

**SOUTH AFRICAN MULTINATIONAL PHARMACEUTICAL ORGANISATIONS:  
FACING CHANGE AND FUTURE CHALLENGES IN A MANAGED HEALTH CARE  
ENVIRONMENT**

by

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for the degree of

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at the

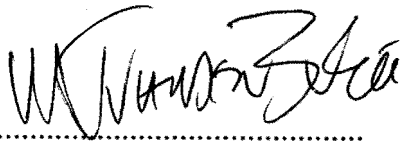
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I declare that "South African multinational pharmaceutical organisations: facing change and future challenges in a managed health care environment" is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.



.....  
SIGNATURE

(Mr M J van den Berg)

.....  
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## ACKNOWLEDGMENTS

Marcel Hyme once gave a young author the following advice:

“Don’t be too impressed by long words  
They stand for small things  
All the big things on the other hand,  
have short names: life, death, fear,  
joy, hope, love”

I would like to add the words “thank you” and thank the people who were involved in this research project.

My Creator for the mental ability granted to me.

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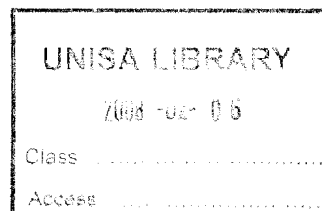
My kids, Kayleigh and Gavin Lawrence, for their support and understanding when Daddy could not play with them.

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My Mother and Dad who always believed in me.

Marius J van den Berg

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A journey of a thousand miles start with the first step

John F Kennedy

## **EXECUTIVE SUMMARY**

The South African health care environment is a two-tier health care delivery system consisting of the public sector and the private sector. The focus of this study is on the private health care sector. Private health care is funded by medical schemes through employer and employee contributions. The private sector is also the most profitable sector for multinational pharmaceutical organisations to market and sell their products within the South African health care environment.

The major cost saving initiative by employers and medical schemes in the private health care sector has also been the introduction of managed health care initiatives. The goal of managed health care is to establish a system which delivers value by giving people access to quality and cost-effective healthcare.

The new reality of managed health care initiatives are changing the boundaries of the South African pharmaceutical industry. The managed health care wake is overturning the business processes which made the pharmaceutical industry so successful and are rendering obsolete the industry's conventional models of corporate strategy and management systems. In the context of these turbulent changes, pharmaceutical companies are being forced simultaneously to develop new strategic approaches for the future, design new business processes which will link them more firmly to their new customers, and implement the cultural changes necessary to accomplish the transformation from yesterday's successful pharmaceutical company to tomorrow's customer-led, integrated health care supplier.

The way forward lies in three organising concepts. The first is customer alignment. The effort of transformation must start with an understanding of how the customer defines the value of the services and/or products offered by the organisation. Everything that follows involves aligning internal processes with external contingencies. The second is sequencing. It is vital to understand not just what needs to happen first in the transformation process, but also what the subsequent steps is and in what order the steps need to be undertaken. The third organising concept is learning. The sequence of interventions that lead to organisational transformation must occur in such a way as to maximize the ability of the organisation to learn: from customers and the marketplace, and from itself.

## **KEY TERMS**

South African Health Care Environment, Medical Schemes Industry, Restructuring National Health System, Pharmaceutical Industry, Managed Health Care, Disease Management, Change Management, Organisational Transformation, New Core Competencies, Strategic Positioning

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## **CHAPTER 1**

### **BACKGROUND AND AIM OF STUDY**

#### **1.1 INTRODUCTION**

The domain of the term health is as broad and complex as the entire scope of human activities. The World Health Organisation (WHO) describes health as a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity (Ncayiyana 1995:10). The World Health Organisation (WHO Technical Report Series, No.55:7) adapted Winslow's (1923) definition to define public health as:

the science and art of preventing disease, prolonging life, and promoting mental and physical health and efficiency through the organised community efforts for the sanitation of the environment, the control of communicable infections, the education of the individual in personal hygiene, the organisation of medical and nursing services for the early diagnosis and preventive treatment of disease and the development of social machinery to ensure to every individual a standard of living adequate for the maintenance of health, so organizing these benefits as to enable every citizen to realise his birthright of health and longevity (WHO Technical Report Series, No.55: 7).

Bernard, Coburn and Miani (2000:23) define health in the context of managed health care as: a clinical improvement process aimed at ensuring that the best practices known to medical science are incorporated with minimal variation over the entire continuum of care

Each and every human being is concerned about the concept of health - directly or indirectly, individually or collectively, consciously or unconsciously. A "state of good health" is the most basic prerequisite for performing the tasks and duties associated with the diverse roles that individuals assume at different stages in their lives. The concept of health is intimately related to the idea of quality of life, and is used to refer to the functioning abilities not only of individuals, but also of organisations, societies and nations.

According to Levey and Loomba (1984:3), "If one does not feel well, other satisfactions (material and nonmaterial) are typically diminished and in some cases eliminated."

Over the last decade the paradigm of whom the private health care consumer is has moved dramatically towards the managed health care scenario. In the United States the 20<sup>th</sup> century witnessed the transformation from rural to an urban society, from an individual orientation to institutional domination, from agricultural to manufacturing economy, and from self employment to employee status in increasingly larger businesses. During the same period medical practice made the transformation from generalist to specialist, from solo to group practice, from fee-for-service to group payment, and from a cottage industry to corporate management of medical care (Kongstvedt 1989:3).



Managed medical care - a uniquely American development - dates back about sixty years. During that period group practices and group payment for health developed with the evolution into the popular marketable entities called health maintenance organizations (Kongstvedt 1989:5). With the globalization strategies of companies the concept of managed health care is taking roots in Europe, South America, Australasia and South Africa.

## **1.2 THE NEED FOR A NEW PARADIGM IN THE SOUTH AFRICAN HEALTH ENVIRONMENT**

### **1.2.1 The impact of health care inflation**

Whereas open-ended, largely unbridled budgets for medical care were characteristic of the United States health policy in the 1960s, by the end of the decade there were already hints of a change in political attitude toward the American health care delivery system. The rapid escalation of health care prices in the 1960s and beyond had many causes. General inflation was a major factor; the cost of goods and services in the economy increased. The health care sector, however, experienced more severe inflation than the rest of the economy. Another factor contributing to price increases was greater scientific and technological sophistication, which led to an increase in the complexity of services provided per patient. The same factor increased hospital prices significantly owing to costs associated with the purchase of equipment, the training of specialised employees, and the maintenance of complex machines. Demographic factors also contributed to the increased costs of health care. Not only did the United States population continue to grow, but MediCare and MediAid (health care for the old and poor) subsidies enlarged the patient population by many thousands who previously could not afford care. Moreover, the American population is aging. The elderly commonly have chronic diseases that necessitate more hospital admissions, tests and treatments (Metz 1999:250). On the average, annual medical care for a person more than 65 cost more than two and a half times than that for a 35-year-old (Stoline and Weiner 1988:35-37). The inflation of health care prices in the United States occurred at a time when productivity was lagging and many organisations found themselves in fierce competition. Managers examined their operating expenses for ways to cut costs. Only then did they realize the extent to which health care costs were reducing profits. Findings like these drove more and more employers to look for alternative health insurance arrangements for their employees.

To cease providing employee health insurance might have been a simpler solution, but tax exemptions were a significant advantage for both employer and employee and union opposition to such a move could have courses be anticipated. The most common strategy that was adopted by large American organisations was self insurance. Under this arrangement, which is administered by a managed care organisation, all or most employee claims for medical care are paid out of funds set aside from general operating budgets (Stoline and Weiner 1988:40-43).

This approach has grown in popularity over the years; it is estimated that more than 80% of employees with company-sponsored benefits are covered by some form of a managed health care insurance plan (Hughes, 1999)

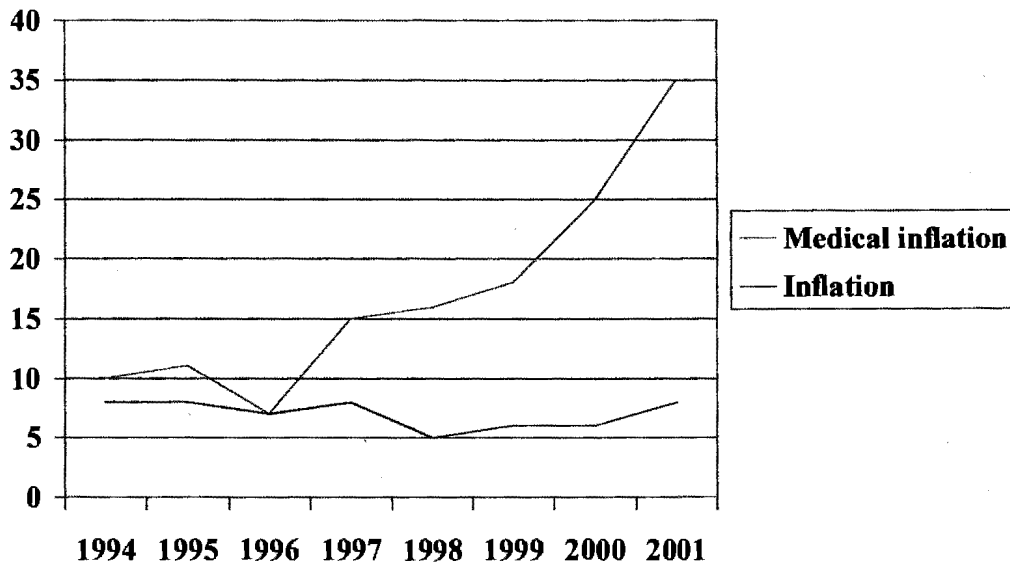


Figure 1.1 Medical inflation versus general inflation in South Africa (*Health Annals* 2001:34)

South Africa has faced similar problems in the early 1990s and health care costs to employees is still increasing. The reason for these increasing health care cost will be discussed in chapter 2.

### 1.2.2 The South African health care environment

The South African health care environment is a two-tier health care delivery system consisting of the public sector and the private sector:

- (1) private health care funded by medical schemes, which covered up to 20% of the country's population, the vast majority of whom were from the White section of the population
- (2) a public sector, which was characterized by fragmentation (no less than 14 health authorities), a resultant irrational use of resources, poor working conditions and inadequate infrastructure (Gotlieb 2000:1).

The legacy of apartheid policies in South Africa has created large disparities between racial groups in socioeconomic status, occupation, education, housing and health. These policies created a fragmented health system, which resulted in inequitable access to health care. The inequities in private and public health care sectors in South Africa are reflected in Chapter 2 of this thesis.

According to the Old Mutual health care survey (1999:2-3) the average contribution increase for private health care patients over the past two years was 12% and 16%. These figures are well above general inflation. The trend is consistent with surveys done in 1994, 1995 and 1997 by Old Mutual. Similar figures are not available for the public sector.

As a result of the two tier systems of health care delivery many South Africans face substantial obstacles in obtaining access to adequate health services, including geographical and financial barriers, and those caused by disorganised and poor quality services which are primarily the legacy of the apartheid health care system. These problems impact profoundly on the health status of those who depend on public sector services, and particularly the poor. Dealing with these problems is therefore a fundamental precondition for the fulfilment of the Reconstruction and Development Plan and its specific goals of providing access to adequate health care services for the entire population and meeting basic needs. That is why the South African government has proposed the implementation of primary health care (PHC) system which will be discussed in Chapter 5. Primary health care approach embodies the concept of community development, and is based on full community participation in the planning, provision, control and monitoring of health care services. It aims to reduce inequalities in access to health services, especially in the rural and deprived communities.

This primary health care delivery mechanism will not form part of the research project but has been added to the theoretical framework to show that there is an alternative health care delivery mechanisms available to the public sector.

The main focus of this research project will be the private sector as the bulk of ethical pharmaceutical sales are sold in this sector. The private sector is also the most profitable sector for multinational pharmaceutical organisations to market and sell their products within the South African health care environment. In the private sector the same arguments have been put forward for the increased health care costs in South Africa as was the case in the United States.

- # Cost shifting by providers. The *Genesis Report* (1995:2) defines cost shifting as the redistribution of payment resources. Typically, cost shifting occurs when discount on provider services is obtained by one payer, and the providers increase costs to another payer to make up the difference
- # Rising remuneration of physicians, nurses and other allied health professionals
- # Increasing hospital costs and utilisation of out patient services

- # The cost of medical technology, for example heart transplants (Kim 2000:3)
- # The increase in certain catastrophic cases, such as AIDS (Rudman & Otto 1999:108)
- # Inappropriate or unnecessary surgery and laboratory testing
- # The aging population

The following two arguments are specific to only the South African health care environment.

- # The depreciation of the Rand since February 1996 (Golieb 2000:3)
- # Fraud and abuse within the claims processing system (The Pharma Strategy Group, 1997:24)

### **1.2.3 The introduction of managed health care as a cost saving initiative**

The major cost saving initiative by employers in the private health care sector has also been mainly the introduction of managed health care initiatives. The goal of managed health care is to establish a system which delivers value by giving people access to quality and cost-effective healthcare (Chetty 1999:1). The Genesis Report (1995:4) defines managed health care as a system that integrates the financing and delivery of appropriate health care services to covered individuals by means of the following basic elements:

- arrangements with selected providers to furnish a comprehensive set of health care services to members
- explicit criteria for the selection of health care providers
- formal a programme for ongoing quality assurance and utilisation review programmes
- significant financial incentives for members to use providers and procedures associated with the plan.

Managed health care as a health care delivery mechanism will be discussed in Chapter 6.

Rudman and Otto (1999:108) list six objectives of an effective health care delivery system:

- (1) cost control and reduction
- (2) maintenance and improvement of care
- (3) efficient allocation of resources
- (4) management of service delivery
- (5) improvement of effectiveness in preventative care
- (6) optimal utilisation of new technology.

The success of primary health care and managed health care as health care delivery mechanisms will ultimately be measured against these objectives.

The impact of managed health care as a health care delivery system for South Africa on multinational pharmaceutical organisations will be the focus of the research project.

### **1.3 SOUTH AFRICAN MULTINATIONAL PHARMACEUTICAL ORGANISATIONS: FACING CHANGES**

The new reality of cost saving initiatives by employers in the private health care sector through the introduction of managed health care initiatives are changing the boundaries of the South African pharmaceutical industry. The managed health care wake is overturning the management practices which made the pharmaceutical industry so successful and are rendering obsolete the industry's conventional models of strategy and structure.

In the context of these turbulent changes, pharmaceutical companies are being forced simultaneously to develop new strategic approaches for the future, design new structures which will link them more firmly to their new customers, and implement the cultural changes necessary to accomplish the transformation from yesterday's successful pharmaceutical company to tomorrow's customer-led, integrated health care supplier.

In chapter 4, theoretical foundation, the theory of change, strategy and organisational transformation will be discussed as organisations must understand what the most crucial factors are in determining its ability, or inability, to create and sustain competitive advantage (Porter, 1990:2). Competitive strategy is a combination of the ends (goals) for which the firm is striving and the means (policies) by which it seeks to get there. Different organisations use different terms like "mission" or "objective" instead of "goals", and some organisations use "tactics" instead of "operating" or "functional policies".

Yet the essential notion of strategy is captured in the distinction between ends and means (Porter, 1980:xvi). Industry analysis is one of the most useful forms of strategic analysis, which is why it is widely practised as well as preached. Careful industry analysis can help establish whether a particular industry is likely to prove attractive to the “average” competitor and can also shed light on profit differences among the competitors in that industry. More broadly, industry analysis illuminates the competitive landscape in a way that aids the formulation of effective strategies (Fahey and Randall 1994:171).

Porter’s “dynamic diamond” framework, as discussed in his book *The competitive advantage of nations* (Porter 1990:69), was used to create a model to work from to investigate the major factors influencing business transformation in a pharmaceutical organisation in a managed health care environment.

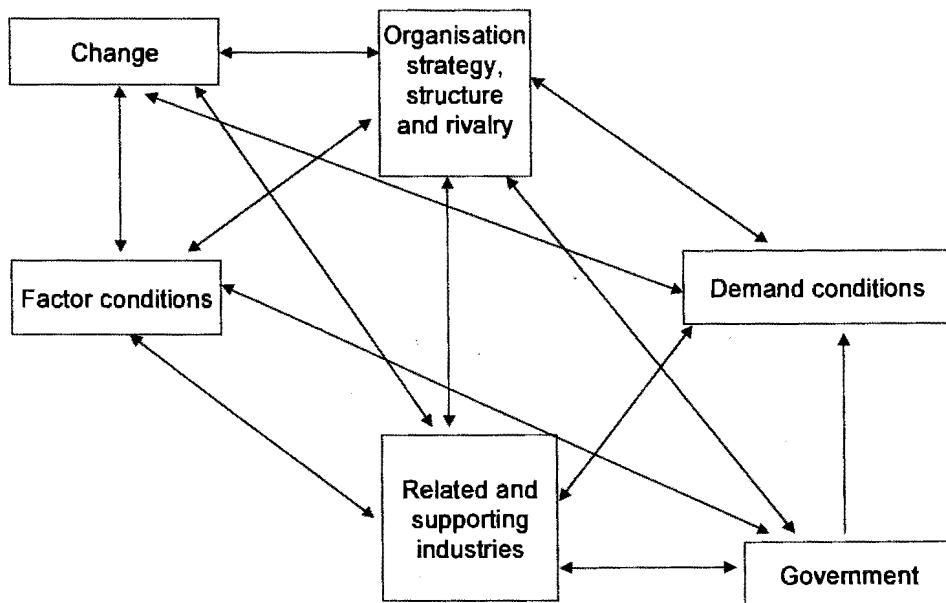


Figure 1.2 Porters’ “dynamic diamond” framework (Porter 1990:127)

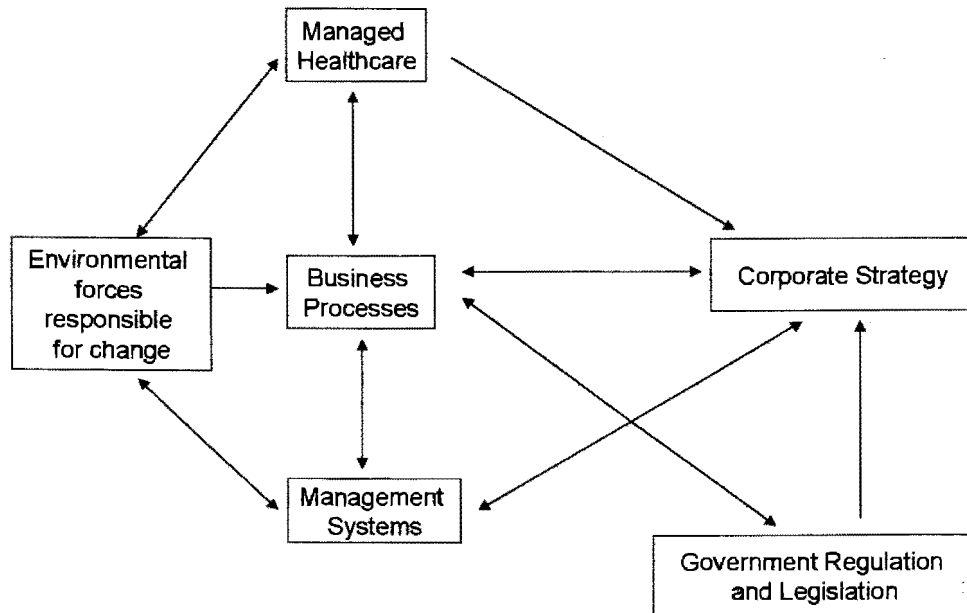


Figure 1.3 Managed care business transformation diamond

#### 1.4 THE RESEARCH PROBLEM AND ITS SETTING

The purpose of this research was to identify and evaluate the impact of managed health care, as a health care delivery mechanism for the private health care market, on the South African multinational pharmaceutical organisation. The primary health care delivery mechanism for the public sector falls outside the research project.

The first subproblem was to theoretically establish what is understood by managed health care and then to determine if it is transferable (from the United States) and a viable option for controlling the ever increasing health care costs in South Africa under the proposed aims of the ANC government health care policy.

Secondly, the purpose was to determine the possible impact that the change in the environment, brought about by managed health care, will have on the modus operandi of multinational pharmaceutical organisations in South Africa. What should the pharmaceutical organisation's corporate strategy be to adapt to the change envisaged by managed health care?

