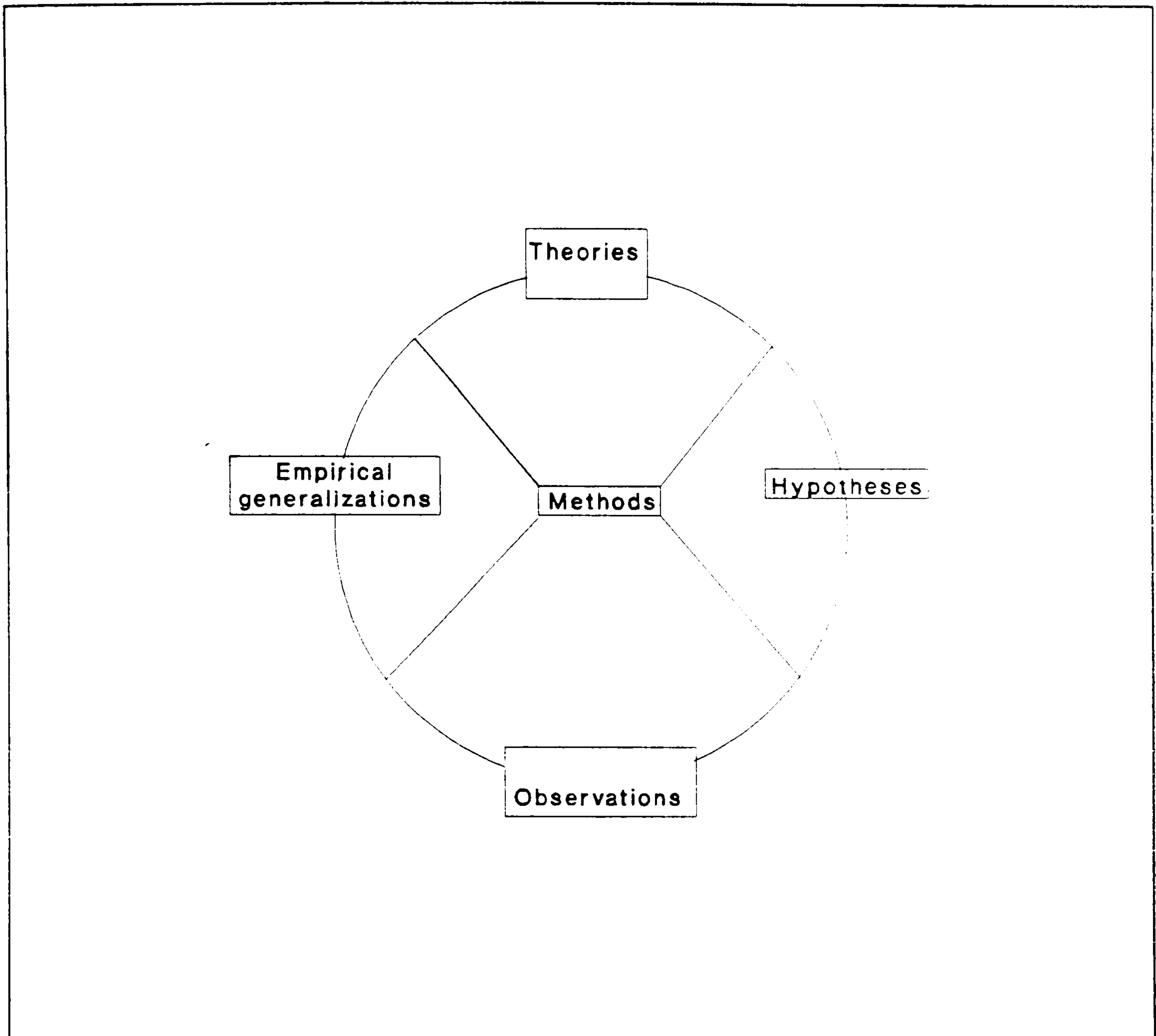
With this combined view, the "theory-in-use" methodology recognizes and incorporates the assumption that theory for marketing applications cannot be developed in isolation from the business environment that is comprised of practising marketing managers. This, thereby, ensures that the two aspects -- theory and practical application -- meet and support each other.

A limitation of the approach, however, is that it is designed to discover theory and, therefore, does not test it. Because testing the theory is a critical requirement for this piece of research, the approach used to compensate for this is discussed in a later section of this chapter.

The combined approach is illustrated in Figure 5.1. The deductive approach is the right side of the circle and begins with theories; the inductive approach is the left side of the circle and starts with observations. This research study, therefore, combines deductive and inductive methodologies.

Figure 5.1

A COMBINED DEDUCTIVE AND INDUCTIVE MODEL



Adapted from: Theory Construction in Marketing: Some Thoughts on Thinking by Zaltman, LeMasters and Heffring, 1982.

The preface of this study began with a review of the literature presented in Chapters 2, 3 and 4. It has illustrated the paucity of previous theory development and empirical work on new product development for service industries. Considering this lack of previous study, the first part of the research, by using the inductive approach

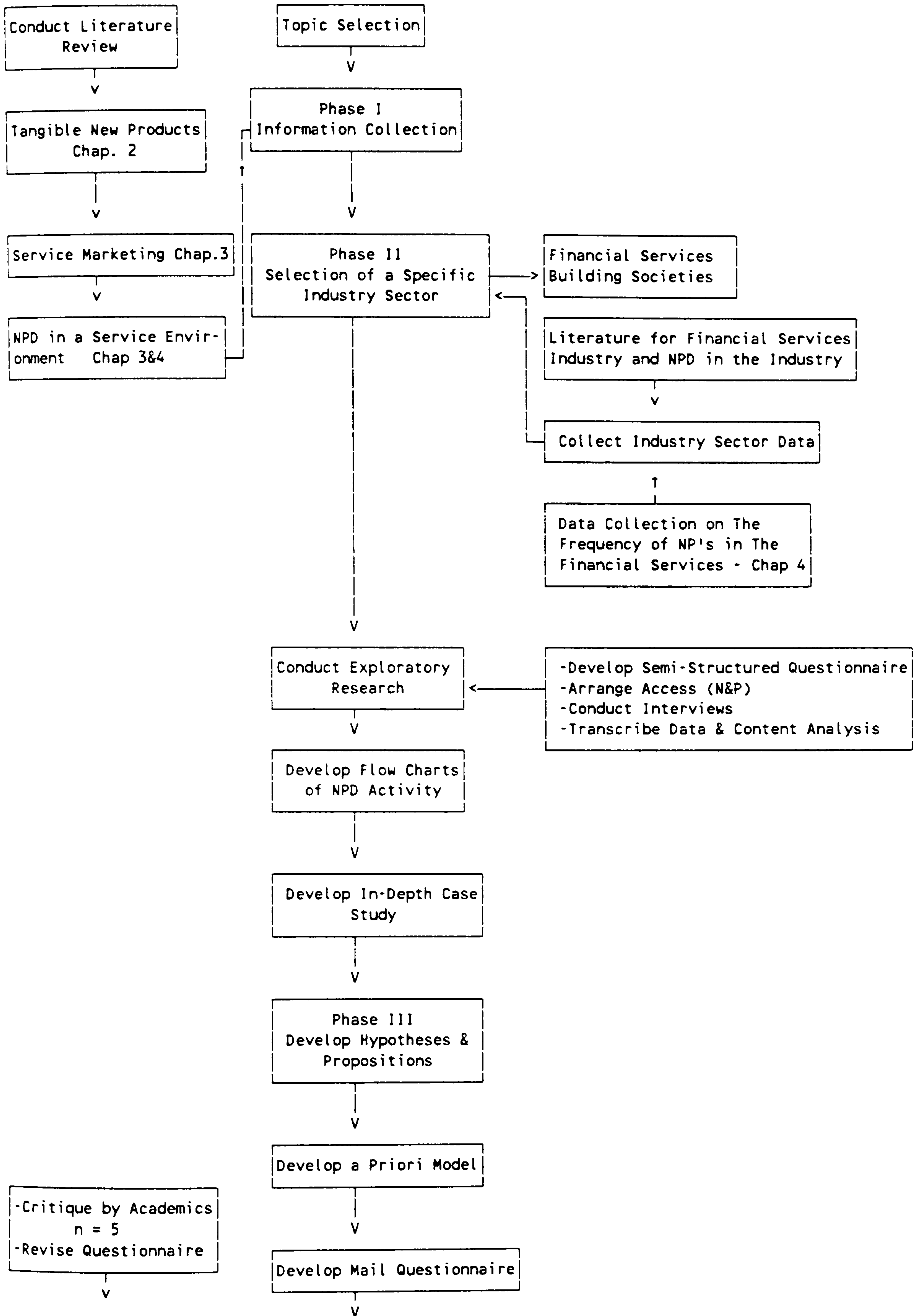
through conducting single-subject research -- a case study of one building society -- allows a rich source of qualitative data to be developed. This, in combination with the literature, allows hypotheses to be formed for a deductive approach to examining how this service sector goes about the development process for new products.

To address the second aspect of the research -- determinants for a successful new product -- an inductive approach is used again. Then, by analyzing the results of a series of variables, with quantitative multivariate methods, a model is developed that discriminates between success and failure.

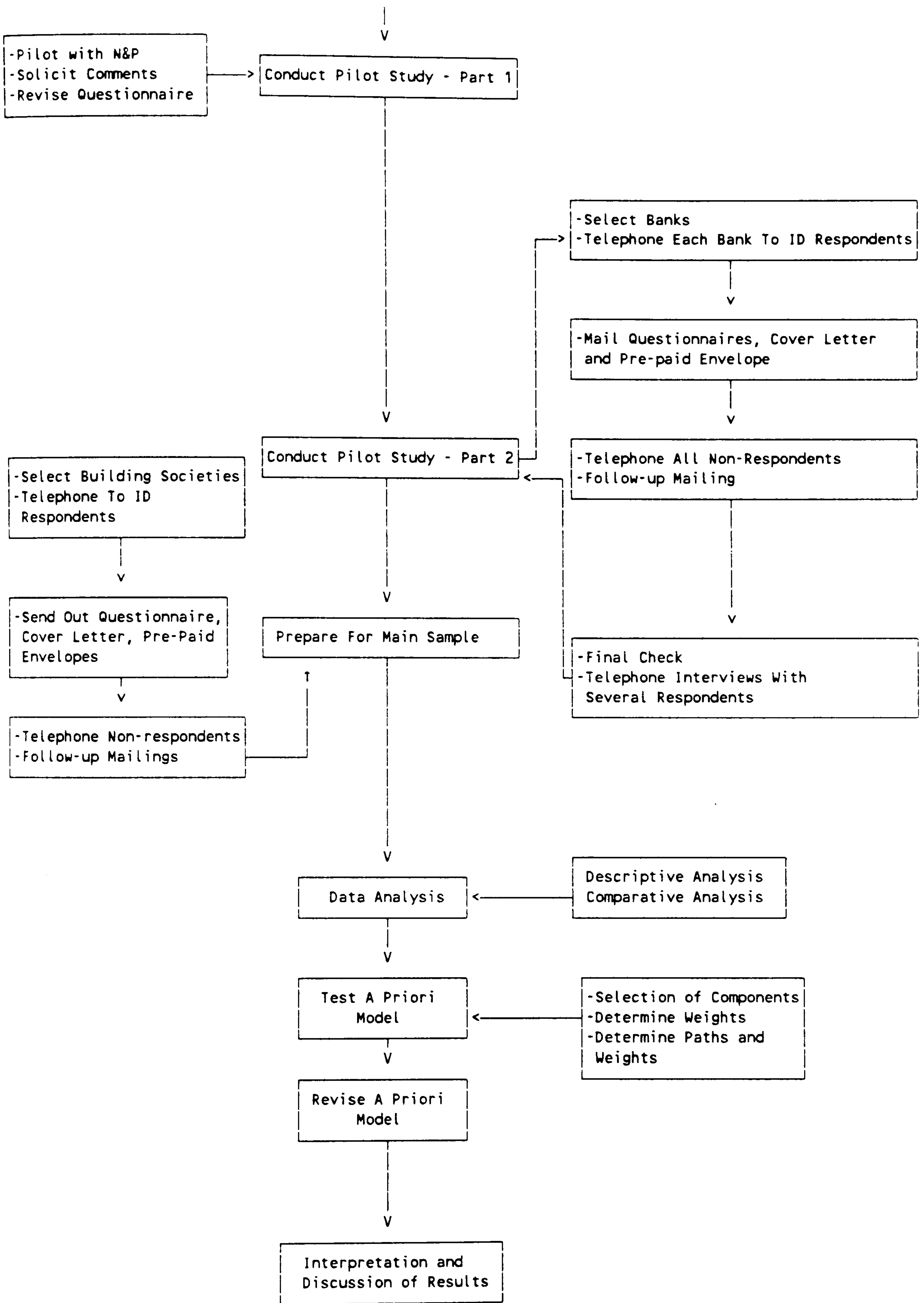
A summary of the research methodology and data analysis is provided in Figure 5.2.

Figure 5.2

RESEARCH METHODOLOGY AND DATA ANALYSIS



continued



Research Questions

For the convenience of the reader, the research questions originally presented in Chapter 1 are restated below, and an indication is given whether an inductive or deductive approach will be taken for each question. Each of the questions is expanded upon in the following sections, and the hypotheses are developed, together with an a priori model of success and failure.

1. What is the current approach used for the new product development process for building societies as a subset of the financial services industry? **(Deductive)**
2. Is the development process different for this sector of the service industry versus previously reported new product development processes? **(Deductive)**
3. What are the current organisational structures used for new product development in building societies?
(Deductive)
4. What traits are inherent in the successful development of a new service within the building society sector?
(Inductive)
5. What traits are inherent in the unsuccessful development of a new service within the building society sector?
(Inductive)
6. How do the traits of successful and unsuccessful new products relate to and/or affect the new product development process? **(Inductive and Deductive)**

Hypotheses

This section will expand the research questions into hypotheses for this study. The justification for each hypothesis is also presented.

The first three of the research questions reflect a synopsis of the literature review. Strong theoretical support exists among marketing scholars to suggest that the service industry has a number of unique characteristics, which require marketers to approach the marketing of services from a different perspective than that used for physical goods. (Refer to Table 3.1 and Figure 3.1 in Chapter 3). Similarly, it has been argued that service firms may approach new product development differently (i.e. Shostack 1977, 1981, 1982, 1984a; Lovelock 1984a, Cowell 1988, and de Brentani 1989a,b). However, little empirical evidence has been found on the actual approach to new product development that service firms are taking and, more specifically, the approach building societies are using. However, the limited empirical evidence to date does confirm the theoretical suggestion that, indeed, new product development in service industries is different than it is in physical goods industries [Easingwood 1986, de Brentani 1989b and Scheuing and Johnson 1989a,b].

To provide a base upon which to explore the issues that determine successful and unsuccessful service development it is necessary to identify the current practices that these firms have established in new product development. Accordingly, the first part of the

questionnaire is designed to provide this type of exploratory insight into the current approaches to new product development.

The first hypothesis is a general conjecture that the majority of building societies are using a reactive approach in generating new products. The exploratory survey (reported in Chapter 4) indicated that a large number of new products are being introduced into the marketplace. In comparing the product offerings from the different societies, many appeared to have been of a "me-too" variety. Introductions of similar products suggests that societies are reacting to the competition. The rapid proliferation of similar types of new product ideas is also an example of the quick diffusion that occurs in service industries due to the intangible nature of the products [Easingwood 1986 and de Brentani 1989b].

H₁: The new product focus is not competitively driven for the majority of building societies.¹

$$H_1: T \geq C; \quad M \geq C \quad p = .05$$

where C = the summed mean of the extent to which new products are competitively driven
T = the summed mean of the extent to which new products are technology driven
M = the summed mean of the extent to which new products are market driven
p = statistically significant at the x percent

¹ The hypotheses are stated in the traditional null form (H₀). Thus, each hypothesis is stated in the opposite form of the expected outcome. The successful rejection of a hypothesis is, therefore, the desired outcome.

H₂: The majority of building societies have a strategic focus for their new product activity.

$$H_2: P(x) > 0.5$$

where

$$x = (n - \sum_{i=1}^n a_i - \sum_{j=1}^n a_j - \sum_{i=1}^n b_i + \sum_{j=1}^n b_j - \sum_{i=1}^n c_i + \sum_{j=1}^n c_j) / n$$

n = number of respondents

a_i = respondents with no strategic plan

a_j = respondents that have a strategic plan but do not have a new product performance expectation written into the strategic plan

b_i = respondents that have a new product programme but do not have clearly defined written objectives for the new product programme

b_j = respondents that were included in b_i and either a_i or a_j

c_i = respondents that indicated no formal measurements for new product performance

c_j = respondents that were included in c_i and either b_i or a_i or a_j

For tangible new product development, companies with successful new product programmes have been found to have a strong strategic focus [Crawford 1980 and Cooper 1984a]. Given the importance of a strategic focus, it is reasonable to expect that a similar requirement is also necessary in the financial service industry, if product development is to be successful. However, although restricted in their generalisability, findings have indicated that banking institutions in the United States are not very sophisticated in their approach to new product development [Scheuing and Johnson 1989a,b]. This suggests a lack of strategic focus in the product development programme.

The principal study in the United Kingdom to address this issue for service industries found a large number of companies with clearly defined objectives for their new product programmes, and slightly better than half of the

respondents with expectations for new products written into their strategic plans as well [Easingwood 1986]. This study, however, was cross-sectional in its approach and made no attempt to measure if, indeed, this finding reflected a strong focus across all service industries, or whether it was dominated by certain industry sectors.

It is reasoned therefore, that similar to financial institutions in the United States, British building societies have not yet managed to develop an integrated approach to new product development at the strategic level, even through this process has been proven to be essential for developing successful tangible new products.

As a follow-up to the previous hypothesis it can be expected that if there is a lack of a strategic focus, there will also be an absence of a formal new product development process. Thus, the third hypotheses is

H₃: The majority of building societies have a formal new product development process.

$$H_3: P(a) > \{P(b) + P(c) + P(d) + P(e)\}$$

where P(a) = percentage of respondents that have formal written procedures

P(b) = percentage of respondents having some written guidelines

P(c) = percentage of respondents with an informal, but well understood pattern

P(d) = percentage of respondents with a mostly informal process although some steps have formalized procedures

P(e) = percentage of respondents that handle each project differently (ad hoc)

The remainder of the first and the second research questions are addressed in the following series of

hypotheses, which examines the development process and its various components. Repeatedly the theoretical and empirically based literature on new product development for tangible goods has demonstrated the need for a formal approach to the various stages of a product's development. The use of a formal development system has been cited as a contributing factor to improving a company's success rate for the new product programme [i.e. Booz, Allen and Hamilton 1968,1982; Urban and Hauser 1980, Wind 1982, Crawford 1983, Cooper 1983a, 1987a, 1988b and Cooper and Kleinschmidt 1986].

In a service industry setting, however, the preliminary evidence suggests that a formal approach to product development is not being used [Easingwood 1986 and Scheuing and Johnson 1989b]. One possible reason is that service firms have not, as of yet, become as sophisticated in their approach to developing new products [de Brentani 1989b]. This concept is explored further in the following set of hypotheses.

H₄: New product ideas are screened by individual decisions rather than group decisions.

$$H_4: P(i) > P(g) \quad p= 0.05$$

where P(i) = percentage of respondents using an individual decision approach for screening new products
P(g) = percentage of respondents using a group decision approach for screening new products

H₅: The majority of respondents use a formal checklist or rating system.

$$H_5: P(f) > P(i) \quad p = 0.05$$

where $P(f)$ = percentage of respondents using a formal checklist or rating system.
 $P(i)$ = percentage of respondents using an informal bases (no formal techniques).

H₆: The group decision makers have used a formal screening procedure to select new product ideas.

$$H_6: P(g_i) > P(h_j)$$

where $i = 1, 2 \dots n$
 $j = 1, 2 \dots n$
 $P(g_i)$ = percentage of respondents using a group decision and formal techniques for screening new products
 $P(h_j)$ = percentage of respondents using a group decision and no formal techniques for screening new products

Hypotheses H₄, H₅ and H₆ are directed at the initial screening procedures and not at the continual screening process advocated by Cooper [1987b, 1988b]. This particular approach investigates whether the starting phase of the process is formalized to establish the operating base upon which the remaining development process is conducted.

H₇: For preliminary market research assessment techniques, primary research is used to a greater extent than desk research techniques.

To test H₇ descriptive statistics are used to analyze Question 6 of the questionnaire, by comparing the means of each of the various techniques listed. In order for H₇ to be true, the external research techniques should be used

more frequently than the internal research methods. Correlation analysis will be used to further explore the relationship between the different techniques.

H₈: Market research techniques for new product development are, in general, frequently used.

$$H_8: \{ \sum_{j=1}^9 (\sum_{i=1}^n a_{ij} / n) \} / 9 < \{ \sum_{j=1}^9 (\sum_{i=1}^n b_{ij} / n) \} / 9$$

where a_{ij} = score for i respondent on j technique that is less than 3 on the scale of 1 to 5
 b_{ij} = score for i respondents on j technique that is 3 or higher on a scale of 1 to 5
 $i = 1, 2 \dots n$ (number of respondents)
 $j = 1, 2 \dots 9$ (a variable for each market research technique)
 n = number of respondents

Similar to H₇, market research techniques in H₈ are hypothesised to be infrequently explored. Traditional theory has suggested that during the development process, continual market research should be conducted, with the product's attributes being continually re-evaluated (i.e. Crawford 1983 and Cooper 1988b). This pattern of ongoing research and evaluation is necessary to ensure that the product is market driven and, thus, able to meet the target group's needs when it is launched. This increases the product's probability of being successful. Similarly in a service setting, market research is needed to help offset the effects of intangibility and inseparability. For example, research is needed to determine for the new product

- the appropriate price/quality relationship;
- service quality standards;
- effective communication strategy.

Although it is to be expected from a theoretical basis that financial institutions have a strong need for marketing research, the empirical evidence discussed in Chapter 4 suggests that these institutions are not frequently using this aid [Herman 1981, Reidenbach and Moak 1986, Davison, Watkins and Wright 1989, Morgan 1989, Schueing and Johnson 1989b and Edgett and Thwaites 1990b].

Further support for this hypothesis is also demonstrated in a case study of the National & Provincial Building society (discussed later in the chapter) where a contributing factor to a successful new service ("MAX") was the extensive use of market research, while very little marketing research was undertaken for the unsuccessful product (travel service).

H₉: The stages of the new product development process are conducted with the same or greater frequency than for those previously reported in the literature.

$$H_8: \sum_{i=1}^{21} \sum_{j=1}^n a_{ij} \geq \sum_{i=1}^{21} b_i \quad p= 0.05$$

where a_{ij} = stages and activities in the new product development process (question 7)
 b_j = individual respondents response
 b_i = the mean for each stage and activity of the new product development process presented by Scheuing and Johnson [1989b]
 $i = 1, 2 \dots 21$ (a stage or activity in the new product development process)

An underlying contributor to a successful new product development programme is the repeated use of a group of well defined activities during the development phase. Theoretical and empirical support for this position is well documented in the tangible new product literature.

From a service perspective, Reidenbach and Moak [1986] have suggested that top performing institutions in the U.S. banking industry have more structured and formal new product development processes. However, Scheuing and Johnson [1989b] have contradicted this claim by suggesting the majority of U.S. financial institutions use a haphazard approach. No studies of this nature are found in the U. K.

Given the potential importance of a structured development process to successful product development in a service setting, H_9 is designed to determine what activities are actually conducted on a regular basis. The result is then compared to the level of development activity established by Scheuing and Johnson [1989b].

The question that follows, of whether the repeated use of a structured programme has contributed to the success rate of a society's new product launches, is addressed by H_{10} .

H_{10} : Societies that have a higher than average occurrence of new product development process activities do not have a statistically significant difference in the rate of new product success than do societies with a lower than average rate of new product success.

$$H_{10}: \epsilon(H_{hi}S_i) = \epsilon(H_{li}S_i)$$

where H_{hi} = societies that conduct a higher than average level of new product development process activities (summed score).
 - if R_i is greater than the overall mean for R then $R_i = H_{hi}$
 R = overall mean for all process variables
 R_i = mean response for respondent i for variables 1...j
 H_{li} = societies with an equal or lower than average level of new product development process activities (summed score).
 S_i = new product success rate for the respondent

The third research question inquires into the various organisational structures that are used for new product development. Similar to the literature on processes, the subject area of organisational issues for tangible new products is well documented. In Chapter 2 the principal types of organisational structures were discussed. Many types of organisations were identified [Johns 1985], and little disagreement was found in the literature over the importance of using a different management approach to new product development than that used in day-to-day company activities. There is also general agreement that different types of new products may require different organisational approaches. It is not surprising that new product theory and empirical studies confirm that the organisational input during a product's development phase is a major factor in determining whether the product will eventually be a success or failure in the marketplace.

From a service industry perspective, organisational issues should be expected to have an even stronger impact on a product's success or failure. The characteristics of a service -- intangibility, inseparability, heterogeneity and perishability -- raise many new issues revolving around new product development in these industries. This impact has been discussed in Chapter 3. Although this area is rich in potential hypotheses for research studies, the nature and scope of this research question limits the focus on organisational issues to a macro perspective. The complex interrelationship between organisational variables

and the variables of other determinants of success and failure is incorporated in subsequent research questions and is discussed in more depth then.

The first of the following two hypotheses explores the frequency with which different approaches to managing new product development are used, and the years of experience these managers have.

H₁₁: A product (brand) manager is the most common approach used for managing the new product development process.

By using descriptive statistics, question nine will provide the frequency of use for each approach given, thereby indicating which approach is the most commonly used.

Although the theory for tangible new products suggests that varied organisational approaches are used, the exploratory research suggests that within building societies there is limited variety in organisational structures. This is partly a result of the historically departmental, or function-oriented approach that has traditionally characterised this industry. A second contributing factor is the rapid increase in marketing personnel over recent years, combined with the increased pressure to develop and launch a large number of new products. The resulting turbulence has reinforced the functional management approach, rather than encouraging new or varied ways of conducting new product development. Thus, H₁₂ proposes that personnel conducting new product

development are relatively new to the business of marketing new services.

H₁₂: The majority of respondents have five or more years experience in developing new products for a service organisation.

$$H_{12}: (\sum_{i=1}^n a_i / n) \geq 5 \text{ years}$$

where a_i = years of experience for respondent;
n = number of respondents

Success and Failure

The second major phase of this research is an examination of the success and failure criteria. However, before the remaining research questions and the resulting hypotheses are addressed, several theoretical and definitional issues must be clarified.

First, definitions must be provided for the terms "success" and "failure" in new product development. Despite the attention given to successes and failures by researchers in the field, universally accepted definitions have not been developed. Instead, a wide range of interpretations is found in the literature. Figure 5.3 lists the principal approaches used by key researchers to defining successes/failures.

Figure 5.3

DEFINITIONS OF SUCCESS/FAILURE IN TANGIBLE NP RESEARCH

Undefined in the Research	Briscoe (1973) Tauber (1973)
Breakeven	Maidique & Zirger (1984)
Profit	Calantone & Cooper (1979, 1981) Cooper (1975, 1976, 1979a, b 1980b, 1981a, b, 1983c) Cooper & Kleinschmidt (1986)
Output Related	Parkinson (1981, 1984)
Long-Term	Yoon & Lilien (1985)
Multiple Measures	Booz, Allen & Hamilton (1982) Cooper (1984a) Cooper & Kleinschmidt (1987c) Crawford (1980) Larson & Gobeli (1989) Rothwell (1972, 1974) Rothwell et al (1974)
Respondent Determined	Baker (1975, 1983) Crawford (1977) Hopkins (1980) Souder (1978) Utterback (1976)

Although there are many types of criteria used to measure successes and failures in Figure 5.3, the majority of definitions have one factor in common: management sets and measures the criteria, or benchmarks, that will determine whether a product is a success or a failure. Criteria and benchmarks will change from company to company and industry to industry, but the role of management in determining these factors does not. As Baker [1983] has stated, it is better to allow each product to be judged by

the company. This allows for multiple types of measurement to be used that suit the specific needs of each organisation. The alternative to Baker's approach is for the researcher to arbitrarily select a definition which in turn will force the respondent to narrow the definition of success/failure into a classification which may not be appropriate for the new product under consideration.

In a service setting, a pioneering study by deBrentani [1989b], the only researcher to empirically explore success measures in a service firm, found multiple measures were used. However, the findings are limited to industrial-based Canadian service firms.

In financial institutions profit may not be as common a success measurement tool as it is for tangible goods. The need to maintain competitive product offerings -- even if the product is unprofitable -- is a major consideration of building societies, due to their need to offer complete service packages. In contrast, tangible products and brands may be sold to the consumer in isolation from any other products offered by a firm.

Financial institutions also support other products they offer through cross-selling. For example, a new chequing account may be launched with a principal objective to attract new customers who will eventually purchase other more profitable products. This was the case with "MAX" at the National & Provincial building society.

For this research, new product "success" and "failure" is therefore defined by the individual respondent's

judgement of success and failure. This does not, however, preclude the examination of the varying success measurement criteria used by these service managers.

The next hypothesis attempts to determine the most common criteria used by building societies in determining the success of a new product.

H₁₃: A profit measurement is the most common criterion used in measuring the success or failure of a new product.

$$H_{13}: \sum_{i=n}^1 A_i + \sum_{i=n}^1 B_i + \sum_{i=n}^1 C_i + \sum_{i=n}^1 D_i + \sum_{i=n}^1 E_i + \sum_{i=n}^1 G_i + \sum_{i=n}^1 K_i < \\ \sum_{i=n}^1 H_i + \sum_{i=n}^1 I_i + \sum_{i=n}^1 J_i + \sum_{i=n}^1 F_i$$

where A_i = sales volume in £'s selected by respondent n
 B_i = sales volume in units selected by respondent n
 C_i = respondent selected an informal approach
 D_i = respondent selected cross-selling
 E_i = respondent selected market share
 F_i = respondent selected breakeven
 G_i = respondent selected consumer recruitment
 H_i = respondent selected cross profit contribution
 I_i = respondent selected pay back period
 J_i = respondent selected return on investment
 K_i = respondent selected defensive reasons

Another area of interest is the actual percentage of new products that are failures in the marketplace. In Chapter One, a wide range of estimates for failed tangible new products was presented. To date, however, no figures have been reported on the number of product failures that occur in service industries. Without any evidence to the contrary however, it is reasonable to assume that the rate of success in a service industry is not any better than that reported for physical new products. Thus, H₁₄ probes the success rate of new products that were launched by building societies over a three-year period. This time

frame was selected to coincide with the major environmental changes in the industry that occurred during the late 1980's.

H₁₄: New product failure among respondents' firms is lower than the new product failure averages reported for tangible goods (between 30-40%).

$$H_{14}: = F < A$$

where $F = 100 - S_i / n$
 S_i = percentage of new products that have met or exceeded management expectations
 A = average failure rate for tangible goods
(.30 ≤ A ≤ .40)
 n = number of respondents

The final phase of this study revolves around the issue of identifying factors that make a new product a success or a failure. This issue encompasses the remaining three research questions about the traits that are inherent in successful product development, in unsuccessful product development, and how these traits relate to and/or affect the new product development process. However, before these questions are explored in more detail, an overview of previous research is required.

The issue of why new products are successes or failures is well documented in the tangible goods literature. The methodological approaches for these studies have varied from single case studies to multi-industry approaches; and from examining a series of successful cases to examining the converse, a number of situations where the new product failed. Another, more encompassing series of studies has used the methodological

approach of examining both the successful and unsuccessful cases simultaneously.

The methodological merits of using a single versus a multi-industry approach were discussed in Chapter 3 and are elaborated upon later in this Chapter. The second methodological question is whether to examine successful or unsuccessful new products independently of each other, or whether to conduct a comparative analysis.

The two pioneering researchers in this field (Cooper and Marquis) have examined success and failure in isolation from each other in their earlier work [Myers and Marquis 1969 and Cooper 1975, 1979a,b]. However, in later studies both scholars have used comparative methodology for analyzing success and failure in new products, and they have repeatedly stated that their earlier studies were flawed, because they had not established control groups. [i.e. Maidique and Zirger 1984 and Cooper and Kleinschmidt 1987a]. Without a control group, no discrimination can be made between success and failure. Instead, a researcher is limited to describing traits that are common to one group or the other, and is unable to say why the product became either a success or a failure.

The process of comparing a number of successful and unsuccessful new products simultaneously through using one set of criteria permits the researcher to establish two dependent variables -- success and failure. This technique allows differentiation between new product development practices that succeed and those that fail [Maidique and

Zirger 1984].

The comparison method has been used with good results in a number of studies on new products. For example, Parkinson [1981, 1982, 1984] used it for comparing new product development in British and German machine tool manufactures. New product screening models have also been developed by comparing successful and unsuccessful new products [de Brentani and Droge 1985 and de Brentani 1986]. The need to develop products differently, depending upon the type of product (old or new), has been examined successfully via a comparative study of U.S. and U.K. manufacturing firms [Johne and Snelson 1988b,c, 1989]. The approach has also been successfully applied as a discriminating function in a number of studies on new product success and failure. Examples are Phases I and II of Project SAPPHO [Rothwell 1972, 1974 and Rothwell et al 1974]; The Stanford Innovation Project [Maidique and Zirger 1984]; and Project NewProd Phase I and II [Cooper 1979a, 1980b, 1988b and Cooper and Kleinschmidt 1987a,b,c].

Consistently with the lack of research on new product development in service marketing, this comparative methodology has only more recently been applied to a service setting. In a study of industrial companies that reported on how these firms measure new product performance, de Brentani [1989b] compared successful and unsuccessful products in a way similar to the methodology used by Cooper.

As identifying the discriminating functions between

success and failure is the primary focus of this section of the research; and, as the comparison methodology has been used successfully for tangible new product studies, the same approach will be used in this study.

Previous models that have been developed on this topic have all been derived from studies based on tangible new products. However, a useful premise is provided by these earlier studies for the beginning of similar work in a service setting, as each attempt has identified factors that discriminate between successful and unsuccessful new products. Thus, the next hypothesis is:

H₁₅: There are no identifiable variables (activities) that distinguish successful new product development projects from unsuccessful new product development projects.

$$H_{15}: D_i = b_1X_1 + b_2X_2 \dots b_nX_n$$

where D_i = the discriminant score
 X_n = the value of predictor variable (independent variable)
 b_n = the model coefficient for the nth predictor variable (discriminant weight)

The rationale for this hypothesis is supported by the findings of the previous comparative studies on new products. Although each of the principal studies used a slightly different approach, each was able to isolate a number of important factors that were related to the eventual success or failure of the new product. Figure 5.4 presents the findings of these four studies. The service related factors were incorporated into the questionnaire design for the present study to test whether similar ones would be identified for this subset of the financial services industry.

Figure 5.4

DISCRIMINATING SUCCESS FACTORS FOR TANGIBLE PRODUCTS

Project SAPPHO	<ul style="list-style-type: none"> - understanding of user's needs - attention to marketing & publicity - efficiency of development - effective use of outside technology and external scientific communication - seniority and authority of responsible managers
Stanford Innovation Project	<ul style="list-style-type: none"> - introduce a product with a high performance-to-cost ratio - proficiency in marketing - commits sufficient resources - yields a high contribution margin - well planned R&D process & executed - well interfaced & coordinated process - early market entry - high level of management support - market & technology is complimentary to firm
Project NewProd Phase I	<ul style="list-style-type: none"> - unique & superior product - strong market knowledge - undertakes MR & tasks well - technological and production synergy
Project NewProd Phase II	<ul style="list-style-type: none"> - superior product - good up-front activities - technological and marketing synergy - good control over controllable variables - strong top management support

A number of scholars have theorized that the four unique characteristics of services will have an effect on the various components of developing a new product for a service firm. The evidence to this effect is, however, scattered throughout a number of previous studies and theoretical propositions that have been discussed in the service marketing literature (Chapters 3 and 4). Figure

5.5 summarises these theoretical and empirical issues that have been identified as complicating the development process for services. From this list a number of other variables have been identified as possibly affecting new product development.

Through the development of several propositions (discussed in the following sections) these issues are explored to determine their impact on the development process. To implement this approach a comparative methodology is deployed. The result is the first comprehensive comparative study in service marketing that examines these variables.