## **1.5 THE METHODOLOGY OF THE STUDY**

A comprehensive literature search was done on the topic. On completion of the literature search it was decided to use the Porter model as the theoretical framework (figure 1.2). The questionnaire (see appendix 1) was designed in four parts around the managed care business transformation diamond (figure 1.3). The first section collected demographic data on and tested attitudes towards managed health care in South Africa. The second section established the importance versus performance of core competencies in marketing, sales and general business functions, as perceived by respondents in a managed health care environment. The third section collected some actions which pharmaceutical companies might take to keep their competitive advantage and the importance of listed terms as a contribution to their future competitiveness in a managed health care environment. The last section is a measure of where the organisation presently stands in the turbulent health care environment.

The demographic data sought in the first section were to determine the current designation of the respondent and in which main market sector the respondent company/division operates.

## **1.6 BASIC OVERVIEW OF THE STUDY**

The study examines the South African health care environment and provides insights to what are the factors that are driving health care costs in the private health care market. The study also investigates the concept of managed health care as a health care delivery mechanism for the private sector and its transferability to South Africa to curb increasing health care costs. The study was designed through a literature search and a questionnaire to get a better understanding of the key drivers in managed health care and the resulting key issues facing multinational pharmaceutical organisations over the next few years. These key issues will provide a strategic approach on how to address and transform the modus operandi of multinational pharmaceutical organisations in a managed health care delivery mechanism.

## **1.7 CONCLUSION**

By the year 2005, the health care industry in South Africa will have changed drastically if the country follows the USA trend of introducing managed health care to reduce health care costs. Facing such prospects, many multinational pharmaceutical organisations have engaged in strategic planning regarding managed healthcare. A central goal of this strategic planning is to help the multinational pharmaceutical organisations adapt to the changing market environment. This can be achieved, in part, by orienting business (pharmaceutical products and services) towards managed healthcare, that is, the pharmaceutical organisations should strive to provide goods and services which managed healthcare companies want and can afford to buy.



However, the Institute for the Future (2000:5) in their report, *Health and Health Care 2010* is of the opinion that managed health care will lead to volatility and uncertainty in the pharmaceutical industry. They also believed (2000:6) that the future of the health care industry is managed health care and that it will dominate the health care marketplace in the new decade and beyond.

In their article, *Innovation fails to shield Glaxo in HMO world*, Moore and Tanouye say that for decades pharmaceutical organisations pursued a simple axiom: if you build a new medicine, riches will come. But in the current world of cost-control medicine, innovative research is simply no longer enough. Now health maintenance organisations and pharmacy benefit managers - the driving forces behind managed health care - demand proof that new drugs, even innovative ones, are better values than older, cheaper drugs (*The Wall Street Journal*, January 25, 1995).

On international trends, The Institute for the Future (1998:19) states that a number of pharmaceutical companies have already realised the change and that their organisational structure includes expertise in health economics as well as the systematic linkage of six corporate strategies:

- (a) product development strategy
- (b) pricing strategy
- (c) reimbursement strategy
- (d) marketing strategy
- (e) product/price integration strategy
- (f) a company strategy to enter the debate on national resource allocation strategies which influence the share of the total health care expenditure going to medicine.

## **CHAPTER 2**

### **THE SOUTH AFRICAN HEALTH CARE ENVIRONMENT**

#### **2.1 INTRODUCTION**

The legacy of apartheid policies in South Africa has created large disparities between racial groups in socioeconomic status, occupation, education, housing and health. These policies created a fragmented health system, which resulted in inequitable access to health care. The inequities in health are reflected in the health status of the most vulnerable groups.

Good quality data on population needs, local communities and particular subgroups are essential for rational planning and evaluation of services. However, available data are often inadequate, unreliable, or incomplete. The data used here are taken from the best available and a very wide variety of sources. Fourie (1998) agrees with this statement and adds that there “are serious question marks about the accuracy of existing South African health statistics, the available data does not provide an idea of the kind and magnitude of the health problems that the population faces. As is often the case, these statistics substantially underestimate the level of ill health and premature or preventable death in South Africa.”

This chapter provides an overview of the South African health care system. It focuses on the existing structure, the structure proposed by the South African government, legislation and the role of the private sector in the delivery of health care.

#### **2.2 THE DRIVING FORCES BEHIND CHANGES IN THE SOUTH AFRICAN HEALTH CARE SCENARIO**

The health status in a country is affected by many domains outside the health sector. This is especially true of marginalised groups such as the poor, in particular poor women and children. The health of all South African fundamentally depends on the combination of economic growth and political stability. The government has a role to play in fostering an economic environment that enables households to improve their own health.

According to Lund and Patel (1995:17) an important question, to be examined, is how the non-health indicators of poverty and development are measured and understood. Until recently, there was a lack of reliable South African data on which to base the development of socioeconomic indicators, and this was a serious problem for researchers and planners.

The fragmenting of South Africa into different administrations such as homelands, “independent states” and province resulted in fragmented and incomplete information systems; the national census had little political legitimacy; the Centre for Statistical Services’ data was questionable; and the Human Sciences Research Council had a reputation for supporting research which favoured the apartheid government.

Specific demographic, political and economic factors determine the design of the health care delivery system in any country. This section examines macro-environmental and health care trends which are currently changing the design of the South African healthcare industry.

### **2.2.1 Trends in the macro-environmental health care system**

The economic and social policies of the new government since 1994 are largely determined by the Reconstruction and Development Programme (RDP), which focuses primarily on social upliftment programmes, housing programmes, improved education, and a more equitable health care system for the country. Fundamental economic, demographic, political and technological developments which are shaping the South African health care system will now be discussed:

#### *2.2.1.1 Economic factors*

The South African economy contracted between 1990 and 1992, and growth since then has not been dramatic. Real GDP growth reached 3.1% in 1995, 4.2% in 1996 and slumped to 2.5% in 1997. The combination of punitive interest rates and low world commodity prices meant that growth only reached 0.6% in 1998. In 1999 the GDP growth was 1.2% (South African Reserve Bank 2000:S-148) Estimated figures for GDP growth for the year 2000 is 2.91% (*Beeld* 2000:9)

Although one of the forces for growth in recent years has been a rise in private consumption, it is unlikely that this will provide a major source of sustained rapid growth in the near future. Since gross domestic fixed investment began its fitful decline as a share of GDP from the mid-1970's onwards, private consumption accounted for some 60% of GDP, has been central to the performance of the economy. With interest rates and personal debt at high levels, and little immediate prospect of strong growth in employment, private expenditure will probably not increase sharply.

Nor will government expenditure be a major source of GDP growth as long as fiscal conservation continues. The main potential for growth in the medium term lies in gross domestic fixed investment and exports, both of which will be hard-hit by current global economic turmoil in the short term. The former rose by an average of 7.2% in 1995-97, raising hopes of a significant turnaround in investment trends, although growth is set to decline in the next few years. Export earnings increased by an average 8.8% in 1995-97, but the fall in gold prices over the past year will result in much lower growth.

Fluctuations in the health of the South African economy can at least partly be explained by the variable performance of the agricultural sector, and thus the performance of agro-processing industries, which are vulnerable to the region's sometimes adverse weather conditions. Official figures put the maize crop at 9.7m tonnes in 1995/96 after good rains, but this dropped slightly in 1996/97 and 1997/98 to 8.5 tonnes. The 1998/99 crop is expected to drop even further to 7.08m tonnes as a result of fears of an El Niño-induced drought, which led farmers to sow less during the summer season.

Inflation has remained relatively subdued as a result of restrictive macroeconomic policy, real wage restraint and capacity underutilisation in the past couple of years. Consumer price inflation averaged 7.2% in 1996 and 6.8% in 1997 (*EIU Country profile 1998-1999:20-21*).

### 2.2.1.2 Demographic factors

Urbanisation coupled with the population dynamics of the main population groups in South Africa and the emergence of new illnesses, such as AIDS, will play an important role in determining the quantity, quality and distribution of health care services in the future. The following demographic factors suggest that the burden on the public health sector is likely to increase significantly in future.

#### 2.2.1.2.1 Demographic profiles

Since many population estimates are not adjusted for undercounting and traditionally exclude the populations of the previous homelands, exact figures are difficult to obtain. Although the official midyear estimate for the total South African population as of June 1990 was 30.79 million people (Veliotes, Magennis and Brown 1993:23) and for 1995 estimated at 41.244 million (*Statistics in Brief 1996:5*). Census 1996 gives a preliminary estimate of the size of the population of South Africa as 37 859 million, including a correction for an undercount (*Central Statistical Services June 1997:10*).

Looking at the 1996 census results, it appears that the Veliotes, Magennis and Brown's projections in Table 2.1 were close. The annual compound growth rate of the African population is 2.40% per annum, compared with 1.21% for the White population. The annual average compound population growth rate for 1970 to 1995 was 2.4 % (*Statistics in Brief, 1996:5*) and is projected to be 2.2 % for 1991 to 2000. Africans comprise 76.3% of the total population, Whites 12.7%, Coloureds 8.5% and Indians 2.5% (*Statistics in Brief 1996:7*). The White population group is 90% urbanised, compared to only 50% among Africans, although there is rapid urbanisation in the latter group. Income distribution is highly unequal, reinforced by a history of controls on access to education, the labour market, asset ownership and, in many cases, entrepreneurial activity (*EIU Country profile 1998-1999 23*).

<b>POPULATION PER ANNUM 1985 -2010</b>					
<b>YEAR</b>	<b>TOTAL</b>	<b>WHITE</b>	<b>BLACK</b>	<b>COLOURED</b>	<b>ASIAN</b>
<b>1985</b>	<b>27 814</b>	<b>4 839</b>	<b>19 162</b>	<b>2 935</b>	<b>878</b>
<b>1990</b>	<b>31 318</b>	<b>5 009</b>	<b>22 137</b>	<b>3 219</b>	<b>954</b>
<b>1995</b>	<b>35 266</b>	<b>5 156</b>	<b>25 576</b>	<b>3 509</b>	<b>1 025</b>
<b>2000</b>	<b>40 666</b>	<b>5 293</b>	<b>30 500</b>	<b>3 784</b>	<b>1 089</b>
<b>2005</b>	<b>47 522</b>	<b>5 408</b>	<b>36 942</b>	<b>4 030</b>	<b>1 143</b>
<b>2010</b>	<b>53 870</b>	<b>5 516</b>	<b>42 909</b>	<b>4 250</b>	<b>1 195</b>

Table 2.1 Population growth 1985-2010, historic and projected [in thousands] (Veliotis, Magennis & Brown 1993:23)

The preliminary results of Census 1996 show that more than half (55.4%) of the estimated population live in urban rather than non-urban areas (Central Statistical Services, June 1997:11). Blacks will clearly constitute the main growth area in the population, and the relative proportion of Whites, Asians and Coloureds will diminish. This trend has clear policy implications as Blacks have historically been the most disadvantaged group of the South African population. Future policy must address the challenge associated with a growing indigent population.

A high population growth rate in the poorer sector of the community can clearly be seen from these statistics. In the October 1994 Household Survey, 24.8% of the population were children between the ages of zero and nine years, while approximately 46.7% of the population were under the age of 19 years (*Statistics in Brief*, 1996:17). The October 1995 Household Survey (1996:3) figures give the same percentages. It is estimated that children under the age of four years form 13% of the total population. The proportion of females in the South African population are 52.7%, with a higher proportion in the rural areas (*A National Health Plan for South Africa* 1994:27). Census 1996 gives the proportion of females as 51.83% and attributes the higher percentages of females in the rural areas to internal migration among males to more urban areas for work (Central Statistical Services June 1997:11). Around 78% of patients are in the public sector and 22% receive private health care (Pharma Strategy Group 1997:48). As a result, the health needs of the expanding indigent population will have to be met by the public sector to an ever-increasing extent (Veliotis, Magennis & Brown 1993:23).

### 2.2.1.2.2 *Urbanisation*

The geographical distribution of the population in a country is important because it is linked with disease patterns and influences health care planning, evaluation and resource allocation. In 1990, 59% of the total South African population resided in urban areas. Analysis by population groups in the October 1994 Household Survey revealed that 85.6% of all Whites and only 36% of the Black population lived in urban areas (*Statistics in Brief* 1996:17-18). Since White urbanisation has reached saturation, the Black population will experience the greatest impact of future urbanisation. It is estimated that the black urban population will increase by one million people annually until the end of 1999.

The rapid growth in the population, particularly in urban areas, will place great pressures on essential services, such as housing, water and electricity supply, sanitation, refuse removal and health service. Priority is likely to be given to primary and preventive care in order to extend the health care system and to provide improved services at the point of need (Veliotes, Magennis & Brown 1993:23).

The preliminary estimates of population in urban areas are 55.4% and in non-urban areas, 44.6%. Gauteng has the biggest percentage of urbanisation (96.4%) and the Northern Province the smallest percentage of urbanisation (11.9%) (Central Statistical Services June, 1996:12-13).

### 2.2.1.2.3 *AIDS*

Although the extent of AIDS in South Africa has not been accurately quantified, it is emerging as a major public health problem, with more than 2 000 reported cases at the end of 1993, and 500 000 people infected with HIV. Forecasts to the year 2000 predict that there will be between four and seven million HIV-positive cases, with about 60% of total deaths due to AIDS, if HIV prevention and control measures remain unaddressed. Similarly, credible predictions indicate that by the year 2005, between 18% and 24% of the adult population will be infected with HIV, that the cumulative death toll will be 2.3 million, and that there will be about 1.5 million AIDS orphans (*A National Health Plan for South Africa* 1994:30). Figures from the Department of National Health and Population Development for 1995 indicate an estimated 1.7 million adults were HIV positive, of whom the majority were women. There were 40 600 people infected with HIV in 1995 (Pharma Strategy Group 1997:49). A national survey in 1998, disclosed that the number of pregnant women with HIV increased by 34% in one year despite government efforts to educate people on the pandemic. This percentage increases against the Department of Health's seventh national HIV survey of women attending antenatal clinics of public health services, conducted in October and November 1996 and a similar survey conducted in 1998 can be seen in figure 2.1 and figure 2.2. The 1998 survey again targeted women attending public antenatal clinics and was the ninth such study conducted by the Department of Health. It was found that the epidemic continued to rise at an alarming rate, with HIV most prevalent among women in the 20 to 29-year age groups. The highest rate of increases was at 64%, however, was found among teenage girls.

The study done by Bell, Rose and Sacks (1999:1549) found that the incidence of HIV tended to decline with age. Only 10% of the women interviewed in the 40 to 49-year categories were infected, although other studies conducted by the Department found women over the age of 50 with HIV. In terms of provincial statistics, it was found that the number of respondents with HIV could be divided as follows: KwaZulu-Natal, 32,5 %; Mpumalanga, 30%; Free State, 22,8 %; Gauteng, 22,5 %; North West, 21,3 %; Northern Province, 11,5 %; Eastern Cape, 15,9 %, Northern Cape, 9,9 % and Western Cape, 5,2 %. The Department of Health considers the antenatal study to be a reliable indicator of the spread of HIV among communities, as pregnant women come from a cross section of the population and are known to be sexually active. Based on this assumption, the study estimates that approximately 3,6 million South Africans were infected with the HIV virus in 1998, as opposed to 2,7 million in 1997. This would mean that at least one in every eight adult South Africans is infected with HIV (Department of Health 1999:14-15).

Figures 2.1, 2.2, 2.3 and 2.4 show the history of the actual cases vs. reported deaths, estimated number of people infected with HIV - 1996, HIV infection by province -1996 and 1998.

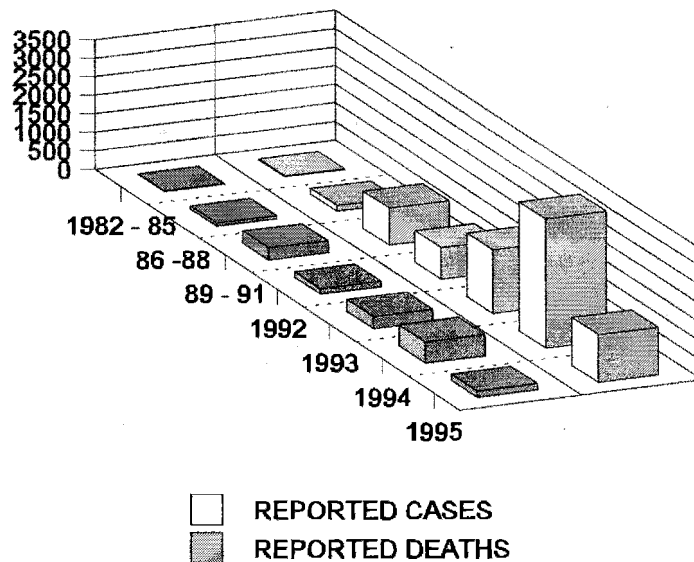


Figure 2.1 AIDS - Reported cases vs. reported deaths (*South Africa in figures 1995:76*)

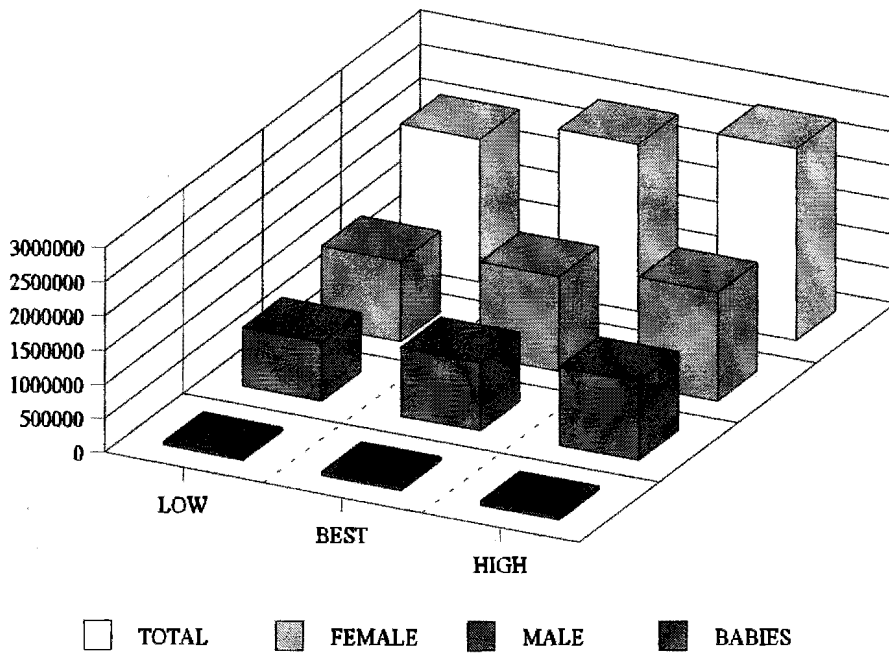


Figure 2.2 Estimated number of women, men, babies and people in total infected with HIV - 1996 (Department of Health 21 April 1997:12)

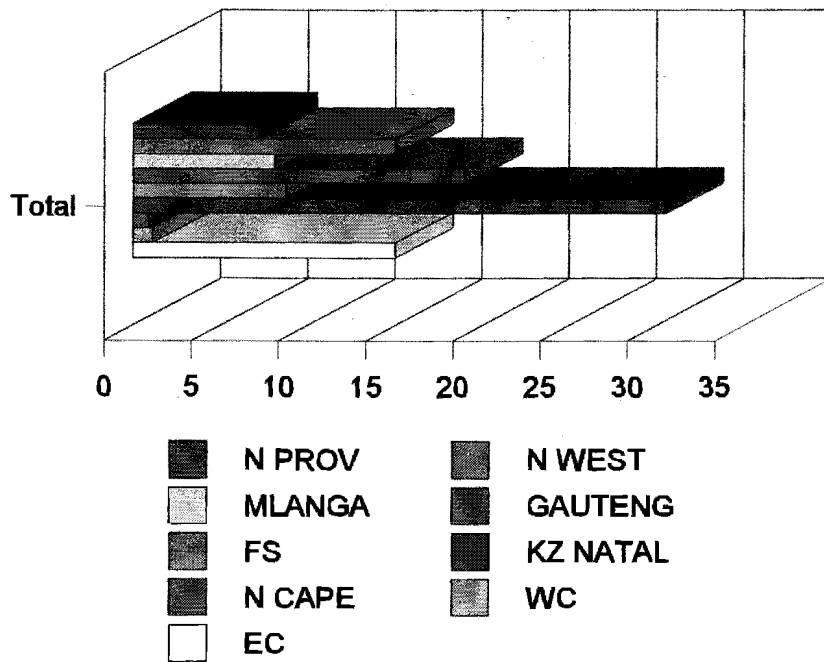


Figure 2.3 Estimated number of HIV-infected persons by province as a percentage of total estimated population infected with the disease - 1996 (Department of Health 21 April 1997:12)



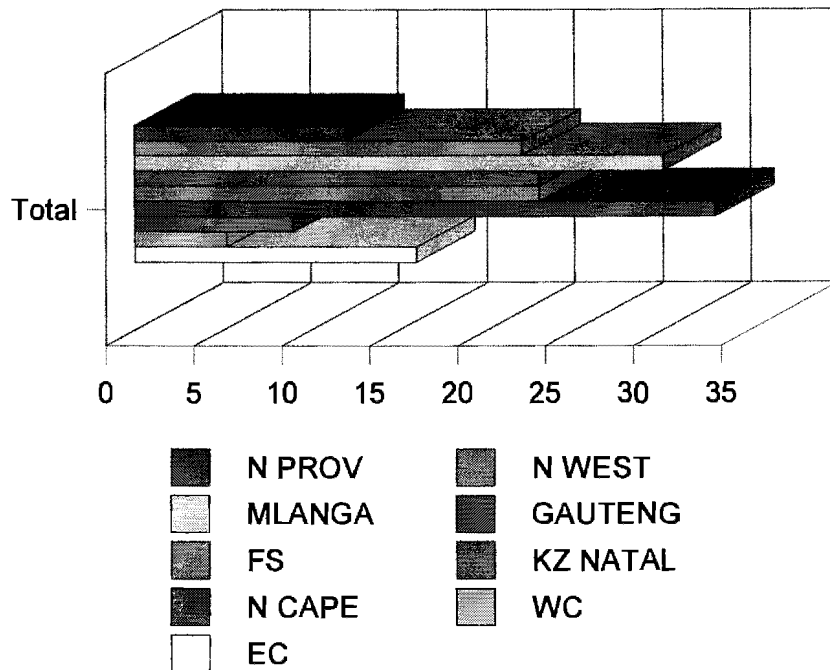


Figure 2.4 Estimated number of HIV-infected persons by province as a percentage of total estimated population infected with the disease - 1998 (Department of Health 1999:14)

Research undertaken by the Centre for Health Policy suggests that the epidemic is likely to have a substantial impact on the economy as a whole. The direct cost of AIDS treatment is expected to rise from about R113 million in 1991 to R10 billion by the year 2000. It is clear the demands on limited resources will be prohibitive and more innovative ways will have to be found to provide care within budgetary constraints. This could leave the door open for a new health care delivery system to be implemented in South Africa as the impact of AIDS can financially destroy both the private and the public health sector.

A recent survey of a number of South African companies by the Health Economics and HIV/AIDS research division of the University of Natal showed that with a few notable exceptions, business had not planned for the epidemic or had made token attempts to create an awareness about the disease and were not seeing visible signs of the epidemic, despite it being featured in the media for the past 10 years. The survey said most companies carried out HIV awareness programmes in ways that showed they conceptualised the disease as a health problem or a problem of poverty and not one endemic to themselves. In contrast to earlier arguments, the infection appeared to be greater in rural areas than urban areas and was spreading fastest among the unemployed (where rural women and school leavers make up 50% of this figure (*Healthmatters* 1999:1).

A survey released by SA Institute of Race Relations has revealed that South African's population growth rate is expected to drop by 71 percent in the next 10 years as a result of the AIDS epidemic. By 2005, about six million people here would be HIV-positive, with more than 18 percent of the workforce infected. The survey quotes the previous Minister of Welfare, Population and Development, Geraldine Fraser-Moleketi, as saying that almost 250 000 people would die of Aids annually within three years to 2003. This figure would increase to 500 000 deaths annually by 2007 (*Healthmatters* 2000:1). The World Economic Forum (WEF) estimates that within two years six percent of South Africans will die of AIDS-related illnesses. It said nearly three million South Africans were already living with AIDS and nine percent of the workforce was HIV-positive. US estimates indicate that at present one in eight adult South Africans is infected with the HIV virus. The World Economic Forum (WEF) said the HIV/AIDS epidemic posed a major threat to South Africa's competitiveness. Already 30 percent of South African firms surveyed by World Economic Forum (WEF) said AIDS was having a moderate to major effect on time lost because of AIDS-related sickness; 28 percent said it was having an effect on time lost to attend funerals, while 34 percent said it was reducing the skilled labour force. The World Economic Forum (WEF) estimates that five percent of managers in South Africa are HIV-positive, while university graduates show an infection rate of roughly four percent. (*Healthmatters* 20 June 2000)

The South African government established a National AIDS Council early in 2000 to strategise on the disease and the impact of the disease on the country's future. The council includes representatives from all sectors of society and has an extensive mandate to deal with the pandemic. The council consists of 15 government representatives and 15 from all sectors of civil society including business, people living with HIV/AIDS, trade unions, traditional healers, leaders, media and non-governmental organisations. Included among the government representatives are: Health Minister Manto Tshabalala-Msimang; Education Minister Kader Asmal; Transport Minister Dullar Omar; Finance Minister Trevor Manuel; Abe Nkomo, who chairs Parliament's portfolio committee on health; Defence Minister Mosiuoa Lekota; and Zola Skweyiya, welfare and population development minister (*Healthmatters* 2000:2).

#### 2.2.1.2.4 *Socioeconomic living conditions*

Africans comprise 95% of the 18 million people in South Africa currently existing below the accepted "minimum living level" (MLL) of R 750 per month per household, with 60% of this group living in total poverty. Although the African population is in the majority, it is estimated that they receive only 27% of the total income. It is estimated that between eight and nine million of this population group are destitute, relying on social grants and support schemes. Approximately 64% of the economically active population are Blacks, but they represent only 15% of the professional, semiprofessional, technical, managerial and executive positions. Black people perform largely unskilled work and their unemployment rates are high. Illiteracy is a major problem and it is estimated that more than 75% of the in South Africa is functionally illiterate (Von Beck 1997:29-30).

The urban housing backlog in 1990 was conservatively estimated at 1,3 million units (*A National Health Plan of South Africa* 1994:27). If hostels and rural areas are included, the backlog rises to approximately three million units, of which approximately 90% are needed by African households. It was estimated that up to seven million people lived in informal settlements in the urban areas in 1991. Gross overcrowding and unacceptable sanitary conditions are prevalent amongst the majority of Blacks in the urban and peri-urban areas.

The Development Bank of South Africa (DBSA) estimates that of the 22 million urban population, 62% have waterborne sewage systems, 33% have minimal sewage facilities and 5% have bucket systems, ventilated improved latrines (VIP) or aquatrines. However, local surveys suggest that in many communities, particularly in informal settlements, large numbers of people have no access at all to sanitation facilities. Of the 16 million rural population, rough estimates indicate that 53% have a safe and accessible water supply and 14% have access to adequate sanitation defined as either a VIP or a flush latrine.

#### 2.2.1.2.5 *Technology*

Worldwide technology is a major factor driving the global medical inflation spiral. International developments in medicine result in the ongoing discovery of new procedures and equipment which affect diagnostic and treatment methods. Because the cost of such technology usually tends to be substantially higher than that of older technology, it often increases expenditure disproportionately. This phenomenon is particularly prevalent in the private health sector in South Africa, where modern technology is used by private hospitals to attract health care providers. Since most sophisticated medical equipment has to be imported by South Africa, the devaluation of the Rand against most major international currencies increases the cost of technology (Veliotis, Magennis & Brown 1993:23).

#### 2.2.1.2.6 *Health status*

Infectious and parasitic diseases cause 14% of deaths amongst Black people, but only 2% of deaths among Whites. Cardiovascular diseases, on the other hand, cause 12% of deaths among Blacks, but 40% of deaths among Whites. Mortality and morbidity are strongly related to poor environmental and socioeconomic circumstances as well as to life style. Chronic disease is emerging as an increasing problem in all population groups. There was no compulsory registration of births and deaths for Africans during apartheid and the data on Infant Mortality Rates (IMR) are variable and unreliable. In 1991 the infant mortality rate was 54 per 1000 live births. For Black children the IMR was between 94 and 124. The major causes of death are infectious diseases, especially intestinal infection, and respiratory diseases. These figures have been computed from registered deaths, but the estimated deaths are higher, especially in the rural areas (*A National Health Plan for South Africa* 1994:29).

The maternal mortality rate in 1989 was eight per 100,000 for Whites and more than 58 per 100,000 for Africans. In 1991 life expectancies for all South Africans were 63 years. The life expectancy at birth for Whites is nine years more than that for Blacks, as an increase in life expectancy is influenced by a decrease in IMR.

In 1989, 2.3 million people were considered to be in need of nutritional assistance. Of these, 92% were children below the age of twelve years, and 8% were pregnant and lactating women.

Tuberculosis is by far the most frequently occurring notifiable disease. The annual case load increased by 4% between 1987 and 1988. In 1988 the prevalence rate was 489 per 100,000 population, with the Western Cape having the highest rates in the country. The incidence in 1990 was 229 per 100,000 (*A National Health Plan for South Africa* 1994:29). TB is a major problem in all three Cape provinces (Yach and Buthelezi 1995:35). High notification rates have also been recorded in the Free State (Yach and Buthelezi 1995:39). Urbanisation and its associated overcrowding and life style (increased alcohol and tobacco consumption) is part of the social factor conducive to the spread of the TB pathogen in the urban and peri-urban areas. The number of notified cases of TB fell in 1996 to 49 266 from 84 664 in 1995. Pulmonary TB accounted for the most of these cases – 89% and 88% in 1996 and 1995 respectively. Similarly, the number of reported deaths from TB declined in 1996 to 1 940 from 2 885 the year before. TB is most prevalent among the Black population, who accounted for 69.9% of the cases in 1996 (Pharma Strategy 1997:49).

In 1989, the measles notification rate per 100,000 population was 43.1% for Africans and 3.8% for Whites. Vaccination coverage varies between the different population groups and geographical areas (*A National Health Plan for South Africa* 1994:29).

Violence has become one of the most important causes of morbidity, disability and mortality. The non-natural causes of fatalities in South Africa are three times higher than the WHO estimates for the world. It is estimated that violence caused more than 4 000 deaths per month in 2000, and caused many other people to become disabled. Less than 15% of these deaths were politically related. Mortality, morbidity and disability from motor vehicle accidents are also increasing, much of it related to alcohol abuse, with many victims being pedestrian.

Studies estimate that five million people in South Africa suffer from mental illness and 150 000 attempted suicides each year (*A National Health Plan for South Africa* 1994:30).

## **2.3 SYNOPSIS OF THE CURRENT SOUTH AFRICAN HEALTH CARE SYSTEM**

Until the recent process of democratisation and universal franchises, the health care delivery in South Africa was characterized by a two-tier system of:

- (1) private health care funded by medical schemes, which covered up to 20% of the country's population, the vast majority of whom were from the White section of the population
- (2) a public sector, which was characterized by fragmentation (no less than 14 health authorities), a resultant irrational use of resources, poor working conditions and inadequate infrastructure (Gotlieb 2000:1)

The allocation of health resources will be discussed taking into consideration that a two-tier system existed.

### **2.3.1 Health resources**

#### *2.3.1.1 Fragmentation*

Government policy on health care in South Africa is that medical care and well-being are the personal responsibility of the individual. The State, however accept responsibility for people who are unable to afford medical cover. This policy has given rise to a two-tier system in the provision and financing of health care, namely the public and the private health sectors. The public sector caters primarily for the health care needs of the indigent population while the private sector is primarily designed to fulfil the health care needs of the employed population.

From 1981 the State played a dominant role in the provision and financing of both curative and preventative health services at tertiary, regional and community levels. Health services in this sector are funded from general tax revenue and the State owns the hospitals and employs health care providers on a fixed-remuneration basis. The main crises facing the public sector are the fragmentation of health services and the shortage of funds. There is a declared intention to improve health care services in this sector by rationalisation of health departments, allowing the independent management of academic complexes, and by placing more emphasis on primary health care (Veliotes, Magennis and Brown 1993:16).

At the central level there were nominally four departments of health, one for each racial group. In 1993, with rationalisation, these four departments were combined into one Department of Health.

The provincial administrations of the nine provinces are the second tier of government, responsible for hospital services, ambulances and outpatient services. There are almost 800 local authorities which form the third tier of the health care system. They are largely responsible for environmental services, public health, primary health care and preventive health care services in the provinces.

There is also a strong but fragmented private sector, which includes health professionals in private practice, private hospitals, pharmaceutical manufacturers and distributors, medical aid schemes, and others. The private sector will be discussed in more detail later as it is the major target for managed health care initiatives. In order to maintain and improve health care for all South Africa, there needs to be closer cooperation between the public and private health sectors. It is essential that both sectors identify and examine unique challenges facing them. Both need to become more cost-efficient and effective. Future cooperation between these sectors may introduce new opportunities and the private sector should therefore not be considered in isolation.

### 2.3.1.2 Hospital beds

In 1988 there were 693 hospitals in South Africa, and 158 567 hospital beds (public and private), of which 28% were in the private sector. The figures for 1995 show that there were 663 hospitals with a total of 148 207 hospital beds in both sectors (*South Africa in figures* 1995:22), of which 24.6% were in the private sector. The figures for 1997 shows there were 361 public and 323 private hospitals in South Africa, although some 75.4% of the bed is in the state sector (*Pharma Strategy* 1997:41). State hospitals are estimated to have cost structures half those of private facilities and the government's intention is that those newly-covered patients under the national health insurance scheme would use the services of state hospitals rather than private hospitals. About a quarter of private sector beds are in "fee-for-service" hospitals. There has been a rapid growth in fee-for-service hospitals in recent years, with a 61% increase in the number of these beds between 1983 and 1990. Ninety-four percent of fee-for-service hospital beds are in the urban areas. According to *Health Annals*, the official publication of the Hospital Association of South Africa, there are 20 264 private beds in South Africa (van der Merwe 1999:43).

The 1988 data showed that there were, overall, 4.4 hospital beds per 1000 population in South Africa. However, the former homelands had only 2.7 hospital beds per 1000 population, and the non-metropolitan areas had 4.0 hospital beds per 1000 population, compared with 7.1 hospital beds per 1000 in the metropolitan areas. There were 1.9 tertiary hospital beds per 1000 population, compared with 1.5 general acute hospital beds per 1000 population. There was, therefore, a relative under supply of acute general hospital beds. Hospital bed occupancy rates averaged 75%, but public hospitals in the former homelands and Black urban hospitals often showed occupancy rates of above 100%.

There were similar disparities in the distribution of laboratory services and pharmacies. There were 2 218 health care clinics in the public sector in South Africa, an average of 16 190 people per clinic. If the recommended WHO ratio of 10 000 people per clinic is used as a guideline, the shortfall in the number of clinics needed in 1988 was 1 373. Using population figures to the year 2000, the shortfall to that year will be 2 541 (*A National Health Plan for South Africa* 1994:31).

### 2.3.1.3 Human resources

In 1990 there were 22 260 medical doctors registered in South Africa out of whom 6 087 had a registered medical speciality. The 1995 figure was 26 452 of whom 7 167 were registered with the Interim Medical Council as specialists (*South Africa in figures 1995:26*). The ratio of doctors to population in the metropolitan areas was approximately 1:700, compared to 1:1900 in non-metropolitan areas. In the former homelands it is estimated that there were between 10 000 and 30 000 people per doctor. In 1980, 48% of doctors worked in the private sector. By 1989, this proportion had increased to 58%. Seventy-seven percent of doctors in 1989 resided in metropolitan areas and female doctors comprised about one third of the total doctors; however, there were few African female doctors (*A National Health Plan for South Africa 1994:31*). According to the South African Medical Council 27 279 medical doctors were registered in 1995 out of whom 6 544 had registered a medical speciality (*Pharma Consulting 1997:39*)

There is a disproportionate supply of doctors in the private sector, with 61% of all general practitioners servicing 22% of the population. More doctors are moving from the public sector into the private practice to augment their income. The trend for public doctors to move into private sector is further complicated by public sector consultants who supplement their income with private work. An additional factor is the emigration of medical doctors.

In 1988 there were 3 581 dentists registered, with more than 93% working in the private sector; there were 1 130 clinical psychologists, with 92% in the private sector; and 8 311 pharmacists with the majority in the private sector (*A National Health Plan for South Africa 1994:31*). According to the South African Pharmacy Council there were 9 559 pharmacists registered with the council in July 1997. Although there has been an increase of 8% in the number of registered pharmacists since 1990, the proportion of pharmacists to population have declined in the 1990s (*Pharma Strategy 1997:45*).

Of 109 236 qualified nursing professionals in 1990, 48% were African, 35% White, 2% Asian and 15% Coloured. In 1990, about 21% of these nurses were employed in private hospitals, compared with 17% in 1987.

It has been estimated that there are approximately 350 000 traditional healers in South Africa, mainly in the rural areas (*A National Health Plan for South Africa 1994:31*).

These figures reflect a number of prominent problems in human resources developments that need to be dealt with, including:

- the over-concentration of health personnel in urban areas, in sophisticated curative settings and in the private sector
- the under-provision in rural and peri-urban areas, in informal settlements, and in clinics, health centres and community and secondary hospitals

- the emigration of highly trained personnel
- insufficient personnel with the necessary training or skills to manage change in accordance with the primary health care approach
- insufficient or inappropriately trained staff in fields such as environmental health, health education and promotion, advocacy and management of health care.

#### *2.3.1.4 Financial Resources*

The health care services at present are geared to the needs of a minority of the population. Health care in South Africa is sharply divided between the private sector (for those who can afford to pay and/ or who belong to medical aid schemes) and the public sector for the indigent.

Approximately R 30 billion was spent on health services in South Africa in 1992/1993 [8.5% of GNP] (Heymans and Ramsden, 1997:2). Of this around 25%, or R 8 billion, represents expenditure on medicines (including private, public, OTC and prescription products). There is some dispute over the accuracy of the amount actually spent on pharmaceuticals since the definition of medicines is thought to include medical disposables, such as syringes, and not only pharmaceutical products. Most observers estimate that the pharmaceutical bill is 40% of the medicines bill. Nevertheless, it is generally acknowledged that health care costs have escalated to reach unsustainable levels in the private sector. The government's objective to provide universal health care coverage will place strain on public funding. Thus South Africa's health care system is at a critical stage as both the public and private sectors strive to contain costs while at the same time expand the availability of care. Fourie (1998) has estimated that this figure will exceed R50 billion in the 1999 financial year.

The established market economies spent a similar fraction (9,2%) of their GDPs on health, but countries with GDPs per capita comparable to South Africa's spent a lower proportion. The World Health Organisation recommends a health expenditure of 5% of GDP for developing countries. Sixty percent (60,8) of total health care expenditure is funded from private sources. Public financing sources accounted for 38.7% of health expenditure while 0.5% was attributed to donor funding (McIntyre, Bloom, Doherty and Brijlal 1995:9). Over the past five years medical inflation averaged close on 30% in the private sector.

Figure 2.5 shows the spending on health care as part of GNP in South Africa from 1987 to 1995.



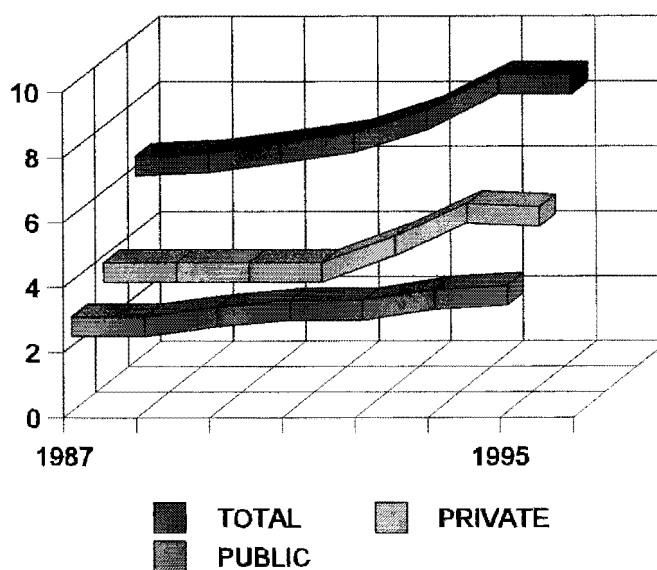


Figure 2.5 South African health expenditure as a percentage of GNP (Veliotos, Magennis and Brown 1993:18).