Figure 5.5

ISSUES AFFECTING NPD IN A SERVICE SETTING

Intangibility	<ul style="list-style-type: none"> - risk of conducting the development process too quickly - risk of haphazard development process - easy to copy competitor's product - risk of new product proliferation - risk of confusing consumer with too many new products - risk of information overload with operations staff and consumers - difficulties in conducting R&D - difficulties in conducting market research - lack of a physical prototype to market test - difficulties in conducting quantitative market research - slower market introductions - new product will affect corporate image - difficulties in measuring success - difficulties in determining actual cost of new product
Inseparability	<ul style="list-style-type: none"> - need for increased interorganisational involvement - increased importance of delivery systems - higher levels of consumer input - hard to allocate cost
Heterogeneity	<ul style="list-style-type: none"> - lack of standardized delivery system - quality control becomes a success issue - need to develop the right level of standardization - difficulties in concept testing - need for more monitoring and control systems
Perishability	<ul style="list-style-type: none"> - difficulties in demand/supply management - need for higher levels of integration among departments - need to decide right mix between people and machines

Propositions

A recurring theme throughout the literature review has been the need for service firms to effectively compensate for the identified effects of intangibility, inseparability, heterogeneity and perishability.

It has been theorized that one approach to offsetting the effects of these traits is to improve the consistency of the product offering through the concept of service quality. This requires that marketing management promote the idea of service quality throughout the organisation. To do so, management must be able to communicate the concept effectively. This approach has been termed internal marketing.

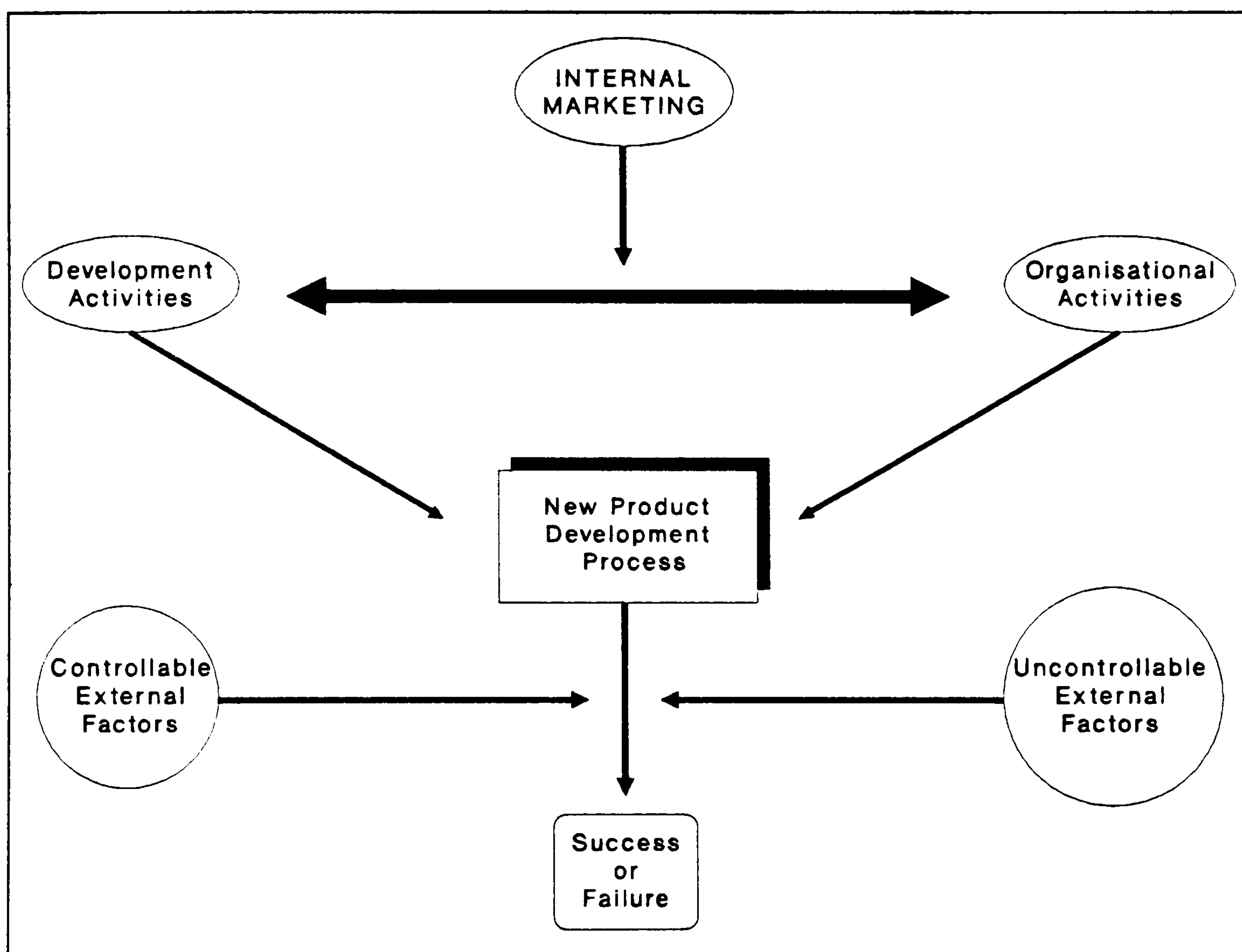
From a product perspective, it has been hypothesized that service firms that are thorough and efficient in their development activities will attain a success rate that is higher than firms that are not. Proficiency at the development level, however, is insufficient by itself to ensure a new product's success. As discussed in Chapter 3 and reviewed in Figure 5.5, the successful development and delivery of a new product is also dependent upon the firm's ability to overcome the traits that make service marketing different from product marketing.

A strategy for overcoming many of these impediments is the adoption of internal marketing into the new product development process. As with service quality, effective new product development is reliant on the internal organisation of a firm; product development activities

cannot be conducted in isolation from organisational activities. The application of internal marketing to the development process means that the organisational and development aspects of the new product process become intertwined. This interactive process is illustrated in Figure 5.6.

Figure 5.6

THE INTERACTION PROCESS IN NEW PRODUCT DEVELOPMENT



If it is accepted that internal marketing is important, because it affects a new product's outcome, then it becomes a contributing factor to the product's success or failure. Although this is a logical inference, the link has not previously been measured by researchers in this field.

Propositions 1-3 capture the interaction. Each of the propositions addresses one of the three fundamental components of the development process: development activities, organisational activities and internal marketing. Parts II and III of the questionnaire contain a number of variables that measure the interactive process. The methodology is to compare successful products with unsuccessful products by using a number of multivariate data analysis techniques. Through this inductive approach, the relationships and the strength of these relationships among the three groups will become clearer.

Therefore, as a follow-up to H_{15} , the last propositions (instead of hypotheses) are a reflection of the unique difficulties that exist with the development of new products in a service setting. Propositions were selected for this task due to the myriad of possible hypotheses that are available. This section of the research also requires an inductive format to allow the probing of the data that enables relationships among the variables to be discovered.

Proposition 1

Successful new products have undergone more thorough development processes than have unsuccessful new

products.

Proposition 2

Successful new products have been developed with a more integrated approach to organisational issues than unsuccessful new products.

Proposition 3

Successful new products have been accompanied by more internal marketing during the development process than have unsuccessful new products.

Sample Framework

Previous research into new product development in a service industry setting has been demonstrated in Chapters 3 and 4 to be deficient. This lack of background theoretical support means that a researcher needs to caution against making industry-wide generalisations that do not stand up to scrutiny. Use of the traditional broad, cross-sectional approach makes an assumption that the research findings will be generalisable to all service industries. However, each industry sector must deal with unique consumer needs and operate in a different external environment. The generalisation of the findings across all industry sectors, therefore, cannot be assumed to be valid. To overcome this limitation, a more controlled approach is desirable, thereby, eliminating one source of unwanted variance.

A narrower approach to investigating product development has been advocated by Easingwood [1986] and

Cowell [1988]. These authors argue that it is both necessary and appropriate for further empirical studies in this subject area to explore a specific service industry rather than to take the traditional cross-sectional approach.

In addition, Johne [1984] has suggested that, in studies of this nature, differences exist between experienced product innovators and inexperienced ones. A further sampling control is, therefore, placed upon this type of variance by reducing the sampling frame to a specific industry sector where each member of the sector has been experiencing similar market pressures for new product development, a methodological approach that has been successfully used in the Stanford Innovation Project [Maidique and Zirger 1984]. The homogeneity of the study group is further emphasised by the new legislation that became effective in 1988 (see Chapter 4). It is only since these changes have taken place that building societies have begun to launch a large number of new products.

With these key points in mind, the sampling framework has been narrowed to reflect a homogeneous service industry sector -- building societies. Figure 5.7 summarizes the selection process.

The 104 building societies that are registered and maintain active membership status in the Building Societies Association comprise the resulting sampling frame. This group has combined assets of £190 billion. To be a member of the Association, a building society must have a minimum

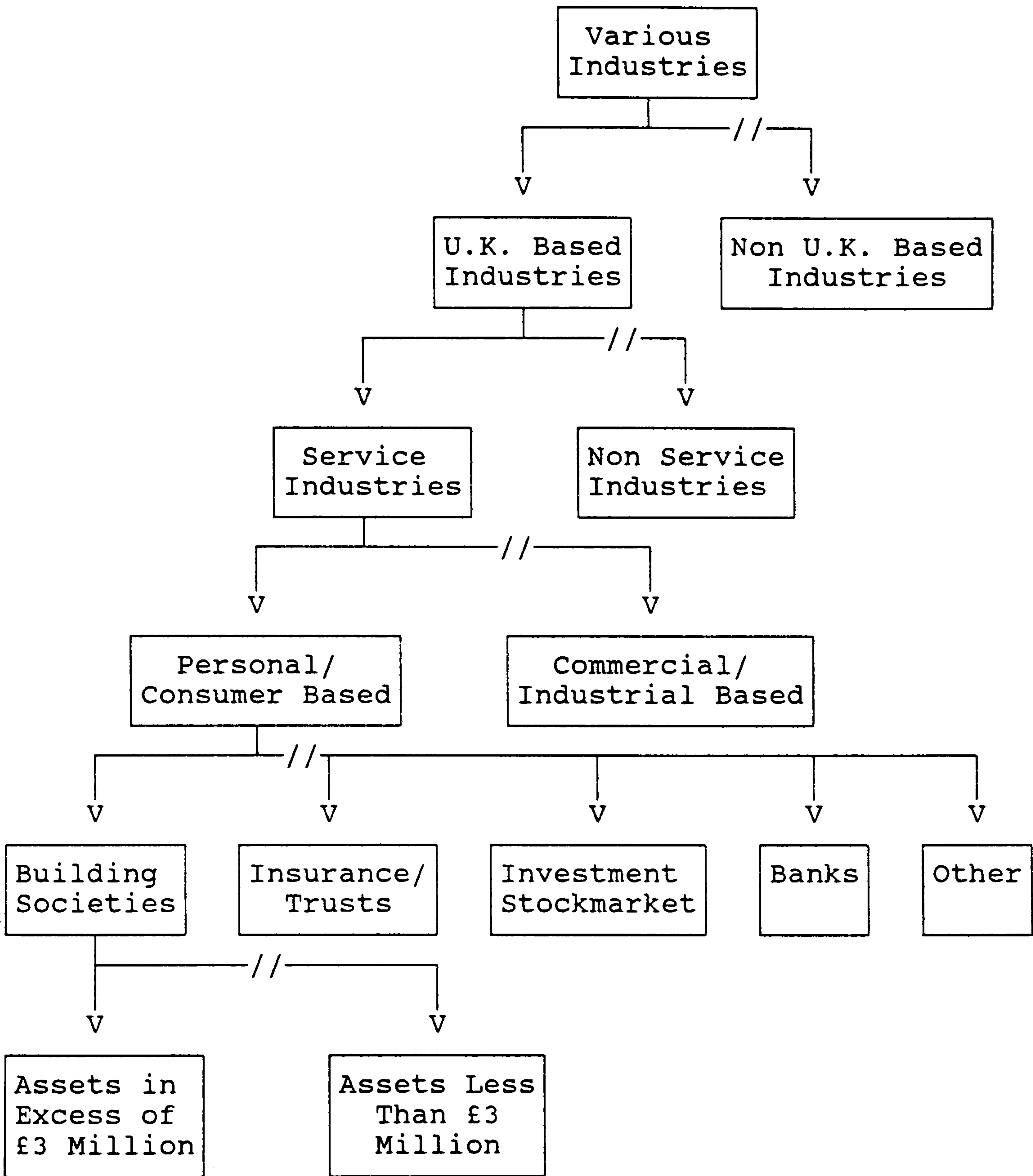
of £3 million in assets. This restriction effectively limits the sample population to those societies that are large enough to be considered active competitors by the remaining societies. (Appendix A lists each society with its assets.)

The study sample is comprised of all 104 societies in the sampling frame; which in effect, reflects a census of this particular service sector. A census is feasible given the small number of institutions involved and the impracticability of reducing this group to smaller stratified samples and being able to still draw statistically significant conclusions.

The building societies and their head office addresses were identified using the Building Societies Yearbook 1989. This register is published annually under the auspices of the Building Societies Association.

Figure 5.7

SELECTION OF A HOMOGENEOUS SAMPLE POPULATION



Data Collection Instrument and Method

Data collection involved two phases that required two separate approaches.

Phase One. The first phase, an exploratory study, took a qualitative approach using an in-depth case study of one building society -- National & Provincial (N&P). This format allowed insight to be gained into the current practices used in new product development by a financial institution in the industry sector under study. N&P was selected as representative of the industry because it is considered to be a mid-range society and is active in new product development (Chapter 4). It was reasoned that N&P would serve as a good compromise in the range of societies, in terms of asset size, although it is acknowledged that this was a subjective decision by the researcher.

Access to the company was obtained through a Director, who in turn arranged for a meeting with the Head of Marketing in the Savings Division. Subsequently, a series of interviews were held with various staff members who had been involved in developing and launching one successful and one unsuccessful new product.

A semi-structured questionnaire was used in the interviews to permit comparisons between the successful and unsuccessful products. However, open-ended questions allowed for the further probing that is required in this type of exploratory research.

All interviews were tape recorded, transcribed and subsequently analyzed. For both products, the development

processes were tracked from the initial idea to the post-launch review stage. This permitted the development of a detailed flow chart of each process and the identification of factors that were deemed to have been critical to the product's success or failure. Appendix B provides the complete case study analysis.

The results of the first phase, the case study, were then conjoined with the literature review to comprise a groundwork for the second phase.

Phase Two. The second phase of the data collection employed a mail questionnaire. The questionnaire is divided into three sections. Part I is designed to gather information on the current development processes used by building societies, their organisational structures, and general data on the internal environments surrounding the product development processes. Part II is designed to gather a detailed profile of a recently launched successful new product, while Part III gathers a profile of an unsuccessful new product.

A covering letter on University letterhead, a pre-paid return envelope, and a questionnaire were mailed to all 104 building societies. Copies of the covering letter and questionnaire are in Appendix C.

Each society was telephoned in advance to identify the name and position of the individual whose responsibilities included the actual development of new products. Thus, practising new product managers were targeted as the respondents, rather than those in more senior levels of

management. The identification of these individuals allowed the covering letters to be addressed directly to them. Addresses were individually typed on each envelope. By avoiding the use of adhesive address labels and generically addressed covering letters, the findings of Kerin and Harvey [1976] for increasing response rates were incorporated into the study. First class postage was used to help avoid the appearance that the envelopes contained junk mail. As an additional incentive to complete the survey, all respondents were offered a complimentary copy of the final research results.

Three weeks subsequent to the first mailing, a second mailing was forwarded to all non-respondents using the above format, including another copy of the survey and a pre-paid envelope. A new covering letter was designed, however. A special coding system on the return envelopes allowed for identification of the non-respondents. Unnecessary second mailings were, thus, avoided.

In an attempt to further increase the response rate, all non-respondents to the first mailing were telephoned as a further means of soliciting support for the research effort. This method has been effectively used to increase response rates by Roscoe, Lang and Sheth [1975], Comer and Kelly [1982] and Jobber, Allen and Oakland [1985].

Pilot Study

In order to pretest the mail questionnaire, a pilot study was undertaken. However, the small sample population

and the desire not to contaminate it precluded the pretest from being conducted on a subset of the building societies. As an alternative, the U.K. banking industry was selected for the pilot study. As test subjects, the banking sector represents the next closest homogeneous group to the building societies. This sector is affected by similar market and environmental conditions, and both groups are considered to be major competitors for the same customer base [Edgett and Thwaites 1990a]. Both groups also have similar product offerings, such as mortgages and savings accounts.

Before conducting the pretest, the questionnaire was subjected to a critical review by five marketing academics. Following the necessary revisions, the survey was then piloted with one building society -- National & Provincial. Only minor changes to the questionnaire were required after this stage.

The pretest among banking institutions was modelled after the methodology for the principal survey of the building societies. A questionnaire, covering letter and pre-paid return envelope were mailed first class to an identified individual responsible for new product development within each institution. A subsequent mailing was conducted for non-respondents. The pretest yielded a 51 percent response rate following the first mail out and a combined response rate of 90.5 percent for the two mailings.

No modifications were required, or made, to the survey

instrument following this phase. The pilot test of the banks revealed no troublesome or ambiguous questions; nor were any omissions discovered.

As a final check, several respondents of the bank sample were telephoned to gain their impressions of the survey. Concern was expressed over the length of the questionnaire; however, it was deemed to be very thorough and complete. When questioned further about the issue of length, respondents indicated that given their interest in the topic and the promise of a copy of the results, they completed it anyway. This general opinion is further confirmed by the high response rate to the survey.

Survey Response

The useable response rate for the survey of building societies, after completion of the follow-up mailings and reminder telephone calls, is 67 percent of the population, or 94.6 percent of industry assets. Seventy-six percent of the respondents voluntarily identified themselves by requesting the survey results. These facts are indicators of a high level of interest in the subject area. Table 5.1 illustrates a breakdown of the survey responses.

Table 5.1

SURVEY RESPONSE RATES	
Original sample size	104
Merger activity during data collection period	<u>4</u>
Total potential respondents	100
<hr/>	
Total surveys returned	74
Returned: uncompleted	5
unusable	<u>2</u>
Total useable surveys	67

A concern to all researchers is the matter of how to explain nonrespondents. Of the 26 nonrespondents to this survey, eight said in the telephone follow-up that it is their company policy not to respond to surveys, due to time constraints. The majority of the remaining 18 institutions have assets of less than £50 million. Although all of these institutions were contacted by telephone to solicit their co-operation, many pointed out that their new product development activities are extremely limited in scope and that the survey questions with regard to the new product development process were too complex to apply to their small-scale operations. Although some of these survey subjects offered vague promises to complete the questionnaires, the collective decision by this group not to respond to the survey is not surprising.

The useable survey response rate of 67 percent is, therefore, very good; particularly since the respondents represent 94.6 percent of this financial sector's assets.

The nonrespondents, who have been identified as having very little new product development activity, have actually indirectly contributed to the homogeneity of the useable sample.

Data Analysis

In order to provide statistical support for the research questions, hypotheses and propositions, the data gathered for this study was analyzed using a number of statistical techniques and was processed through SPSS-X and SPSS/PC+. Standard procedures were used for data entry and cleaning.

General descriptive statistics were selected as the appropriate analytical tool for the first group of hypotheses, which was addressed in Part I of the questionnaire. This approach involved the use of frequency tabulations, chi-squares and other tests of significance; for example, t-tests. The remaining areas of analysis required a more sophisticated approach; thus, a number of multivariate techniques were developed.

The problem of having categorical dependent variables and metric independent variables was overcome by using two-group discriminate analysis. Discriminate analysis allows for an evaluation of a number of variables with two or more groups simultaneously [Klecka 1980]. Thus, it is well suited for analysing the differences (independent variables) that exist between successful and unsuccessful (dependent variables) new products.

The second multivariate technique -- factor analysis -
- is particularly well suited for research problems that
require reduction of a large number of variables into a
smaller set of new variables, while incurring only a
minimal loss of information [Kim and Mueller 1978]. This
approach was therefore selected to deal with the large
number of variables that comprise Parts II and III of the
questionnaire. Factor analysis is also an effective
variable reduction method that is commonly used in
conjunction with discriminant analysis.

Because multivariate statistics are being used, a
brief discussion is needed on the appropriateness of using
data derived from a seven-point scale. The use of a point
scale versus use of a continuous scale has the advantage of
forcing the respondent to select from a limited number of
categories; it is easy to construct and use, and produces
more reliable ratings than do continuous scales [Churchill
1987]. An advantage is also gained in using seven points
rather than five on the scale, as it increases the
reliability of the measurement [Churchill and Peter 1984].
No differences are to be found in the reliability of scales
which have all the points labelled and those with only the
end points labelled. [Churchill and Peter 1984].

The other area of possible contention is the
classification of the scales: is the data ordinal or
interval in nature? Although this is still a contentious
issue among mathematicians [Churchill 1987], a number of
scholars have demonstrated that the issue is not important

and that little difference is found between the results [Labovitz 1970, Gaito 1980 and Churchill 1987]. Similarly in the marketing literature, the use of seven point scales as interval data is a common practice. Many examples are to be found in the leading marketing journals that have judged the multivariate techniques discussed as suitable analytical techniques to be used on itemized point scales.

Summary

Throughout this Chapter, a number of hypotheses and propositions have been advanced. By using a deductive approach (hypotheses), many questions will be answered about how new product development for financial services is carried out in building societies. In addition, use of the inductive approach (propositions), will permit a first look at the relationship between successes and failures in a service industry environment.

CHAPTER 6

RESEARCH RESULTS

Introduction

In this chapter, results of the first phase of this research study are presented. Current approaches used in new product development by the building society sector of the Financial Services Industry are identified. This process encompasses the first 12 hypotheses presented in the previous chapter. The next chapter will address the remaining hypotheses and the research propositions.

This chapter first explores the strategic focus of new product development within the industry; second, it examines new product screening and market research; third, actual stages used in developing new products are presented and compared to previously reported new product development practices. The chapter concludes with an examination of personnel and management related issues. For ease of presentation, each hypothesis will be stated as it is discussed. In accordance with the traditional practice, each hypothesis will be given in the negative H_0 format.

Results of Hypothesis Tests

Hypothesis No.1:

H_1 : The new product focus is not competitively driven for the majority of building societies.

H_1 : $T \geq C$ and $M \geq C$ $p = 0.05$

where T = Technology Driven
 M = Market Driven
 C = Competitively Driven

Table 6.1 presents the frequencies, means and standard deviations for the three conventional types of new product orientation measured with a five point scale.

The analysis indicates that a directional bias exists in favour of a market driven approach, which has the highest mean frequency, at 4.3. However, there is no significant difference between the mean frequency of application for a market driven approach and a competitively driven approach. The results of the t-tests for both of these approaches, however, indicate that their mean scores are significantly different ($p = .0001$) from the technology driven approach to new products. Therefore, the hypothesis $T \geq C$ can be rejected; the hypothesis $M \geq C$, however, cannot. The t-test suggests no significant difference in means between the M and C orientations.

Table 6.1

NEW PRODUCT ORIENTATION

TYPE	Scale					Mean	SD
	Not at All 1	2	3	4	To a Large Extent 5		
Technology Driven (T)	18 (28.6)	26 (41.3)	15 (23.8)	4 (6.3)	0 0	2.079	.885
Market Driven (M)	0 (0.0)	0 (0.0)	11 (16.9)	24 (36.9)	30 (46.2)	4.292	.744
Competitively Driven (C)	0 (0.0)	2 (3.0)	8 (11.9)	39 (58.2)	18 (26.9)	4.092	.712

t-test results
T < M t-test = 14.79 p = .0001
T < C t-test = 14.12 p = .0001
C < M t-test = 1.78 p = .0791

SD = Standard Deviation; Scale: 1 = Not at All, 5 = To a Large Extent
To be read as: 18 (26.9%) of respondents indicated that new products in their company are, to a large extent, competitively driven.

To investigate the effect that the value of assets may have on the new product development orientation of a building society, the data is re-examined by classifying societies into three groups, large, medium and small. By using an F statistic to determine if there may be inequalities among the means of the three asset bases for each of the three approaches to new products, evidence was found to support further analysis. Therefore, a multiple comparison test -- Duncan's multiple range test -- was conducted to determine which means are significantly different from each other.

The results presented in Table 6.2 show that the size of a building society has a bearing on the use of both the technology and competitive approaches. However, no differences based on asset size were detected for a market driven approach. The data indicate, for example, that

small societies are more likely than large societies to develop new products that have been previously introduced into the marketplace by the competition. Large societies are found to be more prone to seek applications of technological advances (i.e. ATM's) than are small societies; and the medium-sized societies are more likely to use technological approaches than are small ones.

Table 6.2

AFFECT OF ASSETS ON MEANS

Approach	Large 1	Medium 2	Small 3	Duncan Test
Technology	F = 6.5689 2.3235	2.1176	p = .0026 1.3333	1-3, 2-3
Market	F = 1.2139 No two groups significantly different		p = .3040	
Competition	F = 2.9122 3.9143	4.1667	p = .0616 4.4286	1-3

Note: Scale for means is 1 = Not at All, 5 = To a Large Extent

Duncan's multiple range test is significant at .05

To be read as: For a technology approach large and small building societies have a statistically significant difference in means and medium and small societies have statistically significant difference in means.

A further indicator in support of the importance of competition to the new product development process is that when respondents were asked if competitors are the most powerful idea source for new products (Table 6.3), 67.2 percent answered affirmatively, while only 32.8 percent indicated the opposite. With the use of a nonparametric chi-square test, due to nominal data, the two modes were found to be statistically different at a significant level of .005

Table 6.3

NEW PRODUCT IDEA SOURCE

	Mode	
	No	Yes
Competitors are the most powerful idea source for new products.	22 (32.8%)	45 (67.2%)
$\chi^2 = 7.896$	D.F. = 1	Significance = .005

χ^2 = nonparametric chi-square test.

The indicators from Tables 6.2 and 6.3 combine to suggest that a more detailed examination of the data is required than is provided in the aggregate perspective of Table 6.1. Table 6.4 presents a disaggregation of the three approaches by segmenting the asset size of respondents. The results of the t-test on various means are also given.

Table 6.4

NEW PRODUCT ORIENTATION BY ASSETS

Asset Size	Technology (Means)	Market (Means)	Competitively (Means)
Large	2.324 _{a,b}	4.400 _{a,c}	3.914 _{b,c}
Medium	2.118 _{a,b}	4.059 _a	4.167 _b
Small	1.333 _{a,b}	4.308 _a	4.429 _b

Note: means are from a 5 point scale: 1 = Not at all, 5 = To a large extent
a,b = p at .0001 ; c = p at .01

To be read as: The mean response of large societies for technology, market and competitively driven approaches to new products is 2.324, 4.400 and 3.914 respectively. A t-test was used to determine which pair of means are significantly different. Pairs found to have a significant difference are indicated by the a, b and c's. For example a significant difference exists between the means for technology and market driven approaches for large societies, indicated in the table by the subscript a.

Not surprisingly, the rejection of the hypothesis $T \geq C$ is further supported by Table 6.4. A closer examination of the difference between the means for market and competitive orientations reveals that large societies are significantly more market oriented than competitively oriented. Accordingly, the hypothesis $M \geq C$ for large societies must be accepted. For medium and small societies, a directional bias favours a competitively oriented approach versus a market one; however, there is not a statistically significant difference between the two approaches. Therefore, the hypothesis $M \geq C$ for medium and small-sized societies cannot be rejected, as no inequalities between the two means have been detected.

Hypothesis No. 2: The second hypothesis explores the relationship of new product development to the overall strategic focus of the company. Table 6.5 provides an overview of the analysis.

H_2 : The majority of Building Societies have a strategic focus for their new product activity.

H_2 : $P(x) > 0.50$

where:

$$x = (n - \sum_{i=n}^1 a_i - \sum_{j=n}^1 a_j - \sum_{i=n}^1 b_i + \sum_{j=n}^1 b_j - \sum_{i=n}^1 c_i + \sum_{j=n}^1 c_j) / n$$

Table 6.5

STRATEGIC INTEGRATION OF NPD

	Yes	No/Don't Know		χ^2	DF	p
Strategic Plan	60 (89.6)	7 (10.4)	(a _i)	44.18	1	.0001
NP Performance Expectation in Strategic Plan	29 (48.3)	31 (51.6)	(a _j)	0.018	1	NS
Existence of NP Program	31 (47.0)	35 (53.0)		0.242	1	NS
Written Objective Included	22 (71.0)	9 (29.0)	(b _i)	4.500	1	.034
NP Performance Formally Measured	54 (85.7)	9 (14.3)	(c _i)	32.143	1	.0001

χ^2 = nonparametric chi-square

() = Percentage; NS = Not significant; DF = Degrees of Freedom

b_i = Respondents that were included in b_i and either a_i or a_j = 4

c_i = Respondents that were included in c_i and either b_i or a_i or a_j = 7

Although the majority of respondents do have a strategic plan (89.6%), slightly less than half (48.3%) of these firms have expectations for new product performance written into their plans. Only 47 percent of responding firms have standard procedures for new product development. Twenty-nine percent, or nine firms, do not include written objectives in their new product development programmes. These results seem to be inconsistent with the 85.7 percent of respondents who indicated that new product performance is formally measured. This apparent contradiction implies that firms are, indeed, measuring new product performance, but it has not been integrated into the strategic planning phase by senior management. Instead, the measurement of new product performance appears to occur at a lower level in the organisations. Thus, performance measurement is treated as a tactical issue rather than a strategic one.

Therefore, in testing whether building societies have a strategic focus for the new product activity, the second hypothesis is rejected.

$$H_2: P(x) > 0.50$$

where:

$$x = (n - \sum_{i=1}^n a_i - \sum_{j=1}^n a_j - \sum_{i=1}^n b_i + \sum_{j=1}^n b_j - \sum_{i=1}^n c_i + \sum_{j=1}^n c_j) / n$$

$$x = (67 - 7 - 31 - 9 + 4 - 9 + 7) / 67 = 32.8\%$$

$$0.328 < 0.500$$

Only 32.8 percent of the building societies responding have a strategic focus for their new product activity.

Hypothesis No. 3:

H₃: The majority of Building Societies have a formal new product development process.

$$H_3: P(a) > \{P(b) + P(c) + P(d) + P(e)\}$$

The lack of a strategic focus on new product development revealed by the previous hypothesis suggests that the new product development process is not formal and well defined with a set of clearly written procedures. It is, instead largely unstructured, with varying degrees of formality. Table 6.6 provides a breakdown of the new product development approaches in use.

Table 6.6

TYPES OF NEW PRODUCT DEVELOPMENT PROCESS IN USE

Types	Frequency	Percent
Formal Written Procedures (a)	9	13.4%
Some Written Guidelines (b)	7	10.4%
Mostly Informal, Some Formalisation (d)	11	16.4%
Informal but Established Pattern (c)	20	29.9%
Ad Hoc Approach (e)	20	29.9%

Chi-square = 11.433; Degrees of Freedom = 4; significance = .022

The majority of building societies were found not to have formalized new product development procedures¹. Only 13.4 percent indicated that they have written guidelines; The majority, 76.2 percent, reported informal or ad hoc approaches.

The infrequent application of formal development processes was confirmed by respondents in a later question on the survey. When asked if the use of a formal new product development process is limited, 68.7 percent answered yes ($X^2 = 9.328$ D.F. = 1 Significance $p = .002$). No significant relationship, however, was found to exist with asset base, the components of Table 6.6, or the above question. Therefore, the degree of formality or informality in the process cannot be isolated by asset base.

Accordingly, the third hypothesis is rejected. No evidence has been found to support the supposition that the majority of building societies use a formalized new product

¹ $H_3: P(a) > \{P(b) + P(c) + P(d) + P(e)\}$
 $13.4 > \{10.4 + 29.9 + 16.4 + 29.9\}$
 $13.4 > 86.6$

development process.

Process Stages

The following series of hypotheses begins the examination of the stages in the new product development process. It is conjectured that, overall, the process is not sophisticated in this service sector. New product screening and preliminary research assessment techniques are discussed first, followed by an examination of the various stages used for developing new products.

Hypothesis Nos. 4, 5 and 6:

- H₄: New product ideas are screened by individual decisions rather than group decisions.
- H₅: The majority of respondents use a formal check list or rating system.
- H₆: The group decision makers have used a formal screening procedure to select new product ideas.

The comparison of individual to group new product screening practices is presented in Table 6.7. Significant at the .0001 level, only 32.8 percent of the respondents indicated that they use an individual approach to screening new products. A group approach, however, was reported by 62.7 percent. Thus, H₄ can be rejected. The use of a group decision making format is strongly supported.

Table 6.7

GROUP VERSUS INDIVIDUAL NP SCREENING

Approach	Number	%
Individual Decision		
Uses a formal checklist/rating system	12	17.9%
Makes decision using informal system	<u>10</u>	<u>14.9</u>
Total Individual	22	32.8
Group Decisions		
Based on a formal checklist/rating system	0	0.0
Based on informal discussion	<u>42</u>	<u>62.7</u>
Total group decision	42	62.7
No screening process is used	3	4.5

Chi-square = 30.125 D.F. = 2 Significance = .0001

No significant differences were found to exist when the effect for asset base was examined.

In examining the use of informal and formal systems for all respondents, irrespective of group or individual decision making, Table 6.7 illustrates that only 17.9 percent use a formal check list method. A strong majority (77.6%) reported informal screening of new product ideas. These statistics are further supported later in the questionnaire. Sixty-seven percent of respondents, when asked if their organisations used new product evaluation committees to assess new product ideas, responded negatively (significant at .005). Hypothesis H₅ is, therefore, rejected.

Further examination of the data reveals that, of the respondents identified as using a group decision format (62.7%), no respondents reported using a formal check list or rating system. All respondents using a group decision format, 62.7 percent, reported that informal methods were used. Hypothesis H₆ can, therefore, also be rejected.

Consequently, by inspection of Table 6.7, the conclusion may be drawn that most building societies use group decision-making to screen new product ideas, and that this procedure is not formalised.

Hypothesis No. 7:

H₇: For preliminary market assessment techniques, primary research is used to a greater extent than desk research techniques.

The results presented in Table 6.8 show that the two listed forms of external research techniques (discussions with customer contact staff and customers) scored lower means than did the two internal research techniques. Further, the external techniques were assigned modes of three and one, where three is the midpoint on a five point frequency of use scale. The mode of one for direct contact with customers indicates that a high proportion of respondents never actually contact consumers to solicit their opinions during the preliminary market assessment phase of the development process. Further evidence of a low degree of external focus is found when a t-test is applied to the combined means for internal and external approaches. The result is significant at $p = .0001$. In Appendix D a listing is provided of the various paired comparison t-tests that were conducted.

Hypothesis H₇ is, therefore, rejected. The evidence suggests the contrary: that internal research techniques have a greater frequency of application in building

societies than do external research methods.

Table 6.8

PRELIMINARY MARKET ASSESSMENT TECHNIQUES

Type	Mean	SD	Mode
1. Review Competitors' Products	4.627	0.546	5
2. Analyse Secondary Published Data	3.657	1.038	4
3. Discussions with Customer Contact Staff	3.424	1.068	3
4. Direct Contact with Customers	2.470	1.153	1
5. Internal Discussions Only	2.905	1.146	4
6. Assessment is Formal and Documented	2.806	1.185	3

Note: 5 point scale 1 = Never; 5 = Always

To measure the strength of association between the variables, the Pearson correlation coefficient was used. A low number of respondents reported using a formal and documented assessment approach (Table 6.8). As Table 6.9 illustrates, however, there is a positive and significant relationship between both of the internal research methods and the tendency toward formality and documentation of techniques.

Table 6.9

CORRELATION MATRIX FOR PRELIMINARY ASSESSMENT TECHNIQUES

Correlation Matrix						
Type	1	2	3	4	5	6
1	1.000	.337a	.078	.082	-.235	.315a
2		1.000	.260	.292	-.223	.428b
3			1.000	.260	-.340a	.227
4				1.000	-.483b	.130
5					1.000	-.173
6						1.000

Significance of correlation coefficients: a: p = .01 and b: p = .001
 Note: Type 1-6 are taken from Table 6.8

It is interesting to note that this statistically significant relationship is missing for the external research techniques. This absence suggests that internal assessment techniques have reached a level of formality with a requirement for documentation, while external approaches have not yet achieved the same level of development. This possibility is explored in more detail in the subsequent hypothesis. As expected, a statistically significant inverse relationship was found between the use of external techniques and the use of internal discussions only.