Although South Africa spent 8.5% of its GNP on health care, a breakdown of this figure between private and public expenditure shows that public sector expenditure accounted for only 3.44% of GNP, with the private sector taking up 5.06% (Ryan 1998:12). Put differently, the private sector was responsible for more than 50% of the total health care expenditure. South Africa is thus devoting substantially more resources to the health sector than most developing countries, yet has poor health status relative to these countries (*White Paper for the Transformation of the Health System in South Africa* 1997:40). The state spends 10% of the total government budget on health care. In 1996 R 17.7 billion, or 10.4% of the total budget, was allocated to health care, a proportion which has been declining in the 1990s if compared with 1991, when the state spends 11% of the total budget on health care (Pharma Strategy 1997:51-52).

Disparities between the public and private sectors are further illustrated by the fact that in 1990 the private sector was responsible for 80% of the country's total expenditure on drugs, although 60 to 70% of the total volume of pharmaceuticals was consumed in the public sector. McIntyre, Bloom, Doherty and Brijlal (1995:24) acknowledge these figures in their research conducted in 1993. According to their figures, 75 to 80% of the total volume of drug sales were sold to the public sector. In spite of the large volume of sales to the public sector, due to the low tender prices obtained, only 25 to 20% of the value of drug sales are accounted for by sales to the public sector.

Within the public sector, there was a maldistribution of financial resources with higher per capita expenditure for tertiary care than primary care. Financial resources were evenly divided between the public and private sectors, with 50% of the total overall health care expenditure attributable to the 20% of the population who are members of a medical scheme. This excludes private expenditures on traditional healers and out-of-pocket payments.

Although 5.7% of GNP was spent on health in 1988, the proportion spent on Whites was equivalent to 13 to 14% of GNP, an amount higher than the average in the USA. The amount spent on Blacks was equivalent to 3 to 3.5% of GNP, which is lower than the World Health Organisation (WHO) target of 5% (Veliotis, Magennis & Brown 1993:26). As at the 1990/91 financial year, the state allocated 11.7% of the budget to health care which was not a significant change from the 11.2% allocated in 1985.

Public sector health expenditure dropped in real per capita terms in the early 1990s. For example, it was estimated that real per capita expenditure by the provincial administrations had decreased from a peak of R 276 million in 1988/89 to R 182 million in 1992/93. The provincial administrations, who are largely responsible for hospital-based care, accounted for more than two-thirds of total public sector health expenditure. Of this, 43% is directed to academic hospitals; approximately 30% of total public sector expenditure is devoted to these hospitals. In contrast, the local authorities, who are largely responsible for promotive and preventive services, account for approximately 4% of total public sector health expenditure.

Within the former ten homelands, where 44% of the total South African population lives, only 19% of the National Health Budget was allocated in 1990/91. In 1993 the ANC initiated a health expenditure review, in conjunction with the World Bank, because of the poor quality or complete lack of data on health expenditure in South Africa, especially in the former homelands and in the private sector. The work of this group was completed during 1994 (*A National Health Plan for South Africa* 1994:32).

The major determinants of health care are intertwined with several shifts under way in South African society.

### *2.3.1.5 The South African Medical Schemes Industry*

Medical schemes are the primary vehicle for funding private health care services, although the number of beneficiaries has declined as a proportion of the total population in recent years. Medical aids are funded by employer and employee contributions (50/50) and the benefits they offer vary from scheme to scheme. The cost and accessibility of quality health care in South Africa have become a major cause for concern. Medical insurance costs continue to outstrip the average inflation rate by between three and 5% per annum (Ryan 1998:12).

Health care funding within the private sector in South Africa is provided by medical aid firms, and more recently, by life insurers. Because medical aid and life insurers are regulated by separate Acts, there are differences and anomalies. Medical aid firms provide a degree of comprehensive cover, while life insurers provide a specified amount in the event of only certain contingencies, arising such as major surgery (Alexander Forbes 1998:3).

The private sector's response to the government's proposed restructuring of health care is to move to managed health care. Managed health care provides quality care, controls the volume of services provided and makes health care more affordable. Health care administrators will be required to operate according to cost-effective and carefully calculated criteria. It is simply a question of do or die (*Health Matters* 1996:10).

#### 2.3.1.5.1 *Income and expenditure*

Medical schemes are the principal financial intermediaries in the private sector, accounting for two-thirds (R12 billion) of total private sector health care funding. The other private sources of health finance are insurance products (R1 billion), direct funding of industrial health services (R1,2 billion) and out-of-pocket expenses (R4,2 billion). The latter include "schemes gap" payments, representing the difference between the fees charged by private health service providers and the amounts reimbursed by medical schemes; payment by non-scheme members for consultations with private doctors and for prescribed drugs; user fees at public hospitals and spending on over-the-counter medicines by all categories of patients.

The funds administered by medical schemes in 1990 were in excess of R5.9 billion (1982 - R 883 million). The 1992 income and expenditure for medical schemes were estimated to be in excess of R8 billion (*Survey of the South African Medical Scheme Industry* 1993:3). The 1994 figure was estimated to be R13.5 billion (*Survey of the South African Medical Scheme Industry* 1995:2). This several-fold increase was not matched by a proportionate increase in membership but was a result of soaring health costs. It is evident that inflation in medical aid contributions surpassed general inflation for the period. From 1992 to 1997 medical inflation was close to 30% on average (Heymans and Ramsden 1997:2).

Virtually every textbook on health economics published during the last twenty-five years stresses the escalating trend in health care costs, whether absolute, relative or per capita, as a major cause for concern for governments, business leaders and individuals.

The trend for health expenditure to demand an ever-increasing percentage of the GDP of a country is a well-documented phenomenon. This trend is set to continue or worsen due to factors such as the ageing of the population, expensive technological advances in diagnostics and treatment, changes in disease patterns (eg. AIDS) and progressively more specialised health care providers and facilities.

It is now part of business folklore that when Lee Iacocca was trying to prevent Chrysler's collapse in the late 1970s, he discovered that the company was dying of health care. The health insurers, Blue Cross and Blue Shield (the Blues) were the company's biggest supplier and the cost of employee health benefits represented one tenth of the cost of a Chrysler car (Hughes 1999).

The contributions to medical schemes in South Africa obviously had to rise equally rapidly to finance the increases in benefit payments with the result that medical scheme contribution rose from 7,1% of average formal sector remuneration in 1983 to 15,2% in 1998 (Alexander Forbes 1998:3). Thus, the simple fact is that more than a decade of runaway medical inflation quickly put private health care even beyond the means of its traditional customers, namely the employers and higher earning employees. If the private health sector were to survive and grow, it will have to contain costs far more effectively than it has done in the past.

This has made comprehensive medical aid cover unaffordable to an increasing number of people and if changes are not implemented soon, many people who have been contributing to medical cover all of their lives, may suddenly be left with inadequate medical insurance. An important point that should be taken into consideration here is that the public health sector has to provide health care services to more than 77% of the population with only 38,7% of the financial resources to do so. The coexistence of large numbers of people who do not have access to basic health services with others who spend large amounts of money on curative care via the private sector goes a long way towards explaining why South Africa has so much excess (preventable) sickness and premature death in spite of a relatively high national expenditure on health care.

There is a wide consensus amongst almost all stakeholders that South Africa's current health care dispensation, whereby just more than 20% of the population consume 63% of the country's health care expenditure via their medical schemes while many people do not have access to basic public health and essential clinical services, is not sustainable and in need of fundamental structural change.

#### *2.3.1.5.2 Membership profile*

Since 1990 there has been a threefold increase in the number of beneficiaries among the Black South African population. Although only 20% of the total Black population is covered by medical schemes at present, there are indications that growth in White membership has reached a plateau and the main future growth area will be in the Black population.

Valentine and McIntyre (1994:19) estimate that approximately 6.9 million South Africans are members of medical schemes, while 1.1 million have health insurance policies and a further one million have access to on-site health services provided by their employers. The 1994 survey of the South African medical schemes industry (1995:2) provides a figure of 6.5 million persons on medical benefit. The 1996 survey will be made public in 2000.

The degree of health service access which such cover allows varies considerably. For example, many medical schemes for low income workers only cover certain primary care services. The number of people who are prepared to pay out-of-pocket to utilise private sector services is unknown, but this tends to be restricted to primary care services. Thus, approximately nine million South Africans (22.8% of the population) have some degree of access to the private sector health care on a regular basis.

#### *2.3.1.5.3 Number of medical schemes*

In 1980 there were 289 medical schemes in South Africa. A gradual decline in the number of medical schemes then followed and by 1990 there were 244 schemes, of which 182 were medical aid schemes, 20 medical benefit schemes and 42-exempted schemes. According to the Registrar of Medical Schemes' annual report for the year ending 1995 (1996:10), there were 169 registered medical schemes at 31 December 1995. Of the 169 registered medical schemes, only 24 had more than 20 000 members, 28 had between 10 000 and 20 000 members, 28 had between 5 000 and 10 000 members, 23 had between 2 500 and 5 000 members, while 66 had fewer than 2 500 members. There is no updated information on the number of medical schemes as the last report of the Registrar of Medical Schemes was the report quoted here. There have been a name change and the Registrar of Medical Schemes is now called the Council of Medical Schemes. It is rumoured that the next report will only be available first quarter 2001.

This trend is likely to continue and in order to achieve economies of scale, smaller schemes are likely to merge, consolidate and share administrative facilities. Heymans and Ramsden (1997:2) support the view of the Registrar of Medical Schemes by claiming that the majority of the present medical schemes are technically insolvent, which points to the fact that South African medical schemes have been experiencing, if not hardship, severe economic pressure.

#### 2.3.1.5.4 Provider reimbursement

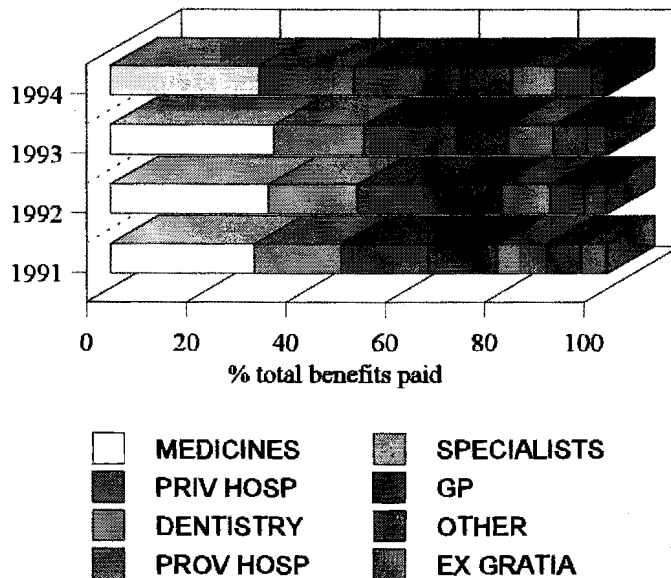


Figure 2.6 Medical benefits paid to members (*South Africa in figures 1995:20 and the Registrar of Medical Schemes report for the year ending 1995, 1996:Annexure 1*)

Figure 2.6 (*South Africa in Figures 1995:20*) and the Registrar of Medical Schemes report for the year ending 1995 (1996:Annexure 1) give a breakdown of benefits paid out by medical schemes for services provided to members over the last few years. This shows that medicines and hospital costs constitute a major portion of health care expenditure. It is important that any future health care delivery system tackle and control costs in these two segments (Velioes, Magennis and Brown 1993:30).

#### 2.3.1.5.5 Types of medical schemes

The following types of medical schemes exist in South Africa:

- **Registered schemes.** These schemes are registered in terms of the Medical Schemes Act, 1967 and make up the vast majority of schemes in South Africa.
- **Exempted schemes.** These schemes are exempt (for historic reasons) from the provisions of the Medical Schemes Act as they are subject to the provisions of other legislation, such as the Industrial Council Act. Although they are not legally obliged to do so, the majority of these schemes do report to the Registrar and, for all practical purposes operate as if they were registered in terms of the Medical Schemes Act (eg, Polmed and Transmed).

- *In-house schemes.* These schemes cater for the employees and the continuation of widowed members of a single or a relatively small group of employers.
- *Open schemes.* These schemes provide membership to the employees and widow and continuation members of multiple employers and are usually established and managed by the large medical scheme administrators (Medical Schemes Amendment Act, 59 of 1992).

#### 2.3.1.5.6 *The legislative environment of medical schemes*

The general legislative environment in which medical schemes are administered is influenced in the main by the following Acts of Parliament.

- *The Medical Schemes Act, 1967*, as amended, provides for the regulation and control of medical schemes by the Registrar of Medical Schemes as the executive officer of the Council for Medical Schemes.
- *The Income Tax Act, 1962.* The tax status of medical schemes, the deductibility of contributions and the taxation of medical scheme benefits are regulated in terms of the Income Tax Act. In the main, medical schemes constitute tax exempt entities. Employer contributions are deductible, subject to certain maxima, while employee contributions are only partially deductible and medical scheme benefits are tax free.
- *The Inspection of Financial Institutions Act, 1984.* In terms of this Act, the Financial Services Board (FSB) has the power to inspect the affairs of a medical scheme for any irregularities. The FSB has never exercised this power and has in past left it to the Registrar of Medical Schemes to investigate and regulate the affairs of medical schemes.
- *The Labour Relations Act, 1996.* The provisions of the this Act, which became effective on 11 November 1996, promote sectoral bargaining, employee participation in decision making and the efficient resolution of labour disputes. The Act can have a direct effect on especially in-house or sectoral medical schemes.

Other statutes which might influence the administration and management of medical schemes are the *Basic Conditions of Employment Act, 1997*, *Occupational Health and Safety Act, 1993*, *Compensation for Occupational Injuries and Diseases Act, 1993*, and the *Road Accident Fund Act, 1996* (Fourie, Case Manager's Training course, 1998).

2.3.1.5.6.1 *The Medical Schemes Amendment Act, 59 of 1992*

The following definitions are provided in Section 1 of the Act:

“medical scheme” means a scheme established with the object of making provision for:

- (a) the obtaining by members thereof and by dependants of such members, of any service
- (b) the granting of assistance to members thereof in defraying expenditure incurred by them in connection with the rendering of any service; or
- (c) the rendering of a service to members thereof or to dependants of such members, either by the scheme itself or by any, supplier of a service or group of suppliers or a service in association with or in terms of an agreement with the scheme.

“*member*” in relation to a scheme, means a person who has been enrolled or admitted as and is still a member of the scheme, or who in terms of the rules of the scheme is a member of the scheme.

“*service*” means any health care treatment of any person, by a person registered in terms of any law, which treatment has as its objective:

- (a) the physical or mental examination of that person,
- (b) the diagnosis, treatment or prevention of any physical defect, illness or deficiency,
- (c) the giving of advice in relation to any such defect, illness or deficiency,
- (d) the giving of advice in relation to or treatment of any condition arising out of a pregnancy,
- (e) the prescribing or supplying of any medicine, appliance or apparatus in relation to any such defect, illness or deficiency or a pregnancy,
- (f) nursing or midwifery,

and includes the provision of accommodation in an institution established or registered in terms of any law as a hospital, maternity home, nursing home or similar institution where nursing is practised, or any other institution where surgically or other medical activities are performed, provided such accommodation is necessitated by any physical or mental defect, illness or deficiency or by a pregnancy (Medical Schemes Amendment Act, 59 of 1992).



#### 2.3.1.5.6.2 *The Registrar and Council for Medical Schemes*

The Registrar of Medical Schemes acts as the executive officer of the Council for Medical Schemes and is responsible for the regulation of medical schemes in terms of the Medical Schemes Act, decisions of the Council and directions from the Director General of the Department of Health.

The Council consists of fifteen members appointed by the Minister of Health and its functions are to:

- control, promote, encourage and co-ordinate the establishment, development and functioning of medical schemes;
- advise the Minister on matters concerning medical schemes;
- investigate complaints and settle disputes in relation to the affairs of registered medical schemes as provided for in this Act; and
- perform such other functions as may be prescribed.

The Council may appoint an executive committee and such other committees as it may deem expedient and may delegate to any committee such powers and functions as it may from time to time determine (Fourie, Case Manager's Training Course, 1998).

#### 2.3.1.5.6.3 *Registration of medical schemes*

The definition of "a medical scheme" is very wide and it is illegal to operate a fund or scheme that falls within this definition without registering it as a medical scheme in terms of the Act. Many schemes currently operating as benefit funds or insurance plans and policies should register as medical schemes as they are doing the business of medical schemes and are acting unlawfully. The Registrar has on several occasions indicated his intention to investigate and/or prosecute such unlawful practices but it is doubtful whether he currently has the capacity and resources to do so.

#### 2.3.1.5.6.4 *The rules of a medical scheme*

In terms of Section 20 of the Medical Schemes Act no medical scheme shall be registered or may carry on business unless its rules make provision for the following:

- (a) the management of the scheme;
- (b) the minimum and maximum benefits to which its members and their dependants are entitled and, if applicable, the different categories of such members;

- (c) the payment of benefits according to scale or specified directives set out in the rules;
- (d) the amount or the basis on which any membership fee is calculated;
- (e) that dependants are entitled to the same benefits as a member;
- (f) the continued membership of a member who retires from employment or becomes disabled, subject to the prescribed conditions;
- (g) the continued membership, after the death of the member or any dependant (including his spouse) until he or she becomes entitled to membership, or is accepted as a dependant of a member, of another registered medical scheme (subject to prescribed conditions);
- (h) the admission to the scheme without a waiting period and without the imposition of new restrictions of a new member;
- (i) the terms and conditions applicable to the admission of a new member who:
  - has been a member of any other registered medical scheme for a continued period of at least two years and whose application for membership is necessitated by his changing of employment, or
  - has for a continuous period of not less than two years, been a dependant of a member; and
  - who applies within three months of the termination for membership of the other scheme.
- (j) the settlement of any dispute arising out of the administration of the scheme;
- (k) the amendment of the rules to comply with any new legislative requirement;
- (l) the appointment, removal, powers and remuneration of officers of the scheme;
- (m) the powers of investment of the scheme;
- (n) where management expenses are carried by the employees, for a separate contribution table and a separate account;
- (o) execution of documents;
- (p) the custody of securities;
- (q) the appointment of the auditor;

- (r) the termination or dissolution requirements;
- (s) the appointment of a liquidator; and
- (t) for matters relating to the annual general meeting.

A registered medical scheme may in the manner directed by its rules, amend or rescind or make any additional rule provided that no such amendment, rescission or addition shall be valid unless it has been approved and registered by the Registrar (Medical Schemes Amendment Act, 59 of 1992).

#### 2.3.1.5.7 *Unfunded liabilities within medical schemes*

If one takes an actuarial view of the medical schemes industry, the problem of unfunded liabilities is much more serious than even the bleak financial position would indicate.

The current legislative framework (Medical Schemes Act, etc.) has allowed medical schemes to operate on a cash-flow rather than a long-term funding basis, while assuming that there will always be enough high-contributing, lower-claiming ordinary members willing to subsidise a growing number of low-contributing, higher-claiming continuation and widow members.

The reality, however, is that the ratio of ordinary members to low-contributing, higher-claiming continuation and widow members are declining at an alarming rate due to factors such as the ageing of the population, retrenchments and the wide availability of early retirement packages.

There is also a growing reluctance on the part of the young and the healthy to subsidise the sick and the elderly. Although this may not be their primary motivation, their reluctance is quite reasonable, because under the current arrangements there is no guarantee that they, in their turn, will be subsidised once they become pensioners. Many of these younger people are opting for the cheaper and more limited forms of cover (managed health care plans, hospital plans, etc.) offered by insurance companies or for schemes that have built-in long-term funding mechanisms, and this trend is likely to continue.

By almost totally ignoring the long-term funding requirements of their membership, medical schemes have built up massive unfunded liabilities. There can be no doubt that, if a proper actuarial valuation is done on today's typical medical scheme, which (by law) promises current and prospective pensioners medical costs cover, the medical scheme would be hopelessly insolvent.