An analysis of variance was conducted on the market assessment techniques and the three categories of asset base. If a significant F-test on an item was found, a Scheffé test was conducted to determine which of the means were not equal. The Scheffé test is a more conservative test than the t-test or alternative multiple comparison techniques (i.e. Duncan's multiple-range test). By using

a more rigorous test, the risk of mistakenly identifying a significant result is reduced (a type 1 error). The Scheffé test is also particularly suited for unequal n's and for evaluating all a posteriori contrasts among means [Kirk, 1982]. Kirk has also demonstrated that this test is robust toward non-normality and heterogeneity of variance.

Table 6.10

PRELIMINARY MARKET ASSESSMENT BY ASSET BASE

Type	Assets		
	Large	Medium	Small
Review Competitors' Products	F = 1.9189; p = .1551 No two groups significantly different at .02		
Analyse Secondary/Published Data	F = 3.6557; p = .0314 No two groups significantly different at .02		
Discussions Held with Customer Contact Staff	F = 1.0098; p = .3701 No two groups significantly different at .02		
Direct Contact Made with Customers	F = 2.0473; p = .1376 No two groups significantly different at .02		
Internal Discussions Only	F = 1.3659; p = .2630 No two groups significantly different at .02		
Assessment is Formal and Documented	3.200a	2.438	2.091a

Note: 'a' indicates the two means are significantly different using the Scheffé test at p = .02

From Table 6.10, it can be determined that the asset size of a building society does influence the degree to which the assessment is formalized and documented. Large

societies reported a mean of 3.2, which is significantly higher than the smaller societies' mean of 2.1. More specifically stated: Large societies are more common users of a formal and documented approach for preliminary market assessment techniques than are the smaller societies; but no significant difference in the use of formal documentation was found between the medium sized societies and either the large or small societies. It is also important to note that no significant differences were found between internal or external market assessment techniques that can be based on differences due to asset size. Therefore, it may be concluded that the size of the building society has no significant bearing on whether it has formalised internal or external research techniques; and -- except for large societies -- whether it has formalised market assessment procedures.

Hypothesis No. 8:

H₈: Market research techniques for new product development are, in general, frequently used.

The frequency with which different types of market research are used in the new product development process was measured on a 5-point scale. The reliability of the scale was verified by using the Cronbach's Alpha². The scale obtained an Alpha of .8388 and a standardized item

² Cronbach's Alpha is one type of reliability coefficient and is based on the internal consistency of a test. A high alpha value indicates that the scale used is very reliable.

Alpha of .8432. Alpha scores this high indicate that the scale is quite reliable and that it has fairly comparable variances. The corrected item-total correlation³ scores were all above the acceptable minimum, with the lowest value at .3519. This indicates a high level of correlation among the different scale items.

Table 6.11 presents summary descriptive statistics for the various types of market research. The two types of internal research scored above the midpoint range of three, which indicates a high level of usage. This finding supports the results presented in discussion of the previous hypothesis. For the primary market research methods, however, all techniques scored below the midpoint range. This indicates that these types of approaches are not commonly used in the new product development process for this sector of the financial services industry.

For further analysis, the responses were collapsed into two categories: low usage and high usage. As the results indicate in Table 6.11, the two internal market research approaches were highly utilized, with 89.6 and 83.1 percent of the respondents classified as frequent users of competitor and secondary data analysis. However, for primary research techniques, the majority of building societies were identified as infrequent users in all but one of the seven different techniques. It is interesting

³ "Corrected item-total correlation is the Pearson correlation coefficient between the score on the individual item and the sum of the scores on the remaining items" [Norusis 1988, p. B-206]. The higher the correlation the better the relationship.

to note that the one external technique identified as having a high frequency rate is qualitative in its approach (focus groups), while the other external techniques are of a quantitative nature (i.e. test markets and mail questionnaires). Most of the comparisons of low versus high usage were found to be statistically significant.

Table 6.11

TYPES OF MARKET RESEARCH USED

Type	Item Total Correlation	Sample Means	SD	Percent Checking		p
				1,2 Low	3,4,5 High	
Competitive Analysis	.3519	4.164	1.15	10.4%	89.6%	.0001
Secondary/Published Data	.4987	3.646	1.23	16.9	83.1	.0001
Group Discussions (Focus Groups)	.5698	2.851	1.26	35.8	64.2	.05
Product Testing	.7008	2.273	1.03	59.1	40.9	NS
Concept Testing	.7068	2.197	1.01	60.6	39.4	.1000
Mail Questionnaires	.3958	2.136	1.16	62.1	37.9	.05
Test Markets	.6358	1.924	1.06	71.2	28.8	.001
Telephone Surveys	.6307	1.864	1.01	75.8	24.2	.0001
Consumer Panel Studies	.5197	1.758	1.07	77.3	22.7	.0001

NOTE: 5 point scale: 1 = Never; 5 = Always
 p = significance of nonparametric chi-square test for high and low
 SD = standard deviation

Hypothesis H_8 has, therefore, been evaluated from two perspectives. Overall the hypothesis can be rejected, no support exists for the claim that market research techniques for new product development are, in general, frequently used (Table 6.11). However, when dividing the market research into either internal or external techniques the findings for the internal techniques are different. Thus the hypothesis cannot be rejected for internal techniques because the above analysis supports the claim that these two techniques are commonly used. H_8 is

rejected, however, for external techniques. No evidence was found to support the conjecture that these approaches to market research are frequently used.

Correspondingly to the previous hypothesis, an analysis of variance was conducted on the types of market research that are used to test if the three sample means for the three categories of building societies were equal. If the F-test was significant for an item, then a Scheffé test was conducted to determine which means were not equal.

In Table 6.12 the ONEWAY ANOVA results indicate that eight of the nine items have a significant F statistic. No significant difference was found for the group discussions item. Large building societies were found to have a significantly different mean than the group of small societies in seven of the eight market research techniques. The direction of this difference was a larger mean for the large societies. This indicates that the large societies are utilizing these seven research techniques more frequently than are the smaller societies, albeit still at a low level of frequency. Significant differences in means were also identified for large societies when compared to medium sized societies. The large societies had higher means for secondary data analysis product testing, test markets and mail questionnaires.

It can, therefore, be concluded that differences do exist between the frequency with which large societies use selected market research techniques and the frequency of usage by medium and small societies. It is interesting to

note that no significant differences were found between medium-sized and small institutions.

Table 6.12

FREQUENCY OF MARKET RESEARCH TECHNIQUES BY ASSETS

Type	Assets		
	Large	Medium	Small
Competitive Analysis	F = 4.6755; p = .0118		
	4.5429a	3.8889	3.5714a
Secondary/Published Data	F = 8.6584 p = .0005		
	4.1765a,b	3.2353b	2.8571a
Telephone Surveys	F = 7.2673; p = .0014		
	2.2353a	1.7222	1.1429a
Concept Testing	F = 7.4472; p = .0012		
	2.5882a	2.0000	1.5000a
Product Testing	F = 9.0946; p = .0003		
	2.7353a,b	1.8889b	1.6429a
Test Markets	F = 5.8090; p = .0048		
	2.3235b	1.4444b	1.5714
Consumer Panel Studies	F = 4.5139; p = .0147		
	2.1176a	1.4444	1.2857a
Mail Questionnaires	F = 6.1834; p = .0035		
	2.5882a,b	1.6111b	1.7143a
Group Discussions	F = 1.4090; p = .2519		
	No Groups Significantly Different at .05		

Note: 'a' and 'b' indicate means that are significantly different using the Scheffé Test at p = .05.

To be read as: For secondary/published data the mean of 4.1765 for large societies is significantly higher than the mean of 2.8571 for the small societies and the mean 4.1765 is significantly higher than 3.2353 for medium societies. No significant difference exists between medium and small societies.

Hypothesis No. 9:

H₉: The stages in the new product development process are conducted with the same or greater frequency than for those previously reported in the literature.

Hypothesis H₉ used a 0-5 point scale to measure 21 items. Each variable is an identifiable activity of the new product development process. The reliability of this scale was verified by using Cronbach's Alpha. The scale has an Alpha of .9337 and a standardized item Alpha of .9356. These large Alpha scores indicate that the scale has a high level of reliability, and the minor difference between the two Alpha scores indicates reasonably comparable variances. No scale item deletions were required as the corrected item-total correlation scores (Appendix E) are all above the acceptable minimum, with the lowest reported correlation at .4226.

Table 6.13 provides the group means, means separated by asset size, the F test and Scheffé test for significant differences that exist between these three means. The raw scores are provided in Appendix F.

The results from the group means indicate that the frequency of occurrence for the various activities in the development process is low. No individual activity has a mean score indicating that the activity occurred 'most of the time' or 'all of the time' (4 or 5). Market research; concept testing -- both in-house and with consumers; and product testing -- both in-house and with consumers -- have all received very low scores. These activities all have

the common theme of some type of primary research. These low figures can be expected, given the low level of primary market research reported.

The activities occurring most commonly are, as would be expected: product concept development, preliminary technical feasibility, product design, system design and testing, personnel training, full-scale launch and post-launch review. The high scores for both system design and testing (mean = 3.313) and personnel training (mean = 3.806) are unique to product development in a financial services environment. Most new products for building societies must be integrated into existing computer systems. Therefore, new software must be developed and tested for each new product. Branch staff also require training; both in how to institute the new product (i.e. new computer commands) and in explaining to the consumer how the new product operates.

The means for each of the three asset classifications are also listed in Table 6.13. By using the F-test and the Scheffé test, significant differences among the three means are identified for 13 of the 21 items. There was a significant difference in the mean between large and small societies for 12 items; five items were found to be used with significantly different frequencies between large and medium societies; and two significant differences were identified between medium and small societies. It is important to note that, for 20 of the variables, the larger societies consistently reported higher levels of usage than

did either the medium or smaller societies. For the one remaining variable -- personnel training -- no significant difference is found among the three size groups.

Table 6.13

NEW PRODUCT DEVELOPMENT ACTIVITIES

Type	Group Mean	Group			F	p	Scheffé
		1 Large	2 Medium	3 Small			
Idea Generation	3.045	3.229	2.889	2.786	0.887	NS	--
Idea Screening	2.866	3.343	2.778	1.786	7.57	.01	1 - 3
Product Concept Development	3.448	4.114	3.056	2.286	12.49	.0001	1 - 2 1 - 3
Preliminary Market Investigation	3.119	3.629	2.944	2.071	7.27	.01	1 - 3
Preliminary Technical Feasibility	3.403	3.971	3.167	2.286	8.80	.001	1 - 3
Market Research	2.418	3.086	1.833	1.500	8.21	.001	1 - 3 1 - 2
Preliminary Business Plan	2.806	3.429	2.444	1.714	11.12	.0001	1 - 3 1 - 2
In-House Concept Testing	2.000	2.486	1.444	1.500	3.14	NS	--
Concept Testing with Consumer	1.478	2.257	0.722	0.500	15.33	.0001	1 - 3 1 - 2
Product Design	3.373	3.829	3.056	2.643	4.30	.01	1 - 3
Product Design Testing	2.105	2.658	1.778	1.143	6.35	.01	1 - 3
Process (Procedures) Design and Testing	3.090	3.486	2.944	2.286	2.13	NS	--
System Design and Testing	3.313	3.686	3.111	2.643	2.20	NS	--
Develop Marketing Plan	3.299	3.771	3.222	2.214	10.60	.0001	1 - 3 2 - 3
Personnel Training	3.806	3.857	4.000	3.429	0.94	NS	--
Product Testing and Pilot Run	1.866	2.286	1.389	1.429	3.88	NS	--
Product Test Marketing with Consumers	1.433	1.914	0.778	1.071	6.09	.01	1 - 2
Revision of Launch Plan	2.567	2.829	2.278	2.286	1.44	NS	--
Final Business Plan	2.881	3.343	2.389	2.357	3.82	NS	--
Full-Scale Launch	3.627	4.000	3.778	2.500	7.48	.01	1 - 3 2 - 3
Post-Launch Review	3.537	4.029	3.278	2.643	5.57	.01	1 - 3

Scale: 0 = Not at All; 1 = Rarely; 2 = Sometimes; 3 = Occasionally;
4 = Most of the Time; 5 = All of the Time

F - Test tested at significant levels of .01 and .001 only.

Scheffé results are significant at the .05 level.

To be read as: Idea screening had a mean of 2.866 for all respondents. The large, medium and small societies had respective means of 3.343, 2.778 and 1.786. The F-Test result of 7.57 was significant at $p = .01$. The Scheffé test identified a difference between the means for large and small societies.

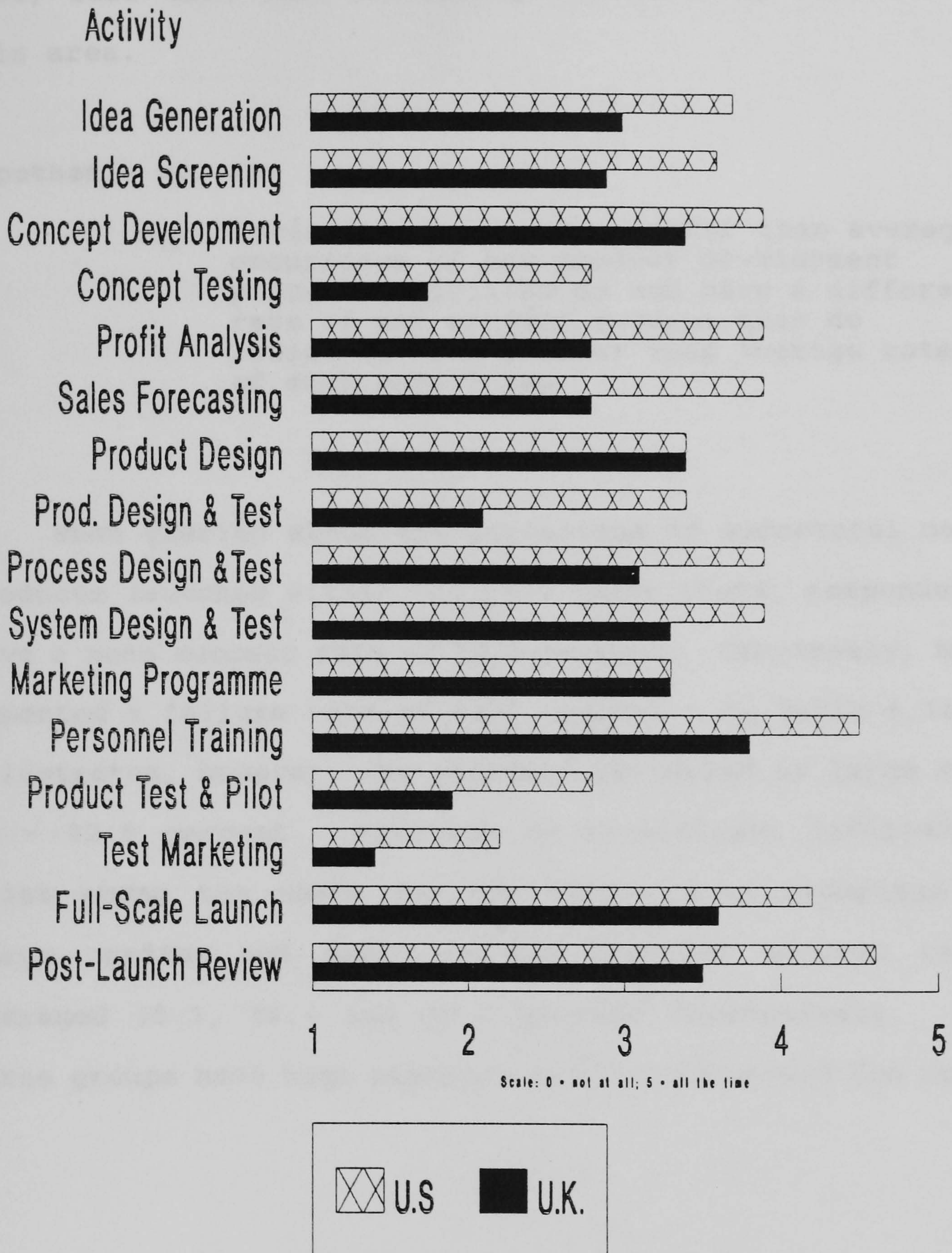
A comparison of the frequencies with which the stages in the new product development process occur is demonstrated in Figure 6.1. It should be noted that these activities are compared with the results of a United States study by Scheuing and Johnson [1989b], which is the only

published list of this nature that deals with the financial services industry. Further, only 16 of the 21 variables presented in Table 6.13 are used, in order to provide a meaningful comparison with the United States study. Appendix G provides the values used for the two studies.

The bar charts in Figure 6.1 demonstrate that for 14 of the 16 listed activities, U.K. Building Societies reported a lower level of frequency of occurrence than did United States banks. For the remaining two variables -- product design and marketing programme development -- an equal occurrence rate was found to exist. These findings imply that the new product development process among building societies may not be as thoroughly executed as previous reports in the literature have suggested. A further plausible view may be that U.K. building societies have not yet developed as sophisticated an approach to new product development as the American financial institutions. The latter interpretation is supported by the findings presented in Table 6.13. As previously discussed, significant differences in approach to new product development have been identified between large societies and the medium and small ones. Although the degree of usage of new product development activities is still low for large societies, the findings still demonstrate that larger institutions in the U.K. use a more sophisticated approach to the development process.

Figure 6.1

COMPARISON OF NPD ACTIVITIES



In concluding the analysis of the results relating to this hypothesis, H_9 is rejected. It has been found that, although varying levels of activity exist among societies, the overall level of activity in the industry sector is, in fact, less than that previously indicated by research in this area.

Hypothesis No. 10:

H_{10} : Societies that have a higher than average occurrence of new product development process activities do not have a different rate of new product success than do societies with a lower than average rate of such activities.

When queried about the percentage of successful new products launched within the past three years, respondents gave a mean success rate of 56.1 percent. Conversely, they reported a failure rate of 43.9 percent. As Table 6.14 illustrates, however, the standard deviation is large at + or - 22.5 percent. Although no significant differences exist among the means for the three asset groupings -- large, medium and small -- the reported success rates averaged 55.3, 54.6 and 60.0 percent respectively. All three groups have high standard deviations around the mean.

Table 6.14

REPORTED SUCCESS RATES

Size of Society	Mode	Median	Mean	SD
All Societies	60.0	60.0	56.1	22.5
Large	80.0	60.0	55.3	22.6
Medium	75.0	62.5	54.6	23.8
Small	N/A	60.0	60.0	21.4

NOTE: Mode for small Societies is not given as six different values were reported with equal frequency.

To test the hypothesis H_{10} , societies with lower-than-average levels of frequency in using the various steps in the development process were compared with societies reporting above-average frequencies. The reported degree of success for each society was used. As expected, societies that scored above average in use of various new product development activities had a significantly higher ($p = .0001$) rate of successful new products (Table 6.15). Hypothesis H_{10} is, therefore, rejected. A significant difference was found to exist in the relationship between the level of success and the extent to which companies used new product development techniques in the various stages of the development process.

Table 6.15**COMPARATIVE LEVELS OF SUCCESS**

Performance	Sum of Means	t-test
Above Average	193.3	5.67 p = .0001
Below Average	110.9	

Note: The average mean for each society, for all the 21 variables, was computed, and then multiplied by its rate of successful new products. The average of this, for each of the two groups, is reported in the table.

Hypothesis No. 11:

H₁₁: A product (brand) manager is the most common approach used for managing the new product development process.

Upon examination of the various approaches used by building societies to manage new product development, respondents were found to vary considerably in their respective approaches, as indicated in Table 6.16. The most commonly reported approaches were permanent and temporary committees, ad-hoc groups and product managers. However, of the eight methods listed, no single approach was used with statistically significantly higher frequency than the remaining seven methods.

Table 6.16

APPROACHES TO MANAGING NEW PRODUCT DEVELOPMENT

	Never 1	2	3	4	Always 5	X	SD
New Venture Teams	37 (56.1)	14 (21.2)	7 (10.6)	6 (9.1)	2 (3.0)	1.8	1.3
New Product Committee	15 (22.7)	14 (21.2)	13 (19.7)	8 (12.1)	16 (24.2)	2.9	1.5
Temporary New Product Committee	22 (32.8)	11 (16.4)	16 (23.9)	13 (19.4)	5 (7.5)	2.5	1.3
New Product Department	49 (73.1)	6 (9.0)	2 (3.0)	3 (4.5)	7 (10.4)	1.7	1.3
New Product Manager	49 (73.1)	2 (3.0)	4 (6.0)	4 (6.0)	8 (11.9)	1.8	1.4
New Product Group	41 (61.2)	5 (7.5)	11 (16.4)	7 (10.4)	3 (4.5)	1.9	1.3
Product (Brand) Manager	34 (51.5)	6 (9.1)	10 (15.2)	4 (6.1)	12 (18.2)	2.3	1.6
Ad Hoc Group	16 (24.6)	13 (20.0)	16 (24.6)	11 (16.9)	9 (13.8)	2.8	1.4

SCALE: 1 = Never; 5 = Always

X = Mean; SD = Standard Deviation

To be read as: 37 respondents, or 56.1 percent reported never using new venture teams.

Upon further examination, by comparing the mean values using the t-test, statistically significant differences were isolated between the different approaches on an item-by-item basis. As would be expected, the four most commonly identified approaches are significantly different from most of the remaining management approaches. Table 6.17 provides the results from the 28 t-tests that were conducted.

Table 6.17

2-TAIL PROBABILITIES OF THE T-TEST

Management Approach	t-value	p	Management Approach	t-value	p	Management Approach	t-value	p
Q91 - Q92	5.21	.0001	Q92 - Q96	4.41	.0001	Q94 - Q96	1.07	NS
Q91 - Q93	3.42	.0001	Q92 - Q97	2.49	.01	Q94 - Q97	2.50	.01
Q91 - Q94	.58	NS	Q92 - Q98	.58	NS	Q94 - Q98	4.33	.0001
Q91 - Q95	.00	NS	Q93 - Q94	3.68	.0001	Q95 - Q96	.48	NS
Q91 - Q96	.50	NS	Q93 - Q95	3.09	.003	Q95 - Q97	2.02	.05
Q91 - Q97	1.93	.05	Q93 - Q96	2.92	.005	Q95 - Q98	3.67	.0001
Q91 - Q98	4.10	.0001	Q93 - Q97	1.01	NS	Q96 - Q97	1.77	.10
Q92 - Q93	1.81	.07	Q93 - Q98	1.23	NS	Q96 - Q98	4.14	.0001
Q92 - Q94	5.61	.0001	Q94 - Q95	1.02	NS	Q97 - Q98	2.23	.03
Q92 - Q95	5.10	.0001						

NS = not significant

To be read as: For variables Q91 and Q92 the t-test result is 5.21, significant at p=.0001.

CODE: Q91 = New Venture Team
 Q92 = New Product Committee
 Q93 = Temporary New Product Committee
 Q94 = New Product Department
 Q95 = New Product Manager
 Q96 = New Product Group
 Q97 = Product (Brand) Manager
 Q98 = Ad Hoc Group

Given the wide variation of approaches, and their dispersion among societies, two interesting results are found (Table 6.18) by using the Scheffé test to explore for possible relationships in the data that are affected by asset size. Significant differences were found to exist for two of the management approaches. New product departments were significantly more common in large societies than in small societies, which appear not to have such departments. The second significant finding with regard to asset size had to do with whether a society's product development was managed by a product (brand) manager: Large societies were found to use this approach significantly more frequently than either medium or small sized societies. Although different means by asset size

were reported for most of the other approaches, no other statistically significant differences were isolated.

Table 6.18

EFFECT OF ASSET SIZE ON NPD MANAGEMENT

Approach	Asset Size		
	Large	Medium	Small
New Venture Team	F = .8991; p = .4121 No Significant Differences		
New Product Committee	F = .0684; p = .9339 No Significant Differences		
Temporary New Product Committee	F = .2807; p = .7562 No Significant Differences		
New Product Department	F = 3.8155; p = .0272 2.0857a	1.5000	1.000a
New Product Manager	F = 3.4579; p = .0375 No Significant Differences		
New Product Group	F = 1.7276; p = .1859 No Significant Differences		
Product (Brand) Manager	F = 12.9226; p = .0001 3.1176ab	1.5556b	1.2857a
Ad Hoc Group	F = 1.7470; p = .1828 No Significant Differences		

Scheffé results are significant at the .05 level.

To be read as: For product (Brand) manager a F-test value of 12.9226 was significant at .0001 for the three means. The mean for large societies (3.1176) was found, by using the Scheffé test, to be significantly different than the mean for the small societies (1.2828). This is indicated by the letter a after the mean.

Hypothesis H_{11} , therefore, cannot be rejected. It has been found that one approach is not clearly more used than the other approaches. Instead, four approaches appear to be frequently used, with large societies favouring new product departments and product (brand) managers.

Hypothesis No. 12:

H₁₂: The majority of respondents have six or more years experience in developing new products for a service organization.

As reflected in Table 6.19, the average number of years' experience in developing new products for a service industry is 5.9 with a median of five years. Respondents with 1 - 5 years of experience accounted for 59.1 percent; respondents with 6 - 10 years of experience, 31.8 percent; and those with over 10 years of experience, 9.9 percent. No significant differences were found to exist due to the societies' asset sizes. Hypothesis H₁₂, which is arbitrarily selected at six years, is, therefore, rejected. The majority of respondents had five or less years of experience, with 30.3 percent of the respondents having ten or less years of experience.

Table 6.19

AVERAGE YEARS OF EXPERIENCE

Years	Frequency	Percent	Cumulative Percent
1	4	6.1	6.1
2	12	18.2	24.2
3	9	13.6	37.9
4	6	9.1	47.0
5	8	12.1	59.1
6	3	4.5	63.6
7	4	6.1	69.7
8	7	10.6	80.3
9	2	3.0	83.3
10	5	7.6	90.9
12	2	3.0	93.9
17	1	1.5	95.5
18	1	1.5	97.0
20	1	1.5	98.5

Mean = 5.924; S.D. = 4.568; Median = 5.000

Summary

This chapter has provided the first phase of the data analysis by presenting the results for 12 hypotheses. These hypotheses have examined the various aspects of the new product development process, beginning with the extent to which new product development has been integrated into the strategic focus of building societies. This was followed by an analysis of the approaches these societies have used for new product screening and market research applications and techniques. Next the different stages used in the development process were explored. The chapter has concluded with an examination of personnel and management related issues.

Throughout the chapter, the research findings have been presented for building societies from an industry sector perspective, and where statistically significant differences were isolated, by different asset grouping within the sector.

The following chapter explores success and failure characteristics for new products.

CHAPTER 7

PREDICTING SUCCESS AND FAILURE

Introduction

In this chapter the final phase of the data analysis is presented. The issues related to the success or failure of new product launches are examined through the presentation of the two remaining hypotheses and the examination of the research propositions.

This chapter first explores the degree to which new product launches are successful, and how building societies measure the success of new products. The second part of the chapter presents the results of the multivariate data analysis techniques that capture the determining characteristics of success or failure in the new product development process. Finally, these characteristics are captured in a model that significantly enhances a user's ability to determine successful new product outcomes. Consistently with the previous chapter, each hypothesis and proposition is restated for the convenience of the reader.

Measures of Success

Hypothesis No. H_{13} :

H_{13} : A profit measurement is the most common criterion used in measuring the success or failure of a new product.

The frequency results presented in Table 7.1, show that, for both successful and unsuccessful new products,

the three most commonly cited approaches to measurement of success were: sales volume in £'s, consumer recruitment and sales volume in units. None of these approaches is a profit measurement; rather, they are approaches directed towards achieving other company objectives.

Only 17.8 percent of the respondents selected a profit approach to measuring the success of new products, while 74.6 percent chose an approach not tied to profit. Of the profit-oriented measures commonly used for tangible new products, gross profit contribution was used in gauging the success of 10.2 percent of the new building society services. No respondents reported using break-even or payback periods as a measurement tool. No significant differences in measurement approach were isolated in the three groups of building societies that would indicate their approaches differed by society asset size.

The data analysis, thus, indicates that H_{13} can be rejected. Profit measures are not the primary method used by building societies to determine new product success or failure (17.8% < 74.6%). Instead, a variety of other methods not oriented to profit are used.

Table 7.1

MOST IMPORTANT PERFORMANCE CRITERIA FOR SUCCESS

	Total For All New Products		<u>Measure Used For</u> Success Failure			
	n	%	n	%	n	%
<u>Non-profit Measures</u>						
Sales volume in £'s	37	31.3	21	32.8	16	29.6
Consumer recruitment	18	15.3	11	17.2	7	12.9
Sales volume in units	16	13.6	8	12.5	8	14.8
Market share	8	6.8	5	7.8	3	5.6
Amount of cross-selling	4	3.4	2	3.1	2	3.7
Informal rough guesses	3	2.5	1	1.6	2	3.7
Defensive	2	1.7	-	-	2	3.7
Total non-profit	88	74.6	48	75.0	40	74.0
<u>Profit Measures</u>						
Gross profit contribution	12	10.2	7	11.0	5	9.3
Return on investment	9	7.6	4	6.2	5	9.3
Break-even	-	-	-	-	-	-
Payback period	-	-	-	-	-	-
Total profit	21	17.8	11	17.2	10	18.6
<u>Other Measures</u>						
Multiple measures	7	5.9	4	6.2	3	5.6
Achieve corporate objectives	2	1.7	1	1.6	1	1.8
Total other measures	9	7.6	5	7.8	4	7.4
Total All Measures	118	100.0	64	100.0	54	100.0

To be read as: 37 or 31.3% of the reported 118 new products used sales volume in £'s as the measurement instrument. 21 or 32.8% of the successful new products and 16 or 29.6% of the unsuccessful new products were measured this way.

In keeping with the rejection of hypothesis H₁₃, it is interesting to note the contribution to gross profit and sales that new products have made to building societies during the past three years and their expected contribution for the next three years. In Table 7.2 the mean responses to questions addressing this are presented. It is important to note the low level of response to these questions (n = 29, 28). Over half of the respondents indicated they were unable to provide this information (a

few exceptions indicated they were unwilling to do so).

These results confirm the earlier indications found in the qualitative study: that new product costing and impact on profit are hard to determine. Thus, unlike tangible new product development, profit -- while a consideration of product development -- is not the principal measurement technique used to gauge a new product's success or failure.

Table 7.2

NEW PRODUCT CONTRIBUTION TO SALES AND GROSS PROFIT

Time Frame	Gross Profit (n = 29)	S.D.	Sales (n = 28)	S.D.
Past Three Years	23.9%	20.3	33.9%	26.0
Next Three Years	29.4	16.8	41.9	22.9
T-test	not significant		significant at p = .05	

S.D. = Standard Deviation

To be read as: Firms report that 23.9% of the gross profit and 33.9% of their sales result from products launched during the past three years.

Considering the small number of respondents and a large standard deviation, the reported contribution to gross profit resulting from products that were launched during the past three years is 23.9 percent, while for the next three years it is expected to be 29.4 percent. This projection of increasing dependence on new products for profit is consistent with the research findings for tangible new products [Booz, Allan Hamilton 1982 and Cooper 1987b]. However, the degree of reliance upon new products for profit is less with building society services than with

tangible goods. A similar pattern is reported for the contribution to past sales (33.9%) and expected contributions to future sales (41.9%). Asset size, consistent with the findings for success measurement techniques, is not a significant influence on the profit and sales percentages among societies.

Hypothesis No. H₁₄:

H₁₄: New product failure among respondent firms is lower than the new product failure averages reported for tangible goods (between 30 - 40%).

Building societies do not have a lower failure rate for new products than the average failure rates reported in the literature for tangible new products. In Table 7.3 the inverse of the results that were presented in Table 6.14 are presented. The mean reported failure rate for all societies is 43.9 percent, with large, medium and small societies reporting average failure rates of 44.7, 45.4 and 40.0 respectively.

Hypothesis H₁₄ is therefore rejected (.439 > .30 to .40). Building societies appear to have a marginally higher failure rate than previously reported findings for tangible new products have suggested is the norm in new product development.

Table 7.3**NEW PRODUCT FAILURE RATES**

Size of Society	Mode	Median	Mean
All Societies	40.0	40.0	43.9
Large	20.0	40.0	44.7
Medium	25.0	37.5	45.4
Small	N/A	40.0	40.0

Note: Mode for small societies is not given as six different values were reported with equal frequency.
 No significant differences were found between the means for the three different groups of societies based on asset size.

Analysis of the Predictive Variables For Success & Failure

This section presents the analysis of 61 variables that have been developed to predict the ultimate success or failure of a new building society service. As discussed in Chapter 5, the variables are the result of an examination of the established literature on new product development for tangible goods, the theoretical literature on services marketing, qualitative interviews and this researcher's judgement.

The analysis presented on the subsequent pages is divided into two principal categories: univariate and multivariate. By successively building the analysis through a series of increasingly complex statistical applications, the final outcome, a predictive model for success or failure, is developed and tested.

This two stage process will permit the final hypothesis of this study to be tested, and it will allow for exploration of the three research propositions that

were established in Chapter 5¹.

Univariate Analysis

Respondents were asked to select and refer to one successful new product. Then, they were asked to indicate their level of disagreement or agreement with the way in which each of the 61 variables reflected the events that occurred during development of the successful new product. This process was repeated for a new product that the respondent considered not to have been a success for the firm. Respondents were asked to rate each set of the 61 variables on a seven point scale. This scale was anchored at each end with "strongly disagree" (1) and "strongly agree" (7). From the 67 societies that responded to the questionnaire, yielding a possible 134 cases, a total of 118 usable projects were recorded. This translates to 62 successful and 56 unsuccessful cases.

The research objective is to determine which of the 61 variables differentiate between success and failure. The first phase of this analysis is presented in Table 7.4. A list of all the variables is presented in this table, with the means for the success and failure cases. For ease of discussion, each variable has been assigned a number that will be referred to throughout this chapter.

A visual inspection of the means provides an indication of the degree to which each activity is

¹The hypothesis and propositions are restated at the relevant stage in this Chapter.

conducted. For the successful cases, 53 variables scored over the midpoint range on the seven point scale, while only eight variables scored under the midpoint. This compares to only 40 variables scoring over the midpoint and 21 scoring under the midpoint in the responses for unsuccessful new products.