### 2.3.2 The new Medical Schemes Bill of 1998

The new Medical Schemes Bill of 1998 proposes the full replacement of the Medical Schemes Act (72 of 1967) and all subsequent amendments thereof in terms of which the medical schemes industry is regulated and supervised. The current amendment's date back too 1993 and does not reflect the current health policy environment. The Bill therefore seeks to reflect current policy initiatives by:

- expanding access to medical schemes, especially by the elderly and sickly who currently tend to be excluded through a system of community rating and non-exclusion
- providing appropriate protections against the tendency – within a voluntary environment where there is some form of open enrolment – to deliberately join medical schemes only when sick or at a late age (adverse selection)
- providing for prescribed benefits, both as a way of ensuring that members have access to necessary care, and cost is fairly shifted to public hospitals
- establishing an appropriate demarcation between the business and community rated medical schemes which effects cross-subsidisation from young and healthy too elderly and sickly, and that of other sickness insurance products offered under the Insurance Act.

In addition, many existing provisions on governance, administration and reporting requirements need to be improved to reflect the significant changes that the medical schemes industry has continued to undergo. The Bill thus aims to:

- Provide for improved governance and administration of medical schemes
- Improve the regulatory oversight and supervision of medical schemes through the Council for Medical Schemes (Council) and the Office of the Registrar of Medical Schemes (Registrar).

It is intended that, cumulatively, these changes will provide incentives for cost containment and improve access to medical schemes (*Memorandum on the Objects of the Medicals Schemes Bill, 1998, 1998:1-2*).

### 2.3.3 Comments on the new Medical Schemes Bill

Conspicuously absent from the debate on the Medical Schemes Bill thus far is an open discussion on how it fits into the rest of the Department of Health's overall policy framework for the South African private health sector and what the macroeconomic consequences of the proposed legislation will be. Some of the salient features of the Department of Health's overall policy framework for the private health sector is:

- A stated policy to move towards a national health system for South Africa (the title of the Government's White Paper on Health) and the current reform initiatives are seen by the Department as part of a future broad-based national social security system.
- The Department views the re-regulation of the private health sector (via a new Medical Schemes Act) and the proposed Mandatory Social Health Insurance System as complementary policies that should be read as companion pieces. It is important to note that in both cases there will be a prescribed minimum benefit package for public sector hospitals.
- Many of the assertions underlying the Medical Schemes Bill are highly questionable. For instance, the assertion that the deregulation of the medical scheme industry via the 1989 and 1993 amendment Acts has led to a deteriorating financial situation with membership reducing and cost increases escalating is factually incorrect. According to the Registrar of Medical Schemes latest annual report, medical scheme membership has over the last few years increased at a faster rate than in the preceding five years, the net assets per beneficiary have more than doubled and the annual percentage increase has reduced by half. This suggests that, in their zeal to pursue certain ideological goals, the Department's policies are based on conjecture rather than on veritable facts.
- In line with other legislation emanating from the Department of Health, the Medical Schemes Bill places a lot of power in the hands of the Minister by making provision for a number of issues that fundamentally affect the structure of the private health sector, to be decreed by the Minister by way of regulation. These include the basis on which contributions may be determined, the minimum benefits to be provided by a scheme and the conditions subject to which a person must be enrolled as a member of a medical scheme.
- The re-regulation of private health care funding should also be seen in conjunction with the Department's other centralist/socialist policies for the private health sector. They include strict licensing control over the supply of facilities and equipment to the private hospital industry, regulation of the pharmaceutical industry via price controls and parallel importation (with its intellectual property rights and international trade implications) and the introduction of a period of compulsory community service for medical graduates.

- In a previous policy document, the Department openly stated that, if they found that adequate funding for health services were not forthcoming from the budgetary allocation process, they would reopen the consideration of a dedicated payroll tax and separate tax authority as a key funding source for health care. Medical scheme membership in South Africa is almost exclusively employment based with contributions to medical schemes constituting up to 17% of formal sector remuneration. Such membership is usually a condition of employment with the employer generally subsidising at least 50% of the members' contributions. Any significant change in the regulatory framework of the medical schemes industry as is contemplated in the Medical Schemes Bill and the proposed Social Health Insurance System, will have a profound effect on the viability, employment levels and industrial relations arrangements of many sectors of the South African economy. It is for this reason that organised business (Business South Africa, SACOB) has, since 1995, repeatedly requested that the Bill be referred to the National Economic Development and Labour Council (NEDLAC) as part of an open and inclusive consultation process. Failure to comply with this request (and the provisions of the NEDLAC Act) has led to Business South Africa instituting legal action against the Department (Fourie 1998:1384-1385).

The combined effect of the proposals contained in the Medical Schemes Bill will drive costs up in a way that will be financially unsustainable to both employers and members of medical schemes. The main problem areas, according to Brink (1998:1385) are:

- *The extension of membership to additional dependants.* Additional dependants mean all immediate family members living in the same household who are dependent on the principal member for family care. This includes adult and child dependants, but all will pay the same dependant rate. The high costs of adult and elderly dependants will not be matched by corresponding contributions. So ordinary members will carry the burden of paying for these additional dependants through cross-subsidies.
- *Community rating coupled with open enrolment and guaranteed access.* The Government is making an emotive appeal to the young and healthy to cross-subsidise the sick and the elderly. This implies making a promise to the young that if they overpay now, they will underpay later. This promise can only be guaranteed by ensuring a continual stream of new entrants or by accumulating sufficient funds within the medical scheme to cope with ageing of the membership. Who will make this guarantee? The medical schemes? Employers? Both seem unlikely. No scheme is adequately funded to cope with ageing. There are fewer and fewer young healthy members to cross-subsidise the elderly and the sick. The promise of low contributions in old age will not materialise for these pensioners. The problem is compounded in an environment of voluntary membership, which allows the young and the healthy to leave rather than cross-subsidise the old and the sick. Open enrolment guarantees they can come back if they get sick. The proposed "waiting periods" for those who join a scheme late in life will not compensate adequately for adverse selection. In any event, waiting periods are a blunt and impractical tools.

From the above it should be clear that the re-regulation of the private health care funding system via the Medical Schemes Bill is not aimed at ensuring a viable, competitive and innovative private health-sector. It should rather be seen as another step on the Department of Health's centralist/socialist route "towards a national health system for South Africa". Furthermore, this national health system will be funded progressively via payroll levies and taxes that will sometimes be disguised as (re-regulated) medical scheme contributions. It is also clear that this funding will be redirected progressively towards public sector healthcare facilities and institutions. Apart from the effect that this will have on the medical scheme industry, the private health sector, health service delivery in general and certain sectors of the economy, it may also further undermine local and international confidence in the Government's macroeconomic policies and commitments if an individual government department is allowed to impose levies and taxes that bypass fiscal control and discipline.

## **2.4 ASSESSMENT OF THE CRITICAL PROBLEMS IN THE ORGANISATION AND DELIVERY OF HEALTH CARE**

### **2.4.1 The public/private mix in health care**

Approximately 38.7% of total health care expenditure in 1996/97 was funded from public sector sources, while private financing sources accounted for 60.8%. There have been very little real increases in public sector health care expenditure, particularly on a per capita basis since 1989 (average annual increases of 0.5% in real per capita public sector health care expenditure). Thus, the majority of South African health care financial resources are derived from private funding sources, and the majority of expenditure are attributable to the services of private sector providers and financial intermediaries. In addition, a higher proportion of the most highly trained health workers are in the private sector, with the exception of nurses (21% of nurses work in the private sector).

For example, 59% of doctors, 93% of dentists, 89% of pharmacists and 60% of supplementary health personnel work in the private sector. Approximately one third of hospital beds are in private facilities. Despite these substantial resources in the private health sector, only an estimated 23% of South Africans have some degree of access to private sector health care on a regular basis. An unknown proportion of the population utilises private practitioners on a direct, cash payment basis, but this access varies and depends on the availability of financial resources when care is needed (*Restructuring the National Health System for universal primary health care, Main Report 1995:3*)

#### *2.4.1.1 Problems and challenges confronting the public health sector*

One of the most pressing problems facing public health services is the relatively heavy concentration of resources within the hospital sector, and consequent under-resourcing of primary health care services. Approximately 76% of total public sector health care expenditure was attributable to small public hospitals in 1992/93, with academic and other tertiary hospitals alone accounting for 44%. In contrast, 11% was spent on non-hospital primary care services. While certain hospitals provide quite substantial primary care services (eg, deliveries and ambulatory care at community hospital outpatient departments), it is clear that a redistribution of resources between levels of care is required if the government is to significantly improve access to community-based primary care services for those who currently do not have such access.

The effectiveness of public sector health services is also undermined by the historical geographic maldistribution of resources that are the legacy of the apartheid health care system. An explicit process of resource reallocation among the nine provinces has been implemented with effect from the 1995/96 financial year. The stated goal is to achieve per capita equity in provincial health care allocations, with an allowance for provinces with academic complexes, within five years. While attention is usually focussed on the distribution of resources between provinces, recent data has highlighted significant interprovincial disparities in public sector resource allocation. These indicate that the public sector in the richest magisterial districts employs 4.5 times more general doctors, 2.4 times more registered nurses, and 6.1 times more health inspectors than in the poorest districts, and that average public expenditure per person on health services in the richest districts is 3.6 times more than in the poorest districts. (*Restructuring the National Health System for universal primary health care, Main Report 1995:4*) The inequitable and inefficient distribution of public sector health care resources described here has contributed to inadequate public health sector performance for many years. This is manifest in the extremely poor health indicators, including high rates of avoidable morbidity, disability and mortality among the poor and disadvantaged communities, particularly in rural or urban undeserved areas. These problems will be significantly dealt with through improvements in the quality and accessibility of the public primary health care delivery system.

In summary, the public sector faces the challenge of attempting to improve access to basic primary care services for those who currently do not have access to such care, while at the same time trying to redress historical inequities in the distribution of health care resources between and in provinces. This must be achieved within the constraints of a limited budget which is currently derived mainly from general tax revenues.



#### 2.4.1.2. *Problems and challenges confronting the private health sector*

Since 1989 expenditures in the private sector, particularly by medical schemes, has increased more rapidly than the rate of inflation, with expenditure on medicines and private hospitals increasing particularly rapidly during this period. The rise in expenditure on benefits is due to increases in both unit costs and utilisation levels. Several factors have driven these increases, including the fee-for-service reimbursement of providers, the fact that some doctors have a stake in the financial performance of hospitals through share ownership, as well as the fact that many health service providers (including hospitals and medical practitioners) benefit financially from selling medicines. Cost increases have also been driven by increases in the proportion of scheme members who are elderly. As expected, the level of contributions to medical schemes has also risen rapidly, since schemes must finance the benefit payments out of contributions. Medical scheme contributions were equivalent to 7.1% of average formal sector remuneration in 1982, but amounted to 15.2% of average remuneration by 1992.

The Medical Schemes Amendment Act, 1993 undermined the cross-subsidisation of elderly members by younger, healthier members, in that medical schemes are now permitted to charge high risk members higher contributions, based on their previous medical claims or on preexisting conditions. Certain schemes are thus becoming increasingly unaffordable for the elderly and chronically ill who will rely more heavily on public sector health services (*Restructuring the National Health System for universal primary health care, Main Report 1995:5*).

## 2.5 CONCLUSION

The existing health care delivery system in South Africa is incompatible with the demands of the current socio-political environment and economic circumstances. As a result of shifts in political power, demographic changes, a low economic growth rate and spiralling health care costs, there is increased pressure on the State to restructure the health care system. The continued downward pressure on State resources has resulted in a planned focus on primary health care, the establishment of academic complexes and the consequent rationalisation of secondary care. Policy makers are faced with the challenge of finding a solution to the inefficient and inappropriate distribution of health care resources.

Policy trends indicate an increased inclination on the part of the State to focus on the provision of certain minimum services to the whole population. Trends in the regulations affecting the private sector clearly demonstrate the intention to manage expenditure more effectively to the benefit of the public.

The rapid cost spiral and fragmentation of risk pools within medical schemes is of concern to a number of health sector stakeholders. Medical scheme membership is becoming increasingly unaffordable for many South Africans, especially those with low incomes, the elderly and those with chronic illnesses. In the absence of a substantial cost-containment effort, scheme membership may begin to decline significantly, and the expansion of the medical scheme market to low income earners is unlikely to occur. This will have negative consequences for the public health sector, through increasing numbers of medical scheme members becoming dependent on public sector services for their health care.

Medical aids claim that the differential between medical inflation and general inflation is reducing. Costs, for years escalating astronomically, are now slowing down. But medical funding has changed. Employers spent 1% of the payroll on healthcare twenty years ago; today it is an estimated 10% to 15%. Medical scheme contributions have increased by more than 22% per year since 1977 with 1998 proving no exception with an increase of 18%.

But what will kill the medical aid industry as surely as terminal cancer will be AIDS. More than five million people are HIV positive. Legislation is now being drafted which will compel medical aid schemes and assurance companies to accept HIV-positive people without any loading to monthly payments. If this legislation goes through, the escalating costs as these people become full-blown AIDS sufferers will eat away at the costing structures thereby forcing the healthy to resign and fund their own cover.

Managed health care is the only thing standing between those who can afford to pay for health services and a national health scheme, courtesy of Dr. Nkosazana Zuma, the former Minister of Health. Less than 25% of all workers in South Africa have medical cover. This scenario has opened the door for a new health care delivery mechanism called managed health care, which is discussed in detail in Chapter 6.

## CHAPTER 3

### BACKGROUND TO THE INDUSTRY

#### 3.1 INTRODUCTION

The rapidly changing environment in the pharmaceutical industry's key markets, which has shifted power away from the manufacturers to customers, will have a domino effect not only on the marketplace for pharmaceuticals, but also on the way in which pharmaceutical companies operate.

#### 3.2 A BRIEF OVER VIEW OF THE SOUTH AFRICAN PHARMACEUTICAL INDUSTRY

The total value for pharmaceuticals (including prescription and over the counter products) in South Africa is estimated at R 7 375 096 billion for 1999. Some 4200 products from 247 pharmaceutical manufactures are available on the South African market, although only 31 companies have an appreciable market share. (IMS Health, Drug by manufacturer, 2000:1-58) Table 3.1 shows the top 10 pharmaceutical manufacturers in South Africa according to percentage market share.

Ranking	Manufactures	Number of products	Rand value (million)	Market share (%)
1	Aventis	192	555 939	7.54
2	Adcock Ingram	109	373 428	5.06
3	Glaxo Wellcome	95	356 399	4.83
4	Aspen Pharmacare	205	327 101	4.44
5	Merck Sharp Dohme	46	314 848	4.27
6	Roche	58	284 639	3.86
7	Park Davis	52	255 068	3.46
8	Novartis	71	251 598	3.41
9	Smith Kline Beecham	64	214 278	2.91
10	Janssen	63	200 530	2.71

Table 3.1 Leading manufactures by value in the South African private health care market (IMS Health, Leading manufactures by value, 2000:1)

The industry has been inundated with mergers over the last couple of years. The number of pharmaceutical companies reported to operate in South Africa according to the Pharma Strategy Group (1997:49) in 1997 was 400. In the year 2000 according to IMS Health (June 2000) there is currently 247 pharmaceutical companies operating in South Africa. Currently the process of the following mergers is taking it course: Glaxo Wellcome and Smith Kline Beecham; Park Davis and Pfizer; and Searle and Monsanto.

In the private retail market – which represents around 85% of the value of the total South African pharmaceutical market – Aventis is the leading pharmaceutical company with a market share of 7.54%, according to IMS Health data for MAT June 2000. The world pharmaceutical market is valued at more than \$US 330 billion. South Africa accounts for less than 0.1% of total world sales. The pharmaceutical sector is the nation's largest funder of medical research, spending more than R154 million a year on research and development. The pharmaceutical industry is the second most innovative manufacturing industry in South Africa, investing more than five times more of its production income on research and development than general manufacturing. Researching and developing new medicines takes on average 15 years, cost R3 billion and creates 100 000 pages of data. The table below will show the processes involved from discovery of a new chemical entity till post-marketing monitoring of a new pharmaceutical product 15 years later (Pharmaceutical Research and Manufacturers Association 1999:22-24).

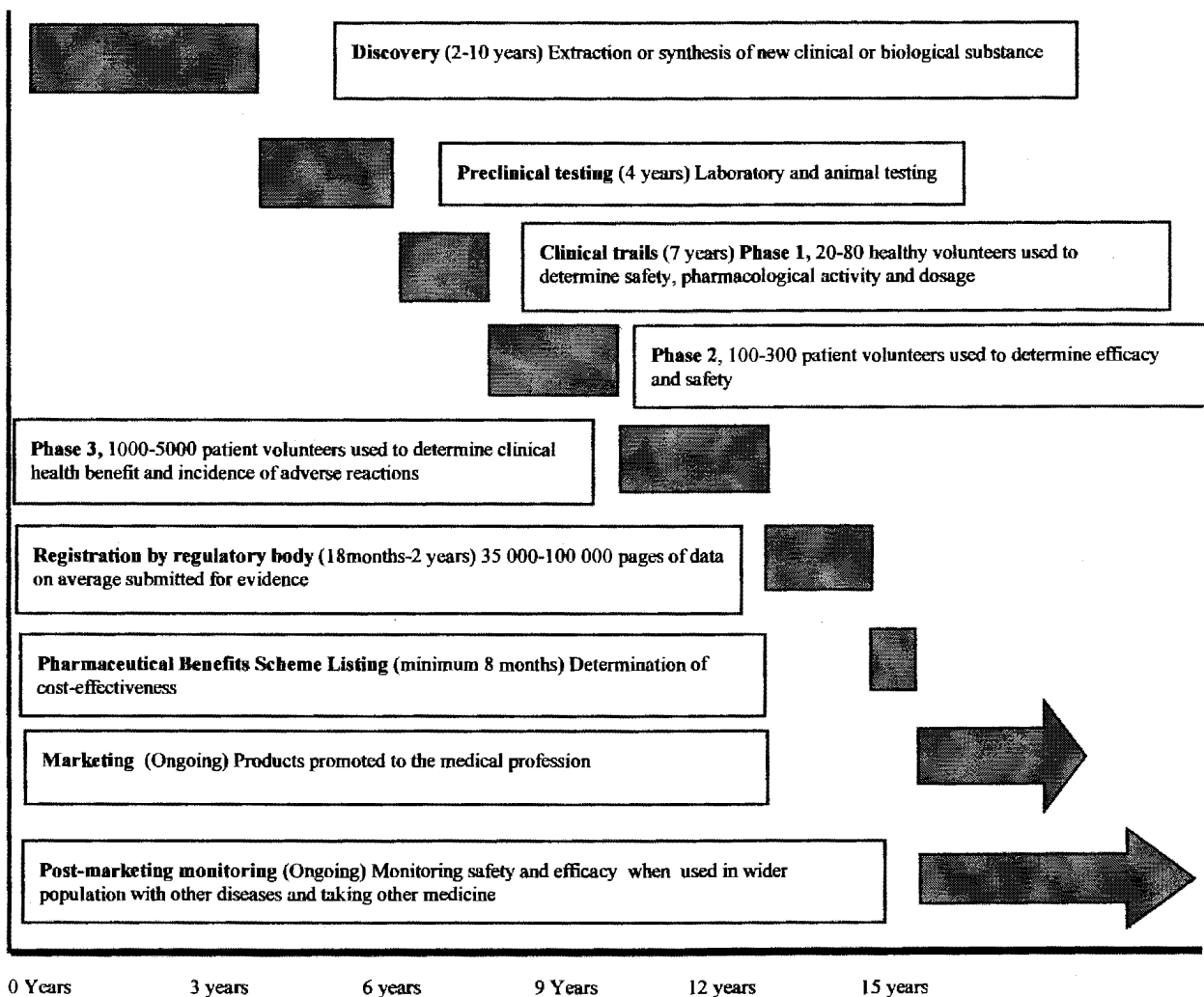


Figure 3.1 How medicines are made (PhRMA 1999:27)

The pharmaceutical discovery process is long and complex. Of the 5 000-10 000 chemical entities screened, only one becomes an approved pharmaceutical product (medicine). Of these, only three in 10 will produce sales that match or exceed the average research and development cost (PhRMA 1999:28).

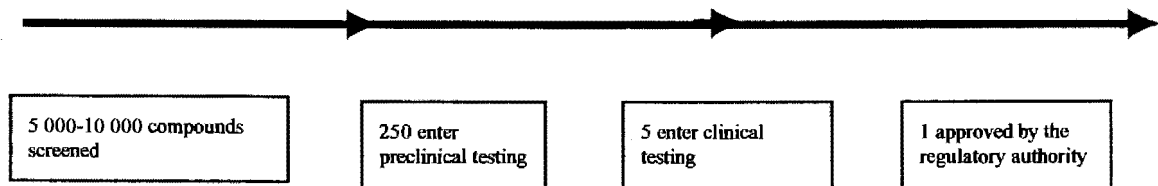


Figure 3.2 Compound success rates by stage (PhRMA 1999:28)

Clinical research is the most costly component of pharmaceutical research and development, accounting for nearly half (42.3%) of research and development investment. In recent years, the average number of clinical trials for the registration of a product had more than doubled. Regulatory authorities now require almost 70 clinical trials involving more than 4000 patients - twice the number needed in the early 1980s (PhRMA 1999:30).

Adequate patent protection of intellectual property (patents) is of fundamental importance to the pharmaceutical industry. The high risks and costs of developing new pharmaceutical products (medicine) mean manufactures rely on intellectual property protection to protect their investments in research and development, thereby encouraging further research. The Pharmaceutical Research and Manufactures of America (1999:83) report that pharmaceutical organisations would not have developed 65% of their products if patent protection were not available.

The South African pharmaceutical industry faces the loss of patent protection of intellectual property from the South African government when a consortium of 39 international pharmaceutical organisations abandoned a three-year court case to prevent Pretoria bypassing certain of their patent right in the search for cheaper pharmaceutical products. Analysts say the result could have a knock on effect on pharmaceutical prices and policy throughout the developing and first world. Only time will tell what the real effect of this decision will be (The Sydney Morning Herald, 25 April 2001:36).

Every year millions of South Africans are saved from hospitalisation, surgery and death as a result of using medicines developed by the pharmaceutical industry. The resulting savings to other areas of the health budget are estimated at hundreds of millions of rands. Disease and the suffering it causes costs the South African government, community and economy billions of rands a year in many ways - hospitalisation, surgery, doctor visits, day and nursing home care, rehabilitation and productivity.

Other less tangible but equally important cost of disease is the loss of quality of life, emotional distress and family burdens. Treatment with medicine is a highly cost-effective, and often eliminates the need for other, more expensive and frequently invasive interventions, while improving the quality of life for the patient and their carers.

Pharmaceutical products' role in shaping human lives was acknowledged by the World Health Organisation in its World Health Report 1999. It notes that while hygiene and nutrition have made a big contribution to longevity, pharmaceuticals have eradicated, controlled or provided effective treatments for what were once mankind's crippers or killers - polio, diabetes, ulcers, heart disease, infection and epilepsy:

“Income growth and improved education levels - and consequent improvements in food intake and sanitation - have accounted for part of the dramatic decline in mortality in the 20<sup>th</sup> Century; but access to new knowledge, drugs and vaccines appear to have been substantially more important.”

“... (the burden of disease)... Is concentrated on a few conditions, most of which are avoidable. There are many vaccines, drugs and clinical algorithms that if employed globally would lead to a dramatic reduction in the burden of infectious diseases.” (World Health Organisation, 1999:p.xxi)

### 3.3 THE NEW MARKETPLACE

As managed health care is injected into health care markets, the primary competitive weapons, designed to attract new and retain existing beneficiaries, will be price and the quality of care (Chetty 1999:5). Since lower prices require lower costs, suppliers will be the main contributors to the new cost structures of the providers. Although pharmaceuticals are arguably the most cost effective as well as the smallest element in health care costs, and are dwarfed by the cost of labour, pharmaceutical companies' defencelessness makes them an easy target for becoming the major contributor to the margin shift from suppliers to providers in the short term. Pressure on prices will intensify in line with the expected consolidation of providers and will continue over time. This will result from the sequential impact of managed health care, due to the different stages of evolution of the managed health care concept in the industry's key markets. For example, while cost pressures are already strong from health maintenance organisations, preferred provider organisations and pharmacy benefit management, the full impact of independent practitioner associations will be felt later due to the incremental effect of the implementation of these developments.

According to Gotlieb (2000:6) there are three major control vehicles in managed health care to curtail medical inflation. These control vehicles are cost reducers, usage regulators and capitation, each of which offers a number of different mechanisms for cost containment.

### 3.3.1 Cost reducers

Cost reducers are used typically to reduce the costs of getting pharmaceutical products to patients and are generally focussed on reducing distribution costs. Measures in this category include:

- *Mail order pharmacy:* This consists of dispensing pharmaceutical products for chronic, long-term usage in large volumes by mail or courier, obtaining cost savings through scale efficiencies in bulk buying, dispensing and administrative costs, cutting out wholesale and retail pharmacy margins and rebates from pharmaceutical manufacturers (Navarro & Wertheimer 1996:86).
- *Dispensing fees:* This involves directing patients to specific retail pharmacies in return for a negotiated reduction in dispensing fees and the dispensing of formulary pharmaceutical products.
- *Co-payment:* This involves making beneficiaries pay part of the cost of a pharmaceutical product. In some instances the flat-sum payment gives way to a “sliding scale” co-payment approach which increases in percentage as the payer’s perceived value of the medication declines, the objective being to reduce the consumption of low-value therapies. Other approaches include increasing the overall level of co-payment, reducing the number of beneficiaries exempted from co-payment and imposing an excess charge for the dispensing of a non formulary pharmaceutical product (Gotlieb 2000:8).

### 3.3.2 Usage regulators

Usage regulators are increasingly being introduced to influence the choice of the type of pharmaceutical product therapy selected for a specific diagnosis. There are a number of mechanisms.

- *Formularies:* These are lists of approved pharmaceutical products with varying degrees of effectiveness as most were open formularies accompanied only by recommendations. The trend is towards closed formularies where non-formulary pharmaceutical products are not reimbursed and must be paid for in full by the beneficiary. A variation is the preferred formulary, which contains only a few products in each therapeutic indication: typically, pharmaceutical companies pay premiums for admission and sell their products at large discounts in order to obtain exclusive positions in these formularies (van den Berg 1999:5)

- *Substitution*: Substitution of drugs takes a number of forms. The best known is generic substitution, where prescriptions for off-patent branded pharmaceutical products are filled with lower-priced generic versions rather than higher-priced brands. Class or chemical substitution, specifying cheaper drugs within a class of similar drugs. However, the most powerful influence on choice of the drug is the growth of therapeutic substitution. This is the use of a different class of drugs approved for the same diagnosis. Here the perception is that the two drugs have essentially the same therapeutic effect and the marginal difference in clinical effect for a few patients do not justify the significant difference in treatment costs between the two therapies. Substitution is probably the most powerful check on pharmaceutical companies (Concepts in managed care pharmacy number 3 1999:1)
- *Step therapy (treatment guidelines and protocols)* advocates a minimalist and incremental approach to overall treatment. This approach calls initially for diet and exercise and other non-pharmaceutical product programmes, followed by low-cost generic drugs and only ultimately therapies based on newer and more expensive branded products (Milliman and Roberts 1999:2). These tools measure important aspects of health and well-being from the patient's perspective (Johnson 1999:782)
- *Drug utilisation reviews (DURs)* compare the prescribing patterns of individual physicians with a peer group to identify and correct deviations from the norm.
- *Pharmacoeconomic* studies provide economic data for use in evaluating the value of a drug as a measure for drug approval, pricing and inclusion in reimbursement programmes, for formulary listing and establishing the level of co-payment (Levy and Champey 1999:52)
- *Counter detailing*, or academic detailing, uses interventionist techniques designed to reform physicians' prescribing patterns by promoting medically appropriate and economically sound prescribing decisions.
- *Outcomes* are studies which measure the effect or result of treatment or care and are used to demonstrate the overall quality of a therapy (Health Industries Research Center 1999:109)

### 3.3.3 Capitation

Capitation is a risk-sharing vehicle which involves setting a fixed fee per head for providing the entire pharmaceutical product benefit. Costs incurred over and above the contractual fixed fee are borne by the pharmaceutical company (Health Industries Research Center 1999:143).



Managedcare info.com (2000:1) defines capitation as a form of payment in which the provider's compensation is based upon a specific population served. Payment is a fixed price and covers the cost of health care services delivered to the enrolled member. A negotiated rate per member is usually paid monthly to the health care provider.

Capitation puts the provider at risk for the frequency, severity and intensity of health care services being provided. Providers must balance those risks against the potential financial rewards and other benefits to determine when and whether to accept capitation. The types of services which can be capitated are facility charges (inpatient, outpatient, etc.), professional fees (primary, specialty, non-medical), and other medical services (pharmaceutical products, ambulance services, etc.). Capitation contracts can also cover specially carve out services, mental health services, outpatient services, and also global capitations with including both the physician and facility (hospital). In moving to capitation, providers become responsible for a group of people rather than a group of service offerings. The broader the services covered under the capitation, the broader the responsibility. While fee-for-service rewards the provider with increased volume, capitation requires hospitals and physicians to serve as the gatekeeper of resources, providing the most appropriate care in the most appropriate setting. Under capitation, the providers' profitability increases when the covered population increases and the volume of services rendered to the population decreases.

Capitation can provide an opportunity to enhance a community's health status. Rather than emphasizing treatment of patients' illnesses, it gives incentives to maintain the health of an entire enrolled population. Prevention is key. Table 3.2 show the differences between the traditional fee-for-service model and the health care structure with a capitation model.

#### PARADIGM SHIFT

<b>Fee-for-Service</b>	<b>Capitation</b>
World revolves around the provider	World revolves around covered lives
Care of a specific patient	Care of a covered population
Specialist driven	Primary care driven
Solo practice	Network of providers
Local service area	Regional service area
Volume driven revenue	Controlled volume drives revenue

Table 3.1 Comparing fee-for-service with capitation (www.managedcare info.com/capitation.htm, 2000:2).

There are advantages and disadvantages associated with capitation. Some are listed below.

*Advantages of capitation:*

- Shifts the providers' focus to health and prevention
- Improves cash flow to the provider. The provider receives a monthly payment for the enrolled population whether care is provided or not
- Allows access to an enrolled population
- Allow flexibility and creativity in managing utilization
- Strengthen relationships and creates interdependency among providers
- Shifts emphasis to outpatient and home care.

*Disadvantages of capitation:*

- Unknown risks
- Requires strong change and utilization controls
- Philosophical differences
- Require change
- May impact quality

Drug cost containment will be significantly affected by these sophisticated control mechanisms for two reasons. Firstly, in the past the passive nature of the providers made it difficult to gain appreciable savings. However, the growing competitiveness of health care throughout the industrialised world is being reflected in the growth in mandatory compliance and fiscal disincentives for physicians, pharmacists and patients, as providers realise that the key to success lies in the power to enforce: the more aggressive enforcement of compliance will result in a greater level of containment. Secondly, the emphasis has shifted from more simplistic cost controls to mechanisms influencing prescribing behaviour which effect both the choice of drug therapy and the overall usage of drugs. The net effect will be to lower clinical costs as well as drug utilisation ([www.managedcare info.com/capitation.htm](http://www.managedcare.info.com/capitation.htm), 2000:1-3).

Managed health care has discovered a “win-win” formula for achieving risk-free drug cost containment at the pharmaceutical industry's expense and it is likely that aggressive cost containment practices will be in force until the providers and payers are convinced that the accumulated fat of years of non-price competition has been cut out of the market. These powerful customer-driven mechanisms controlling price, volume and competition have a high second-order effect: influencing pharmaceutical company margins as well as the type of research that can be funded by companies and accepted by customers.

The marketplace that is emerging is a radically new and threatening place for the traditional pharmaceutical company. The healthcare market is moving towards becoming an institutionalised commodity-type market. In these conditions of turbulent change, clearly the non-innovative, the uncompetitive and the unchangeable pharmaceutical companies will be driven out of business or find only a brief respite in an environment of hostile mergers and acquisitions.

### **3.4 BUSINESS IMPLICATIONS FOR THE PHARMACEUTICAL INDUSTRY**

Competing in this radically new marketplace with its ferocious price pressures are not the only problem facing pharmaceutical companies. The industry is simultaneously plagued with an overcapacity, deregulated, low-price competition and increasing research costs. Deregulating generics and a greater acceptance of substitution have changed choice, and choice is changing the marketplace. Wider customer choice represents a threat when it is accompanied by new competitors who do not subscribe to or play by the accepted rules of the game or observe the old understandings.

Price is the key force driving change. Traditionally, price in the old product-driven environment was primarily based on what pharmaceutical companies perceived to be a fair return for the risks and costs of developing high-cost and high-risk innovation. In today's managed health care market, price is the signal that tells organisations how the marketplace truly values the products that they discover, make and sell. The price that some company charge is the culmination of every decision made along the chain from discovery through to marketing. To survive in this challenging environment, pharmaceutical companies can no longer let their internal processes determine price: customers determine price.

In an era of customer demand for low cost and high quality, to stay in business and prosper, pharmaceutical companies will be forced to reexamine every aspect of how they do business. This will raise a number of important issues which fundamentally question the accepted way of managing pharmaceutical companies. The only constant today is change.

### 3.4.1 New pharmaceutical product innovation

Finding, developing and marketing new drugs has been the *raison d'être* of the research-based pharmaceutical company. Important issues are raised by the transformation to a customer-led marketplace. They present challenges to many pharmaceutical companies which are managed and staffed to produce modest, low-risk improvements to existing drugs which gained yesterday's easy profits.

- *Costs:* James (1994:15) estimates that the total cost of bringing a new product from discovery through to launch, including the cost of capital with a risk premium and the cost associated with failures, is estimated at between \$255m and \$369m, pretax. Around 90% of these costs are concentrated in product development, with the risk falling as the product progresses through the development phases. The Pharmaceutical Research and Manufacturers Association of America estimate that researching and developing a new pharmaceutical compound takes on average 15 years and cost \$480m (Pharmaceutical Research and Manufacturers Association, 1999:22).

Price Waterhouse Coopers (1999:26) estimates that the cost for launching a new chemical entity (a pharmaceutical product) at between \$450m and \$550m. James (1994:16) continues by saying that the percentage of sales spent on innovation has been increasing steadily from around 6% in the 1960s to more than 16% in the early 1990s. The present figure for Rhone Poulenc Rorer is 18% (Annual Report, 1999:12). Both the increased cost and the growing amount of resources being ploughed into pharmaceutical innovation are due to a combination of factors apart from inflation. Firstly, growth was traditionally linked to new product introductions, and pouring more money into innovation generally guaranteed more new products. Many of these expenditures were poorly controlled, however, and led to staff, systems, procedures and facilities' growth rather than major new products being developed. Secondly, the shift from acute to chronic therapy has increased the complexity of research as well as the regulatory approval process. Thirdly, pharmaceutical companies with low levels of new product innovation have been spending at abnormally high rates in an effort to secure future sources of revenue. Pharmaceutical companies face the immediate prospect of much lower margins and almost no price flexibility for existing products in the world's largest markets. The key question is whether companies can afford to keep spending on innovation at the recent high levels.

- *Productivity:* Two features have emerged in pharmaceutical research productivity. Firstly, companies have found that as research moves up the technology curve it not only becomes more complex and costly but also output begins to fall off; and secondly, as size and complexity increased, organisational inefficiencies crept in. A combination of technological complexity, cost increases, scales impact and bureaucracy has led to a growing inefficiency of the whole innovation process.

- *Quality:* Customer satisfaction is declining as customers do not rate new products highly. Many customers now perceive that a large number of the new products reaching the market either are derivative or offer a low level of therapeutic or safety advantages or cost savings over existing products. Class and therapeutic substitution are customer responses to poorly perceived value. In a managed health care market the customers' perception of value is paramount. Products that do not meet customers' criteria will not recoup the investment.
- *Focus:* Historically, the largest pharmaceutical companies have achieved the bulk of their sales by developing so-called annuity drugs which treat long-term chronic diseases in the largest numbers of patients. With sophisticated customers able and motivated to make choices based on their perceptions of value, will there be a future market for a large number of "me too" products in a category, or is it becoming economically futile to develop such products? The burning issue for most pharmaceutical companies is whether they have the capability to convince their customers to pay a premium to cover the cost and return an acceptable profit for developing products with little differentiation. Many of the unconquered conditions that offer new business opportunities, like AIDS, cancer, migraine and multiple sclerosis, have relatively small numbers of patients. In a number of categories, significant products have yet to be introduced due to both the difficulty of finding appropriate new compounds and the complexity of the development process. At the same time, providers and medical aids are wrestling with the thorny issue of whether society can afford the costs of heroic efforts to keep every patient alive for as long as possible.

### 3.4.2 The marketing of pharmaceutical products

It is clear that the list of individuals with some degree of influence over the choice of pharmaceutical products used is lengthening. For the time being medical practitioners will remain important, but the influence of patients and managed care organisations are growing in importance and the determination of who has how much influence is a challenge to the industry. As a result, overall company promotional budgets five years (2005) from now will have to change. Dietrich (1996:1) estimates that attention to managed care organisations will increase to absorb 30% of some pharmaceutical companies promotional budget compared to less than 20% presently.

Price Waterhouse Coopers (1999:35) showed that patients/consumers was the target of 13% of the pharmaceutical marketing budget in the year 1999 compared to the present 5% (1998) and medical practitioner-directed activities will absorb a smaller but still the major portion of the marketing budget, 48% for the year 1999 compared to 71% in 1998.

Sussex and Marchant (1999: 128) report, that pharmaceuticals promotional spend has increased by 22% in the USA from 1998 and that most of these costs will be borne by third party payers, such as employers and health insurers. The new managed health care market will thus have a significant impact on the ways in which pharmaceutical companies promote their products and how they organise their business to deal with customer needs.

- *Sales forces:* The significant growth in the industry's sales and margins is not only due to a large number of new products reaching the market at higher prices and the ability to increase prices on older products, but also to sales force size. However, the rapid shift to managed health care is creating a new set of challenges questioning the cost, sizes and evens the role of the traditional pharmaceutical sales force. Firstly, the concentration of buying power and the consolidation of the industry's customers ranging from pharmacy benefit management, health maintenance organisations, mail order pharmacies and independent practitioner associations, as well as the creation of mega hospital chains has increased pressure on the pharmaceutical industry.

Secondly, the consolidation and concentration of the key players were enhanced by an aggressive approach by the managed health care customers to restrict the decision-making power of physicians and pharmacists. With formularies, substitution, prescribing guidelines, treatment guidelines/protocols and dispensing agreements enforced by budgets, counter-detailing, mandatory activities and financial incentives, the prescribing autonomy of an individual medical practitioner is declining rapidly. Thirdly, as the market power base began to shift away from fragmented downstream towards consolidated upstream decision-making, the traditional sales force approach will come under pressure. The "unitary" focus of one decision-maker, one sales person, one dominant demand factor with its one size-fits-all approach will no longer work.

- *Pharmacoeconomics:* One of the most significant developments in managed health care is the accelerated search for mechanisms to establish values for money. Because of a focus on cost containment in all major pharmaceutical markets, pharmacoeconomic data have become increasingly important. Even in the USA, which is considered to be a free-market economy, there is now a focus on reduction in health care expenditure (Marketletter 1999:27). Pharmacoeconomics are a set of potentially useful approaches for making more rational decisions for selecting drugs. These approaches include analyses of cost benefit, cost effectiveness, cost minimisation, cost utility, quality of adjusted life years and outcomes. Areas of potential use for managed health care customers include price negotiation, reimbursement and co-payment levels, formulary listing, substitution, treatment guidelines and improving prescribing decisions. For pharmaceutical companies the prime focus of pharmacoeconomics is on demonstrating value to support product marketing, and it can also be of use in project selection for R & D.

Krimsky (1999:1474) believes, there should be clear guidelines to foster more transparent reporting of pharmacoeconomic analysis that should enable policy makers to better interpret and more appropriately apply the results to patient care decisions. This is said in response to Friedberg's (1999:1456) findings that only 5% of pharmacoeconomic analysis funded by pharmaceutical companies reached unfavourable conclusions, compared with 38% of pharmacoeconomic analysis sponsored by nonprofit organisations. Friedberg concludes in his study are those pharmacoeconomic studies sponsored by pharmaceutical companies are more likely to report favorable findings (Friedberg 1999:1455).