Table 7.4

VARIABLE RESULTS FOR SUCCESS AND FAILURE

Variable Number	Variable Description	Means For		T-Test S & F	p
		Success	Failure		
Early Stages					
1.	The new product idea had to pass an initial screening -- "go/no go" -- process before funds were allocated to it.	5.02	4.45	1.85	.07
2.	A detailed written description of the product concept was developed very soon after the new product idea was accepted.	5.35	4.80	2.79	.007
3.	A thorough review was made of the competitor's products.	6.00	4.95	4.37	.0001
4.	Customer opinion of the new product was obtained very early in the development process.	3.40	2.36	4.24	.0001
Preliminary Assessment					
5.	A preliminary market assessment was conducted before any major investment, in time or money, was authorized.	4.28	3.20	4.14	.0001
6.	Enough time and money was spent on a preliminary market assessment.	4.03	2.86	4.52	.0001
7.	A sharp, focused definition of the target market was developed in the preliminary market assessment.	4.52	3.45	3.89	.0001
8.	An initial, preliminary appraisal of the technical merits and difficulties of the project was conducted.	4.75	4.14	3.26	.002
9.	The preliminary assessment of the market and technical needs was well supported with written evidence. (documented)	4.00	3.23	3.12	.003
Market Research					
10.	A detailed market study, that involved primary market research, was conducted before developing a financial analysis.	3.03	1.80	4.49	.0001
11.	There was a clear idea of the type of information that was trying to be obtained through market research.	3.65	2.20	5.39	.0001
12.	A good definition of the product concept was developed before beginning a field or customer survey.	3.77	2.64	4.45	.0001
13.	Market research, involving a large enough sample of respondents, a formal design, and a consistent data collection procedure was used.	2.51	1.86	2.81	.007
Business/Financial Analysis					
14.	Written objectives for the new product were developed before a business/financial analysis was conducted.	4.54	3.63	4.52	.0001
15.	A thorough and realistic business analysis was conducted.	4.45	2.91	6.09	.0001
16.	A formal go/no go decision was made after conducting a financial/business analysis.	4.75	3.68	4.44	.0001
17.	A detailed business analysis was undertaken after product development, but before a full scale launch.	3.65	2.70	4.44	.0001
Product Design and Research					
18.	Enough time and effort was spent on the actual design and development of the product features.	5.02	4.11	3.27	.002
19.	The product concept received numerous revisions throughout the development process.	4.58	3.82	2.86	.006
20.	Each new major revision of the product concept resulted in additional market research.	2.08	1.88	.82	.418
21.	Enough time was spent on testing the new product to ensure all the information technology aspects worked properly.	3.95	3.34	2.19	.033

Table 7.4 continued

Variable Number	Variable Description	Means For		T-Test S & F	p
		Success	Failure		
22.	Once the product was developed, in-house product testing occurred.	3.18	2.43	3.11	.003
23.	Good measures and objectives were developed to judge consumer test markets.	2.85	2.18	2.73	.008
24.	A test market or trial sell of the product occurred.	2.06	1.80	1.08	.285
25.	There was good control over the test markets conducted with customers.	2.09	1.79	1.39	.170
Launch					
26.	A full-scale launch occurred with an identifiable set of marketing activities specific to this product.	5.66	4.41	5.76	.0001
27.	All the various communication materials were in place or ready prior to the market launch.	5.77	5.11	2.37	.021
28.	The market launch was well co-ordinated.	5.65	4.63	4.61	.0001
29.	A strong advertising, promotion and marketing communication effort was behind the launch of this product.	5.43	3.91	5.29	.0001
Project Management					
30.	Sufficient financial resources were allocated to the development project.	4.89	4.04	3.43	.001
31.	During the various stages in the development process a series of "go/no go" decisions were made.	4.28	3.34	4.35	.0001
32.	The advertising, promotion and communication effort was well targeted -- at the right customers.	5.20	4.04	4.53	.0001
33.	We were sure of the new product design from a technical viewpoint -- there were no design 'bugs' or technical deficiencies.	5.06	4.14	3.32	.002
34.	The total cost of developing this product was within budget.	5.69	5.57	0.70	.488
35.	The new product was kept as simple as possible. Needless complications were avoided.	5.74	5.32	2.46	.017
36.	There was strong support for the new product once it was launched.	5.94	3.36	11.03	.0001
External					
37.	We felt our product was clearly superior to competing products in terms of meeting customers' needs.	5.95	4.16	6.92	.0001
38.	The product fitted well with our current image of the company in the market place.	6.06	4.77	5.40	.0001
39.	We were first to market with this type of product.	3.91	2.79	2.75	.008
40.	By the time we commercialized our product, we understood our potential customers' needs and wants for their product.	5.17	3.18	7.14	.0001
41.	We understood the customers' purchase decision well -- the 'who, what, when, where and how' of his purchase behaviour.	4.91	3.05	7.52	.0001
42.	We knew well the size of the potential market for our product.	4.60	3.54	3.99	.0001
43.	We were very confident about the commercial success of the product.	5.28	3.82	5.76	.0001
44.	The product class itself was totally new to our company.	3.95	4.29	-.71	.482
45.	Potential customers had a great need for this class of product.	5.31	3.84	6.05	.0001
46.	The market for this product was growing very quickly.	5.06	3.77	5.04	.0001

Table 7.4 continued

Variable Number	Variables	Means For		T-Test S & F	p
		Success	Failure		
Organizational					
47.	There was a high level of awareness within the company that this new product was being developed.	5.25	4.07	4.75	.0001
48.	People from other functional groups were included in the development process as early as possible.	4.88	4.11	3.29	.002
49.	People involved in the project knew why they were involved.	5.65	4.48	5.69	.0001
50.	All people involved in the project were aware of the potential benefit this product would be to the company.	5.46	4.29	5.48	.0001
51.	The various people involved in developing this product were well qualified for their tasks.	5.40	5.09	2.25	.028
52.	There was a high level of commitment and enthusiasm exhibited by all members of the project team.	5.49	4.25	7.81	.0001
53.	There was good co-ordination among people and departments involved in the project throughout the development process.	5.28	4.52	5.09	.0001
54.	The marketing case was well made and understood at all levels in the company	5.17	3.79	5.85	.0001
55.	Senior management placed strong and visible support behind the project.	5.69	4.52	5.51	.0001
56.	One individual strongly supported the new product throughout the various phases of the development process.	5.65	5.38	1.37	.177
57.	The retail branches were geared up and supported the product launch.	5.62	4.20	5.84	.0001
58.	Branch employees were well trained in the new product before it was publicly launched.	5.37	4.14	4.63	.0001
59.	There was a high level of commitment among the people tasked with selling the new product.	5.49	3.96	6.30	.0001
60.	The actual development process became more formal within the company as the development process evolved.	4.60	3.54	4.86	.0001
61.	Enough resources -- time, money and people -- were used for the market launch.	4.77	3.71	4.13	.0001

Note: The scale used is a seven point scale where 1 = strongly disagree and 7 = strongly agree.)
 To be read as: For variable 61 the mean response is 4.77 for successful cases while for unsuccessful cases the mean is 3.71. A t-test value of 4.13, significant at .0001, indicates that the two means are significantly different.

For both the successful and unsuccessful cases, the lowest levels of activity were reported for market research related functions. This further confirms earlier assertions (Chapter 6) that certain types of market research are conducted infrequently in building societies. All the means for the successful new products that scored

lower than three were market research related (variables 13, 20, 23, 24, 25). Similarly, for new product failures, the seven variables with the lowest reported levels of activity were all market research related (variables 10, 11, 13, 20, 23, 24, 25).

A visual comparison of the two means for each variable listed in Table 7.4 indicates that there does appear to be a difference between most of the mean values for the success and failure cases. All but two variables have scored a higher mean value for success than the mean value scored for failure, indicating that for successful new products, development activities were conducted with more frequency than they were for the unsuccessful new products.

In order to determine if these differences between the means are statistically significant, the two means for each variable are subjected to a t-test. Table 7.4 presents the t-test values and the level of significance for each variable. These significance tests reveal a strong level of support for the theory that new product development activities are conducted with more frequency for successful new products. The levels of significance are summarized for the 61 variables:

38 variables	significant at $p = .0001$
12 variables	significant at $p = .01$
4 variables	significant at $p = .05$
1 variable	significant at $p = .10$
6 variables	significant at levels greater than $p = .10$

Using t-tests with such a large number of variables risks a Type I error. However, the risk of this type of

error affecting the research results is very minimal due to the large number of variables at $p = .01$ or lower, and due to the multivariate analysis that will follow in this chapter.

For both success and failure cases the overall means, standard deviation and the individual means for each of the three groups of asset bases (large, medium and small) are provided in Appendix H. The F-test statistic was used to identify variables that had differences in means by asset size. A Scheffé test was then applied to determine what significant differences might exist among the three groups of means. In Table 7.5 the results of statistically significant F-tests and Scheffé tests are presented.

Table 7.5

SCHEFFE TESTS FOR SUCCESS AND FAILURE

Variable Number	Variable Description	Asset Size			Scheffé Test
		Large (1)	Medium (2)	Small (3)	
Success Variables					
8.	An initial, preliminary appraisal of the technical merits and difficulties of the project was conducted.	5.38	3.83	4.38	1-2 F ratio = 5.3763 p = .0070
9.	The preliminary assessment of the market and technical needs was well supported with written evidence. (documented)	4.85	2.78	3.46	1-2 F ratio = 9.2022 p = .0003
10.	A detailed market study, that involved primary market research, was conducted before developing a financial analysis.	3.68	2.00	2.77	1-2 F ratio = 4.6132 p = .0136
11.	There was a clear idea of the type of information that was trying to be obtained through market research.	4.32	2.72	3.15	1-2 F ratio = 3.9064 p = .0252
13.	Market research, involving a large enough sample of respondents, a formal design, and a consistent data collection procedure was used.	3.09	1.50	2.38	1-2 F ratio = 4.4978 p = .0150
16.	A formal go/no go decision was made after conducting a financial/business analysis.	5.53	3.78	4.08	1-2,1-3 F ratio = 7.7377 p = .0010
17.	A detailed business analysis was undertaken after product development, but before a full scale launch.	4.71	2.33	2.70	1-2,1-3 F ratio = 15.7171 p = .0000
26.	A full-scale launch occurred with an identifiable set of marketing activities specific to this product.	6.18	5.00	5.23	1-2 F ratio = 3.8058 p = .0276
31.	During the various stages in the development process a series of "go/no go" decisions were made.	4.77	3.22	4.46	1-2 F ratio = 4.1666 p = .0201
37.	We felt our product was clearly superior to competing products in terms of meeting customers' needs.	6.24	5.39	6.00	1-2 F ratio = 4.2062 p = .0194
48.	People from other functional groups were included in the development process as early as possible.	5.65	4.17	3.85	1-2,1-3 F ratio = 6.6755 p = .0024
57.	The retail branches were geared up and supported the product launch.	6.15	5.00	5.08	1-2 F ratio = 4.1412 p = .0205
59.	There was a high level of commitment among the people tasked with selling the new product.	5.82	4.83	5.54	1-2 F ratio = 3.1845 p = .0483

Note: No significant differences were detected for any of the failure variables.

Scheffé test is significant at the .05 level.

Scale: Seven point scale where 1 = strongly disagree and 7 = strongly agree.

To be read as: For variable 8 the means for large, medium and small societies are 5.38, 3.83 and 4.38 respectively. A significant F test indicated that there were significant differences between the three means. The Scheffé test isolated these differences to between the large (1) and medium (2) societies.

In total, thirteen variables are found to be significantly different at the .05 level. All significant results are for successful cases. No significant differences have been isolated for variables from the

failure group of cases. Considering that a total of 122 tests were conducted (61 success and 61 failure), the small number of statistically significant differences implies a certain degree of homogeneity among societies. Asset size appears to have minimal effect on determining the overall frequency of these variables, with only a few minor exceptions.

In summary, the univariate analysis presented in this section has demonstrated that the two groups of surveyed products -- successes and failures -- tend to have differences between their means for most of the 61 variables. This leads to the conclusion that these variables may have the ability to discriminate between the two possible outcomes. The univariate statistics, however, do not provide sufficient information about the interrelations that may exist among the variables. Therefore, multivariate data analysis is required.

Multivariate Analysis

This section presents the results of the multivariate data analysis. Two major techniques are employed: 1) factor analysis to reduce the number of variables to a more manageable number; and, 2) two-group discriminant analysis to develop a model for predicting either success or failure. However, before beginning this analysis the issue of scale reliability must be addressed.

Reliability

The coefficient (Cronbach's alpha) and correlations are the most appropriate methods of determining reliability of the multi-item scale that has been used [Nunnally 1978, Carmines and Zeller 1979 and Peter 1979].

For each set of 61 variables in the success and failure cases, an initial item-total correlation was calculated to determine which variables did not have a strong relationship with the other variables. After identifying and removing variables that had poor scores, the process was repeated for the combined success and failure cases (118). Again, any variables that scored a corrected item-total correlation value lower than the acceptable minimal value of .3500 were removed. In Table 7.6 the initial and final figures are presented. Only eight variables were retired from the scale. This left 53 active variables for future data analysis.

The lowest correlation value in the final calculation is .3893 for variable number 22. Note that the final Cronbach's alpha value of .9652 indicates that the multi-item scale has a high degree of reliability. Similarly, the final standardized item alpha is .9657, which is very close to the Cronbach's alpha of .9652. Therefore, the variables in the scale have comparable variances.

Table 7.6

RELIABILITY ANALYSIS FOR SUCCESS AND FAILURE VARIABLES

Variable Number	Corrected Item- Total Correlation		Variable Number	Corrected Item- Total Correlation	
	Initial	Final		Initial	Final
1	.4175	.4197	32	.6412	.6572
2	.5404	.5358	33	.4852	.4892
3	.5840	.5881	34	.3809	--
4	.5425	.5271	35	.2669	--
5	.4740	.4829	36	.6312	.6477
6	.6517	.6578	37	.5529	.5589
7	.6273	.6330	38	.5254	.5343
8	.4968	.5042	39	.1740	--
9	.5351	.5361	40	.7238	.7290
10	.5784	.5663	41	.6064	.6113
11	.6159	.6035	42	.4740	.4739
12	.5787	.5616	43	.6378	.6436
13	.4472	.4312	44	.0724	--
14	.6006	.6029	45	.6402	.6373
15	.6791	.6865	46	.5115	.5107
16	.6165	.6268	47	.5805	.5803
17	.5147	.5159	48	.6280	.6351
18	.5984	.5838	49	.7631	.7672
19	.4888	.4816	50	.6758	.6779
20	.4275	--	51	.5356	.5328
21	.4950	.4815	52	.7490	.7558
22	.3985	.3893	53	.6245	.6269
23	.5243	.4992	54	.7171	.7318
24	.3192	--	55	.5455	.5448
25	.3736	--	56	.2739	--
26	.6121	.6249	57	.5837	.5933
27	.4933	.4875	58	.5747	.5741
28	.5985	.6034	59	.6632	.6664
29	.5980	.6113	60	.5069	.5010
30	.5508	.5624	61	.5836	.5951
31	.5836	.5822			
			Initial	Final	
Cronbach's Alpha			.9625	.9652	
Standardized Item Alpha			.9634	.9657	

Note: For a description of each variable please refer to Table 7.4.
 To be read as: For variable 1 the initial corrected item-total correlation is .4175 and the final correlation, after removing unwanted variables, is .4197.

Factor Analysis

This section presents the results of the factor analysis² that was used to reduce the number of variables to a more manageable number. The end result is the development of factor scores to be used in the next stage of this multivariate analysis. By examining the underlying patterns and relationships for variables of both successful and unsuccessful cases, and by reducing this information into a smaller number of factors, the complex and multidimensional interaction among the variables that occurs during the new product development process can be better identified.

The format for this section is as follows: first the appropriateness of the factor technique will be discussed, followed by the factor method selection. The factor extraction and factor analysis results are then presented, concluding with the end result of factor scores to be used in the subsequent discriminant analysis.

Variables

The number of variables to be used in this factor analysis has been reduced to 53 from the 61 original variables. Of a 134 possible cases, 118 cases are used in the analysis. This loss of 16 possible cases is the

²"Factor analysis is a statistical technique used to identify a relatively small number of factors that can be used to represent relationships among sets of many interrelated variables" [Norusis 1988]. Its primary objective is data reduction and summarization with a minimum loss of information [Kim and Mueller 1978 and Hair, Anderson and Tatham 1987].

combined effect of some respondents not providing information, incomplete responses, and cases that contained missing values. The 118 cases are divided into 62 successes and 56 failures. The slightly lower number of failures than successes was expected and is consistent with previous research studies using a comparative methodology. For example, Rothwell et al [1974]; Cooper [1979b]; Cooper and Kleinschmidt [1986] and de Brentani [1989b].

An appropriate sample size for this number of variables is the next issue to be addressed. Historically, the average ratio of cases to variables is four-to-one; however, this number has been described as too conservative a sample size requirement. As Hair et al [1987] have pointed out, many researchers are forced to analyze a set of variables with only a two-to-one ratio of observations to variables. These authors conclude that "when dealing with smaller sample sizes and a lower ratio, the analyst should interpret any findings cautiously." Lawlis and Chatfield [1974] also suggest that "the size of the sample should be twice the variable size" with a minimum sample size of 100. The ratio of 118:53 for this research, which is slightly better than the two-to-one ratio is acceptable providing caution is exercised. Thus, consistently with the practise of using conservative statistical applications and interpretations throughout this research, a similar practise of conservative interpretation has been adopted for the multivariate analysis.

Before conducting the factor analysis, several tests

of the variables were conducted to first determine whether a factor analysis would, in fact, be appropriate for this set of data. The first test stage is to examine the correlation matrix for the variables. A visual inspection of the matrix indicated that a large number of correlations exceeded the recommended minimum level of 0.3 [Nunnally 1978 and Tabachnick and Fidell 1989]. However, given that this inspection involves a 53 by 53 matrix, other techniques are needed to confirm the appropriateness of the variables.

One commonly recommended test of appropriateness is the Bartlett's test of sphericity [Stewart 1981]. This test is used to confirm that the matrix is not an identity matrix³. The test result for sphericity is large at 4938.63 and the associated significance level is small at .000001. This finding is an indication that the data is appropriate for factor analysis.

Another measure of the strength of the relationship among variables is the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy. The index of sampling adequacy provides a measure of the extent to which the variables belong together and, thus, are appropriate for factor analysis [Kim and Mueller 1978 and Stewart 1981]. Measures above .90 are described as marvellous; .80+ as meritorious; .70+ as middling; .60+ as mediocre; .50+ as miserable and below .50

³Bartlett's test of sphericity is a sensitive test of the hypothesis that the correlations in a correlation matrix are zero, which is an identity matrix -- diagonal terms are 1 and all off-diagonal terms are 0 [Tabachnick and Fidell 1989].

as unacceptable. The result of the KMO measure of sampling adequacy for this data is .87917 and, therefore, is classed as meritorious. This result provides further support for factor analysis.

With three approaches to determining the adequacy of the data for factor analysis all strongly supportive of using this approach, it is concluded that factor analysis is an appropriate technique for this data set.

Factor Method

Principal component analysis⁴ (PCA) is the factor method applied, although a number of other possible factoring techniques do exist to choose from (e.g. principal axis factoring, alpha factoring, image factoring and maximum likelihood). The PCA method is particularly suited to research issues that are concerned about predication and determining the minimum number of factors to account for the maximum amount of variance in the data [Hair et al 1987 and Tabachnick and Fidell 1989]. Therefore, PCA was selected because it best meets the particular needs of this research.

The second major consideration, before proceeding with the analysis, is the selection of the rotation and extraction method to be used. Factors can be extracted

⁴Principal Component Analysis -- "A factor model in which the factors are based upon the total variance. With component analysis, unities (1's) are used in the diagonal of the correlation matrix, which computational implies that all of the variance is common or shared." [Hair et al 1987 p. 234.]

using either an orthogonal⁵ or an oblique⁶ approach. The main difference between the two approaches is that for the orthogonal solution, each factor is independent of all the other factors; thus, there is no correlation between the factors. Conversely, in the oblique process the factors are computed so that the extracted factors are correlated.

The selection of the appropriate technique is, again, dependent upon the objective of the research. Orthogonal extraction is particularly suited to research goals that need to reduce a large number of variables to a small set of uncorrelated variables for subsequent use in other prediction techniques [Hair et al 1987]. One of the critical objectives of conducting factor analysis in this particular study is to use the resulting factor scores in subsequent multivariate analysis. The orthogonal rotation procedure, therefore, must be selected over the oblique method to eliminate collinearity.

There are three major types of orthogonal rotation approaches -- VARIMAX, QUARTIMAX, and EQUIMAX. The VARIMAX approach was used in this analysis and has been extensively used by previous researchers [Stewart 1981 and Hair et al 1987]. Of the three approaches, VARIMAX presents the most

⁵Orthogonal factor solution -- "A factor solution in which the factors are extracted so that the factor axes are maintained at 90 degrees. Thus, each factor is independent of or orthogonal from all other factors" [Hair et al 1987].

⁶Oblique factor solution -- "A factor solution computed so that the extracted factors are correlated, rather than arbitrarily constraining the factor solution so the factors are independent of each other" [Hair et al 1987].

enhanced form of interpretability of the factors [Tabachnick and Fidell 1989 and Norusis 1988].

Before the results of the factor analysis are presented, a brief summary of the analytical procedures is desirable. Following a careful screening and reliability check, 53 variables and 118 cases are used. Principal component analysis (PCA), using orthogonal rotation (VARIMAX) is the chosen method. All of the statistical tests applied have confirmed that the data is suitable for this type of approach and that the techniques selected meet the objectives of this research.

Factor Extraction

The ultimate number of factors to be extracted is always debateable. Scholars have acknowledged that several decision criteria should be applied when selecting the final number of factors [Cattell 1978, Kim and Mueller 1978, Stewart 1981, Hair et al 1987 and Tabachnick and Fidell 1989].

In PCA, the most commonly used guide is the eigenvalues⁷ (latent root criterion). All factors that have achieved a value greater than one are considered significant; conversely, factors with eigenvalues of less than one are not included in the group of selected factors. Table 7.7 presents the final 11 factor solution. All have

⁷Eigenvalue -- "The column sum of squares for a factor; also referred to as the latent root. It represents the amount of variance accounted for by a factor." [Hair et al 1987 p. 234]

eigenvalues greater than one. Combined, these 11 factors account for 72.5 percent of the common and unique variance.

Table 7.7

FACTOR EIGENVALUES AND VARIANCE

Factor Number	Eigenvalue	Percent of Variance	
		Explained	Cumulative
1	19.4138	36.6%	36.6%
2	4.6008	8.7	45.3
3	2.5884	4.9	50.2
4	2.0894	3.9	54.1
5	1.9338	3.6	57.8
6	1.6973	3.2	61.0
7	1.4557	2.7	63.7
8	1.3229	2.5	66.2
9	1.1658	2.2	68.4
10	1.0891	2.1	70.5
11	1.0682	2.0	72.5

To be read as: For factor number 1 the eigenvalue is 19.4138, explaining 36.6% of the variance.

The second decision criterion is the interpretability of the nature of the variables. Although a subjective process, this step can be described as the most important part of the extraction process. If the selected factors are not interpretable, then the factor analysis presents little value to the researcher. Consistently with the conservative nature of this analysis, the factor analysis was also recomputed through a range of forced limits on the number of factors (8 - 15). The 11 factor solution again appeared to be the most satisfactory solution for both approaches.

The final selection of an 11 factor solution is

confirmed by the communalities⁸. Appendix I presents a list of the 53 communalities. These communality values indicate the amount of variance in a single variable that is explained from the selected factors (11) taken together. The communalities range from .59384 to a high of .84580; therefore, a degree of confidence in the factor solution is permissible.

Factor Analysis Results

Following the determination that the appropriate number of factors to be extracted is 11, the next stage is the selection of the factor loadings⁹. In determining what factor each variable will best load onto, the rotated factor matrix is reviewed and the factor in which the variable has the highest loading is selected. Table 7.8 presents the results of this selection process.

A factor loading value of + or - .30 is considered significant, while a factor loading of + or - .50 is considered very significant [Cattell 1978, Hair et al 1987 and Tabachnick and Fidell 1989]. The loading values presented in Table 7.8 confirm that the significance criteria for the factor loadings of all the variables have been met. The significance of the loadings is also a

⁸Communality -- "The amount of variance an original variable shares with all other variables included in the analysis." [Hair et al 1987]. Variance that is not explained by the common factors is attributed to the uniqueness of the variable [Norusis 1988].

⁹Factor loadings -- "The correlation between the original variables and the factors, and the key to understanding the nature of a particular factor." [Hair et al 1987 p. 234]

helpful guide in interpreting the factor. As Hair et al [1987] has stated, "the larger the absolute size of the factor loading, the more significant the loading is in interpreting the factor matrix."

The internal reliability of the analysis is further measured by calculating the Cronbach's alpha for the 11 factors. The alpha values range from .6636 to .9227. These strong alpha values are all within the acceptable level.

Factor names have been given to each factor in Table 7.8. Although the name selection is the result of arbitrary decisions by the researcher, each was selected to try and capture the underlying nature of the factor.

Table 7.8

THE RESULTS OF THE FACTOR ANALYSIS

Variables	Factor Loading	Cronbach's Alpha
Factor 1		
Organisational		
53. There was good co-ordination among people and departments involved in the project throughout the development process.	.79424	.9227
50. All people involved in the project were aware of the potential benefit this product would be to the company.	.76680	
49. People involved in the project knew why they were involved.	.71642	
52. There was a high level of commitment and enthusiasm exhibited by all members of the project team.	.69118	
54. The marketing case was well made and understood at all levels in the company.	.68300	
47. There was a high level of awareness within the company that this new product was being developed.	.67242	
55. Senior management placed strong and visible support behind the project.	.62943	
51. The various people involved in developing this product were well qualified for their tasks.	.59076	
2. A detailed written description of the product concept was developed very soon after the new product idea was accepted.	.46076	
48. People from other functional groups were included in the development process as early as possible.	.44789	
Factor 2		
Market Research		
10. A detailed market study, that involved primary market research, was conducted before developing a financial analysis.	.81777	.8915
13. Market research, involving a large enough sample of respondents, a formal design, and a consistent data collection procedure was used.	.81168	
11. There was a clear idea of the type of information that was trying to be obtained through market research.	.81102	
12. A good definition of the product concept was developed before beginning a field or customer survey.	.70285	
4. Customer opinion of the new product was obtained very early in the development process.	.67329	
23. Good measures and objectives were developed to judge consumer test markets.	.58094	

Table 7.8 continued

THE RESULTS OF THE FACTOR ANALYSIS

Variables	Factor Loading	Cronbach's Alpha
Factor 3		
Market Synergy		
38. The product fitted well with our current image of the company in the market place.	.79250	.8960
37. We felt our product was clearly superior to competing products in terms of meeting customers' needs.	.79062	
36. There was strong support for the new product once it was launched.	.70397	
41. We understood the customers' purchase decision well -- the 'who, what, when, where and how' of his purchase behaviour.	.58812	
40. By the time we commercialized our product, we understood our potential customers' needs and wants for their product.	.52060	
57. The retail branches were geared up and supported the product launch.	.49618	
45. Potential customers had a great need for this class of product.	.47251	
46. The market for this product was growing very quickly.	.45730	
Factor 4		
Business/Financial Analysis		
14. Written objectives for the new product were developed before a business/financial analysis was conducted.	.76807	.8749
16. A formal go/no go decision was made after conducting a financial/business analysis.	.74381	
15. A thorough and realistic business analysis was conducted.	.67156	
17. A detailed business analysis was undertaken after product development, but before a full scale launch.	.52981	
3. A thorough review was made of the competitor's products.	.50158	
Factor 5		
Launch Effectiveness		
29. A strong advertising, promotion and marketing communication effort was behind the launch of this product.	.73927	.8820
28. The market launch was well co-ordinated.	.69997	
26. A full-scale launch occurred with an identifiable set of marketing activities specific to this product.	.68267	
32. The advertising, promotion and communication effort was well targeted -- at the right customers.	.54793	
27. All the various communication materials were in place or ready prior to the market launch.	.53983	

Table 7.8 continued

THE RESULTS OF THE FACTOR ANALYSIS

Variables	Factor Loading	Cronbach's Alpha
Factor 6		
Preliminary Assessment		
8. An initial, preliminary appraisal of the technical merits and difficulties of the project was conducted.	.77208	.8513
9. The preliminary assessment of the market and technical needs was well supported with written evidence. (documented)	.65670	
5. A preliminary market assessment was conducted before any major investment, in time or money, was authorized.	.57453	
7. A sharp, focused definition of the target market was developed in the preliminary market assessment.	.51293	
6. Enough time and money was spent on a preliminary market assessment.	.47527	
Factor 7		
Resource Allocation		
18. Enough time and effort was spent on the actual design and development of the product features.	.64617	.8006
30. Sufficient financial resources were allocated to the development project.	.55871	
61. Enough resources -- time, money and people -- were used for the market launch.	.44829	
Factor 8		
Formalization		
58. Branch employees were well trained in the new product before it was publicly launched.	.62210	.7274
60. The actual development process became more formal within the company as the development process evolved.	.52076	
1. The new product idea had to pass an initial screening -- "go/no go" -- process before funds were allocated to it.	.50411	
59. There was a high level of commitment among the people tasked with selling the new product.	.46136	
Factor 9		
Market Potential		
42. We knew well the size of the potential market for our product.	.73555	.7794
43. We were very confident about the commercial success of the product.	.48182	
Factor 10		
Design Testing		
22. Once the product was developed, in-house product testing occurred.	.81017	.6636
21. Enough time was spent on testing the new product to ensure all the information technology aspects worked properly.	.48095	
33. We were sure of the new product design from a technical viewpoint -- there were no design 'bugs' or technical deficiencies.	.33015	
Factor 11		
Project Updates		
19. The product concept received numerous revisions throughout the development process.	.70105	.7026
31. During the various stages in the development process a series of "go/no go" decisions were made.	.58710	

The 11 factors proved to be relatively easy to interpret, due to the strong variable loadings. The factors can be viewed from three distinct categories: management/employee orientation, process activities and environmental assessment.

The management/employee orientation category contains three separate factors. The first is the organizational factor (Factor 1). This captures the level of co-operation, involvement and commitment of the people working with the new product, as well as the degree of support given by senior management. The qualifications and awareness of the people involved and the extent of cross-functional support is also captured here. The second factor in this grouping addresses the degree of commitment towards resource allocation, including time, money and people (Factor 7). The third factor (Factor 8) captures the degree of formalization, and the commitment level of the personnel tasked with selling the new product.

The second grouping of factors, process activities, is comprised of six factors and covers the actual activities of the new product process. This grouping includes the traditional activities that are associated with developing a new product, beginning with the preliminary assessment (Factor 6), followed by market research (Factor 2), design testing (Factor 10), business/ financial analysis (Factor 4) and product launch effectiveness (Factor 5); and last a factor relating to continuous product revisions and evaluation decisions (Factor 11).

The third category, environmental assessment, contains the two remaining factors: The first relates to market support, with variables measuring the synergy of the new product to both the company and the marketplace, as well as the degree of post launch support (Factor 3); The second relates to the products' market potential through knowledge of the market and the level of confidence in the product (Factor 9).

The 11 factors appear to have solid interpretations and, therefore, have effectively reduced the 53 starting variables to a more manageable number. Although the ability of these factors and their respective variables to distinguish between successes and failures cannot be determined from a factor analysis, success or failure can be predicted in the subsequent discriminant analysis by using these factors.

Factor Scores

The final contribution of the factor analysis is the creation of factor scores¹⁰. These scores are used in the subsequent discriminant analysis to represent the values of the factors. Three methods are available for calculating the required factor score coefficients (Anderson-Rubin, regression and Bartlett). However when the PCA method of

¹⁰Factor score -- "When [a] new smaller set of variables (factors) is used in subsequent analysis some measure or score must be included to represent the newly derived variable. This measure (score) is a composite of all the original variables that were important in making the new factor [Hair et al 1987].

factor analysis is used, as in this analysis, the three approaches produce identical results.

Discriminant Analysis

The final stage in this analysis is to develop a model that will predict the successful or unsuccessful outcome of new financial services. Therefore, the final hypothesis of this study addresses the ability of the variables (represented by factor scores) to discriminate between new product success and failure.

Hypothesis H₁₅:

H₁₅: There are no identifiable variables (activities) that distinguish successful new product development projects from unsuccessful new product development projects.

This hypothesis is particularly suited to the development of a predictive model. If a model can classify successful and unsuccessful cases with a higher probability of accuracy than random chance would allow, then the hypothesis can be rejected. The objective, therefore, is to determine if, in fact, the factor scores developed in the previous section can be effectively used to discriminate between success and failure.

As the analysis will demonstrate, a model can be developed that will successfully predict a new product's outcome. Therefore H₁₅ is rejected. There are, indeed, identifiable variables (activities) that distinguish successful new product development projects from unsuccessful ones.

Discriminant analysis¹¹ is particularly suited to this situation, as the dependent variable is nonmetric (success, failure) while the independent variable is metric (interval). This approach contrasts with regression analysis, which has a dependent variable that is metric [Hair et al 1987]. Discriminant analysis also has the added advantage of being a fairly robust technique [Klecka 1980; Hair et. al. 1987 and Tabachnick and Fidell 1989]. Because the dependent variable can only be classed in one of two ways (success or failure), a two-group discriminant analysis is used instead of a multiple discriminant analysis. A two-group analysis permits the difference between the two groups to be analyzed through a number of variables simultaneously [Klecka 1980]. The presentation of the discriminant analysis consists of three main parts: derivation, validation and interpretation. Each stage is presented in turn in the following pages.

Derivation

The dependent variable used in this analysis is a dichotomous group which is mutually exclusive. The independent variables comprise the 11 factor scores derived from the original 53 variables. Klecka [1980] suggests that the total number of cases should exceed the number of

¹¹"Discriminant analysis involves deriving the linear combination of the two (or more) independent variables that will discriminate best between the a priori defined groups. This is achieved by the statistical decision rule of maximizing the between group variance relative to the within-group variance." [Hair et al 1987 p. 75]

variables by at least two. Thus, with 118 cases, the sample size requirements have been met. Cases with missing values have been previously eliminated while computing the factor scores.

There are principally two different computational methods for calculating the discriminant function. The first approach is the forced entry method, where all the factor scores are considered simultaneously. The second approach is a stepwise method. In this method each factor score is entered one at a time based on its discriminating ability. The analysis is then repeatedly recomputed, with each factor score considered in descending order of importance, until an optimal number of factor scores is included in the solution. The primary difference between the two approaches is that the forced entry method produces a discriminating model that includes all of the factor scores regardless of the individual merit of each score's predictive contribution. The stepwise method will eliminate factor scores that do not produce a satisfactory level of discrimination. The results of both approaches are presented in the following pages and the implications of each are discussed.

Forced Entry Approach

In determining a discriminant function, two types of coefficient are produced by the process. These are the unstandardized and standardized discriminant function

coefficients¹², which are presented in Table 7.9. The unstandardized coefficients provide the absolute contribution of each factor score in the determination of the discriminant function, while the standardized coefficients indicate the relative importance of the factor scores. Thus, standardized coefficients are used to determine which factor score has made the greatest contribution to the discriminant function [Klecka 1980].

The standardized coefficients are a more reliable measure than the unstandardized coefficients. Although the order of importance of each factor score did not change in this particular analysis, it is a common occurrence for the rankings of the coefficients to change after they have been standardized to adjust for unequal means and standard deviations. Thus, the standardized coefficients are used when calculating the discriminant function in this analysis. For interpretation purposes, the larger the discriminant coefficient value the greater the discriminating contribution of the factor score it represents.

¹²Some authors refer to these coefficients as discriminant weights.

Table 7.9

DISCRIMINANT FUNCTION COEFFICIENTS (FORCED ENTRY)

Factor Score	Discriminant Function Coefficients			
	Unstandardized		Standardized	
1 Organisational	.45445	(2)	.44436	(2)
2 Market Research	.42722	(3)	.41907	(3)
3 Market Synergy	1.12987	(1)	.93443	(1)
4 Business/Financial	.15769	(8)	.15788	(8)
5 Launch Effectiveness	.31788	(4)	.31515	(4)
6 Preliminary Assessment	.11156	(9)	.11187	(9)
7 Resource Allocation	.08968	(10)	-.08998	(10)
8 Formalization	.19528	(7)	.19517	(7)
9 Market Potential	.25367	(5)	.25269	(5)
10 Design Testing	.21904	(6)	.21865	(6)
11 Project Updates	.05123	(11)	.05144	(11)

() number in parenthesis represents the ranking of the coefficient from high (1) to low (11).

In Table 7.10 the average mean score (group centroid¹³) for each group is given. The value of the success group is .93381 compared to the value of the failure group of - 1.03386. This means that, on average, new product cases that are successful have a larger discriminant function score than for new product cases that have failed.

¹³Centroid -- "The mean value for the discriminant Z-scores for a particular category or group. A two-group discriminant analysis has two centroids, one for each of the groups." [Hair et al 1987]

Table 7.10

CANONICAL DISCRIMINANT FUNCTION

Group	Function	Related Statistics	
Success	.93381	Eigenvalue	.9821
Failure	-1.03386	Canonical	
		Correlation	.7039
		Wilks' Lambda	.5045
		Chi-Square	75.598
		Degrees of Freedom	11
		Significance	0.00001

Note: These functions are evaluated at group means (group centroids) and represent the average score for all success and failure cases respectively.
The chi-square is a transformation of the Wilks' Lambda.

Before examining the ability of the discriminant function to accurately classify cases, several other statistics are presented to evaluate the quality of the discriminant function (Table 7.10). The eigenvalue is .9821. An eigenvalue this large is an indication that a good function has been developed. The second measure is the proportion of the total variance attributable to differences among the two groups. It is represented by a canonical correlation¹⁴ of .7039, which indicates a good level of correlation.

Also of interest is the proportion of the total variance in the discriminant scores that is not explained by the differences among means. This is measured by using

¹⁴In this situation the Canonical Correlation "is a measure of the degree of association between the discriminant scores and the groups." [Norusis 1988]

the Wilks' Lambda¹⁵. A value of .5045 indicates that there is a good degree of variability between the groups, versus variability within groups. This conclusion is confirmed by a transformed Chi-square value of 75.598, with 11 degrees of freedom and significant at .00001. The significance level implies that it is unlikely that successful new products will have the same mean on the discriminant function as failed new products. Therefore, the discriminant function is capable of producing statistically significant results [Klecka 1980].

Although the discriminant function has been demonstrated to be statistically significant, none of the preceding tests have indicated how well the function will predict outcomes. Therefore, a classification matrix, presented in Table 7.11, is used to determine the accuracy rate of the predictive function. The results show that the function has been able to correctly classify 81.36 percent of the cases.

For the 62 successful new product cases, the function correctly classified 55 (88.7%) and misclassified only 7 (11.3%). The predictive ability of the function is marginally lower for the 56 unsuccessful cases. Forty one cases (73.2%) were correctly classified, while 15 cases (26.8%) were incorrectly classified.

¹⁵Wilks' Lambda is the ratio of the variance of the within-group sum of squares to the total sum of squares. It is the proportion of the total variance in the discriminant scores not explained by differences among groups [Norusis 1988].

Table 7.11

CLASSIFICATION RESULTS (FORCED ENTRY)

Group	Actual Number of Cases	Predicted Group Membership	
		Success	Failure
Success	62	55 (88.7%)	7 (11.3%)
Failure	56	15 (26.8%)	41 (73.2%)
Correctly Classified		81.36%	

Note: Correctly classified is computed from 55 success and 41 failure cases correctly classified.
 $(55 + 41)/118 = 81.36\%$

To be read as: From 62 possible success cases the discriminant model correctly classified 55 (88.7%) and incorrectly assigned 7 cases (11.3%) to the failure group.

A question arises, however, as to whether the model's ability to classify cases is any better than random chance. The probability of a case being randomly identified as a successful new product is 52.5 percent (62/118). However, because there is an uneven number of successful and unsuccessful cases, it is better to calculate the proportional chance criterion¹⁶ (50.1%). This results in only a slightly lower percentage due to the small discrepancy between the number of members in each group. From either perspective, however, the discriminant function has performed well. It has correctly classified 88.7 percent of the success cases compared to 52.5 or 50.1 percent that would have been predicted by random chance.

Another way to examine the predictive ability of the model is to use the tau's proportional reduction in error

¹⁶proportional chance criterion =
 $(\text{proportion of cases in group 1})^2 + (1 - \text{proportion of cases in group 1})^2 =$
 $(.525)^2 + (.475)^2 = .50125$ or 50.1%

statistic¹⁷ [Klecka 1980]. The tau result is 62.6 percent fewer errors than would be expected by random chance predictions. Since, both the tau and the proportional chance criterion tests confirm that the model has good predictive value the canonical discriminant function has been confirmed as a valid predictor.

Wilks Stepwise Analysis

A disadvantage of relying completely on the results of the forced entry method is that all factors are included in the predictive model as functions. A question that arises from this type of approach is whether all 11 factors are needed and whether they do, in fact, contribute to the predictive ability of the model. To eliminate any possible redundancy, a stepwise procedure that will produce an optimal set of discriminating functions is recommended [Klecka 1980].

The Wilks stepwise procedure is the technique applied in this analysis. The approach uses the minimization of Wilks' lambda as the decision criterion for a function to be included in the model. At each step the factor that results in the smallest Wilks' lambda is selected for the model. The minimum tolerance level¹⁸ is .001. Factors with small tolerance levels are thereby prevented from

¹⁷ The tau statistic provides a standardized measure of improvement.

¹⁸Tolerance - "...is a measure of the degree of linear association between the independent variables [factors]" [Norusis 1988].

entering the analysis to prevent any association between factors that may have linear combinations. The F statistic is used to determine the significance of the Wilks' lambda for each factor.

Wilks Stepwise Results

The unstandardized and standardized discriminant function coefficients are presented in Table 7.12. The relative importance of each function is represented by the standardized coefficients.

TABLE 7.12

DISCRIMINANT FUNCTION COEFFICIENTS (STEPWISE)

Factor Score	Discriminant Function Coefficients			
	Unstandardized		Standardized	
1 Organisational	.45453	(2)	.44444	(2)
2 Market Research	.42730	(3)	.41914	(3)
3 Market Synergy	1.13007	(1)	.93459	(1)
4 Business/Financial	.15772	(8)	.15790	(8)
5 Launch Effectiveness	.31793	(4)	.31521	(4)
8 Formalization	.19531	(7)	.19521	(7)
9 Market Potential	.25372	(5)	.25273	(5)
10 Design Testing	.21908	(6)	.21869	(6)

() number in parenthesis represents the ranking of the coefficient from high (1) to low (8).

Three factors are excluded from the final stepwise solution, indicating that these factors contribute little to the predictive ability of the discriminant model. The three are preliminary assessment, resource allocation and project updates. Thus, similar to the previous method, (Table 7.9) the larger the standardized coefficient value,

the greater the discriminating contribution of its respective factor score.

A discriminant score for each case can now be computed from these coefficients by using the original values for the factor scores for each case in turn and multiplying by its respective coefficient value. The following is the predictive model format, where D_m is the discriminant score for case m and f_x is the factor score.

$$D_m = .44444f_2 + .41914f_3 + .93459f_1 + .15790f_8 + .31521f_4 + .19521f_7 + .25273f_5 + .21869f_6$$

The discriminant function and the related statistics are presented in Table 7.13. The eigenvalue is .9594, indicating that a good function has been developed. The canonical correlation of .6998 indicates that the proportion of the total variance attributable to differences among the two groups has a good level of correlation. Similarly, there is a good degree of the total variance in the discriminant scores that is not explained by the differences among means (Wilks' lambda = .5103). This is further supported by a transformed Chi-square value of 75.338 with eight degrees of freedom, significant at .00001.

TABLE 7.13

CANONICAL DISCRIMINANT FUNCTION

Group	Function	Related Statistics	
Success	.92299	Eigenvalue	.9594
Failure	-1.02188	Canonical	
		Correlation	.6998
		Wilks' Lambda	.5103
		Chi-Square	75.338
		Degrees of Freedom	8
		Significance	0.00001

Note: These functions are evaluated at group means (group centroids) and represent the average score for all success and failure cases respectively.
The chi-square is a transformation of the Wilks' Lambda.

The accuracy rate of the predictive function is determined by the classification matrix presented in Table 7.14. The function has been able to correctly classify 83.90 percent of the cases. This is slightly better than the results produced by the forced entry classification at 81.36 percent (Table 7.11).

The stepwise function correctly classifies 54 (87.1%) and misclassifies only 8 (12.9%) from a group of 62 successful new product cases. The predictive ability of this stepwise function demonstrates no improvement for successful cases when compared with the classification ability of the forced entry method. However, the accuracy rate for classifying unsuccessful new products is improved through the stepwise model. For the 56 cases that were grouped as failures, the model correctly classifies 45 (80.4%) and misclassifies 11 (19.6%).

Table 7.14

CLASSIFICATION RESULTS (STEPWISE)

Group	Actual Number of Cases	Predicted Group Membership	
		Success	Failure
Success	62	54 (87.1%)	8 (12.9%)
Failure	56	11 (19.6%)	45 (80.4%)
Correctly Classified		83.90%	

Note: Correctly classified is computed from 54 success and 45 failure cases correctly classified.
 $(54 + 45)/118 = 83.90\%$

To be read as: From 62 possible success cases the discriminant model correctly classified 54 (87.1%) and incorrectly assigned 8 cases (12.9%) to the failure group.

Verification of the model's ability to predict better than random chance is, therefore, confirmed by the results of the classification matrix. The model has correctly classified 87.1 percent of the success cases compared with the probability of random chance correctly classifying cases at 50.1 percent. The predictive validity is further confirmed by tau's proportional reduction in error statistic. The tau statistic indicates that 67.7 percent fewer errors have occurred than would be expected by random chance. This compares to 62.6 percent fewer errors in the forced entry method.

Thus, similar to the forced entry method, the validity of the canonical discriminant function's ability to be a predictor has been confirmed. The results of the stepwise procedure confirm the results of the forced entry method. The stepwise model, however, has been able to achieve a higher rate of classification success. This approach to

conducting discriminant analysis has also isolated and eliminated from the model three of the eleven factors that have been found to offer little contribution to the effectiveness of the model's predictive capabilities.

Validation

A final validation of the discriminant model is required to compensate for any weakness the previous validity checks may have, resulting from these checks being conducted on the same cases that were used to develop the predictive model [Crask and Perreault 1977, Dillon, Goldstein and Schiffman 1978, Dillon 1979, Klecka 1980 and Tabachnick and Fidell 1989]. The three approaches available to provide this additional validation are holdout samples, jackknife analysis and U - method.

The holdout sample, a commonly used approach for validation, has been criticized as a technique for use in research that involves small sample sizes. [Crask and Perreault 1977, Dillon, Goldstein and Schiffman 1978 and Klecka 1980]. When working with a small sample size Crask and Perreault [1977] have pointed out "...its use is impractical because splitting an already small sample makes the derived coefficients even less reliable."

The second alternative is a jackknife analysis. Although interesting from a theoretical perspective, this technique presents several problems. First this type of analysis, contrary to popular misconception, does not provide an estimation of error rate in classification.

Instead it is used for evaluating the stability of the discriminant coefficients [Crask and Perreault 1977]. Secondly, current statistical software programs (e.g. SPSS^x, SYSTAT and SAS) cannot compute a jackknife solution, thus, preventing the utilization of this application for most researchers.

A third approach is the U-method. This method provides an estimation of error rate in the classification [Crask and Perreault 1977], thus meeting the validation requirements for this study, which are to evaluate the classification ability of the discriminant function. Implementation of this technique involves withholding one observation, recomputing the discriminant function and then classifying the withheld observation. This process is repeated until all observations have been exposed to the process. The end result is a new classification matrix that represents the withheld cases.

Table 7.15 presents the mean results of U-method classifications. For the group of successful cases the U-method results are similar to the previously presented classification results. The failure group of cases, although experiencing more variation, is still within a reasonable range of the stepwise classification rates. Thus, the validity of its discriminating ability is further supported.

TABLE 7.15

CLASSIFICATION RESULTS (U-METHOD)

Group	Actual Number of Cases	Predicted Group Membership	
		Success	Failure
Success	62	53 (85.5%)	9 (14.5%)
Failure	56	16 (28.6%)	40 (71.4%)

To be read as: From 62 possible success cases the discriminant model correctly classified 53 (85.5%) and incorrectly assigned 9 cases (14.5%) to the failure group.

Interpretation of Discriminant Function

The magnitude of the standardized coefficients is used in interpreting the discriminant function. The larger the size of a coefficient, the greater contribution its respective factor makes to the discriminating power of the function. The stepwise analysis, previously presented, isolated eight factors that made a significant positive contribution to the discriminating function. Structure correlations¹⁹ can also be helpful in providing an interpretation of the discriminant function.

Structure correlation is the pooled within-group correlations between the discriminating factors and the canonical discriminating function. Thus, these correlations indicate the variance that each factor has with the discriminating function. Table 7.16 presents the stepwise structure correlations and restates the

¹⁹Structure correlation - "measures the simple linear correlation between each independent variable [factor] and the discriminant functions" [Hair et al 1989]. These correlations are sometimes referred to as discriminant loadings.

significant stepwise standardized coefficients, in descending order of importance.

TABLE 7.16

STEPWISE COEFFICIENTS AND STRUCTURE CORRELATIONS

Factor Number	Factor Label	Standardized Coefficients	Structure Correlations
3	Market Synergy	.93459	.70336
1	Organisational	.44444	.23928
2	Market Research	.41914	.22423
5	Launch Effectiveness	.31521	.16507
9	Market Potential	.25273	.13111
10	Design Testing	.21869	.11297
8	Formalization	.19521	.10059
4	Business/financial Analysis	.15790	.08109

A comparison of the standardized coefficients with the structure correlations in Table 7.16 indicates that the ranking of the factors is consistent between the two approaches. Market synergy, for example, ranks first in each situation.

Market synergy, organisational and market research factors, in descending order of importance, are the three factors that have been found to contribute the most to the discriminating power of the function. Thus, new products that exhibit a high degree of market synergy, receive strong organisational support and have effective market research conducted throughout the development process have a higher probability of success than do new products which have not had as much effort expended in these areas.

The next three factors that have an impact on the model are launch effectiveness, market potential and design

testing. Although the impact on success or failure is not as strong as that of the previous set of factors, these factors do have an influence on the outcome of the new product. Therefore, development processes that have an effective, well co-ordinated launch into a market that has good potential, with a product that has received thorough design testing, will also have a higher chance of success than a product that does not score well in these areas.

The final two factors that exhibit some influence are formalization and business/financial analysis, although the degree of influence is minor compared to the previous two sets of factors.

Propositions

The data analysis presented in this Chapter has permitted the data probing necessary for this type of exploratory research, and it has produced a predictive model for success and failure for new building society services. This analysis now allows the propositions that were established in Chapter 5 to be sufficiently addressed.

Proposition 1: Successful new products have undergone more thorough development processes than have unsuccessful new products.

This proposition has been demonstrated to have merit. The initial examination began with the mean values of the 61 variables for the two groups of cases, success and failure. For the vast majority of cases, the average value for each variable in successful cases is higher than that

for unsuccessful cases. A large number of statistically significant t-tests confirms the significance of these differences. These results provide support for the claim that successful new products have undergone more thorough development processes than have unsuccessful new products. Similar to the findings of previous research studies into the development process for tangible new products, these results indicate that the more intensely development process activities are undertaken, the greater the probability of success.

Further confirmation of Proposition 1 is provided through discriminant analysis. Although many variables have been changed to compensate for the difference in characteristics between services and tangible products, a discriminant function has been successfully developed. The model is able to successfully classify service product outcomes into either a success or a failure group for 83.9 percent of the cases.

The need for service firms to adopt good organisational practices into the development process has also been highlighted. Conducting the functional development activities well is insufficient alone to generate successful new products. The importance of organisational issues is captured in the factor analysis results. The strongest single factor developed was the grouping of variables labelled organisational (Factor 1). The organisational factor explains 36.6 percent of the total variance. Subsequently, when factor scores are used

as input for the discriminant analysis, the organisational factor makes the second largest contribution towards the predictive ability of the discriminant function. Thus, support is exhibited for the second research proposition:

Proposition 2: Successful new products have been developed with a more integrated approach to organisational issues than unsuccessful new products.

By combining the concepts of propositions 1 and 2, the argument that internal marketing is needed for successful product development can be made. The two levels of the development process -- activities and organisation -- cannot operate in isolation from each other. Therefore, this interactive support permits the conjecture of the third proposition:

Proposition 3: Successful new products have been accompanied by more internal marketing during the development process than have unsuccessful new products.

Successful products have been found to exhibit higher values for both the development activities and the organisational variables than unsuccessful new products. This implies that the two are operating together in an interactive mode. This interaction in new service development, termed internal marketing, appears to have merit, although a claim for a casual relationship cannot be made. However, a favourable relationship does appear to exist for new products that have exhibited higher scores for these two types of variables.

From the analysis, then, it is possible to confirm

that Propositions 1 and 2 have statistically - proven merit, and that Proposition 3 would appear to follow logically from the first two, although it cannot be supported specifically by the foregoing data analysis. It is, therefore, possible to state that, as a result of this research, the merits for building societies of thorough new product development processes that integrate organisational practices have been clearly demonstrated. It is also possible to add that, since new product development and organisational attributes are closely related to new product success, internal marketing is an important aspect of developing new building society services.

CHAPTER 8

CONCLUSIONS AND IMPLICATIONS

Purpose of the Study

This research has a number of implications for marketing scholars, for management involved in new product development, and for financial services institutions. These implications are discussed in the following pages, as are the limitations of the study and suggested areas of research that may prove fruitful in future efforts to understand new product development in a service environment.

This study has its origin in three sets of literature: new product development, service marketing and financial services. A review has determined that development of new services has previously received only minimal attention from marketing scholars in these fields. This has occurred even though service firms are increasingly making a larger contribution to the economies of industrialised nations; and even though there have been repeated suggestions that research in this area is urgently needed. The primary goal of this research has been to address this shortcoming in the literature by achieving an increased understanding of how new services are developed. This has been accomplished by examining actual development activities and some of the organisational issues that accompany them. Individual events in the development process for new services that contribute to either their success or failure have been

examined through a comparative methodology. This has led to the development of a model that is able to predict the success or failure of new building society services.

Fifteen hypotheses and three propositions were developed from the literature review and a supporting case study. Two central questions were identified: 1) What is the process and organisational structure for new product development in a service industry? 2) What contributes to the success or failure of a new service?

To the degree that these questions have been answered, contributions to existing knowledge emerge at three levels: First, the overview of new product development and organisational practices in building societies is the first comprehensive empirical information on service development practices in financial institutions of the U.K. Second, specific findings, taken from examples of successful and unsuccessful cases, provide insight into the complexity of events that occur in the development process. Third, the resulting understanding of these events and their interrelationships should help reduce the large number of new product failures that occur in the financial services marketplace. Thus, the research results have both theoretical and practical applications that augment the new service development, organisational and financial services literature.

Implications for New Service Development Theory

As Johne and Snelson [1989] have suggested, the need is urgent for additional research in product development; further, Cowell [1988] has stated more in depth empirical studies of new services are required. This research responds to these calls for increased activity by examining in detail the new service development and related organisational practices of U.K. building societies. Further, the determinants of success and failure are explored and identified using a comparative methodology.

This study has led to the recognition that previous research in new product development for tangible goods, and inquiries into aspects of service marketing combine to play a role in understanding development of new financial services. The general framework of new product development and many of the traditional new product development activities are found to be relevant in the development of new services. But, the research also confirms claims in the services marketing literature that the unique traits of services -- intangibility, inseparability, heterogeneity and perishability -- do have an impact on how the development process is carried out. Hence, this study has implications for both new product and service marketing literature.

New Product Process Implications: A service development process was found to exist for most building societies; although the degree of integration into strategic planning, cited by Crawford [1980] as essential

in goods industries for new product programmes, was low. Only one third of building societies have a strategic focus for new product activity; the majority appears to treat each new product as a stand-alone project. Similarly, performance measurement is implemented at the tactical level, rather than as an integral part of the firm's strategic planning. Given the lack of a strategic focus, it is not surprising that the development process is found not to be a formal procedure with clearly defined steps. However, the findings from Booz, Allan and Hamilton [1968, 1982] and Cooper's extensive new product research have concluded that a recognized internal process, following a series of stages, is the best approach for new tangible product development.

A closer examination of the individual stages in the development process for building societies reveals that new product ideas are screened by groups in informal discussion with little use of checklists or rating systems. When market research techniques are employed, internal research is favoured over external applications. Building societies are frequent users of competitive and secondary data analysis; however, primary research techniques are infrequently used, with the notable exception of focus groups. Although internal assessment techniques have reached a level of formality and often require documentation, external approaches have not reached the same degree of development. The importance of continually using market research in the development process has been

stressed by Crawford [1983] and Cooper [1986], but the findings from this study confirm previous suggestions that market research is infrequently applied to the development process for financial services [Davison, Watkins and Wright 1989, and Edgett and Thwaites 1990b]. However, this conclusion has been refined to include only external research applications.

In exploring the frequency of occurrence for the remaining activities usually associated with the new product development process, it was discovered that the level of frequency is low overall. The most commonly occurring activities among building societies are: product concept development, preliminary technical feasibility, product design, system design and testing, personnel training, full-scale launch and post-launch review. Thus, as discussed in previous studies for tangible new products [Feldman and Page 1984, Cooper and Kleinschmidt 1986 and More 1987], the use of prescribed stages in the development process is found to be lacking. However, in societies where new products go through a more complete development process, a higher rate of success has been reported. This confirms suggestions by Cooper and Kleinschmidt [1986] that the more complete the development process, the higher the probability of achieving success.

Over all, a new service failure rate of 43.9 percent has been reported. This is marginally higher than previously reported findings for tangible products, which reflects, in part, a lower level of sophistication in the

development process for services than for goods. In addition, the product development process for these service firms is found to be less sophisticated than that of financial service firms in the United States.

Service Marketing Implications: Notable exceptions to the low degree of new product development sophistication in building societies were three service development stages: system design, system testing and personnel training, all of which have reportedly high activity levels. These three stages are also unique to service firms and have not previously been reflected in flow models for tangible new products.

Inherent in the intangibility of a service is the risk of haphazard product development and negative impact on the corporate image brought about by product failures. Less sophistication in new service development will result in higher rates of product failure. This was reflected in the higher failure rates found for building societies. Intangibility also creates difficulties in conducting R&D and marketing research [Thomas 1978 and Cowell 1988]. In this study preliminary market assessment techniques were demonstrated to be infrequently used. The same was found to be true of external market research applications. The ability to conduct effective quantitative market research is also affected by the intangible nature of the product. Accordingly, when external research was undertaken, qualitative approaches appeared to be more favoured over the quantitative methods more commonly used in developing

physical products. Heterogeneity among services presents obstacles for concept testing, since it is difficult to maintain consistency in the service as it is being tested. This explains, in part, why this type of market research is infrequently used by building societies.

Measurement of new product success is also affected by intangibility. Similar to the findings of de Brentani [1989b], use of the traditional types of profit measures was found to be uncommon among building societies. The difficulty in determining the actual cost of a new product is also reflected in the difficulty respondents had in providing estimates of gross margin contribution. This may be partly a reflection of the unique traits of services.

Implications for Organisational Theory

Although positioned as a study in marketing, this study has implications for research into organisational structures as well. As Johne [1985] suggests, organisational traits do have an impact on the ultimate success or failure of a new product. The general framework of this study provides insight into the organisational structures and presents an overview of the various approaches used in managing product development. It, thereby, provides the first empirical example of organisational structures used in new service development. Thus, this research provides a basic framework for further studies of an organisational nature.

Building societies have been found to vary

considerably in their approaches to managing the development process for new services. No single approach is significantly more dominant than the others, although new product committees (both permanent and temporary), ad hoc groups and product (brand) managers are slightly more common than other organisational approaches. The experience among personnel responsible for new products is short, with respondents reporting a median of five years in the field. This is partly indicative of the recent increase in new product activity among building societies.

The impact of organisational structure upon the development of new services is further captured in the factor analysis and subsequent discriminant analysis, which demonstrate that the process is influenced by a series of complex relationships instead of being dominated by a few simple variables. Three management/employee factors emerge from the multivariate analysis. The single strongest, capturing 36.6 percent of the variance, is organisational. This factor includes such things as the level of co-operation, involvement, commitment, awareness and qualifications of the people involved in the process, as well as the degree of senior management support. When the factor scores have been used to predict success or failure outcomes in the discriminant analysis, the organisational factor has displayed the second most important influence on the predictive ability of the model.

Service Marketing Implications: In studies of tangible new products (for example NEWPROD I and II)

organisational issues were found to have a secondary role to other factors in determining success or failure outcomes. The findings in this study are the reverse. This suggests a need for increased intra-organisational involvement and integration among departments in the development of new services; and it highlights the inseparability and perishability of services. The inability to separate the development process from the varied personnel who will be involved in delivering it implies that closer working relationships are needed among functional groups within building societies when new services are being developed. Because service offerings cannot be stored, like tangible goods, the co-operation of all groups associated with the service is required simultaneously.

The importance to the development process of a service's heterogeneous nature is also confirmed in this research. Service quality issues become a major factor as efforts are expended towards standardising the delivery system and establishing quality control throughout the organisation. The effects of intangibility also surface here, as management tries to ensure that neither operations staff nor consumers are overloaded and/or confused by the service offering.

The combined effects of these service traits underscore the importance of internal marketing to ensure that the process activities are fully integrated into the organisation. It is argued that the degree of integration

directly affects the ultimate success or failure of new building society services, although a causal link between internal marketing and service performance is not established.

Implications for Financial Services Theory

The general findings of this study present a comprehensive overview of the new service development practices of building societies. The in depth examination of the practices followed for both successes and failures illustrates the complex interaction among numerous events that occurs while new products are being developed. From a macro perspective, these service firms do not appear to have the level of sophistication in new product development that is evident among firms dealing in tangible new products. On a micro level, differences were isolated among various societies, based on asset size. Repeatedly, large, medium and small sized societies exhibited differences in their respective approaches. In general, large societies are more likely to conduct the various development practices with regularity.

Interestingly, building societies that did conduct more rigorous forms of service development activity were found to be more successful at developing and launching new products. This suggests a correlation between the eventual success of a new product and the development process activities undertaken. Diffusion of this study into the industry should, thus, reinforce to management the need for

a planned approach to new product development, as well as the need to integrate an organisational focus into the process.

Limitations of the Research

Conceptual: New product development involves a complex mixture of sequential and interactive events. This complexity is supported in the literature for tangible products and is confirmed for services by the results presented in this study. The proposed predictive model is the first of its kind for the new product process in a service environment. It is, therefore, not surprising to find some unexplained variance in the factor solution and some misclassification of results from the predictive ability of the discriminant function.

Some of this unexplained variance may be the result of different competitive and economic climates occurring over the time frame for the new products included in this sample. Some variance may also be attributable to the possibility of excluded factors that may be influencing the development process. For example, certain personality types may be better suited than others to developing new products.

Constructs resulting from the product's degree/type of newness, which may affect the difficulty of the development process, have been down played in this study. Although it is recognized that various types of new products and differing organisational structures may have a bearing on

the successful outcome of new products, financial services are relatively more homogeneous in their degree of newness than tangible products found in many other industries, for example, in high technology.

Finally, each respondent has been allowed to apply his/her own definition of a successful or unsuccessful new product. Previous researchers have used this approach with good results, although others suggest predefining this condition. In consideration of the lack of empirical and theoretical evidence on this topic for service firms, and in accordance with the particular goals of this study, respondents were permitted to provide their own definitions of success and failure. This approach has subsequently proven to be correct, as very few new products were found to have been measured by the traditional boundaries used for tangible goods.

Methodological: The design of the study places boundaries on the conclusions that can be drawn. Although the propositions investigated in this study have been supported, causal claims about the relationships between development activities and organisational issues cannot be made. Confidence in the results is permissible, however, due to the strong significance levels of the various statistical checks used. Nevertheless, caution is always advised.

The sample itself restricts the generalisability of the findings. The hypotheses have been tested only on building societies. As a result of the high sample

response rate, it should be possible to extrapolate the findings of the study to all building societies in the United Kingdom. The ability to conduct liberal generalisations of these findings to other service industries, however, has not been proven.

The actual survey also raises some possible issues. First, in a questionnaire of this size, there may be a response bias due to some variables having ambiguity. Second, the large number of interrelated variables (61) together in one survey could generate a response consistency problem, although no evidence of this potential bias appears in the data. Finally, there is always the risk that an unasked question might have provided information that was not captured by the other questions in the survey.

Difficulties are inherent in the use of mail surveys for data collection. Potential problems exist with who the respondent is, the knowledge level and area of expertise of the person who has filled out the questionnaire, and with the amount of effort the respondent has put into answering the questions. The low number of missing values combined with the high number of respondents who voluntarily identified themselves suggests that these are not significant concerns, however.

Summary: While due consideration of the conceptual and methodological limitations must be given, it is suggested that the empirical results of this study have significant merit for academics and marketing practitioners

alike. The findings have either met or exceeded the research objectives originally outlined in Chapter 1 of this study.

Future Research

This research, having been pioneering in nature, has established that differences do exist between the processes for developing new tangible products and intangible new services. Strong potential for future research exists in this subject area.

This study focuses narrowly upon building societies, but it raises interesting questions as to the potential for generalising its findings to other sectors of the financial services industry, and to service industries in general. The research has centred only on consumer oriented products, although it draws attention to opportunities for future studies investigating industrial services and comparing the results. Cross-cultural comparisons could also be conducted.

Still other research might examine each of the various stages in the development process in more depth, for both industry and sector-specific situations; for example, why is qualitative market research conducted more commonly for services than quantitative?

Research could also be conducted into the impact of organisational attributes upon new service success or failure. For example, further inquiries might explore whether one type of organisational structure produces

better results, and which types of new services are better suited to which types of organisational structures.

The determinants of success and failure identified in this research, along with the resulting predictive model, need to be tested in other service industries to help arrive at a more generic approach to predicting successful or unsuccessful new service outcomes.

Finally, more work is needed from both a qualitative and quantitative perspective. Qualitative studies in the form of in depth case studies can provide a wide base of knowledge on the subtle but influential practices occurring within service organisations. This can, in turn, provide a better foundation for future quantitative studies.

Conclusion

This research into the new product development process for service companies has:

1. Identified an issue important to both senior management and new product development staff in financial service companies.
2. Drawn out, integrated and supplemented previous research from the three fields of new product development, service industries and financial services.
3. Carried out an in depth examination of the current new service development practices of this industry.
4. Developed a general framework for this and future

research into the combined effects of organisational issues and development activities which affect success or failure.

5. Identified a number of traits in the development process which inherently distinguish between a successful or unsuccessful new service.
6. Developed a predictive model of new product outcomes to help reduce the high rate of new product failure.

This research, by successfully applying a comparative methodology, has provided insight into a subject area previously lacking in rigorous empirical studies. By combining inductive and deductive approaches, a unique insight has been gained into the new service development practices of building societies. A series of multivariate tests has permitted the isolation of a number of factors that affect a new service outcome. A predictive model has been developed that effectively predicts success and failure.

It is clear from this research that service industries are not immune to the high failure rates that plague tangible new products. In fact, this study has proven that, for building societies, failure is even more common. But, it also identifies ingredients in the development process that can help contribute to success. Diffusion of this study to managers in the financial services industry should, therefore, help to reduce the risks associated with developing new services.

APPENDIX

Appendix A

BUILDING SOCIETY STATISTICS

Building Society	Total Assets 1989 (£M)	Shareholders	Number of Branches
Halifax	47,920.8	8,569,723	760
Nationwide Anglia	26,647.2	5,818,374	814
Woolwich Equitable	15,327.2	2,800,000	546
Alliance & Leicester	13,552.6	2,542,294	407
Leeds Permanent	13,447.9	3,308,463	482
National & Provincial	8,465.1	1,616,646	321
Cheltenham & Gloucester	7,270.3	925,419	175
Bradford & Bingley	7,155.8	2,003,118	250
Britannia	6,298.2	1,134,586	255
Bristol & West	4,682.6	799,328	171
Birmingham Midshires	3,160.5	669,108	135
Yorkshire	3,063.5	655,145	141
Northern Rock	2,794.6	607,066	125
Town and Country	2,155.0	220,512	77
Chelsea	1,820.3	192,915	55
Skipton	1,662.3	198,902	57
Coventry	1,645.9	380,569	65
Leeds & Holbeck	1,489.2	242,209	75
Leeds & West of England	1,254.7	234,618	80
Guardian	1,215.3	71,186	--
Leamington Spa	1,180.7	117,549	63
Derbyshire	1,043.2	277,352	60
Norwich and Peterborough	1,018.0	188,845	65
Portman Wessex	962.5	198,587	49
West Bromwich	873.8	276,404	80
Principality	769.2	216,628	50
Heart of England	766.0	174,635	54
Portsmouth	760.8	83,537	19
North of England	759.6	215,214	52
Newcastle	731.8	120,311	54
Cheshire	694.7	207,343	56
Staffordshire	650.7	162,402	54
Sussex County	483.2	88,845	34
Dunfermline	474.4	106,824	37
Lambeth	432.2	43,068	13
Nottingham	427.7	127,807	49
Cheshunt	360.4	55,718	19
Walthamstow	351.4	46,000	12
Cumberland	350.2	122,033	28
Stroud and Swindon	340.0	66,012	24

Note: Abbey National members voted in April, 1988, in favour of the society converting to a public limited company.
The Guardian transferred their engagements to Cheltenham & Gloucester on 16th April 1990.

Appendix A (continued)

BUILDING SOCIETY STATISTICS

Building Society	Total Assets 1989 (£M)	Shareholders	Number of Branches
Scarborough	276.5	49,494	15
National Counties	273.8	20,376	--
Eastbourne Mutual	267.9	52,363	27
Furness	241.5	61,504	17
Lancastrian	235.6	46,839	12
Leek United	211.2	45,027	16
Cambridge	208.7	35,833	10
Kent Reliance	190.6	45,366	12
Mornington	188.5	19,206	--
Darlington	187.5	38,052	9
Hinckley and Rugby	186.6	39,482	18
Marsden	174.9	35,400	14
Progressive	165.8	30,627	10
Saffron Walden Herts & Essex	163.6	29,895	9
Newbury	153.9	27,252	10
Market Harborough	148.9	24,542	7
Melton Mowbray	139.9	28,691	4
Greenwich	128.9	29,108	6
Barnsley	128.8	25,848	4
Ipswich	126.1	28,381	8
Universal	124.4	25,821	13
Hanley Economic	122.0	28,953	3
Haywards Heath	105.9	19,459	6
Hampshire	93.6	14,801	6
Monmouthshire	93.6	14,500	7
Meacantile	92.7	18,128	10
Teachers'	86.8	9,053	--
St. Pancras	83.2	9,772	5
Vernon	76.8	18,853	5
Scottish	76.0	15,618	5
Mansfield	72.4	15,957	3
City and Metropolitan	71.3	10,355	4
Surrey	69.1	9,308	5
Peckham	67.2	12,964	4
Loughborough	60.5	11,256	3

Note: Peckham transferred their engagements to Cheltenham & Gloucester on 30th June 1990.

Appendix A (continued)

BUILDING SOCIETY STATISTICS

Building Society	Total Assets 1989 (£M)	Shareholders	Number of Branches
Tipton & Coseley	55.4	14,943	4
Dudley	51.5	14,048	5
Bedford	51.1	9,264	1
Frome Selwood Permanent	47.8	14,227	1
Manchester	46.2	5,977	--
Chesham	45.7	8,157	3
Holmesdale	45.6	6,871	--
Earl Shilton	39.6	9,103	2
Chorley and District	36.9	6,402	1
Penrith	35.5	7,203	1
Tynemouth	35.2	6,167	--
Bath Investment	34.9	11,811	4
Stafford Railway	32.6	7,540	--
Buckinghamshire	32.3	6,003	1
Harpenden	32.2	7,649	2
Hendon	27.8	3,428	--
West Cumbria	26.4	6,372	4
Nottingham Imperial	24.6	6,068	2
Shepshed	24.0	6,308	--
Mid-Sussex	22.6	5,653	2
Beverley	21.9	5,648	--
Swansea	18.0	3,131	--
Sheffield	17.2	4,253	--
Catholic	17.0	3,196	--
Gainsborough	15.1	3,468	--
Bexhill-on-Sea	13.9	2,776	1
Bedford Crown	12.9	3,387	1
Ilkeston Permanent	12.8	4,044	1
Standard	12.1	2,203	1
Clay Cross Benefit	10.7	3,148	--
Londonderry Provident	3.7	976	--

Note: Bedford transferred their engagements to Cheltenham & Gloucester on 8th April 1990.
Sheffield transferred their engagements to Bradford & Bingley on 15th June 1990.

Source: The Building Societies Association (1990) Building Societies Yearbook
(London, U.K.: Franey & Company Ltd.)

Appendix B

National & Provincial Building Society

NATIONAL & PROVINCIAL BUILDING SOCIETY (N&P)

In a period of environmental turbulence in the financial services industry, the National & Provincial Building Society (N&P) has the added burden of adjusting to a recent organisational restructuring. This case study discusses the changes at N&P in light of the increasingly competitive financial services environment, and it traces the new product development process for two new products launched in response to these changes. The principal means for gathering this information was interviews with several people involved in various aspects of the new product development process. They were: Nigel Whichelo, Head of Marketing, Savings; Steve Jones, Market Manager, New Product Development; Andy Marchant, Product Manager; Annette Ashton-Realin, Head of Marketing Research; and Allison O'Keefe, New Product Development.