### **3.5 NEW RULES FOR A NEW MARKETPLACE**

#### **3.5.1 Product innovation is no longer the only determinant to business success**

It was accepted in the pharmaceutical industry, and largely proved, that the more money and effort put into innovation, the greater the chance of new products, and the more new products introduced, the greater the prospect of achieving a major market success and a competitive advantage.

This works admirably as long as medical practitioners had the freedom of prescribing, buying power was fragmented and insensitive to price, and customers did not have the skills or the motivation to make comparisons between products' performances. Increasing demand-side controls on prescribing autonomy, competitions between providers, creating concentration of buying power, and the growth in sophisticated product-selection criteria by managed health care, have wrought havoc with traditional research and development (R & D) strategies. In a managed health care market the degree of success of an innovation is a function of how well a product is perceived to offer new or better solutions to a customer's clinical and cost problems.

According to Pospisil and Ward (1994:36), it is no longer sufficient for pharmaceutical firms to promote the efficacy of their products to managed health care organisations. Pharmaceutical companies must prove cost effectiveness compared to similar pharmaceutical products and show how their medications cut treatment costs by reducing hospital stays or preventing surgery.

### **3.5.2 Medical practitioners are no longer the only customers**

Where medical practitioners have freedom of choice in prescribing, where there is little emphasis on cost containment and where the payers have few mechanisms to monitor medical practitioners' compliance, the role of the medical practitioner is evidently crucial. However, this has changed rapidly with the implementation of managed health care. There will be fewer occasions when pharmaceutical companies will send sales representatives to doctors. Pharmaceutical companies will send more to managed health care pharmacy and therapeutics committees (P & T). It is now a tough negotiating session where these P & T committees say that they do not want to see glossy advertising but want to see scientific evidence of the pharmaceutical company's product therapeutic value (Pospisil & Ward 1994:36). The result is a plethora of controls from formularies to prescribing guidelines, mandatory substitution and practice protocols.

New managed health care intermediaries focus on managing the pharmaceutical component of the payers and providers' costs through formulary construction and management, counter-detailing and utilisation of generics, all of which effect the medical practitioner. Negotiating volume rebates from pharmaceutical companies and rebates from participating pharmacies completed the control mechanisms, while a switch to mail order pharmacy supply for chronic drug therapy eliminated a large part of distribution margins.

While medical practitioners will always be an important element in the marketplace, the upstream consolidation of managed health care buyers is irreversibly changing the balance of power. When the decision makers of pharmaceutical products are a relative handful of economically orientated executives, the current armies of sales forces will simply not be needed (Easton 1994:36).

A staff model managed health care organisations can restrict pharmaceutical sales forces to promote to their employees and so prevent the prescribing of pharmaceutical products that have not negotiated favourable prices to be included on their formularies (Castagnoli 1994:15).

### **3.5.3 Competition goes beyond innovation**

Traditionally, competition was based largely on a product's features/benefits and its clinical performance. Price competition was notably absent and even clinically, but indistinguishable products could be introduced successfully at higher prices than the pioneers' product. This has changed radically. Firstly, the growing ability of managed health care customers to make informed decisions based on their perceptions of the clinical performance and cost implications of competing drugs, motivated by the provider's need to contain costs, led to discounting.



Secondly, the growing ranges of generic drugs, the widespread acceptance of their substitutability drove down new product prices, particularly for those with the potential for therapeutic substitution.

Finally, with slow growth, or static or even declining markets, the relaxed nature of competition vanished as pharmaceutical companies began to realise that participation no longer guaranteed success, that the new objective is survival, and that it means taking market shares away from competitors. Competition is now firmly based on a pharmaceutical company's ability to meet a customer's clinical needs in the most cost-effective manner.

Easton (1994:35- 36) believes that in the new managed health care world, the key to pharmaceutical success will be market shares and that long-term market share will provide the economies of scale necessary to reduce costs across all the pharmaceutical company's business functions, therefore providing an economic advantage. This can be used to exercise a greater price flexibility or could be invested into operations to further increase the cost advantage.

#### **3.5.4 Operating cost is crucial**

Managed health care customers' decisions on what they will pay rather than pharmaceutical companies' decision on what they will charge is becoming paramount. New product pricing is no longer driven by premiums and the ability to raise prices has almost been eliminated. The ability to find and develop a stream of new products has always been a key success factor, so innovation became a significant investment for pharmaceutical companies. Escalation in research and development is due to the shift from acute to chronic therapy, more regulatory requirements and the higher costs incurred as pharmaceutical companies moved up the knowledge curve into new, more advanced, areas of science. Marketing in the pharmaceutical industry was long accorded a back seat for one simple reason. In a marketplace where the key customer, the medical practitioner, was influenced by the latest new product and price was largely irrelevant, but the marketing job was largely one of "advising of availability".

The discovery of the correlation between the number of visits to a medical practitioner and sales volume drove the escalation of sales force size as companies attempted to maintain parity with their competitors who had increased their own sales force sizes. At the same time companies increased funding of marketing tools like educational support and pharmacoeconomic studies to reduce the increase in risk caused by the growing expenditures on innovation and the decline in efficiency.

### **3.5.5 Satisfying the new managed health care customer needs**

In the new health care market, non-product attributes are becoming more important than the inherent attributes of the product themselves. Companies competing successfully in the new health care market should pay increasing attention to improving the non-product components of their product-service offerings (KPMG Report 1996:7). As long as the approach to managing health care was uncoupled, and providers and payers managed health care resource allocation and judged outcomes on the basis of the discrete components of health care, there was every reason to keep pharmaceuticals separate. This led to the widespread acceptance in the pharmaceutical industry that the value of its unique and continuing contribution to society would provide a lasting shield against challenge. Much of the pharmaceutical industry's defence was built on facts. Not only were pharmaceuticals the smallest component of overall health care expenditures and the most cost-effective, but also the industry was able to point to a long run of products which eased suffering, and saved lives and money for society. With health care costs spiralling out of control managed health care organisations are looking at health care as a value-chain and at where the inputs and outputs occurred, together with their efficiency, in order to assess where costs could be contained and reduced. At the same time medical aids, employers and managed health care organisations are experimenting with injecting competition into the health care system to improve the efficiency of the discrete components.

This radically new managed health care-led marketplaces is not only driving a fundamentally new set of rules for survival and success. It will also have a seminal effect on the future structure of the pharmaceutical industry and drive the development of a new set of business models for pharmaceutical companies to enable them to participate effectively in the new marketplace.

### **3.6 PHARMACEUTICAL ORGANISATIONS MUST CONSIDER A NEW DYNAMIC STRUCTURE**

The pharmaceutical industry's structure was essentially unchanged from the early 1950s through to the early 1990s, with very few new firms and only a limited number of major acquisitions and mergers. This long-run structural stability was due to a combination of factors. While the continuous demand for more and better health care, supported by price-insensitive decentralised decision-makers, created strong market growth, patents, trademarks and escalating regulatory requirements provided effective barriers for new competition. In this high-growth, protected market, all the incumbents were able to prosper with even the mediocre producing a performance unmatched in almost any other industry. As a result, few companies were for sale and even fewer developed the urge to merge.

The pharmaceutical industry was the structural antithesis of most other industries. Up to the 1990s the business was highly fragmented with the largest company on a global basis having less than a 5% share (Merck & CO) and companies on a country basis rarely having more than 8%. GlaxoWellcome in the UK and Rhone-Poulenc Rorer in France are two exceptions, with shares of around 12% in their home markets. Presently the global market supported around 7 000 pharmaceutical companies, of which 50 accounted for in excess of 70% of sales, at least 75% of the money spent on innovation, and around 80% of the industry's global profits (James 1994:28).

### **3.6.1 Structural drivers for the pharmaceutical industry**

The new structure of the pharmaceutical industry is being driven by three issues: access to customers, access to technology and the new competitive realities.

#### *3.6.1.1 Access to customers*

As the traditional large and fragmented customers decision base (medical practitioners) gives way to a small and concentrated set of more powerful decision-makers (managed health care organisations) the battleground is beginning to change. Managed health care organisations are focussing their demands in three different ways: firstly, low-cost supply of primarily chronic medication (hypertension and asthma) to meet the treatment needs of large numbers of patients; secondly, the clinical and economic justification to enable them to make more informed decisions about using more expensive treatments and new pharmaceutical products; and thirdly, the sharing of risk with suppliers (medical practitioners, hospitals and pharmacies) by paying for a pharmaceutical product or for the management of a disease on a capitated basis.

#### *3.6.1.2 Access to technology*

Although the ubiquitous "blockbuster" drug will always be a major factor in some pharmaceutical company fortunes, the reward for innovation will be more firmly linked to a combination of clinical and economic value. Average pharmaceutical products are more likely to fail to generate returns adequate to fund even their direct costs of development.

Although scientific and technical knowledge is now widely dispersed among a large number of pharmaceutical companies and it is impossible for anyone firm to gain a lasting competitive advantage, size is becoming an important factor. Advanced research is inherently more risky, and the scale of resources required, not only to fund finding and developing new pharmaceutical products or buying in ideas from biotechnology companies but also to underwrite the risks, will increase.

### *3.6.1.3 Competition*

From a focus concentrated primarily on product features and benefits, competition, led by managed health care customers, is evolving into areas which are completely new for pharmaceutical companies. Firstly, competitive leverage not only for low-priced, volume products but also for advanced pharmaceutical therapies is based firmly on a pharmaceutical company's ability to be a low-cost supplier. All products eventually become substitutable, and without a low-cost supply capability, pharmaceutical companies will not have the ability to maximise long-run margins. Since much of the cost is based on volume, size will be an important driver.

Secondly, competitive strength will revolve around the ability of a pharmaceutical company to leverage customer relationships. This will range from collaborative risk taking and information-sharing programmes through to forward integration, acquiring intermediaries like PBMs (pharmacy benefit managers). Again, size is important, due to the cash needs for both meaningful collaboration and acquisition.

Small pharmaceutical companies will provide too narrow a set of boundaries from which to make appropriate decisions about all of the opportunities and challenges facing pharmaceutical companies in a managed health care environment. Nevertheless, while size will become a critical success factor, size in itself will not be a protection for those companies who have no other competitive advantage.

## **3.7 NEW MARKET MODELS**

James (1994:31) identifies five basic business models that are emerging in the pharmaceutical industry. Each of these contrasts significantly with the traditional dominant, product-driven, standalone pharmaceutical company.

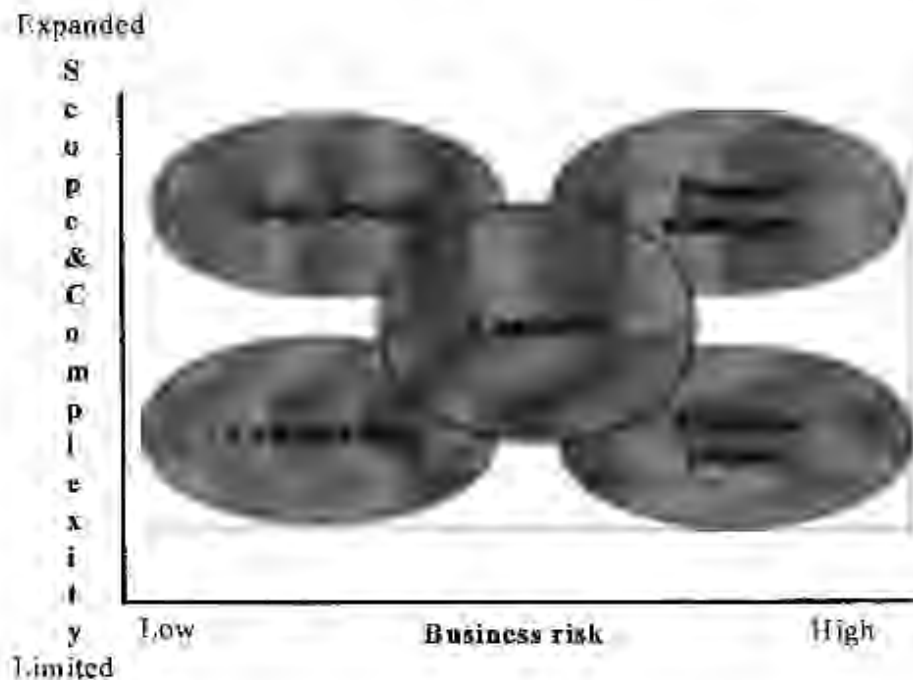


Figure 3.3 The five new business models (James 1994:32)

### 3.7.1 Market share drivers

Market share drivers are designed to capture large market shares dominated by increasingly lower-priced therapies, by providing broad-based treatment solutions in a "one-stop shop" intended to reduce the system cost of pharmaceutical product therapy. Share drivers are formed using the nucleus of a large research-based, functionally integrated pharmaceutical company vertically integrated into a PBM or a managed health care provider through acquisition, with the product base expanded by a combination of acquisition and contract supply agreements. The key objective of a share driver is to obtain a high share of patients, contrasting with the old approach of achieving a high product market share, since volume is now as important as price over the long term. Competitive strength depends on the capability to supply a comprehensive product line in volume leveraged through a channel management vehicle (pharmacy benefit management) or captured customers, for example a health maintenance organisation or preferred provider organisation.

### **3.7.2 Premium players**

Premium players are focussed on capturing market shares through leading-edge therapeutic solutions. They are formed by a large, functionally integrated, research-based pharmaceutical company horizontally integrated through acquisitions with smaller research-based companies that enhance the aggregate research productivity to provide a fuller line of products. Competitive strength is built around the ability to offer a range of high-value therapeutic solutions to sophisticated customers, primarily in hospitals and for in-office procedures, in therapy areas and in countries where customers are prepared and able to pay the premiums.

### **3.7.3 Disease managers**

Disease management is aimed at capturing market shares by offering superior management of selected diseases in clearly defined therapeutic areas. Formed from a functionally integrated, research-based pharmaceutical company operating either alone, using a network to acquire products, or selectively merging or acquiring firms to increase product line depth within, or increase the number of therapeutic areas. The competitive strength of disease management rests on the capability to provide high-value solutions in a "one-stop shop" to specific customers for defined therapies which go beyond the provision of the physical product.

### **3.7.4 Consortia**

These are groups of research-based pharmaceutical companies, commoditors, conceptualisers and even providers who join forces to offer a broad set of solutions to customers. Both formal consortia, with equity sharing, and informal consortia to support disease management, capitation and tender bids, for example, are probable.

### **3.7.5 Commoditors**

These are companies focussed on producing large-volume generics at low cost for direct sale either to independent PBMs, managed health care organisations, hospitals and retail pharmacies, or as house brands for share drivers, disease managers and as participants in consortia. These new business models have begun to take shape nationally, regionally and even globally (James 1994:31-36).

### 3.8 THE KEY TRENDS IN THE YEAR 2000 AND BEYOND

The new pharmaceutical market models reflect three key trends for the future.

- (1) *Ongoing consolidation:* The urge to survive in a rapidly changing environment has been the force behind pharmaceutical company acquisitions. Many of these acquisitions have been rationalised by arguing that building up critical mass, through either vertical integration or horizontal expansion, are the key development strategies for the future. However, the increasing frequency and escalating values of the deals indicate an air of panic at being left out, which has led to a feeding frenzy and, for the first time, hostile acquisitions. Significantly, some of the acquisitions suggest that some pharmaceutical companies will do no more than end up struggling together rather than separately. Nevertheless, companies who just pursue size as a strategy is likely to find that size in itself will offer no protection in tomorrow's marketplace.
- (2) *Fewer companies:* Consolidation automatically leads to fewer companies.
- (3) *No new major players:* Infrastructure costs have now passed well beyond the point where one or two products were sufficient to create a top 50 pharmaceutical company from scratch. Essentially these firms, the conceptualisers, ranging from single-product startup organisations to established developers, will provide most of the new consortia. For the conceptualisers this offers not only funding opportunities but also a way out of the infrastructure-building trap, which diverts management attention and increases the "burn rate" of venture capital; it can also be a means of avoiding reliance on a single product for survival and growth, all of which have combined to threaten the futures of many biotechnology companies (Health Industries Research Center 1999:213).

### 3.9 THE WINNERS AND LOSERS IN A NEW HEALTH CARE MARKET

The Health Industries Research Center (1999:225) estimates that by the year 2002 some 40% of the 100 largest pharmaceutical companies operating will be out of business, 30% will merge or be acquired, 20%, will survive and 10% will be clear winners.

This change in arguably the most successful of all industries is under way because pharmaceutical organisations have failed to identify the changes brought about by managed health care and been unable to react quickly and effectively.

- *The curse of incumbent success:* The power of pharmaceutical companies' knowledge of their products, the technology and ways of developing, manufacturing and marketing, and the regulatory process, had become so deeply embedded in their communications channels, information and accounting systems, strategies, structures and cultures that they had great difficulty in recognising the managed health care threat to the established way of doing things.
- *The law of increasing conservatism:* The long-run success of the pharmaceutical industry bred a degree of conservatism into the decision-making processes in many pharmaceutical companies and a reluctance to move away from those strategies which had proved successful in the past. With the growth in the pharmaceutical industry, companies grew more bureaucratic and developed institutionalised rules for dealing with situations which served to limit the firms' range of response as well as their options. Over time, organisational arteries hardened, the culture became set and the managerial creativeness of earlier years became routine and ritualised (Gotlieb 2000:46).

Whether a company win or loses now centres not on the traditional saviour, the new product, but on the professionalism of its management and the underlying organisational culture. Winners will not only look different, but they will act differently, accepting that the ongoing changes are irreversible not only intellectually but emotionally as well. They will accept and endorse continuous change and will have a very different view of their world.

The winners will see themselves as an integrated part of the health care chain, moving from monochromatic, single industry-focussed organisations, to polychromatic organisations able to function in the new multi-industry health care environment. Losers will be firms who continue to see themselves solely as innovators, developers and marketers of drugs. By 2002 these firms will be part of another company's food chain. A major trait among winners will be the continuous emphasis on gaining a deep understanding of managed health care customers' needs at all levels in and across the health care chain, as well as a sharpened capability to mobilise the organisation to meet these needs. Winners will recognise that products have time-limited advantage. Competitive advantage built around customer requirements has far more sustain ability than competitive advantage resulting from positioning, innovation or proprietary standards. This customer culture will extend to a complete understanding of the managed health care market, including the economies of disease, treatment and individual customers.



Winners will accept that the new goal is creating value along the health care chain, from suppliers through distribution to patients, and that the competitive edge will come from a willingness to improve performance for all members in the health care chain and not for the pharmaceutical company alone.

Past success was derived from the absence of effective competition rather than a competitive advantage. Managed health care, technology and regulation are changing the health care market in fundamental ways. The failure of pharmaceutical companies to redefine their roles in the new health care environment and a failure to match the organisation with the new environment will result in an inevitable market failure. Success among winners will be recognised as involving not only the ability to find a new pharmaceutical product but also the capability to “own” the disease, the technology and the customer. Failure will not come because managed health care customers stop buying, prescribing or using innovative drugs, but because of a pharmaceutical company’s inability to see or respond to changes taking place in the health care market.

Winning will require a change in behaviour away from innate conservatism due to an unbroken run of success too risk-taking and risk-sharing; from a reactive approach to a proactive approach, as competition in the pharmaceutical industry shifts away from being an observer to an issue of survival; and from an isolationist bunker mentality to a seamless business where the boundaries between managed health care customers and competitors become increasingly blurred. Many companies are poised uneasily between the lure of managed health care customer satisfaction and the forces of traditionalism. While the market increasingly rewards customer-inspired initiatives and prices linked to perceived value, conservative fundamentalists and organisation and process hardliners resist change (Gotlieb 2000:66-68).

### **3.10 THE PHARMACEUTICAL INDUSTRY’S RESPONSE TO THE NEW HEALTH CARE ENVIRONMENT**

Against a background of accelerated change, pharmaceutical companies have responded in a number of different ways, most trying to do things better with a few tries to do things differently.

Almost all pharmaceutical companies have already gone through one restructuring and are on to a second, or even third, round in an attempt to deal with their structural cost overhangs. Many are re-engineering their business process to improve their overall efficiency. A few are transforming by developing new value propositions for customers as the old product-based approach loses its viability.