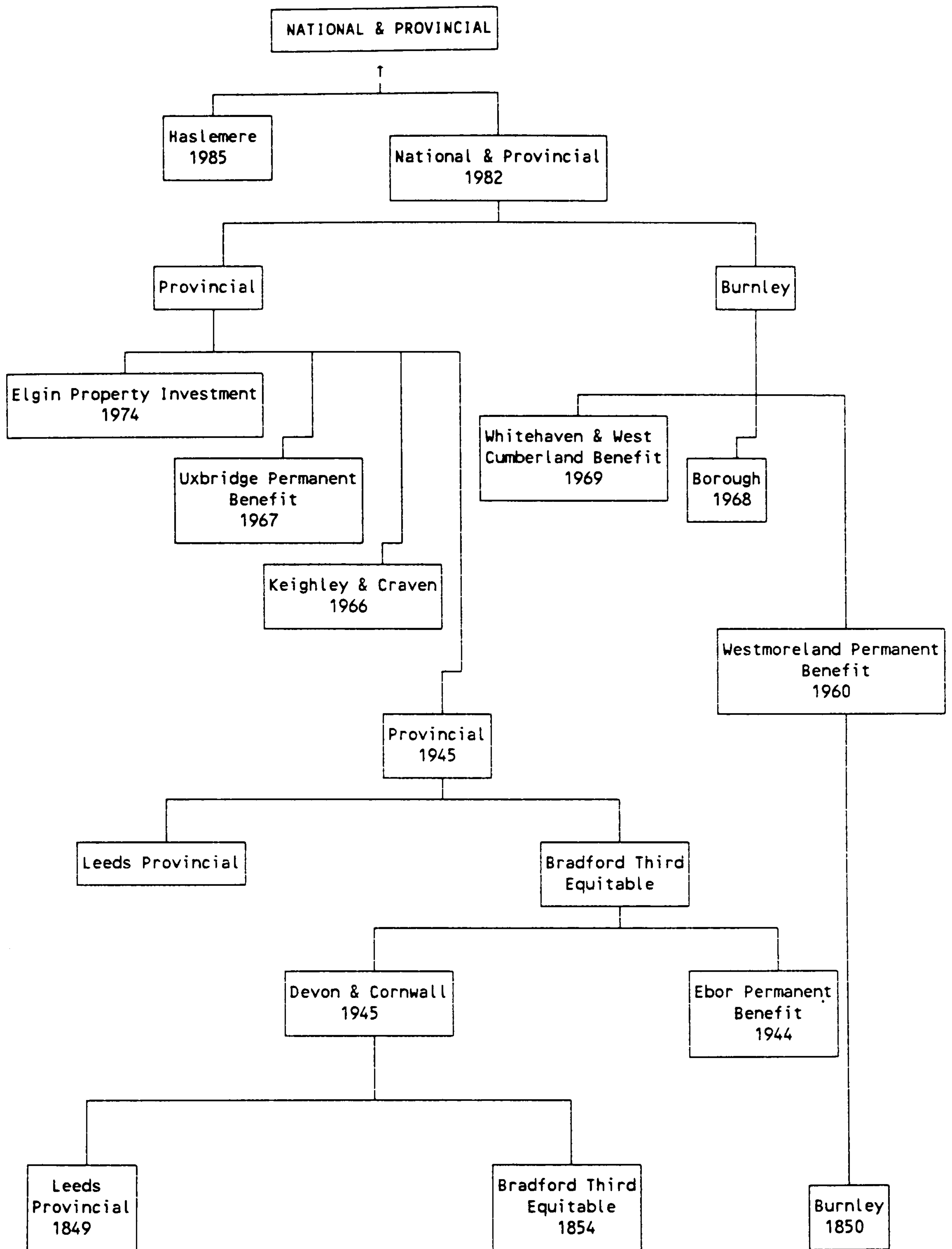
Company Background

Historical The origins of the present day National & Provincial can be traced to the formation of the Leeds Provincial Building Society in 1849, and that of the Burnley Building Society in 1850. The succession of mergers that eventually resulted in the formation of National & Provincial 1982 is shown in Figure B.1.

N&P's head office is located in Bradford, West Yorkshire. There are 322 branches throughout England, with the highest concentration of these in the Yorkshire and Lancashire regions.

FIGURE B.1

N&P: SUCCESSIVE MERGER ACTIVITY



Financial N&P is Britain's sixth largest building society, with £7.5 billion in assets, and pre-tax profits of £94 million in 1988. The society's principal financial performance indicators for the past five years are presented in Table B.1. Each year has shown an improvement.

Table B.1

FINANCIAL PERFORMANCE

	1988	1987	1986	1985	1984
Profit Before Tax	£ 94m	£ 76m	£ 61m	£ 48m	£ 25m
Return on Reserves	30%	29%	28%	26%	15%
Management Expenses to Total Income	49%	51%	55%	57%	68%
General Reserve	£347m	£286m	£237m	£200m	£169m
Gross Capital Ratio	5.8%	4.5%	4.2%	4.0%	4.1%
Return on Assets	1.33%	1.19%	1.08%	0.99%	0.59%

Source: Annual Report, National & Provincial 1988

Strategic Focus In 1988, N&P developed a new strategic plan, which set as its objective:

To become a major and profitable provider of personal financial services in addition to becoming a sophisticated financial organisation fully able to take advantage of the ever-changing and competitive marketplace.

In keeping with this goal, the society targeted several areas:

- Developing a new brand;
- Expanding the customer base;
- Targeting younger customers;
- Diversifying;
- Raising the fee-earning levels;
- Building a distribution system tailored to revenue potential;
- Meeting customers' needs.

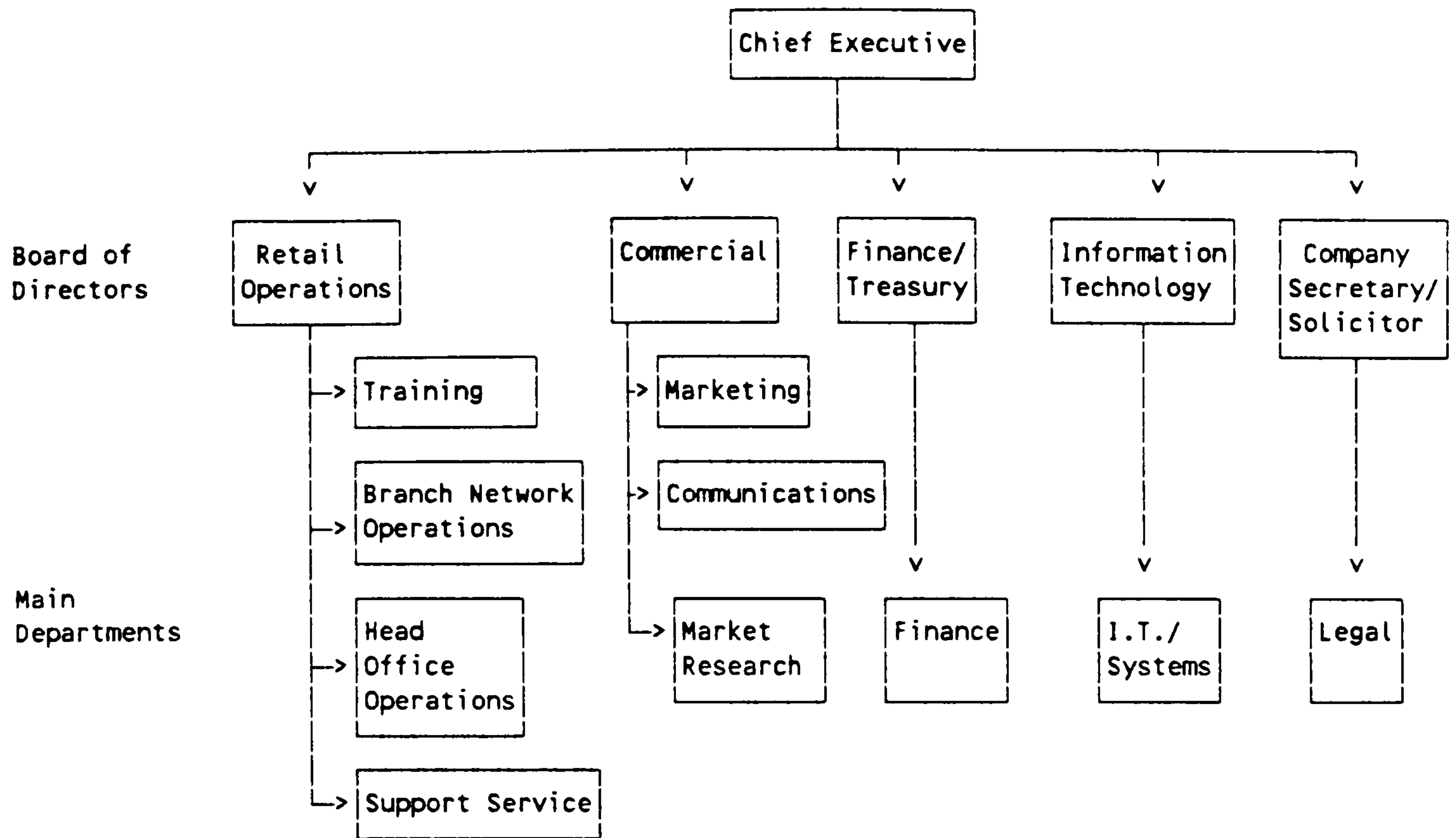
To meet these challenges, decisions were made to enhance the information technology (IT) and marketing departments, and to restructure the network of branches into four regions rather than the previous twelve. A further response to the strategic plan was a reorganisation in 1989 into five separate business units: savings, mortgages, insurance and investments, consumer credit and corporate services. Each unit is self-contained, with its own operating budget and personnel. To ensure the consistency of brand values throughout the company departments such as information technology, human resources, communications, retail operations and training remained outside the business units at group level. N&P's organisational chart is shown in Figure B.2.

The Business Units

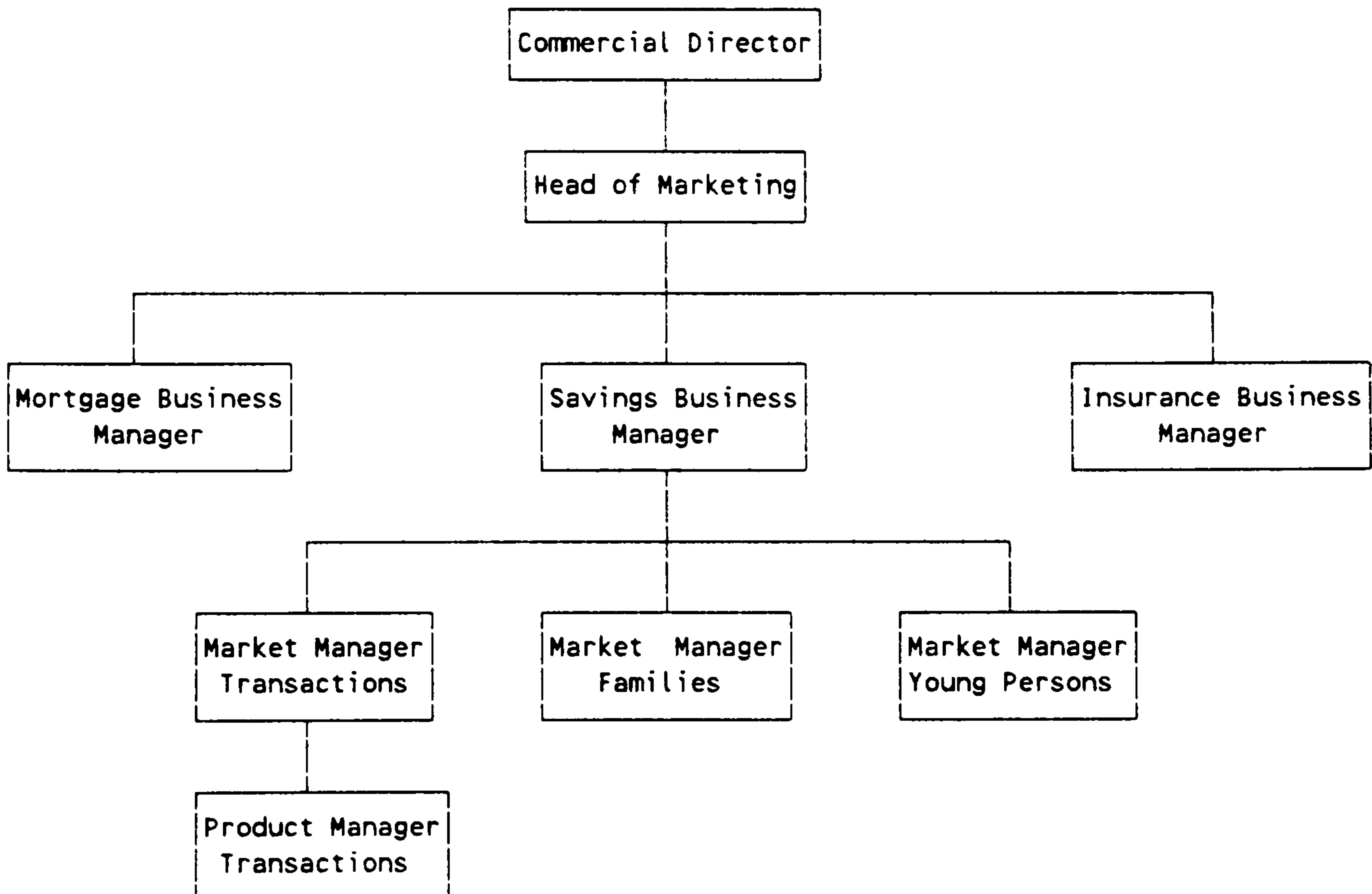
Savings N&P has more than two million savings customers. Several types of savings accounts are offered to various segments of the market; for example, "Private Reserve" and "Instant Reserve", which are high interest accounts; "BUZZ", an account targeted to teenagers; and a high transaction account aimed at the under 25-year-olds called "MAX". All of these accounts were launched after the new strategic plan came into effect.

Mortgages Examples of mortgage products are first-time buyer loans, large loans at discounted interest rates, self-build mortgages and a recently launched house restoration mortgage.

FIGURE B.2 ORGANISATIONAL CHART FOR N&P



Commercial Division



Insurance and Investment N&P has opted for independent intermediary status under the Building Societies and Financial Services Acts of 1986. Its insurance and investment area is highly profitable, having earned £28 million from commissions in 1988. Initially, a stockbroking service was administered through the insurance and investment unit, although all transactions and stock counselling services were carried out by an investment company, Allied Provincial Securities. In March 1990, this unit expired as N&P launched three new companies: N&P Life, a joint venture with General Accident, which holds a 25 percent interest; N&P Insurance and Investment Services; and N&P Independent Financial Consultants.

Consumer Credit In 1989, this unit launched N&P's own Visa card, which is managed through its London offices. Unsecured loans are also administered by the unit through an arrangement with Forward Trust.

Corporate Services Corporate services specialises in providing financing to housing associations and developers. A relocation service is also offered to corporations, which assists with employee transfers. A corporate package, launched in 1988, offers share related plans, group savings plans and discounted mortgage schemes for employees of subscribing companies.

Marketing Department

In keeping with the corporate strategy to expand the role of marketing within the organisation, N&P's marketing

department has been enlarged to just over 50 people, compared with less than half a dozen in 1985. As would be expected with such rapid growth, the department has experienced considerable change and restructuring. At the time of the case study, the interviews revealed that the accompanying problems of developing credibility and good working relationships with other, more established departments had not been completely overcome.

Each of the new business units has a small marketing group that falls under the umbrella of the larger marketing department. Each of these smaller groups administers day-to-day operations related to its business unit. For example, in the savings unit each major product has a product manager. New product development is also carried out at the unit level. Each unit has a head of marketing who reports to the Director of Marketing.

The major thrust of the marketing department is in branding, new product development and expanding the customer base.

Branding In reaction to an industry trend toward copying the competition's new products (the "me-too" syndrome), and a need to develop a lasting image with the consumer, N&P developed and launched, in late 1988, the symbol of a bumblebee as its new corporate emblem. The "Bee" is intended to have positive connotations of industry, community spirit and building activity. It has been successfully incorporated into all advertising and promotional activities of the society. Initial market

research indicates the brand has achieved a high level of awareness and recall in the marketplace.

Customer Base In January, 1988, the first comprehensive survey of N&P's customer base was conducted. Among the market research results was a finding that only four percent of the society's customers were under 25, while government census figures indicated 17 percent of England's population was in this age group. In other words, the existing N&P consumer composition was disproportionately skewed towards the older age categories, and the organisation was not acquiring and retaining younger consumers (under 25). This finding had serious implications for future growth of the society. To overcome this problem, the marketing department was charged with developing new products and strategies to attract the under-25 segment of the market. Two new products that have responded to this need are the "MAX" and "BUZZ" accounts.

Marketing Research Department

The Marketing Research Department operates at the group function level. Since it is independent of the business units, the department is able to develop a corporate perspective on research needs, rather than having its outlook limited to the narrower needs of individual business units.

Each unit is given a share of the market research budget, but the research department holds the funds and makes the decisions as to how the money is spent. To

obtain research for the new product development process, each new product manager must approach the research department with a request that is supported by an approved business case. As Department Head Annette Ashton-Realin put it, this format prevents "research for the sake of research". The department defines how the research will be conducted and determines the budget.

The department has three full-time researchers who conduct a wide range of quantitative and qualitative research. However, due to the increasing need for market research and limited human resources, the unit usually restricts itself to planning, analysis and interpretation of primary research, while it contracts data gathering to outside firms. Information is also obtained from a syndicated report, the Financial Research Survey. In-house research is usually conducted only on sensitive issues, such as on customers who take their mortgage business elsewhere.

Test marketing, forecasting of sales potential, and investigations into pricing and cannibalization effects, are not conducted by the marketing research department. Nor is in-house research done on the effectiveness of advertising and promotions. However, a syndicated study produced by the market research firm Milward-Brown is purchased. Although it measures consumer awareness, it does not measure the effectiveness of the advertising.

The amount of research conducted at N&P has expanded in recent years , but its scope is still limited. As Mrs.

Ashton-Realin indicated, "I would say we've got, certainly, plenty of work, and there is a lot of research done, but it is quite a limited spread of the type of research. There is not a lot of the sort of innovative research which you get in other companies."

One research improvement is a major revision to N&P's IT system that will allow easy access to demographic profiles of customers. This information was previously not available to the research department without major efforts by IT staff.

Market research as part of the new product development process is still a relatively new experience at N&P. Mrs. Ashton-Realin summarized its status: "If you are comparing it to fast moving consumer goods, it is sort of like a baby... However, the appreciation of information in the development process is changing. Statements like: 'we don't need to know that, we never needed it before, why do we need it now?' are not being made now."

New Product Development

There was general agreement among those interviewed that a "new product" is "something that meets consumer needs currently not being met by the organisation".

The importance of new product development to a reorganised N&P is evidenced in the number of new product launches: 11 between June, 1988, and December, 1989. Projections for the next two years forecast a similarly high level of activity: a minimum of five and a maximum of

12 new product launches. There will also be a number of product relaunches.

Most future new product development will aim at markets that have become accessible as a result of the Building Societies and Financial Services Acts of 1986. For example, the society plans to develop several investment related accounts; such as, equity linked and equity/long-term investment services. There will also be developments in service quality (i.e. the creation of a customer service quality manager position).

The NPD Process The process of developing a new product varies with each manager. N&P has no formal procedure or checklist to follow, although there are standard procedures for the preparation and presentation of financial forecasts in the form of a "Basis for Interest" document that is submitted to obtain approval for each new project.

Product managers are not directly rewarded for successful product launches, although indirect rewards may be reflected in their annual performance reviews.

Project objectives are set by individual project managers, but are reviewed by their superiors in the "Basis for Interest" before funding approval is given. From the information gathered in the interviews, there appeared to be no conscious effort to match new products with the corporate objectives, except as a means of justifying a particular project in the business plan submitted for final approval. For example, although the "MAX" account matches

the new objective of increasing the number of customers under age 25, the matching occurred by coincidence rather than by design.

A typical new product development process at N&P is described in the following paragraphs.

The idea generation stage is not a controlled process. Any product manager may present a new idea at any time and try to develop general interest and support for it. However, the traditional methods such as brainstorming sessions, customer reply cards or employee suggestion plans are not used. Structured brainstorming sessions have been used occasionally for specific topic areas; but most new product ideas tend to be generated from the competition and/or desk research.

A "Basis for Interest" report will usually be used by the product champion to gain initial support for the new idea. This report is a brief, or preliminary business plan, which seeks approval for limited funding to research the idea further. If the idea is for a major new product offering, then a more detailed business plan seeking approval for more funding will follow the preliminary market research. If the project is small; or if it will not require large amounts of money, the original "Basis for Interest" may be revised as information becomes available, or as required to receive further funding.

Screening processes are not used. Instead, the idea, in the form of the "Basis for Interest" report will go through the organisational hierarchy for approval. The

marketing head for the particular business unit (i.e. savings) will approve the project first. This will usually ensure its approval at higher levels. As an idea is forwarded through the hierarchy, a sign-off system is used to indicate approval, and to allow for written suggestions. This process leads to agreement in principle to the project by two to three senior managers. Once this approval is given, the project tends to gain a momentum of its own and is unlikely to be cancelled thereafter.

In-house market research is limited by the size of the market research department. Most new projects start with the new project manager compiling secondary data from government publications, competition and syndicated/omnibus reports. If project approval has been given, this secondary research may be followed up with a request to the research department for primary research. For qualitative research, focus groups or one-on-one interviews are used most often. As noted earlier, this research is contracted to independent market research companies. Quantitative research is seldom used.

Project teams are unlike those traditionally used for physical new product development. At N&P, a team is led by the product champion who draws people from other departments as they are needed. These people act as liaisons between the project and their respective departments but do not work full-time on the project.

Consumer testing of the product concept while it is under development has been the exception rather than the

rule in the past; however, this practice appears to be changing.

Although the new product manager responsible for the project initiates the activities required for launch, each department administers the tasks that apply to it specifically. For example, once the communications department is told of the product, its promotional and advertising needs and the amount of money allocated for these purposes, it contacts outside agencies to develop the material and arrange media time. The new product manager acts in an advisory role, pressing for commitments to deadlines. Although the ad material is reviewed by the new product manager, interdepartmental politics make it difficult for him/her to do more than suggest changes. A similar advisory capacity is maintained in working with other departments, such as IT, human resources and retail operations. Consequently, the new product manager, although the product champion, must rely heavily on the timely co-operation of other departments. Thus, good interpersonal skills are required for a co-operative rapport.

A more detailed look at the development process for individual products is provided later in the case examples. However, the interviewees identified several general areas for improvement:

1. More time should be allocated to looking at new product ideas in general.
2. The current development process needs to be shortened, in order to get new products to market more quickly. Thus, more human resources are required once a new

product idea is approved.

3. Senior managers should verbalise early in the process any reservations they may have and communicate clearly their degree of commitment to the project.
4. More product testing is required.
5. Some co-operating departments need a higher degree of commitment to meeting deadlines.
6. Regular evaluation of advertising and promotional expenditures is needed to ensure objectives set for the product launch are being met.

Factors Critical for Successful NPD

All those interviewed at N&P determined the success or failure of a new product by how it performed against the quantitative objectives in the business plan. These can take a variety of forms depending on the purpose of the new product:

- Profit
- Consumer Recruitment
- Sales
- Market Share Percentage
- Numbers of Units Sold
- Margin Targets

A number of factors were identified as being essential to a successful new product development process:

1. Adequate financial resources to ensure thorough market research.
2. Clear identification of the target market.
3. Demonstration by senior management of strong commitment to the project.
4. A high level of commitment and enthusiasm by all members of the project team to ensure the new product is right for the market and developed in a timely fashion.
5. A product champion who is prepared to push the new product through the system and to overcome delays and difficulties.

6. Ensurance by the product champion that the product is brought through the research process in a very tight and disciplined form, once the idea has been accepted.
7. Inclusion as early as possible in the development process of people from other functional groups.
8. Development of a critical path, so that each department involved will know what is expected and when it is required.
9. Development of strong internal communications concerning the new product. The more internal 'noise', the better.
10. Proper installation of all the operational elements of the product, so that the staff can sell it effectively
11. Adequate resources for staff training, so that they have the product knowledge and skills necessary to be effective.
12. Development of a high degree of commitment to the new product among the people tasked with selling it. They should be convinced before the launch stage that the new product is right for the customer.
13. A strong launch campaign. Enough resources should be allocated for advertising and promotion to make the consumer aware of the product.
14. Differentiation from all the other products already in the marketplace.
15. The product should meet a consumer need that is not already being met.
16. Avoidance of needless complications of the product: The new product should be as simplistic a proposition as possible.

The opposites of these 16 factors were indicated by interviewees as contributing to an unsuccessful new product launch. In addition, a number of factors were stressed as particularly relevant to failures:

1. Failure to conduct market research properly, and early in the development process.
2. Failure to follow up on tasks that have been assigned to other functional groups outside the marketing department.

3. Failure to consult the consumer during the development process.
4. Failure to conduct or analyze market research before making a decision to launch a product.
5. Setting unrealistic targets to make the business plan look good, rather than considering what the product can realistically achieve.
6. Lack of sufficient funding.
7. Failure by senior management to place strong and visible support behind the project.
8. Insufficient follow-up once the new product has been launched.

TWO NEW SERVICES: A SUCCESS AND A FAILURE

To give a clearer picture of how the preceding success and failure factors bear upon the actual new product development process, the following two examples -- one of an unsuccessful product launch, and one of a successful launch -- are given. A new product is classified as a success by N&P management if it has matched or exceeded the stated performance objectives for the product.

Travel Services -- Unsuccessful Product Launch

N&P's "Travel Services" was launched in February, 1989. From its early development stages the product, which was identified as desirable by senior managers without the benefit of preliminary market research, was plagued with problems. A low-key approach by N&P to the product, together with technical difficulties and missed deadlines combined to set the launch date back three times and failed to generate the staff commitment required to successfully promote the service. Although the service continues, it has been generally recognized that sales and profit

objectives have not been met.

The Product "Travel Services" has three principal components: foreign currency and cheques, travel insurance and a helpline service. American Express travellers cheques, in US dollars or sterling, are available at all N&P branches. Cheques in the following currencies are available on five days notice: Canadian, French, German, Japanese, Saudi Arabian and Swiss. All normal benefits offered by American Express apply. Cash in various currencies is also available, but five days notice is required, and it is available only to N&P customers who have investment accounts. There is a fee for both cash and travellers cheques, except for customers buying insurance.

The travel insurance package is offered through General Accident. One type of insurance covers a specific trip, and another type is a one-premium plan that will cover insurance requirements for all holidays taken during a one-year period. Apart from the time span and fees charged, both insurance plans offer the same coverage. The packages include:

- | | |
|--|------------------------------|
| - Loss of baggage | - Loss of personal money |
| - Personal accident | - Personal liability |
| - Medical expenses | - Emergency expenses |
| - Cancellation and curtailment charges | - Delayed departure expenses |

Any customer who has purchased travellers cheques or travel insurance may use the Helpline Card, which operates in conjunction with EUROP Assistance. The holder of the card is entitled, from anywhere in the world, to call a free British telephone number for advice and assistance on

problems or emergencies that may arise.

The Development Process Once the decision had been made to offer Travel Services, Allison O'Keefe was assigned to develop a product offering. The development process began with gathering secondary data about competitors' products and collecting information on the travel market; such as the number of people who go abroad, their use of travellers' cheques and insurance, how much money they spend and the currency they use. Sources of information included competitors, government census reports and American Express, which would later be contracted to supply the travellers cheques. The information supplied by American Express on expected market size and the amount of sales that could be expected in the first few years turned out to be very accurate.

Once this information was collected a brief business plan was prepared that summarized the proposed product features and projected profits and sales. The plan was submitted to the head of marketing for approval, although this was a formality, since the decision to launch the product had been made before the development process began.

While formal approval was pending, work commenced on other areas of development. New computer programs for foreign currency transactions were required, and the IT department was brought into the project early, although a failure to see the project as a high priority resulted in difficulties in arranging for IT people to devote time to it.

No advertising campaign was planned, but the communication department was asked to develop the brochure and poster that would be used for inbranch promotion. This process also encountered problems, as the communication department repeatedly missed deadlines.

The net effect of the communications and IT complications was that the launch date was postponed three times, from December, 1988, to late February, 1989.

Throughout the development process, negotiations were held with American Express, and the final contract was not signed until immediately prior to the launch date. The extended negotiations were over fine points in the agreement.

In addition to secondary market information, research included six focus groups of about eight to 10 people. Here, there was discussion of what people wanted in travel packages; such as, cheques and insurance, whether they would want it all in one package, and whether they would buy it from N&P. This research confirmed that there was a market for the product and supported the features that were originally planned. No other market research was conducted, because there were no funds budgeted. The focus groups were contracted to outside agencies, and were handled through the marketing research department. No changes in the product were made as a result of the focus groups.

Procedure manuals were developed and passed on to the training department to be used in briefing staff about the

new product. The retail operations department was also briefed on the product, and staff training began in the branches. This consisted mainly of discussions during which a manual on the product specifications was read. The product was not included in branch performance evaluations, and it was not perceived by them as high profile. Consequently, little effort was expended on selling it.

A product test was conducted in five branches in December, two months prior to the launch. Staff at these branches were trained in dispensing the service and instructed to start selling it. However, the day before the test was to begin, IT announced that the computer system would not be able to process currency transactions. The test went ahead, but only part of the product was sold, and transactions were carried out manually. A further complication arose after the product launch, when it was discovered that not all branch staff could operate the data viewer that would be needed to complete transactions, despite earlier assurances to the contrary. Those staff who could use the viewer found frequent problems, such as inability to access currency exchange rates. In July, 1989, a new data view system was installed, which helped to solve this problem.

No consumer test marketing was conducted between the initial product development and the launch; nor were the brochures consumer tested. There was no follow-up business analysis and no pre-commercialisation reports. The product went directly from development into the launch phase, which

consisted of a pamphlet and poster distributed to all branches. Because of a lack of consumer awareness, the product has not performed well.

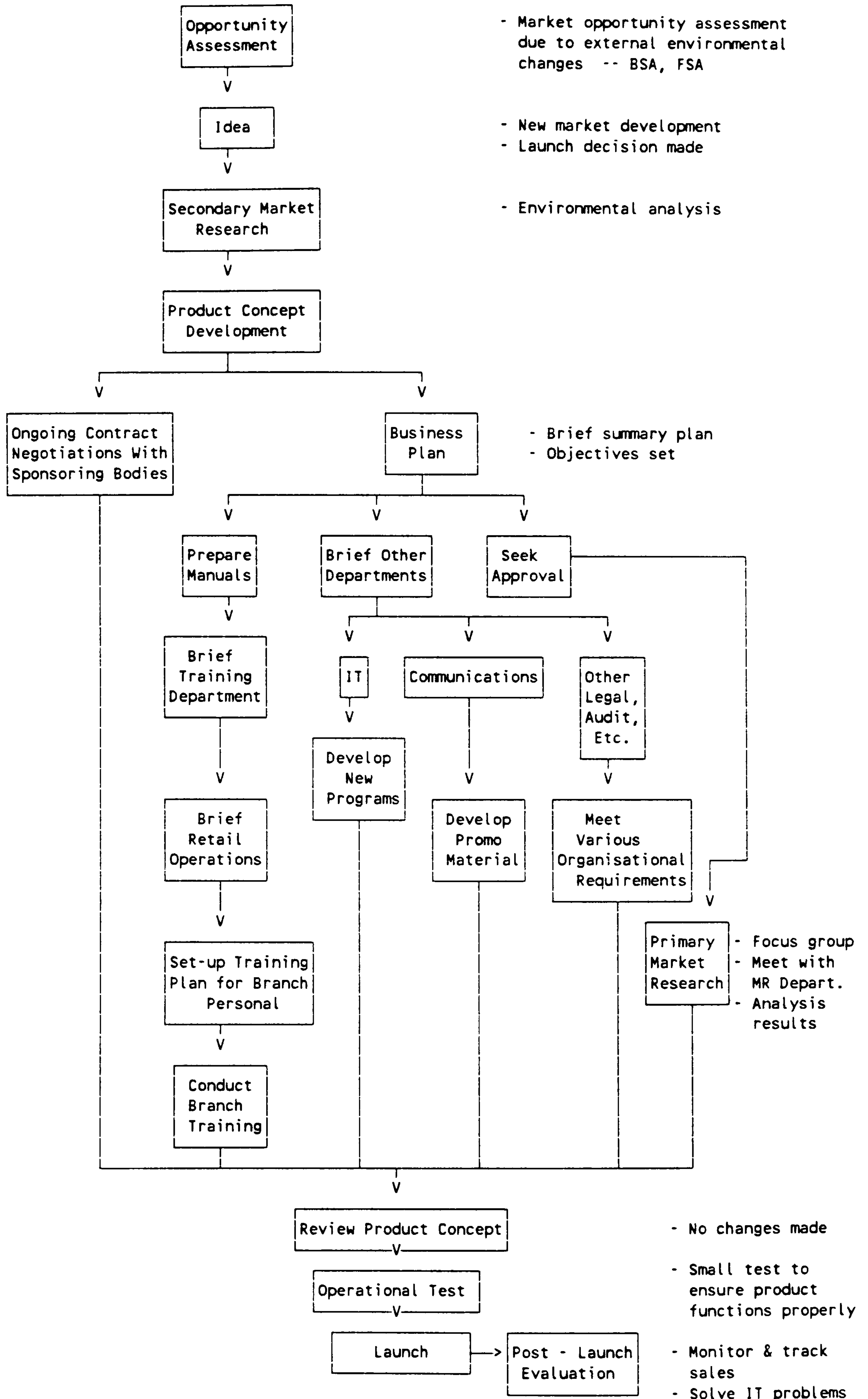
Post-launch evaluation consisted mainly of monitoring and tracking sales, with little in the line of revisions, added budgets, or sales push. The product is now under the control of the savings business. A flowchart of the development process is presented in Figure B.3.

Hindsight Mrs. O'Keefe identified some key points of the development that could be improved upon:

1. The training department could have been brought into the process earlier and been more involved in the process.
2. Employees from the branches should have been asked to explain step by step how they would carry out the transactions on the data view system. This could have helped identify problems with operating it.
3. Premiums for the insurance should have been higher (the product is under-priced).
4. A full-scale, heavily-promoted launch should have been used.

FIGURE B.3

TRAVEL SERVICES: NPD PROCESS



"MAX" -- Successful New Product Launch

MAX, a card-based transaction account, is seen as the most successful new product ever developed and launched by N&P. It also holds the record for the highest development budget to date for a new product.

A multi access expenditure account, MAX offers a tiered interest rate that is calculated daily, with maximum daily cash withdrawals of £250, or £1,000 by cheque. The account includes one master card -- the "MAX Cash Card" -- and the two minor cards that are add on features of the product -- the "MAX Law Card" and the "MAX Info Card".

The "Cash Card" permits access to a network of ATMs. The "Law Card" enables the holder to get free personal legal advice by telephone 24 hours a day. Telephone banking is done via a voice-activated computer that allows the customer to get account updates, pay bills, read out a mini statement, or transfer funds to another account. "MAX Guard" allows for five free insurance claims for full replacement value of any item damaged within 90 days of the purchase date. "MAX Facts" is a pre-recorded telephone line that offers free advice on a variety of subjects to "Info Card" holders. A personal organizer is given to all new "MAX" customers.

The idea for the product began with the realisation that several of N&P's key building society competitors had successfully launched transaction accounts, complete with cheque books. In early 1988, N&P decided that it, too, should consider starting a transaction account targeted

toward the over 25 market. Thus, a rough product concept was put together, centering around a transaction based account.

In March, 1988, Steve Jones, the manager assigned to this new product, began conducting secondary research around this concept. The result of his analysis was the discovery that N&P had a more serious shortage of customers under 25 years of age than previously thought. Consequently, the product concept was widened to include two distinct target groups: Those over 25 and those under 25. A field study of the two age groups was then commissioned, and qualitative research in the form of focus groups was conducted. The age groupings were further refined into three: under 18, 18-24 and over 24. Further splits were made to include possible differences between those living in the North and those living in the South, as well as differences by age and sex, preference for chequing or non-chequing accounts, and general consumer attitudes. Approximately 30 focus groups of 8-10 people were conducted by a market research agency.

Analysis of the focus group responses revealed that the over-24's were happy with the services as they were and the majority of this group already had transaction accounts with other institutions. However, the younger consumers tended not to have chequing accounts, and they were more receptive to plastic cards and other types of innovation. Accordingly, the objectives for the new N&P transaction account were reassessed. The idea of launching a cheque

book was dropped, and a strategic decision was made to target the under-25 group. The new objectives were put in writing (previous objectives were not), and agreement as to the nature of the new account was reached with senior management in the marketing department.

At this stage, a market analysis was conducted to determine such things as: size of market for a cash card; growth of the market; and potential market share. The market share for such a card was estimated at six percent, or 80,000 accounts over a 12-month period, with 50 per cent of these customers being under 25. An extensive analysis of competitive activity in the product area was also conducted. The outcome of the market analysis was a "Basis for Interest" report.

Early in the summer of 1988, a new product concept was generated that identified desirable product features. It was tested with four groups of 18-24 year olds using concept boards to find the correct positioning niche for the product. Four lifestyle images were examined: The 'Macho' image; the carefree image, which says, "I don't care how I spend my money"; the very sensible, conservative image; and a soft, feminine one. As with most lifestyle research, the end results indicated the best positioning strategy would entail 'bits and pieces' of each lifestyle. One important new finding, however, was the idea for telephone banking.

A telephone survey, with a sample size of 100 people, was conducted. Strong support was found for the telephone

banking idea. Due to the high cost of installing the service -- £1 million -- another "Basis for Interest" report was prepared. In November, 1988, the go-ahead was given, and the telephone banking concept was developed as part of the new transaction account.

In November, the first formal business plan was developed, which incorporated the previous "Basis for Interest" documents. It also quantified the benefits for N&P and made firm projections for market share in the first year following the launch. There were two main objectives: To open 57,000 new accounts, and to have 54 percent of them new customers to N&P. The business plan was then circulated for comment to approximately 12 people in various departments. This was a new procedure for N&P; no precedent existed for gaining approval and, thus, the co-operation of other departments. Following agreement within the society, the go-ahead to launch the product was given at the end of December, 1988. Approval was then sought at the board of directors level although, for practical purposes this was by now a formality. The board has the power to approve or reject projects, but in practise the final decision regarding product launches rests with the head of the marketing department.

The business plan made note of the fact the new product fit N&P's strategic objectives. Although this was true, the matching had occurred more by accident than by design. The building society's objectives did not play a significant part in the instigation of the project which,

in the beginning, was targeted at older consumers and intended to copy transaction accounts already offered by N&P's competitors. However, the coincidental matching with the strategic objectives helped to further justify final approval of the project.

The two principal stages of the implementation phase were staff training and the contracting of external agencies.

Due to the novelty of this product and its complexity in comparison to the existing N&P product portfolio, two forms of implementation problem occurred at the branch-level: convincing the staff that it was a good product, and training them to properly sell it. Detailed negotiations were required with the training and retail operations departments over how the training would be implemented. The result was a series of one-day seminars at hotels in various regions for staff representatives from each branch. Marketing personnel from head office, including Mr. Jones, assisted in the training. This was the first time N&P had conducted training outside the branches with the developers of new product actively involved.

The period between January and April, 1989, also involved work with various external agencies, together with the communications department, to develop the advertising and promotional literature for the new product. Internal politics plagued this phase of the process, as the communications and marketing departments disputed control over development of the appropriate promotional mix and

themes. In the end, the communications department appears to have secured control over these elements, although marketing did have some input into the decisions. For MAX, a full-scale promotion of television, radio, print advertising, together with prizes was used. During this phase, the business plan was adjusted to reflect the ongoing changes in the marketing mix, but the remainder of the plan remained the same.

Another area of considerable controversy was the selection of the product's name. The marketing group conducted an internal brainstorming session and selected a name that was then tested on three consumer groups. Following positive feedback, the name was approved and forwarded to the communications department for incorporation into the advertising material. However, the communications department rejected the name and argued that it should be agreed upon by a committee. Following a committee meeting, the product was renamed "Select". This name was turned over to the ad agency, but was rejected again. The agency suggested "MAX", and proposed an ad campaign revolving around the title. The marketing department rejected this name, but the communications department approved it, and "MAX" became the product's title.

Before the launch date, the IT department checked its computer system to ensure all the product features were operational. This test was conducted in house by having 30 people carry out various transactions over several days.

The cash cards were also tested, and when it was discovered that ATM's would not accept them, they were returned to the manufacturer for replacement. This caused a two week delay in the launch.

In May 1989, MAX was launched.

Follow-up to the "MAX" launch is an ongoing process. Immediately after the launch, weekly monitoring of the number of new accounts was conducted. A telephone survey of 800 MAX customers was carried out three months after the launch date. A written evaluation of the product was prepared four months after the launch, in September; however, by January, 1990, the report still had not been "signed off" by all the departments involved in developing "MAX".

A normative model of the development process is presented in Figure B.4 and a detailed process flowchart is given in Figure B.5.

FIGURE B.4

MAX: NEW PRODUCT DEVELOPMENT PROCESS

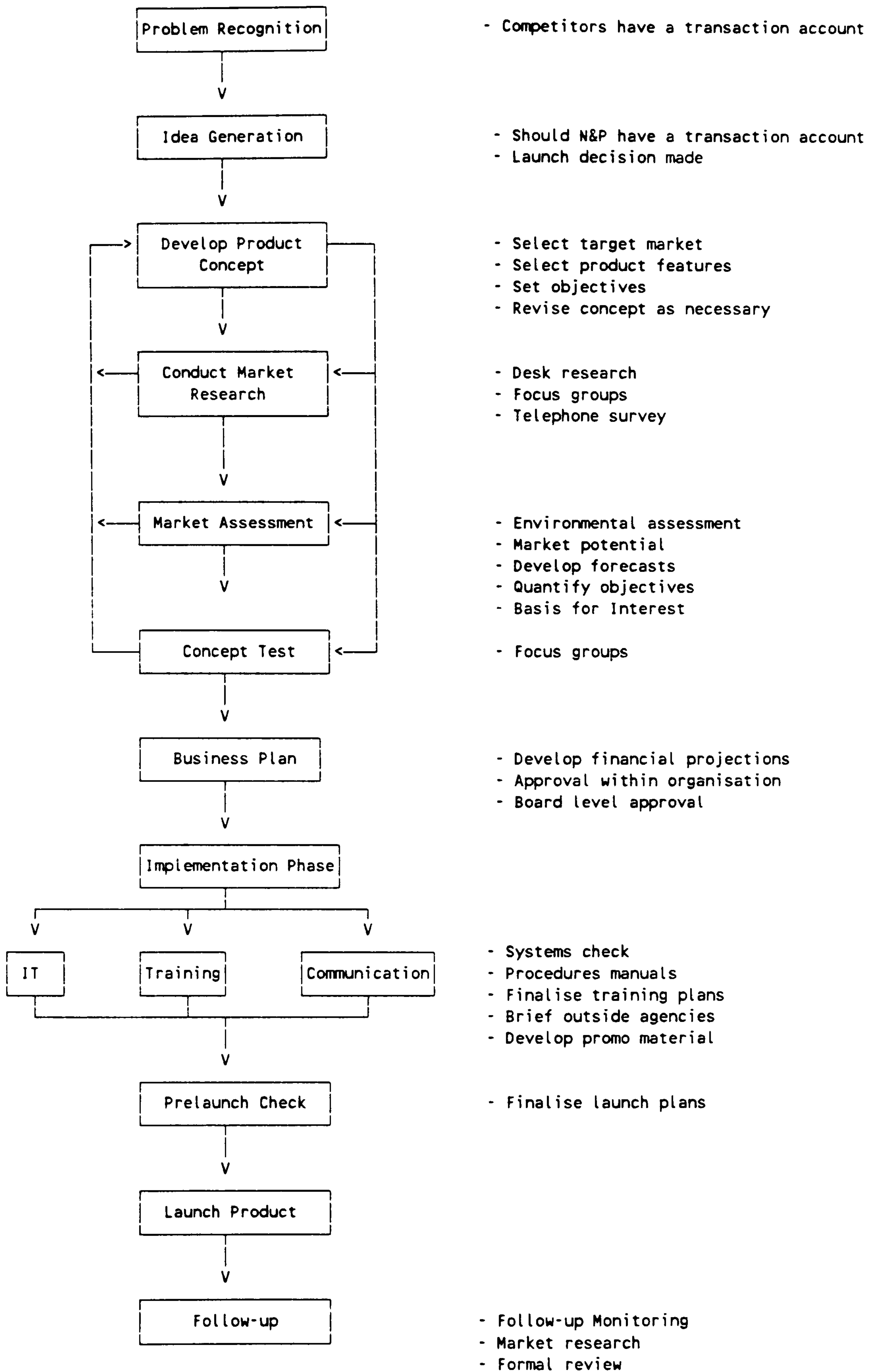
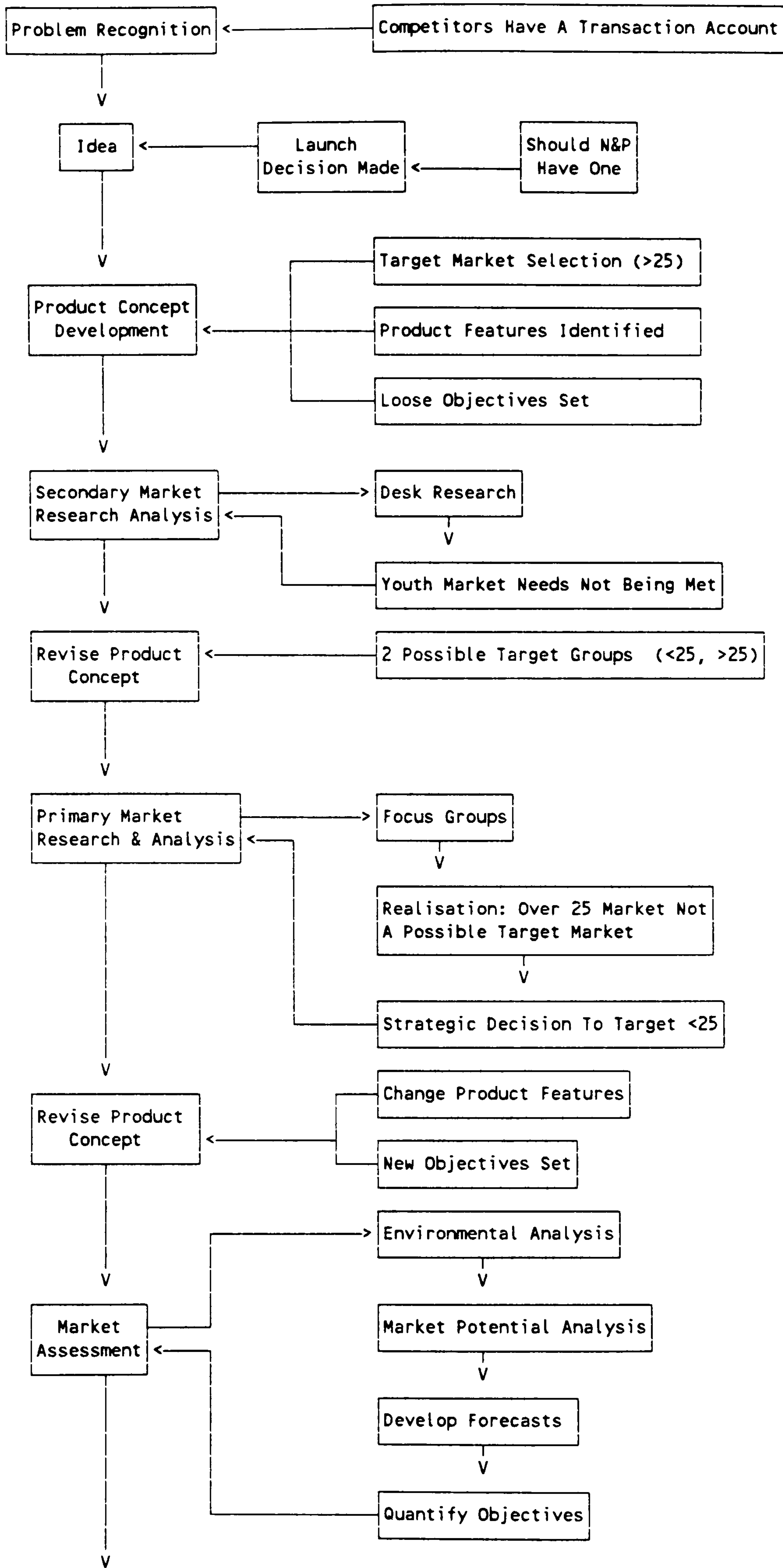
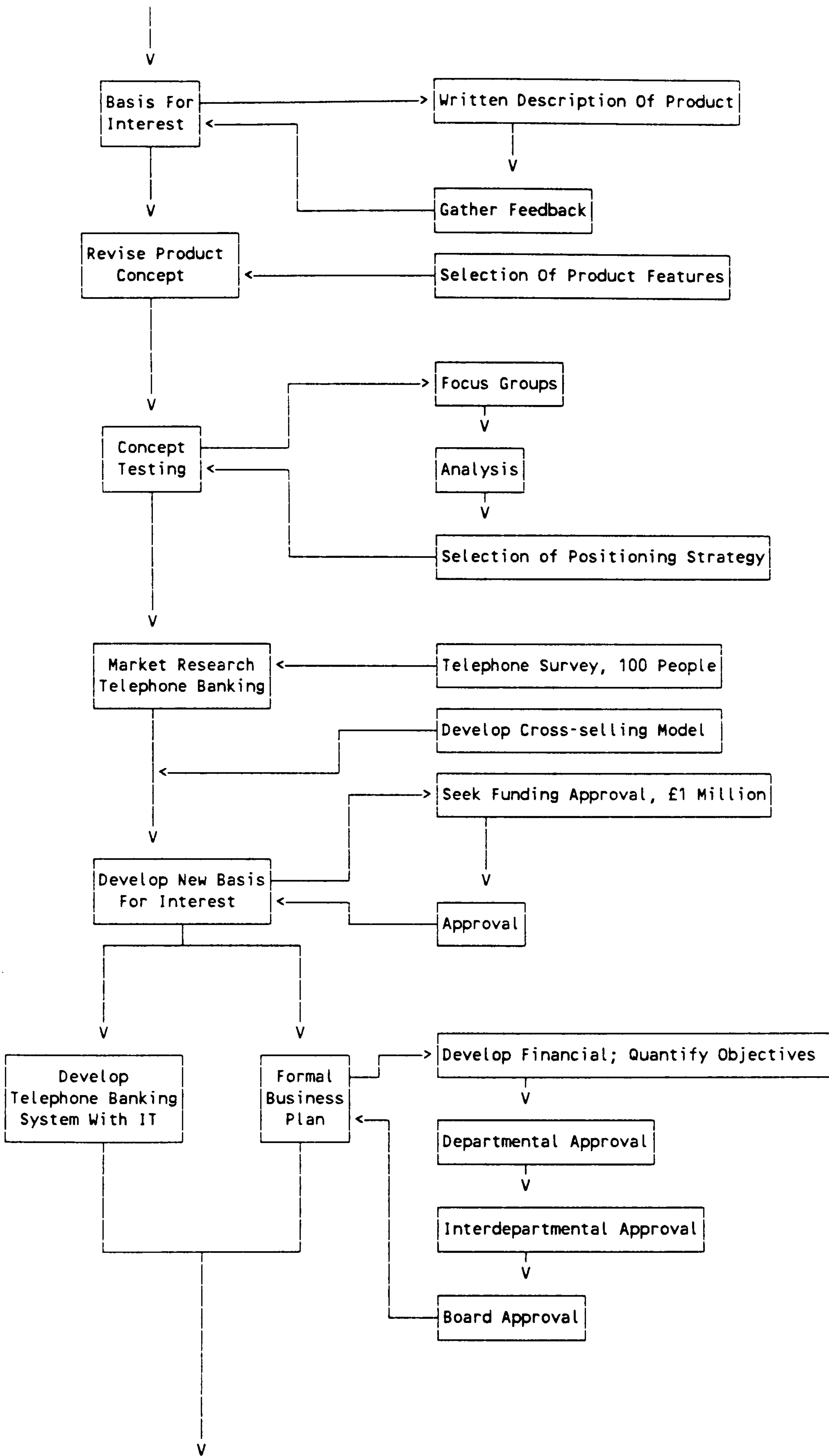


FIGURE B.5

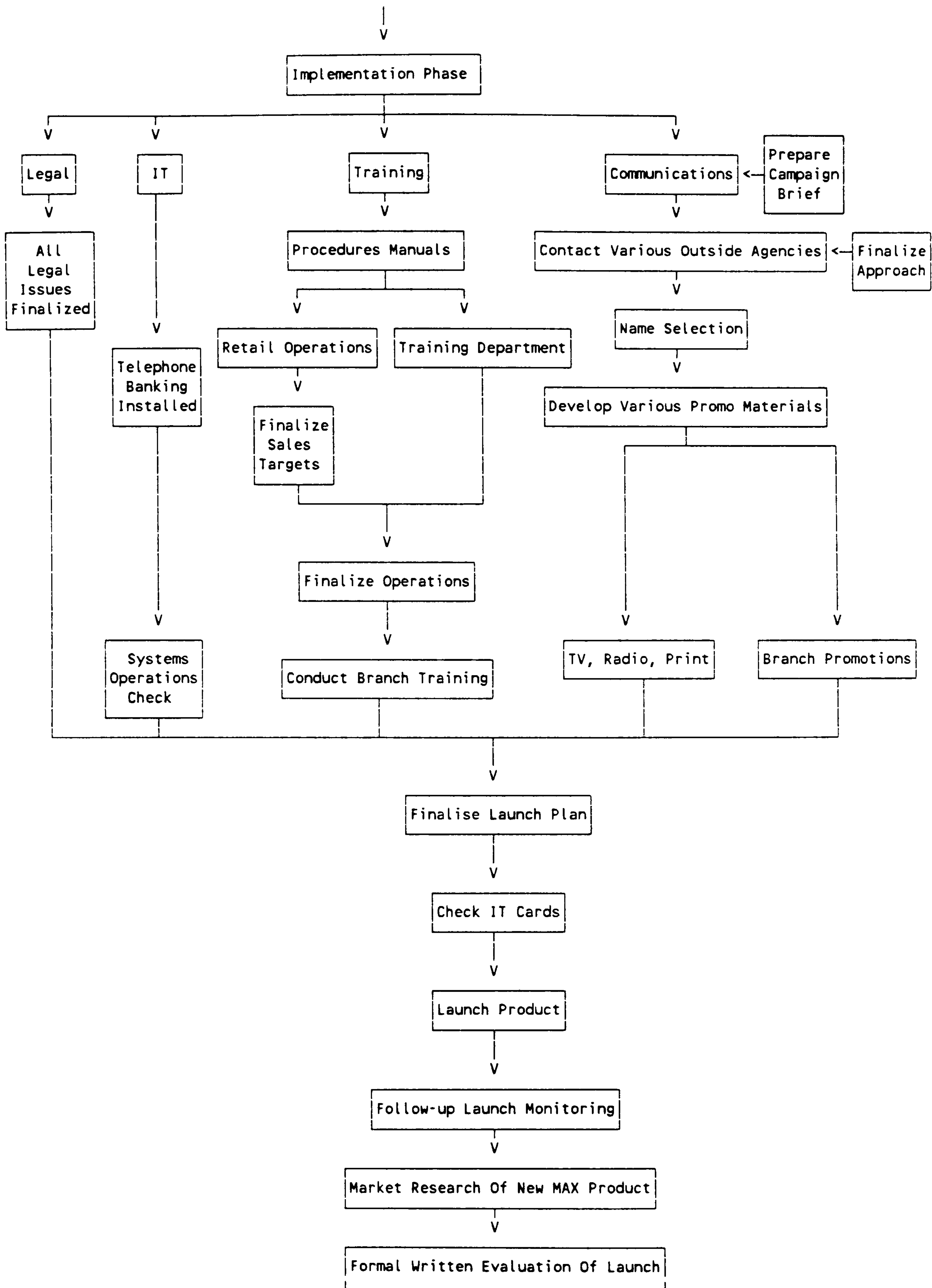
FLOWCHART: NPD PROCESS -- MAX



MAX: NPD Process Continued



MAX: NPD Process Continued



Early indications are that the launch of "MAX" was a success. Of the consumers who have opened "MAX" accounts, 80 percent are new to N&P, and 50 percent are under 25 years of age. The account is used by 27 percent for salary deposit, a figure that has been growing by one percent a month; and 60 percent have registered for telephone banking, although only 28 percent actually use this service. Of these new accounts 40 percent have never been used, a figure comparable with industry averages.

Mr. Jones identified three factors critical to the success of the product:

1. It was a good product to begin with;
2. The high level of enthusiasm he brought into the project;
3. The high level of personal contact that was made with all the people involved with the product.

Interestingly, throughout the product development, a decision as to whether the project should continue (a "go/no go" decision) was never made. As Mr. Jones stated, "It had a life of its own. It just rolled on and rolled on." Further, no internal product launch tests were used; nor were the product attributes tested for consumer acceptance. No pre-testing was conducted on any of the approved advertising material.

Hindsight Several actions that would have improved the development process were identified by Mr. Jones:

1. More testing of branch procedures and training material to ensure the branch staff properly understood the product.
2. Consumer testing of the promotional literature before launching the product.

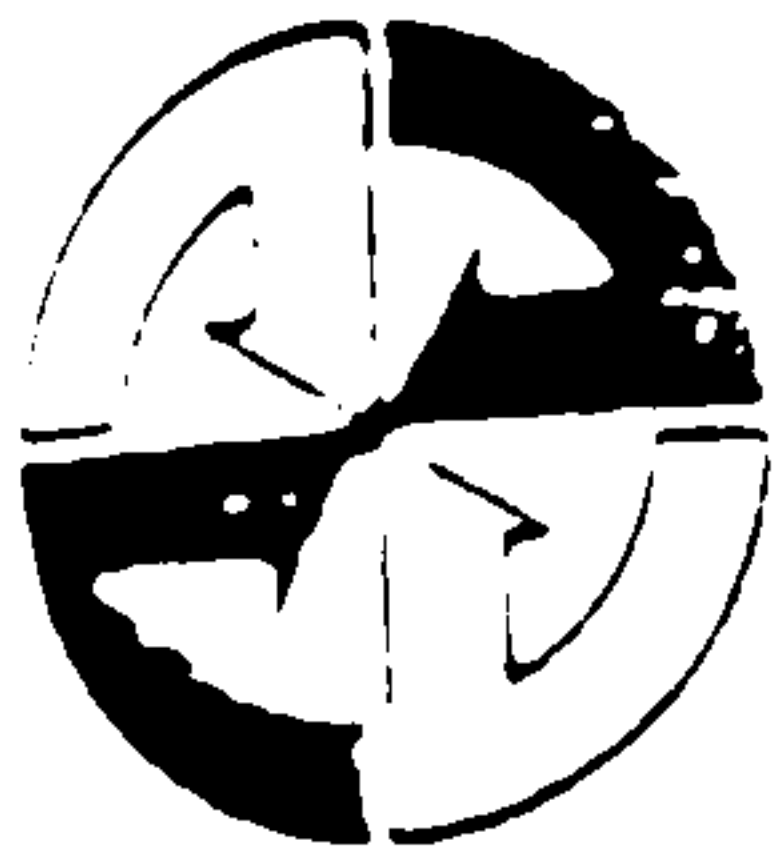
3. Commitment of the various departments involved at the start of the project, before any primary research was conducted.
 4. Better communications with the branch staff selling the product.
 5. Technical aspects of branch procedures conducted as early as possible in staff training, preferably before the formal training begins.
 6. Improve media scheduling by setting formal objectives for audience reach.
 7. Make the product simpler to understand.
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Note: This section is not part of the preceding case study. Instead, it presents the results of a preliminary probe into the applicability of the findings from a U.S. based study to British financial institutions.

PROPOSITIONS ON NEW PRODUCT DEVELOPMENT

Ten propositions have been put forth by Scheuing and Johnson [1989a,b] on new product development, based on their conclusions from research conducted on American financial institutions. To explore whether these propositions may be applied to British building societies, three of the marketing personnel interviewed at N&P were asked to evaluate the statements as either true or false. Although they cannot be generalised to the whole industry, the results do indicate six points of disagreement, three areas of agreement and one area of partial agreement. This suggests that British building societies may differ from the conclusions provided by Scheuing and Johnson on American institutions. The 10 propositions, and the responses from N&P, are presented below.

1. Most financial institutions do have a specialised new product function. **FALSE**
2. Marketing is largely responsible for new products in financial institutions. **TRUE**
3. Marketing research techniques find limited use in the new product development process. **FALSE**
4. The use of a formal new product development process is limited. **FALSE**
5. Most institutions use new product evaluation committees to assess new product ideas. **FALSE**
6. Most institutions use new product project teams to implement new product ideas. **TRUE**
7. New product leaders or champions rarely reap personal rewards from their financial institutions.
PARTIAL AGREEMENT
8. Profitability is the overriding concern when evaluating new products. **FALSE**
9. Competitors are the most powerful idea source for new products. **TRUE**
10. The overall level of new product activity is limited in most financial institutions. **FALSE**



Dear Mr. :

The Management Centre, as part of a continuing research project into the marketing practices of financial services institutions, is currently investigating the importance of new product development to the industry.

One critical aspect of the current study is to identify what makes a new product a success and how financial institutions develop these new products. This research cannot be completed without your help, and we would be most grateful if you would take about 25 minutes to answer the attached questionnaire. In return for your kind assistance, we will be pleased to give you a copy of the final report.

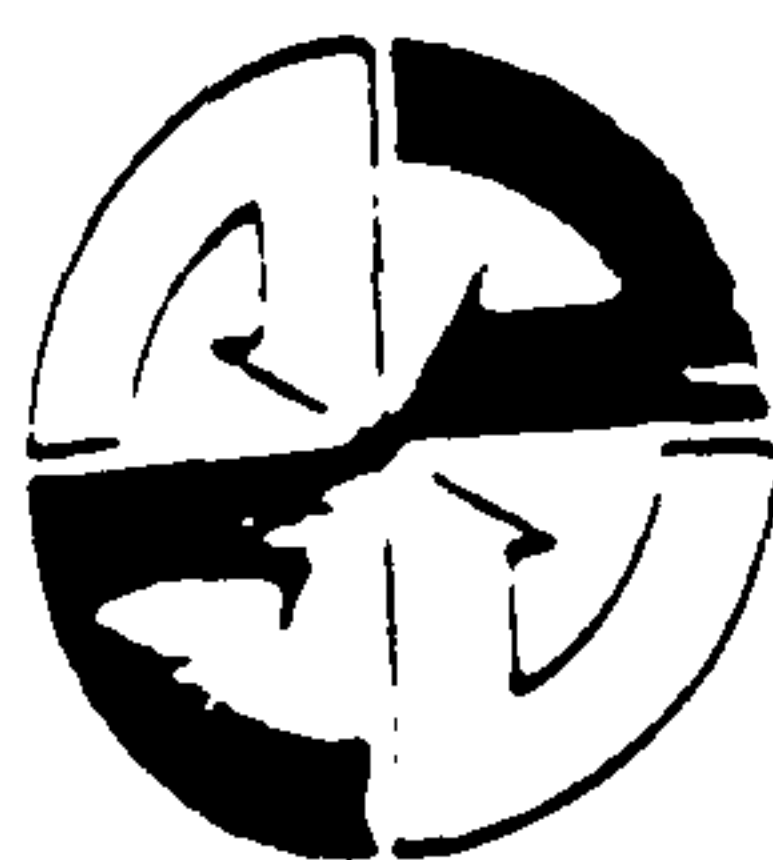
To automatically receive a copy, please fill in the address section on the last page. If you prefer to remain anonymous, please detach and mail it separately. Complete confidentiality is guaranteed. No individual or company will be identified in the research or report. All results will be used only in an industry aggregate format.

This research will also enable me to complete the requirements for a Ph.D. degree and, thus, is very important to me. I need your help to achieve this.

Please accept my thanks in advance for taking the time and effort to complete this survey. I would, again, like to assure you of the complete confidentiality of your response.

Yours sincerely,

Scott Edgett
Research Project Director



UNIVERSITY OF BRADFORD

MANAGEMENT CENTRE EMM LANE BRADFORD WEST YORKSHIRE BD9 4JL UK ☎ 0274 542299

Professor of Marketing: STEPHEN T PARKINSON BA MSc PhD

Dear Sir:

As part of an ongoing research project into the marketing practises of the financial services industry, the University of Bradford Management Centre mailed questionnaires in early May to selected key professionals in the industry.

This research into the new product development process cannot be completed without your help. It is important that we obtain the opinions of practising marketing managers, like yourself.

So we would like to ask you, if you have not already completed and returned the questionnaire, to please spare approximately 25 minutes of your time to assist us in our research.

You may also find the research results useful as an industry professional. As our way of thanking you for your assistance, we would be pleased to give you a copy of the final report on new product development. To obtain a copy, complete the last page of the questionnaire. If you prefer to remain anonymous, detach the form and mail it separately.

Complete confidentiality of your response is guaranteed. No individual or company will be identified in the research or report. All results will be used only in an industry aggregate format.

If you have already completed and returned the survey, please accept our thanks for your kind co-operation.

Yours sincerely,

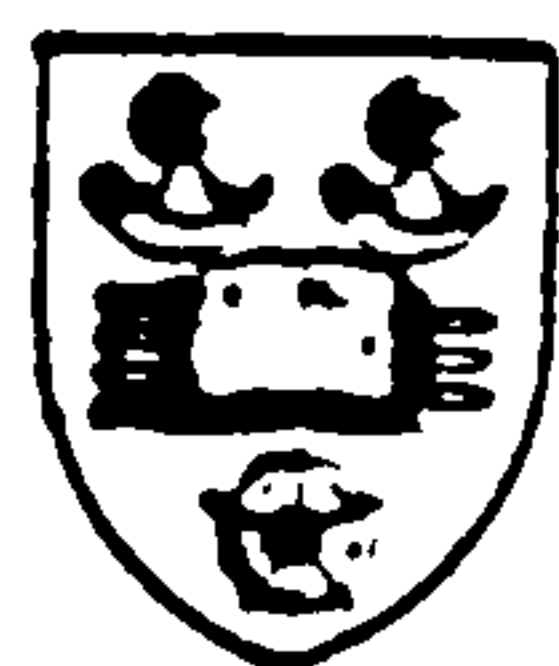
Scott Edgett
Research Project Director

CONFIDENTIAL

NEW PRODUCT DEVELOPMENT
IN FINANCIAL SERVICES

A SURVEY

Scott Edgett
UNIVERSITY OF BRADFORD
Management Centre
Emm Lane, Bradford
West Yorkshire BD9 4JL



NEW PRODUCT DEVELOPMENT

Thank you for taking the time to complete this questionnaire.

Throughout this survey the term 'new product' refers to a product that is new to your company. 'NEW' refers to all types of new products including significant modifications of existing products. However, products that have undergone only minor changes are not considered new.

All answers will be kept strictly confidential.

Part I General Questions On New Product Development

1. In general, to what extent would you say new products in your company are:

	Not At All				To a Large Extent
A. Technology driven - seeking application of technical advances i.e. ATMs	1	2	3	4	5
B. Market driven - looking for ways to meet certain consumer needs	1	2	3	4	5
C. Competitively driven - matching a new product introduced by the competition	1	2	3	4	5

	Yes	No	Do Not Know
2. A. Does your company have a strategic plan? If yes, are new product performance expectations written into the strategic plan?	___	___	___
B. Does your company have a new product programme? If yes, are there clearly defined written objectives for the new product programme?	___	___	___
C. Is the performance of a new product formally measured in your company?	___	___	___

3. Of the following types of new product development processes which approach best describes the practice used by your company? (Please tick one only)

- 1. Formal written procedures exist _____
- 2. Some written guidelines are provided _____
- 3. An informal, but well understood pattern exists _____
- 4. Mostly informal, although some steps have formalized procedures _____
- 5. Each project is handled differently (ad hoc approach) _____

4. How often do the following situations occur in the new product development program in your company?

	Not At All				Very Frequently
Lack of senior management support	1	2	3	4	5
Managements' short term orientation	1	2	3	4	5
Inadequate marketing research	1	2	3	4	5
Lack of a new product strategy	1	2	3	4	5
Delays in a new product's development	1	2	3	4	5
Poor cooperation with other departments	1	2	3	4	5
Insufficient funding of projects	1	2	3	4	5
Not enough personnel assigned	1	2	3	4	5
Not enough time for creative thinking	1	2	3	4	5
Lack of enthusiasm and commitment to the new product by company personnel	1	2	3	4	5

5. Please tick one of the following approaches that best describes your company's approach to screening new product ideas for projects that may be worthy of further investigation. (screening is the process of reviewing ideas)

1. A single individual makes the decision using a formal checklist or rating system _____
2. A single individual makes the decision on an informal basis (no formal techniques) _____
3. A group decision, based on a formal checklist or rating system is used _____
4. A group decision, based on an informal discussion (no formal techniques are used) _____
5. No screening process is used _____

6. Please indicate which, if any, of the following preliminary market assessment techniques are commonly used:

	Never					Always				
1. A review is made of competitors' products	1	2	3	4	5	1	2	3	4	5
2. Secondary/published data is analyzed	1	2	3	4	5	1	2	3	4	5
3. Discussions are held with customer contact staff	1	2	3	4	5	1	2	3	4	5
4. Direct contact is made with customers	1	2	3	4	5	1	2	3	4	5
5. Know market already - internal discussions only	1	2	3	4	5	1	2	3	4	5
6. The assessment is formal and documented	1	2	3	4	5	1	2	3	4	5

.. Please indicate how common an occurrence each of the following activities are for the new product development process in your company.

0 = not at all
 1 = rarely
 2 = sometimes

3 = occasionally
 4 = most of the time
 5 = all of the time

Idea generation	0	1	2	3	4	5
Idea screening	0	1	2	3	4	5
Product concept development (a written description of the product)	0	1	2	3	4	5
Preliminary market investigation	0	1	2	3	4	5
Preliminary technical feasibility	0	1	2	3	4	5
Market research	0	1	2	3	4	5
Preliminary business plan	0	1	2	3	4	5
In-house concept testing (product concept is tested with company employees)	0	1	2	3	4	5
Concept testing with consumers	0	1	2	3	4	5
Product design	0	1	2	3	4	5
Product design testing	0	1	2	3	4	5
Process (procedures) design and testing	0	1	2	3	4	5
System design and testing	0	1	2	3	4	5
Development of a comprehensive marketing plan	0	1	2	3	4	5
Personnel training	0	1	2	3	4	5
Product testing and pilot run	0	1	2	3	4	5
Product test marketing with consumers	0	1	2	3	4	5
Revision of launch plan	0	1	2	3	4	5
Final business plan	0	1	2	3	4	5
Full-scale launch	0	1	2	3	4	5
Post-launch review	0	1	2	3	4	5

8. Please indicate to what extent the following types of market research are used in the new product development process.

	Never				Always
Competitive analysis	1	2	3	4	5
Telephone surveys	1	2	3	4	5
Concept testing	1	2	3	4	5
Product testing	1	2	3	4	5
Test markets	1	2	3	4	5
Consumer panel studies	1	2	3	4	5
Mail questionnaires	1	2	3	4	5
Group discussions (focus groups)	1	2	3	4	5
Secondary/published data (desk research)	1	2	3	4	5
Other (Please specify) _____					

Which of the following approaches to managing new product development used?

	Never	1	2	3	4	Always
1. New Venture Team (special team operating full time on specific projects)	1	2	3	4	5	
2. New Product Committee (consists of top level managers for the purpose of encouraging, coordinating and controlling all the firm's new product efforts)	1	2	3	4	5	
3. Temporary New Product Committee (a temporary committee with the purpose of exploring new product opportunities)	1	2	3	4	5	
4. New Product Department (full time staff that develop new products which are later turned over to various departments)	1	2	3	4	5	
5. New Product Manager (full time person working solely on new product development)	1	2	3	4	5	
6. New Product Group (a number of people are charged with developing a new product)	1	2	3	4	5	
7. Product (Brand) Manager (works part time on new product development and full time on existing brands)	1	2	3	4	5	
8. Ad Hoc Groups (part time, non-permanent groups that work on developing new products with the marketing department)	1	2	3	4	5	
9. Other _____						

10. Please indicate how each of the following statements apply to your organization by circling the appropriate answer.

	No	Yes
1. We have a specialised new product function.	N	Y
2. People from the marketing function are largely responsible for new products.	N	Y
3. Market research techniques find limited use in the new product development process.	N	Y
4. The use of a formal new product development process is limited.	N	Y
5. New product evaluation committees are used to assess new product ideas.	N	Y
6. New product project teams are used to implement new product ideas.	N	Y
7. New product leaders or champions rarely reap personal rewards.	N	Y
8. Profitability is the overriding concern when evaluating new products.	N	Y
9. Competitors are the most powerful idea source for new products.	N	Y
10. The overall level of new product activity is limited.	N	Y

_____, ___ the new products your company has launched onto the market over the previous three years, what percentage do you feel have met or exceeded the company's expectation for the new product? (are clearly a successful product)

_____ %

12. Please estimate the contribution to your company that new products --

	Gross Profit	Sales
Launched during the past three years have made	_____ %	_____ %
Launched during the next three years will make	_____ %	_____ %

13. What is your job title? _____

14. How many years have you been involved in developing new products for a service industry? (Please round part years up)

_____ Years

15. In what ways would you like to see the new product development process improved in your company?

Part II

We would now like to ask you some questions about a new product that you consider to have been successful for your firm. Please select and refer to this one new product for all the questions in this section.

1. What was the single most important performance criteria that has determined the success of the new product that you have just selected?

- | | | | |
|---------------------------|-------|----------------------|-------|
| Sales volume in f's | _____ | Break even | _____ |
| Sales volume in units | _____ | Market share | _____ |
| Informal, rough guesses | _____ | Payback period | _____ |
| Amount of cross-selling | _____ | Consumer recruitment | _____ |
| Gross profit contribution | _____ | Return on investment | _____ |
| Other (Please specify) | _____ | | |

2. Please indicate your level of disagreement or agreement with how each of the following statements reflect the various activities that took place in developing the successful new product you have chosen.

	Strongly Disagree						Strongly Agree
Early Stages							
The new product idea had to pass an initial screening -- "go/no go" -- process before funds were allocated to it.	1	2	3	4	5	6	7
A detailed written description of the product concept was developed very soon after the new product idea was accepted.	1	2	3	4	5	6	7
A thorough review was made of the competitor's products.	1	2	3	4	5	6	7
Customer opinion of the new product was obtained very early in the development process.	1	2	3	4	5	6	7
Preliminary Assessment							
A preliminary market assessment was conducted before any major investment, in time or money, was authorized.	1	2	3	4	5	6	7
Enough time and money was spent on a preliminary market assessment.	1	2	3	4	5	6	7
A sharp, focused definition of the target market was developed in the preliminary market assessment.	1	2	3	4	5	6	7
An initial, preliminary appraisal of the technical merits and difficulties of the project was conducted.	1	2	3	4	5	6	7
The preliminary assessment of the market and technical needs was well supported with written evidence. (documented)	1	2	3	4	5	6	7
Market Research							
A detailed market study, that involved primary market research, was conducted before developing a financial analysis.	1	2	3	4	5	6	7
There was a clear idea of the type of information that was trying to be obtained through market research.	1	2	3	4	5	6	7
A good definition of the product concept was developed before beginning a field or customer survey.	1	2	3	4	5	6	7

	Strongly Disagree					Strongly Agree	
	1	2	3	4	5	6	7
Market research, involving a large enough sample of respondents, a formal design, and a consistent data collection procedure was used.	1	2	3	4	5	6	7
Business/Financial Analysis							
Written objectives for the new product were developed before a business/financial analysis was conducted.	1	2	3	4	5	6	7
A thorough and realistic business analysis was conducted.	1	2	3	4	5	6	7
A formal go/no go decision was made after conducting a financial/business analysis.	1	2	3	4	5	6	7
A detailed business analysis was undertaken after product development, but before a full scale launch.	1	2	3	4	5	6	7
Product Design and Research							
Enough time and effort was spent on the actual design and development of the product features.	1	2	3	4	5	6	7
The product concept received numerous revisions throughout the development process.	1	2	3	4	5	6	7
Each new major revision of the product concept resulted in additional market research.	1	2	3	4	5	6	7
Enough time was spent on testing the new product to ensure all the information technology aspects worked properly.	1	2	3	4	5	6	7
Once the product was developed, in-house product testing occurred.	1	2	3	4	5	6	7
Good measures and objectives were developed to judge consumer test markets.	1	2	3	4	5	6	7
A test market or trial sell of the product occurred.	1	2	3	4	5	6	7
There was good control over the test markets conducted with customers.	1	2	3	4	5	6	7
Launch							
A full-scale launch occurred with an identifiable set of marketing activities specific to this product.	1	2	3	4	5	6	7
All the various communication materials were in place or ready prior to the market launch.	1	2	3	4	5	6	7
The market launch was well co-ordinated.	1	2	3	4	5	6	7
A strong advertising, promotion and marketing communication effort was behind the launch of this product.	1	2	3	4	5	6	7
Project Management							
Sufficient financial resources were allocated to the development project.	1	2	3	4	5	6	7
During the various stages in the development process a series of "go/no go" decisions were made.	1	2	3	4	5	6	7
The advertising, promotion and communication effort was well targeted -- at the right customers.	1	2	3	4	5	6	7
We were sure of the new product design from a technical viewpoint -- there were no design 'bugs' or technical deficiencies.	1	2	3	4	5	6	7
The total cost of developing this product was within budget.	1	2	3	4	5	6	7
The new product was kept as simple as possible. Needless complications were avoided.	1	2	3	4	5	6	7

	Strongly Disagree					Strongly Agree	
	1	2	3	4	5	6	7
There was strong support for the new product once it was launched.	1	2	3	4	5	6	7
External							
We felt our product was clearly superior to competing products in terms of meeting customers' needs.	1	2	3	4	5	6	7
The product fitted well with our current image of the company in the market place.	1	2	3	4	5	6	7
We were first to market with this type of product.	1	2	3	4	5	6	7
By the time we commercialized our product, we understood our potential customers' needs and wants for their product.	1	2	3	4	5	6	7
We understood the customers' purchase decision well -- the 'who, what, when, where and how' of his purchase behaviour.	1	2	3	4	5	6	7
We knew well the size of the potential market for our product.	1	2	3	4	5	6	7
We were very confident about the commercial success of the product.	1	2	3	4	5	6	7
The product class itself was totally new to our company.	1	2	3	4	5	6	7
Potential customers had a great need for this class of product.	1	2	3	4	5	6	7
The market for this product was growing very quickly.	1	2	3	4	5	6	7
Organizational							
There was a high level of awareness within the company that this new product was being developed.	1	2	3	4	5	6	7
People from other functional groups were included in the development process as early as possible.	1	2	3	4	5	6	7
People involved in the project knew why they were involved.	1	2	3	4	5	6	7
All people involved in the project were aware of the potential benefit this product would be to the company.	1	2	3	4	5	6	7
The various people involved in developing this product were well qualified for their tasks.	1	2	3	4	5	6	7
There was a high level of commitment and enthusiasm exhibited by all members of the project team.	1	2	3	4	5	6	7
There was good co-ordination among people and departments involved in the project throughout the development process.	1	2	3	4	5	6	7
The marketing case was well made and understood at all levels in the company	1	2	3	4	5	6	7
Senior management placed strong and visible support behind the project.	1	2	3	4	5	6	7
One individual strongly supported the new product throughout the various phases of the development process.	1	2	3	4	5	6	7
The retail branches were geared up and supported the product launch.	1	2	3	4	5	6	7
Branch employees were well trained in the new product before it was publicly launched.	1	2	3	4	5	6	7
There was a high level of commitment among the people tasked with selling the new product.	1	2	3	4	5	6	7
The actual development process became more formal within the company as the development process evolved.	1	2	3	4	5	6	7
Enough resources -- time, money and people -- were used for the market launch.	1	2	3	4	5	6	7

Part III

We would now like to ask you some questions about a new product that you consider to have not been successful for your firm. Please select and refer to this one new product for all the questions in this section.

1. What was the single most important performance criteria that has determined the lack of success of the new product that you have just selected?

- | | | | |
|---------------------------|-------|----------------------|-------|
| Sales volume in \$'s | _____ | Break even | _____ |
| Sales volume in units | _____ | Market share | _____ |
| Informal, rough guesses | _____ | Payback period | _____ |
| Amount of cross-selling | _____ | Consumer recruitment | _____ |
| Gross profit contribution | _____ | Return on investment | _____ |
| Other (Please specify) | _____ | | |

2. Please indicate your level of disagreement or agreement with how each of the following statements reflect the various activities that took place in developing the new product you have chosen as an unsuccessful product.

	Strongly Disagree			Strongly Agree			
	1	2	3	4	5	6	7
Early Stages							
The new product idea had to pass an initial screening -- "go/no go" -- process before funds were allocated to it.	1	2	3	4	5	6	7
A detailed written description of the product concept was developed very soon after the new product idea was accepted.	1	2	3	4	5	6	7
A thorough review was made of the competitor's products.	1	2	3	4	5	6	7
Customer opinion of the new product was obtained very early in the development process.	1	2	3	4	5	6	7
Preliminary Assessment							
A preliminary market assessment was conducted before any major investment, in time or money, was authorized.	1	2	3	4	5	6	7
Enough time and money was spent on a preliminary market assessment.	1	2	3	4	5	6	7
A sharp, focused definition of the target market was developed in the preliminary market assessment.	1	2	3	4	5	6	7
An initial, preliminary appraisal of the technical merits and difficulties of the project was conducted.	1	2	3	4	5	6	7
The preliminary assessment of the market and technical needs was well supported with written evidence. (documented)	1	2	3	4	5	6	7
Market Research							
A detailed market study, that involved primary market research, was conducted before developing a financial analysis.	1	2	3	4	5	6	7
There was a clear idea of the type of information that was trying to be obtained through market research.	1	2	3	4	5	6	7
A good definition of the product concept was developed before beginning a field or customer survey.	1	2	3	4	5	6	7

	Strongly Disagree					Strongly Agree	
	1	2	3	4	5	6	7
Market research, involving a large enough sample of respondents, a formal design, and a consistent data collection procedure was used.	1	2	3	4	5	6	7
Business/Financial Analysis							
Written objectives for the new product were developed before a business/financial analysis was conducted.	1	2	3	4	5	6	7
A thorough and realistic business analysis was conducted.	1	2	3	4	5	6	7
A formal go/no go decision was made after conducting a financial/business analysis.	1	2	3	4	5	6	7
A detailed business analysis was undertaken after product development, but before a full scale launch.	1	2	3	4	5	6	7
Product Design and Research							
Enough time and effort was spent on the actual design and development of the product features.	1	2	3	4	5	6	7
The product concept received numerous revisions throughout the development process.	1	2	3	4	5	6	7
Each new major revision of the product concept resulted in additional market research.	1	2	3	4	5	6	7
Enough time was spent on testing the new product to ensure all the information technology aspects worked properly.	1	2	3	4	5	6	7
Once the product was developed, in-house product testing occurred.	1	2	3	4	5	6	7
Good measures and objectives were developed to judge consumer test markets.	1	2	3	4	5	6	7
A test market or trial sell of the product occurred.	1	2	3	4	5	6	7
There was good control over the test markets conducted with customers.	1	2	3	4	5	6	7
Launch							
A full-scale launch occurred with an identifiable set of marketing activities specific to this product.	1	2	3	4	5	6	7
All the various communication materials were in place or ready prior to the market launch.	1	2	3	4	5	6	7
The market launch was well co-ordinated.	1	2	3	4	5	6	7
A strong advertising, promotion and marketing communication effort was behind the launch of this product.	1	2	3	4	5	6	7
Project Management							
Sufficient financial resources were allocated to the development project.	1	2	3	4	5	6	7
During the various stages in the development process a series of "go/no go" decisions were made.	1	2	3	4	5	6	7
The advertising, promotion and communication effort was well targeted -- at the right customers.	1	2	3	4	5	6	7
We were sure of the new product design from a technical viewpoint -- there were no design 'bugs' or technical deficiencies.	1	2	3	4	5	6	7
The total cost of developing this product was within budget.	1	2	3	4	5	6	7
The new product was kept as simple as possible. Needless complications were avoided.	1	2	3	4	5	6	7

	Strongly Disagree					Strongly Agree	
	1	2	3	4	5	6	7
There was strong support for the new product once it was launched.	1	2	3	4	5	6	7
External							
We felt our product was clearly superior to competing products in terms of meeting customers' needs.	1	2	3	4	5	6	7
The product fitted well with our current image of the company in the market place.	1	2	3	4	5	6	7
We were first to market with this type of product.	1	2	3	4	5	6	7
By the time we commercialized our product, we understood our potential customers' needs and wants for their product.	1	2	3	4	5	6	7
We understood the customers' purchase decision well -- the 'who, what, when, where and how' of his purchase behaviour.	1	2	3	4	5	6	7
We knew well the size of the potential market for our product.	1	2	3	4	5	6	7
We were very confident about the commercial success of the product.	1	2	3	4	5	6	7
The product class itself was totally new to our company.	1	2	3	4	5	6	7
Potential customers had a great need for this class of product.	1	2	3	4	5	6	7
The market for this product was growing very quickly.	1	2	3	4	5	6	7
Organizational							
There was a high level of awareness within the company that this new product was being developed.	1	2	3	4	5	6	7
People from other functional groups were included in the development process as early as possible.	1	2	3	4	5	6	7
People involved in the project knew why they were involved.	1	2	3	4	5	6	7
All people involved in the project were aware of the potential benefit this product would be to the company.	1	2	3	4	5	6	7
The various people involved in developing this product were well qualified for their tasks.	1	2	3	4	5	6	7
There was a high level of commitment and enthusiasm exhibited by all members of the project team.	1	2	3	4	5	6	7
There was good co-ordination among people and departments involved in the project throughout the development process.	1	2	3	4	5	6	7
The marketing case was well made and understood at all levels in the company	1	2	3	4	5	6	7
Senior management placed strong and visible support behind the project.	1	2	3	4	5	6	7
One individual strongly supported the new product throughout the various phases of the development process.	1	2	3	4	5	6	7
The retail branches were geared up and supported the product launch.	1	2	3	4	5	6	7
Branch employees were well trained in the new product before it was publicly launched.	1	2	3	4	5	6	7
There was a high level of commitment among the people tasked with selling the new product.	1	2	3	4	5	6	7
The actual development process became more formal within the company as the development process evolved.	1	2	3	4	5	6	7
Enough resources -- time, money and people -- were used for the market launch.	1	2	3	4	5	6	7

please return this questionnaire in the enclosed PREPAID envelope

THANK YOU FOR YOUR KIND COOPERATION

If you would like to receive a copy of the findings of this research please provide your name and address in the space below. If you prefer to remain anonymous then detach this page and return it separately.

NAME _____

COMPANY _____

ADDRESS _____

Scott Edgett
Room B2.02
University of Bradford
Management Centre
Emm Lane, Bradford
West Yorkshire, BD9 4JL

APPENDIX D

T-TEST RESULTS FOR QUESTION SIX

- Q61 = A review is made of competitors' products.
Q62 = Secondary/published data is analyzed.
Q63 = Discussions are held with customer contact staff.
Q64 = Direct contact is made with customers.

	t Value	D.F.	p
Q61 - Q62	8.07	66	.0001
Q61 - Q63	8.74	65	.0001
Q61 - Q64	14.35	65	.0001
Q62 - Q63	1.48	65	NS
Q62 - Q64	7.39	65	.0001
Q63 - Q64	5.83	65	.0001
Q61 & Q62-Q63 & Q64	10.76	65	.0001

Note: The question on the survey is:
Please indicate which, if any, of the following preliminary market assessment techniques are commonly used.

The above t-test results are for various paired comparisons that were conducted.

APPENDIX E

ITEM-TOTAL CORRELATIONS FOR NPD ACTIVITIES

Activity	Item-Total Correlations
Idea Generation	.4818
Idea Screening	.6634
Product Concept Development (Written)	.5937
Preliminary Market Investigation	.7168
Preliminary Technical Feasibility	.6420
Market Research	.7149
Preliminary Business Plan	.7604
In-House Concept Testing	.4226
Concept Testing With Consumers	.5558
Product Design	.6501
Product Design Testing	.6336
Process Design and Testing (Procedures)	.5785
System Design and Testing	.5614
Comprehensive Marketing Plan	.7637
Personnel Training	.4971
Product Testing and Pilot Run	.5348
Product Test Marketing With Consumers	.6339
Revision of Launch Plan	.6872
Financial Business Plan	.6654
Full scale Launch	.5384
Post-Launch Review	.6713

Cronbach's Alpha = .9337

Standardized Item Alpha = .9356

Note: Item - Total correlations are a measure of reliability for Question 7 of the questionnaire.

APPENDIX F

OCCURRENCE OF NPD ACTIVITIES

Please indicate how common an occurrence each of the following activities are for the new product development process in your company.

0 = Not at All
 1 = Rarely
 2 = Sometimes

3 = Occasionally
 4 = Most of the Time
 5 = All of the Time

Activity	0	1	2	3	4	5
Idea Generation	2 (3.0)	7 (10.4)	9 (13.4)	21 (31.3)	24 (35.8)	4 (6.0)
Idea Screening	4 (6.0)	10 (14.9)	11 (16.4)	12 (17.9)	26 (38.8)	4 (6.0)
Product Concept Development (Written)	3 (4.5)	6 (9.0)	5 (7.5)	14 (20.9)	22 (32.8)	17 (25.4)
Preliminary Market Investigation	4 (6.0)	7 (10.4)	10 (14.9)	11 (16.4)	26 (38.8)	9 (13.4)
Preliminary Technical Feasibility	4 (6.0)	5 (7.5)	7 (10.4)	10 (14.9)	26 (38.2)	15 (22.4)
Market Research	9 (13.4)	15 (22.4)	8 (11.9)	15 (22.4)	14 (20.9)	6 (9.0)
Preliminary Business Plan	5 (7.5)	6 (9.0)	16 (23.9)	17 (25.4)	16 (23.9)	7 (10.4)
In-House Concept Testing	14 (21.2)	16 (24.2)	13 (19.7)	13 (19.7)	6 (9.1)	4 (6.1)
Concept Testing with Consumers	24 (35.8)	16 (23.8)	6 (9.0)	13 (19.4)	8 (11.9)	0 (0.0)
Product Design	3 (4.5)	6 (9.0)	8 (11.9)	14 (20.9)	18 (26.9)	18 (26.9)
Product Design Testing	12 (17.9)	13 (19.4)	17 (25.4)	12 (17.9)	7 (10.4)	6 (9.0)
Process Design and Testing (Procedures)	6 (9.2)	9 (13.8)	11 (16.9)	11 (16.9)	15 (23.1)	13 (20.0)
System Design and Testing	5 (7.6)	5 (7.6)	9 (13.6)	14 (21.2)	17 (25.8)	16 (24.2)
Comprehensive Marketing Plan	2 (3.0)	4 (6.0)	9 (13.4)	18 (26.9)	25 (37.3)	9 (13.4)
Personnel Training	2 (3.0)	2 (3.0)	4 (6.0)	12 (17.9)	26 (38.8)	21 (31.3)
Product Testing and Pilot Run	12 (17.9)	18 (26.9)	14 (20.9)	14 (20.9)	8 (11.9)	1 (1.5)

APPENDIX F - Continued

OCCURRENCE OF NPD ACTIVITIES

Activity	0	1	2	3	4	5
Product Test Marketing With Consumers	20 (29.9)	19 (28.4)	12 (17.9)	12 (17.9)	3 (4.5)	1 (1.5)
Revision of Launch Plan	6 (9.0)	8 (11.9)	14 (20.9)	25 (37.3)	9 (13.4)	5 (7.5)
Financial Business Plan	7 (10.4)	4 (6.0)	14 (20.9)	17 (25.4)	15 (22.4)	10 (14.9)
Full Scale Launch	4 (6.0)	2 (3.0)	5 (7.5)	11 (16.4)	27 (40.3)	18 (26.9)
Post-Launch Review	4 (6.0)	4 (6.0)	6 (9.0)	11 (16.4)	22 (32.8)	20 (29.9)

To be read as: Two respondents, or 3.0 percent, reported not conducting any idea generation activities.

Note: Numbers in brackets are percentages.

APPENDIX G

NPD ACTIVITIES COMPARISON

Activity	Mean	
	This Study	Scheuing & Johnson
Idea Generation	3.0	3.7
Idea Screening	2.9	3.6
Concept Development	3.4	3.9
Concept Testing	1.8	2.8
Profit Analysis	2.8	3.9
Sales Forecasting	2.8	3.9
Product Design	3.4	3.4
Product Design & Test	2.1	3.4
Process Design & Test	3.1	3.9
System Design & Test	3.3	3.9
Marketing Programme	3.3	3.3
Personnel Training	3.8	4.5
Product Test and Pilot	1.9	2.8
Test Marketing	1.4	2.2
Full-Scale Launch	3.6	4.2
Post-Launch Review	3.5	4.6

Note: Items were measured on a 7 - point scale.

APPENDIX H

MEANS FOR THE SUCCESS VARIABLES

Variable Number	Variable Description	Total		Means for		
		Mean	SD	Large	Medium	Small
Early Stages						
1.	The new product idea had to pass an initial screening -- "go/no go" -- process before funds were allocated to it.	5.02	1.90	5.44	4.67	4.38
2.	A detailed written description of the product concept was developed very soon after the new product idea was accepted.	5.35	1.39	5.71	4.89	5.08
3.	A thorough review was made of the competitor's products.	6.00	1.36	6.35	5.78	5.38
4.	Customer opinion of the new product was obtained very early in the development process.	3.40	1.86	3.85	2.89	2.92
Preliminary Assessment						
5.	A preliminary market assessment was conducted before any major investment, in time or money, was authorized.	4.28	1.99	4.91	3.72	3.38
6.	Enough time and money was spent on a preliminary market assessment.	4.03	1.86	4.38	3.61	3.69
7.	A sharp, focused definition of the target market was developed in the preliminary market assessment.	4.52	2.05	4.94	3.94	4.23
8.	An initial, preliminary appraisal of the technical merits and difficulties of the project was conducted.	4.75	1.79	5.38	3.83	4.38
9.	The preliminary assessment of the market and technical needs was well supported with written evidence. (documented)	4.00	1.94	4.85	2.78	3.46
Market Research						
10.	A detailed market study, that involved primary market research, was conducted before developing a financial analysis.	3.03	2.03	3.68	2.00	2.77
11.	There was a clear idea of the type of information that was trying to be obtained through market research.	3.65	2.18	4.32	2.72	3.15
12.	A good definition of the product concept was developed before beginning a field or customer survey.	3.77	2.25	4.44	3.11	2.92
13.	Market research, involving a large enough sample of respondents, a formal design, and a consistent data collection procedure was used.	2.51	1.92	3.09	1.50	2.38
Business/Financial Analysis						
14.	Written objectives for the new product were developed before a business/financial analysis was conducted.	4.54	1.84	5.06	3.83	4.15
15.	A thorough and realistic business analysis was conducted.	4.45	1.83	4.94	3.78	4.08
16.	A formal go/no go decision was made after conducting a financial/business analysis.	4.75	1.85	5.53	3.78	4.08
17.	A detailed business analysis was undertaken after product development, but before a full scale launch.	3.65	1.94	4.71	2.33	2.69
Product Design and Research						
18.	Enough time and effort was spent on the actual design and development of the product features.	5.02	1.62	5.26	4.39	5.23
19.	The product concept received numerous revisions throughout the development process.	4.58	1.62	4.88	4.39	4.08
20.	Each new major revision of the product concept resulted in additional market research.	2.08	1.51	2.38	1.72	1.77
21.	Enough time was spent on testing the new product to ensure all the information technology aspects worked properly.	3.95	1.96	4.44	3.56	3.23

APPENDIX H continued

MEANS FOR THE SUCCESS VARIABLES

Variable Number	Variable Description	Total Mean	SD	Means for		
				Large	Medium	Small
22.	Once the product was developed, in-house product testing occurred.	3.18	2.08	3.24	3.28	2.92
23.	Good measures and objectives were developed to judge consumer test markets.	2.85	1.91	3.06	2.67	2.54
24.	A test market or trial sell of the product occurred.	2.06	1.81	2.18	1.83	2.08
25.	There was good control over the test markets conducted with customers.	2.09	1.77	2.32	1.67	2.08
	Launch					
26.	A full-scale launch occurred with an identifiable set of marketing activities specific to this product.	5.66	1.66	6.18	5.00	5.23
27.	All the various communication materials were in place or ready prior to the market launch.	5.77	1.52	5.91	5.44	5.85
28.	The market launch was well co-ordinated.	5.65	1.35	5.94	5.33	5.31
29.	A strong advertising, promotion and marketing communication effort was behind the launch of this product.	5.43	1.55	5.59	5.11	5.46
	Project Management					
30.	Sufficient financial resources were allocated to the development project.	4.89	1.74	4.94	4.89	4.77
31.	During the various stages in the development process a series of "go/no go" decisions were made.	4.28	1.94	4.76	3.22	4.46
32.	The advertising, promotion and communication effort was well targeted -- at the right customers.	5.20	1.74	5.76	4.39	4.85
33.	We were sure of the new product design from a technical viewpoint -- there were no design 'bugs' or technical deficiencies.	5.06	1.73	5.18	5.28	4.46
34.	The total cost of developing this product was within budget.	5.69	1.50	5.74	5.72	5.54
35.	The new product was kept as simple as possible. Needless complications were avoided.	5.74	1.43	5.74	5.33	6.31
36.	There was strong support for the new product once it was launched.	5.94	1.10	6.15	5.61	5.85
	External					
37.	We felt our product was clearly superior to competing products in terms of meeting customers' needs.	5.95	1.05	6.24	5.39	6.00
38.	The product fitted well with our current image of the company in the market place.	6.06	1.01	6.26	5.78	5.92
39.	We were first to market with this type of product.	3.91	2.30	4.32	3.28	3.69
40.	By the time we commercialized our product, we understood our potential customers' needs and wants for their product.	5.17	1.67	5.62	4.89	4.38
41.	We understood the customers' purchase decision well -- the 'who, what, when, where and how' of his purchase behaviour.	4.91	1.66	5.24	4.67	4.38
42.	We knew well the size of the potential market for our product.	4.60	1.84	4.94	4.44	3.92
43.	We were very confident about the commercial success of the product.	5.28	1.43	5.44	5.06	5.15
44.	The product class itself was totally new to our company.	3.95	2.37	3.97	3.83	4.08

APPENDIX H continued

MEANS FOR THE SUCCESS VARIABLES

Variable Number	Variable Description	Total Mean	SD	Means for		
				Large	Medium	Small
45.	Potential customers had a great need for this class of product.	5.31	1.48	5.59	5.17	4.77
46.	The market for this product was growing very quickly.	5.06	1.69	4.94	5.00	5.46
Organizational						
47.	There was a high level of awareness within the company that this new product was being developed.	5.25	1.50	5.21	5.06	5.62
48.	People from other functional groups were included in the development process as early as possible.	4.88	1.95	5.65	4.17	3.85
49.	People involved in the project knew why they were involved.	5.65	1.41	5.94	5.39	5.23
50.	All people involved in the project were aware of the potential benefit this product would be to the company.	5.46	1.56	5.62	5.28	5.31
51.	The various people involved in developing this product were well qualified for their tasks.	5.40	1.48	5.71	4.89	5.31
52.	There was a high level of commitment and enthusiasm exhibited by all members of the project team.	5.49	1.31	5.53	5.39	5.54
53.	There was good co-ordination among people and departments involved in the project throughout the development process.	5.28	1.41	5.41	5.00	5.31
54.	The marketing case was well made and understood at all levels in the company	5.17	1.49	5.41	5.06	4.69
55.	Senior management placed strong and visible support behind the project.	5.69	1.30	5.59	5.61	6.08
56.	One individual strongly supported the new product throughout the various phases of the development process.	5.65	1.65	5.85	5.39	5.46
57.	The retail branches were geared up and supported the product launch.	5.62	1.64	6.15	5.00	5.08
58.	Branch employees were well trained in the new product before it was publicly launched.	5.37	1.60	5.47	4.83	5.85
59.	There was a high level of commitment among the people tasked with selling the new product.	5.49	1.39	5.82	4.83	5.54
60.	The actual development process became more formal within the company as the development process evolved.	4.60	1.46	4.74	4.39	4.54
61.	Enough resources -- time, money and people -- were used for the market launch.	4.77	1.66	4.91	4.78	4.38

SD = standard deviation; seven point scale where 1 = strongly disagree and 7 = strongly agree.

APPENDIX H continued

MEANS FOR THE FAILURE VARIABLES

Variable Number	Variable Description	Total		Asset Size		
		Mean	SD	Large	Medium	Small
Early Stages						
1.	The new product idea had to pass an initial screening -- "go/no go" -- process before funds were allocated to it.	4.45	1.95	4.28	4.53	4.89
2.	A detailed written description of the product concept was developed very soon after the new product idea was accepted.	4.80	1.70	4.75	4.80	5.00
3.	A thorough review was made of the competitor's products.	4.95	1.86	5.06	5.00	4.44
4.	Customer opinion of the new product was obtained very early in the development process.	2.36	1.72	2.50	2.00	2.44
Preliminary Assessment						
5.	A preliminary market assessment was conducted before any major investment, in time or money, was authorized.	3.20	1.83	3.63	2.47	2.89
6.	Enough time and money was spent on a preliminary market assessment.	2.86	1.84	3.09	2.40	2.78
7.	A sharp, focused definition of the target market was developed in the preliminary market assessment.	3.45	1.91	3.60	2.93	3.78
8.	An initial, preliminary appraisal of the technical merits and difficulties of the project was conducted.	4.14	1.72	4.50	3.40	4.11
9.	The preliminary assessment of the market and technical needs was well supported with written evidence. (documented)	3.23	1.65	3.69	2.47	2.89
Market Research						
10.	A detailed market study, that involved primary market research, was conducted before developing a financial analysis.	1.80	1.13	1.94	1.40	2.00
11.	There was a clear idea of the type of information that was trying to be obtained through market research.	2.20	1.38	2.38	1.67	2.44
12.	A good definition of the product concept was developed before beginning a field or customer survey.	2.64	1.66	2.97	2.13	2.33
13.	Market research, involving a large enough sample of respondents, a formal design, and a consistent data collection procedure was used.	1.86	1.35	1.97	1.33	2.33
Business/Financial Analysis						
14.	Written objectives for the new product were developed before a business/financial analysis was conducted.	3.63	1.87	3.81	3.33	3.44
15.	A thorough and realistic business analysis was conducted.	2.91	1.70	2.88	3.00	2.89
16.	A formal go/no go decision was made after conducting a financial/business analysis.	3.68	2.14	4.03	3.13	3.33
17.	A detailed business analysis was undertaken after product development, but before a full scale launch.	2.70	1.78	3.06	2.00	2.56
Product Design and Research						
18.	Enough time and effort was spent on the actual design and development of the product features.	4.11	1.81	3.81	4.93	3.78
19.	The product concept received numerous revisions throughout the development process.	3.82	1.67	3.97	3.67	3.56
20.	Each new major revision of the product concept resulted in additional market research.	1.88	1.32	1.78	2.07	1.89
21.	Enough time was spent on testing the new product to ensure all the information technology aspects worked properly.	3.34	2.15	3.28	3.67	3.00

APPENDIX H continued

MEANS FOR THE FAILURE VARIABLES

Variable Number	Variable Description	Total Mean	SD	Asset Size		
				Large	Medium	Small
22.	Once the product was developed, in-house product testing occurred.	2.43	1.88	2.34	2.40	2.78
23.	Good measures and objectives were developed to judge consumer test markets.	2.18	1.43	2.19	2.13	2.22
24.	A test market or trial sell of the product occurred.	1.80	1.45	1.78	1.67	2.11
25.	There was good control over the test markets conducted with customers.	1.79	1.36	1.81	1.67	1.89
Launch						
26.	A full-scale launch occurred with an identifiable set of marketing activities specific to this product.	4.41	1.95	4.63	4.33	3.78
27.	All the various communication materials were in place or ready prior to the market launch.	5.11	1.79	4.91	5.40	5.33
28.	The market launch was well co-ordinated.	4.63	1.81	4.50	4.73	4.89
29.	A strong advertising, promotion and marketing communication effort was behind the launch of this product.	3.91	2.05	3.69	4.07	4.44
Project Management						
30.	Sufficient financial resources were allocated to the development project.	4.04	1.89	3.88	4.67	3.56
31.	During the various stages in the development process a series of "go/no go" decisions were made.	3.34	1.87	3.63	3.01	2.78
32.	The advertising, promotion and communication effort was well targeted -- at the right customers.	4.04	1.85	3.97	4.33	3.78
33.	We were sure of the new product design from a technical viewpoint -- there were no design 'bugs' or technical deficiencies.	4.14	1.96	3.69	4.80	4.67
34.	The total cost of developing this product was within budget.	5.57	1.66	5.43	5.80	5.67
35.	The new product was kept as simple as possible. Needless complications were avoided.	5.32	1.71	5.07	5.73	5.56
36.	There was strong support for the new product once it was launched.	3.36	1.60	3.72	3.13	2.44
External						
37.	We felt our product was clearly superior to competing products in terms of meeting customers' needs.	4.16	1.69	4.06	4.47	4.00
38.	The product fitted well with our current image of the company in the market place.	4.77	1.66	5.03	4.47	4.33
39.	We were first to market with this type of product.	2.79	1.94	2.91	2.60	2.67
40.	By the time we commercialized our product, we understood our potential customers' needs and wants for their product.	3.18	1.73	3.03	3.40	3.33
41.	We understood the customers' purchase decision well -- the 'who, what, when, where and how' of his purchase behaviour.	3.05	1.61	3.31	2.80	2.56
42.	We knew well the size of the potential market for our product.	3.54	1.99	3.28	4.13	3.44
43.	We were very confident about the commercial success of the product.	3.82	1.65	3.56	4.27	4.00
44.	The product class itself was totally new to our company.	4.29	2.40	4.00	4.87	4.33

APPENDIX H continued

MEANS FOR THE FAILURE VARIABLES

Variable Number	Variable Description	Total		Asset Size		
		Mean	SD	Large	Medium	Small
45.	Potential customers had a great need for this class of product.	3.84	1.71	3.59	4.60	3.44
46.	The market for this product was growing very quickly.	3.77	1.58	3.63	4.20	3.56
Organizational						
47.	There was a high level of awareness within the company that this new product was being developed.	4.08	1.93	3.97	4.07	4.44
48.	People from other functional groups were included in the development process as early as possible.	4.11	1.83	4.38	3.80	3.67
49.	People involved in the project knew why they were involved.	4.48	1.80	4.47	4.47	4.56
50.	All people involved in the project were aware of the potential benefit this product would be to the company.	4.29	1.83	4.13	4.40	4.67
51.	The various people involved in developing this product were well qualified for their tasks.	5.09	1.54	5.00	5.20	5.22
52.	There was a high level of commitment and enthusiasm exhibited by all members of the project team.	4.25	1.56	4.00	4.53	4.67
53.	There was good co-ordination among people and departments involved in the project throughout the development process.	4.52	1.43	4.34	4.60	5.00
54.	The marketing case was well made and understood at all levels in the company	3.79	1.86	3.47	4.13	4.33
55.	Senior management placed strong and visible support behind the project.	4.52	1.93	4.19	4.67	5.44
56.	One individual strongly supported the new product throughout the various phases of the development process.	5.38	1.87	5.75	4.80	5.00
57.	The retail branches were geared up and supported the product launch.	4.20	1.61	4.09	4.20	4.56
58.	Branch employees were well trained in the new product before it was publicly launched.	4.14	1.66	3.81	4.33	5.00
59.	There was a high level of commitment among the people tasked with selling the new product.	3.96	1.69	3.72	4.13	4.56
60.	The actual development process became more formal within the company as the development process evolved.	3.54	1.53	3.41	3.60	3.89
61.	Enough resources -- time, money and people -- were used for the market launch.	3.71	1.91	3.34	4.20	4.22

SD = standard deviation

Scale: Seven point scale where 1 = strongly disagree and 7 = strongly agree

APPENDIX I

COMMUNALITY VALUES FOR THE FINAL FACTOR SOLUTION

Variable	Communality	Variable	Communality
1	.59384	31	.68852
2	.72533	32	.71309
3	.60574	33	.70617
4	.63452	36	.75636
5	.69279	37	.80002
6	.61354	38	.80802
7	.68798	40	.72109
8	.80755	41	.72061
9	.74650	42	.74685
10	.79675	43	.73799
11	.84580	45	.74778
12	.74013	46	.63328
13	.76216	47	.64109
14	.78647	48	.74550
15	.82540	49	.82786
16	.81519	50	.78374
17	.77096	51	.61321
18	.68560	52	.79060
19	.75959	53	.78647
21	.62508	54	.76427
22	.75946	55	.67554
23	.69730	57	.62267
26	.72987	58	.69987
27	.64206	59	.67279
28	.78623	60	.71524
29	.78159	61	.74223
30	.64690		

Variable descriptions are given in Appendix 7.1.

The eight missing variable numbers represent the eight variables that were not included in the factor analysis.

To be read as: The final communality value of variable one, for the final 11 factor solution, is .59384.

Note: Communality values indicate the amount of variance in a single variable that is explained from the selected factors (11) taken together.

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