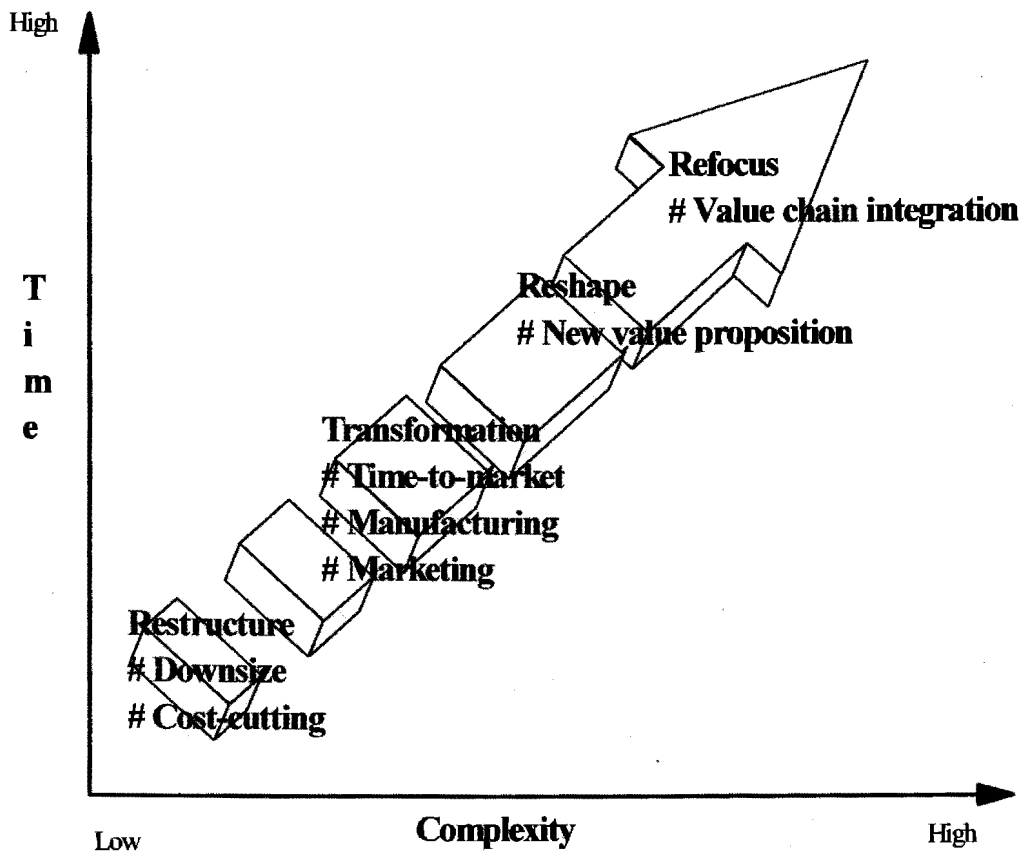


Figure 3.4 Pharmaceutical companies' response to change (Health Industries Research Center 1999:203).

### 3.10.1 The restructuring of the pharmaceutical organisation

Almost all pharmaceutical companies have acknowledged that the combined effect of falling prices, increasing costs of innovation and a more competitive market with managed health care processes being implemented will squeeze margins, necessitating a much lower cost structure.

Cost reductions in the pharmaceutical industry in the past were driven more by isolated events than by turbulent environmental changes.

According to the KPMG report, *Managing transformation in the new economy* (1996:6), cost-cutting is not sufficient for survival; developing knowledge-based growth strategies is essential. And yet most pharmaceutical companies have taken the cost-cutting route. The report continues by saying that some companies may have gone too far in driving people out of businesses in the cost-cutting exercises, and that some companies may now be too lean to operate effectively. The stress alone produced by continuous “right-sizing” reduces corporate productivity, and misguided cost-cutting can cause profitability to shrink by more than the incremental overhead saved. Downsizing, right sizing and de-layering are all euphemisms for cutting staff numbers. Head count reduction has become the major tactic in the pharmaceutical industry to reduce costs, since it is far easier in static or declining markets to cut the headcount to improve the return on investment than it is to raise net income. While most pharmaceutical companies need a significant dose of structural cost reduction, there are critical issues in the current obsession with reducing head count by “slash and burn” downsizing.

- Cost-cutting episodes give a welcome jolt to the bottom line, and many pharmaceutical companies are becoming addicted and quickly repeating the process. However, few are finding that reducing head count really improves margins, as it does not change the underlying behaviour and practices that led to cost escalation. Most of the emphasis has been on eliminating unnecessary jobs, not on cutting unnecessary work. Most head count reductions left the work and the old ways of doing things in place.
- Few pharmaceutical companies perceive that cost-cutting does not necessarily entail the management of costs in a way which optimises the return on activities, processes and systems. Identifying how much added value an activity produces and eliminating those that do not add to the bottom line is a more productive exercise than goals of eliminating 10% of administrative costs.

The cost-cutting approach to management has a damaging effect on morale, particularly in an industry where people are the value-adding mechanisms. In several pharmaceutical companies chopping heads with multiple “quick fixes”, the knife has gone quickly through the fat into the muscle and bone, losing world-class talent and irreplaceable know-how as well as creating an incalculable level of personal grief as people shift from being assets to expenses. Nevertheless, management in many pharmaceutical companies think that the magic cure is restructuring the bottom line by cutting the numbers employed. Isolated restructuring through cost-cutting exercises is highly defensive and can induce industrial anorexia, which may fundamentally and even permanently damage competitiveness. Restructuring will only be valuable if it is part of a broad-based strategic response to repositioning a company in an industry in transition (James 1994:46).

As seen in figure 3.4 the restructuring of the pharmaceutical organisation over time has increase in complexity to the transformation of the organisation, which will be discussed now.

### **3.10.2 The transformation of the pharmaceutical organisation**

The pharmaceutical industry, which has a complex set of management, information, service and support systems involved in the core processes of finding, developing, manufacturing, distributing and selling pharmaceutical products, is an ideal candidate for transformation.

#### *3.10.2.1 Time-to-market*

Reducing the new product cycle time has become a major focus for pharmaceutical companies, since the time taken to develop many products is now often longer than the products' branded shelf life. Pharmaceutical new product development has one of the longest cycle times in industry, with an average time of nine to eleven years plus a further two in the regulatory approval phase, with a mean time of twelve years from synthesis to first launch (James 1994:45). In addition, new product development cycles put the pharmaceutical industry at a distinct disadvantage in its ability to modify products to meet the changing value perceptions of customers (especially managed health care organisations) since even minor enhancements can take up to two years.

While cutting time-to-market has significant effects on both costs and market potential, this is no longer enough. With more powerful and knowledgeable customers (managed health care organisations) forcing down price and making takeoffs of performance for price, only those products perceived by managed health care organisations to offer substantially clinical and economic value will be awarded premiums. Most pharmaceutical companies have not yet refined their product selection process to mirror the demands of managed health care organisations, and what has the greatest appeal internally inevitably ends up as the research project of choice.

However, getting the product to the market faster is of little value if customers will not pay for the cost of development. Secondly, there is a great reluctance to kill products in development. As a product moves through the process it accumulates more cost, and the bigger the cost, the more difficult it is to kill. Adding to the problem is the understandable reluctance of scientists to accept that customers do not want to pay for the product of their intellectual output. Management in many pharmaceutical companies has generally taken great pains to avoid killing "brain babies". This reluctance to terminate products in the face of more stringent cost and performance requirements from knowledgeable buyers in a managed health care-led market is resulting in a growing number of products, which are commercially "dead on arrival", reaching the marketplace.

### *3.10.2.2 Pharmaceutical manufacturing*

The pharmaceutical industry is saddled with significant costs in manufacturing. Most of these costs derive from its complex low-volume, batch manufacturing, a proliferation of pack sizes and formulations, high-cost specialised presentations and a long list of low-volume products which affect stocks of materials and inventories of finished products. All these factors have contributed to low utilisation, high fixed costs and low productivity in pharmaceutical manufacturing.

Manufacturing strategic responses to these challenges include the global management of product operations; improving operational effectiveness of manufacturing, distribution and support processes; improving access to and management of information, and improving product development and launch capabilities with a link to the research and development process (McLaughlin 1996:26).

While many of the pharmaceutical manufacturing transformation projects show impressive gains, they generally miss two vital issues. Firstly, few of the projects integrate pharmaceutical manufacturing with research in terms of process development. The frequent result is that process development for a new pharmaceutical product lags, which affects the whole process of shortening the time-to-market. Secondly, none of the transformation projects tackle the fundamental problem of achieving cost parity with generics. The lack of price flexibility and the new willingness of customers to replace brands by class and generic substitutes give no option but to achieve cost leadership (James 1994:47).

Being the cost leader ensures higher upfront margins as well as the capability to fight therapeutic, class and generic substitutes head-to-head when necessary. Without heroic cost reductions, manufacturing is now a major problem for pharmaceutical companies, particularly as revenues for some pharmaceutical companies will soon start falling faster than their costs.

### *3.10.2.3 Sales and marketing*

James (1994:48) found that most of the transformation projects in sales and marketing were based on expanding sales forces and to a lesser extent on micro marketing. The growth of managed health care, consolidating buying power into a few points and limiting the prescribing freedom of medical practitioners, created a new wave of sales and marketing transformation programmes. Essentially, these new programmes are aimed at selectively reducing the size the traditional sales force while simultaneously developing the optimal means to serves the new set of managed health care customers.

While much of this is concentrated on cost cutting, a number of companies are actively focussing on selectively transforming functions and ensuring that adequate resources are available and used effectively for critical marketing programmes like pre-marketing support.

However, these transformation exercises in sales and marketing are invariably focussed on treating the symptoms rather than the cause. While transformation holds valuable promise, much of the effort will fail to improve overall financial or market performance as the problem lies in looking at the overall business as a set of core processes (like R & D, manufacturing, and sales and marketing), which can be transformed discretely, rather than as a single seamless process from identification of need to risk-sharing with specific customers, which needs to be transformed as a whole. The artificial separation of the business into core business processes enables barriers to form between functions, phases and programmes, which effectively isolates the gains made in one function from the whole organisation. Probably the low “level of pain” with margins still only slowly drifting down is not yet enough to drive pharmaceutical company managements to take the tough decisions needed to force:

- a really fresh start, avoiding the social and authority compromises, which are often required to make transformation successful;
- the development of well-thought out visions of the future, not just comfortable extrapolations of the present.

### **3.10.3 Reshaping the pharmaceutical organisation**

The convergence of the new health care value chain and the diffusion of financial risk is driving pharmaceutical companies towards a radical reshaping of their business. This is the most complex of the of the pharmaceutical companies’ response to change as can be seen in figure 3.4.

- *The new health care value chain.* The drive towards managed health care has forced the payers and the providers to reappraise their whole approach to the delivery of health care. Payers and providers have come to the conclusion that the only way to manage costs is to improve effectiveness and efficiency by both forcing competition into the system and creating a new value chain encompassing all the previously discrete players and integrating their activities into a seamless system. This new value chain marginalises the ability of pharmaceutical companies to remain as isolated players maintaining their own business chain.

- *The diffusion of risk.* Financial risk in health care is moving away from payers towards users and suppliers. In response to the new managed health care-inspired value chain and the acceptance of external risk, pharmaceutical companies are being driven towards making a fundamentally new set of strategic decisions which have the collective effect of refocusing their business.

### 3.10.3.1 *Creating a new value proposition*

The intense fiscal pressures on both payers and providers and their growing sophistication has shifted their value perceptions away from the traditional “hard” issues of product safety and efficiency to the “soft” issues of cost-effectiveness and outcomes. This has effectively destroyed the accepted preeminence of the “product”, which was the very core of a pharmaceutical company’s competitive advantage over the years. Simultaneously, the transfer of decision-making authority away from a large and fragmented group of individual decision-makers (medical practitioners) to a concentration of decision-making power among a few large customers (managed health care organisations), has irrevocably changed the balance of power in the health care marketplace.

To survive in this new health care marketplace, pharmaceutical companies must develop new value propositions that get closer to the decision-making in managed health care. Two new value propositions are emerging: capitation and disease management. Capitation is the full provision of drug benefits over a fixed period at a fixed price, irrespective of utilisation. Disease management is a programme which provides drugs and related products together with comprehensive training for patients, medical practitioners, nurses and pharmacists, to follow approved treatment programmes and to intervene where necessary and provide follow-up. Both seek to bring a pharmaceutical company closer to the customer by integrating forward and by assuming part of the payer’s and/or provider’s risk.

These new mechanisms go beyond the traditional “value-added” approach to “shared value”, creating a new value perception by looking at the problem from the customer’s perspective to create a positive selling environment over the longer term. Packaging benefits, outcomes and risk, rather than selling the physical product, is seen as the prime means to create partnerships and overcome the old adversarial style of relationship.

The ability of a pharmaceutical company to acquire and leverage knowledge is the key element of a new value proposition built around the assumption of risk. While pharmaceutical companies have arguably always been in the knowledge business, it is now the knowledge itself rather than the physical product which is becoming the driving competitive force. Health care has become an information highway along which services and products flow from suppliers through intermediaries to customers, in response to specified needs.

Information to develop disease management and capitation “packages”, assess risk, control implementation and measure outcomes are becoming the new competitive currency. The pharmaceutical industry faces a paucity of information on which to base new value proposition decisions. Its information requirements are rapidly shifting away from sample-based audits of past retail and hospital sales (which fail to capture the magnitude of discounting), and diagnosis and treatment audits (which have limited coverage), towards on-line, census-based data providing accurate real-time information on patient diagnosis, treatment, compliance, cost and outcomes.

### *3.10.3.2 Outcomes*

At the very heart of health care information needs are outcomes. Outcomes are the qualifier used to evaluate the benefit of a drug from a retrospective review of clinical performance in terms of improved quality of life and decreased mortality. The benefit review goes beyond the classical clinical criteria of safety and efficacy and examines patient experiences with a drug as well as the overall costs involved. This includes drug costs, diagnostic and laboratory charges, doctors’ room visits, emergency room visits and hospital costs. Outcomes have multiple values. A more expensive pharmaceutical product can be favoured if there is evidence indicating that it can lead to avoidance of greater costs. In capitation this could be valuable since a pharmaceutical product tends to be the lowest-cost component in the broader cost of therapy. Outcomes can also be used to determine drug choice, particularly against other modes of treatment like surgery and hospitalisation.

However, the overriding value of outcomes is in their ability to provide payers, managed health care organisations, providers and patients with a rational basis on which to make clinically and economically appropriate health care decisions. In turn, this will pave the way for a new level of accountability throughout the health care marketplace. Coupling outcomes’ information with utilisation data, how a drug is used by patients and prescribers, compliance and practice patterns in the world of real clinical practice, provides the basis for therapeutically managing a disease.

This will allow pharmaceutical companies to progress beyond capitating drug costs into the realm of capitating whole diseases. However, to be effective, this would require a strategic alliance with managed health care organisations to provide both the data flow and the control mechanisms essential to manage the disease. Without a strong programme at the provider level which has enforced formularies, treatment protocols and counselling through direct mail and telephone calls, it is unlikely that utilisation can be measured accurately. Much of the data necessary to produce outcomes information is currently wasted, as a result of misuse and limited interest, or is being hoarded by the holders of the data either to leverage discounts or to control competition. Access to information is rapidly becoming the industry’s competitive advantage. In the future pharmaceutical companies without access to full data will not be able to assume the risks involved in marketing capitation packages.



### *3.10.3.3 Opportunities*

Although new value propositions based on capitation and disease management offer significant opportunities for pharmaceutical companies, they are still at a very early stage between conjecture and concept, and require serious thought.

#### *3.10.3.3.1 Capitation*

Capitation is gaining ground but is a complex issue with several facets. Capitation is used in connection with risk-sharing to denote programmes where pharmaceutical companies will assume all or part of the risk of the cost of a pharmaceutical product, a therapy, total pharmaceutical costs or a disease state as well as total health care spending. To capitate pharmaceutical product costs, an accurate profile is required which not only measures the impact of a disease as well as the impact of various pharmaceutical products during the course of that disease, but also the total health care costs. These range from diagnosis to an acceptable outcome, including all the intermediary costs of visits, non-pharmaceutical product therapy and administrative fees. If a pharmaceutical company promise to help reduce the risk, they must be willing to put their product's efficacy to the test to deliver on the promise (Storm 1994:18).

Under capitation agreements, instead of charging per pill, the pharmaceutical companies provide as much as groups need for a set fee per member (Pospisil & Ward 1994:36).

While a number of companies are prepared to go beyond capitating the cost of pharmaceutical product therapy towards the capitation of the treatment of a total disease, there are three issues:

- (1) There is currently insufficient data in depth, breadth and over time on both patients and costs to build an accurate model which enables risk-based contracts for a whole disease to be priced and monitored. Most medical data are a series of case examples with no long-term tracking or accurate costing.
- (2) Pharmaceutical companies have no direct control over the treatment of a disease from accurate diagnosis and appropriate therapy through to effective pharmaceutical product utilisation.
- (3) Capitation is like an insurance policy and, like insurance firms, pharmaceutical companies will make their margins out of the minimisation of their costs through non-pharmaceutical product therapy and generic substitution.

### 3.10.3.3.2 Disease management

Disease management is a complex issue. Proactive disease management is based on managing patients and costs by focussing on total costs and recognising that each component is interrelated. Disease management focuses on intervention, early detection and clinical pathways to keep health care costs for patients low and then pass on the savings to the managed health care organisation (Conklin 1995:1). Disease management thus provides both a mechanism to emphasize the value of pharmaceutical products in reducing health care costs and the promise of a new business landscape where pharmaceutical companies can compete for part of the huge non-pharmaceutical product-related health care market. Current approaches to disease management reflect the capabilities and visions of individual companies. Some see disease management as a cluster of services designed to add value to their product offerings, while others see an opportunity to build an integrated system of partnerships or even to completely control health management. Gotlieb (2000:101) believes those formulary-sensitive programmes requiring coverage of a particular company's product and that standalone programmes managed by pharmaceutical companies, will not succeed in the future of disease management. James goes further by saying that pharmaceutical companies acting as disease managers cannot directly manage health or disease without active cooperation from numerous health care professionals, particularly the dominant providers. Countless pharmaceutical companies share the risks and the financial benefits with these other industry members, but these risks will likely be marginalised and involved in disease management only at the discretion of the providers. Disease management is the most promising and at the same time the most controversial strategic approach being explored to address the challenges emerging in the new pharmaceutical industry environment.

Often, however, careful evaluation of the concept of disease management, what it is, how it has evolved, where it fits into overall health care strategy, and what it implies for suppliers and users, is being neglected in the stampede to address the key customer concern: the spiralling costs of healthcare. To successfully take advantage of the disease management trend, pharmaceutical companies must consider the parameters of disease management, the capabilities required, and the potential risks and benefits of a disease management program. Like any emerging concept for which the boundaries lie unmarked and practical experience is largely experimental, disease management has as many definitions as it has proponents. Although the definitions of disease management vary, all revolve around the use of information to integrate the various components of health care as a means of reducing costs while improving the quality of health care. James (1996:109-2) states that the evolution of disease management is firmly linked to the growing belief among pharmaceutical industry management that traditional strategies based solely on innovation are no longer viable for all pharmaceutical companies, and that approaches that move firms downstream into risk-sharing arrangements with managed health care customers will become the dominant force in determining both success and survival. Disease management offers pharmaceutical companies the opportunity to expand beyond their traditional role of selling pharmaceutical products and enter into arrangements with managed health care customers in which pharmaceutical product therapy is seen as part of a continuum of care.

At the same time, disease management emphasizes the optimal use of pharmaceutical products as a cost-effective means of managing illness. Thus, disease management may allow pharmaceutical companies to deal with the growing pressure to lower pharmaceutical product costs by demonstrating that increased pharmaceutical product use can result in greater savings elsewhere in the health care system.

A comprehensive disease management programmes must include patient education, medical practitioner education, monitoring of drug utilisation and the prevention of complications (Potgieter 1999:128-130).

### **3.11 SURVIVAL OF THE PHARMACEUTICAL INDUSTRY**

While transformation will be the dominant strategic theme for survival, most pharmaceutical companies face a much more immediate and pressing problem: how to live through the critical stage of the growth to maturity by managed health care.

The pace of change is now so fast that it is beginning to outstrip the ability of pharmaceutical companies to change. With managed health care-imposed formularies restricting choice and controlling price, and capitation fixing total expenditure, company revenues and margins cannot continue as in the past. The quality of survival will depend largely on the ability of a company to sell its emerging product pipeline into a managed health care-led market where customer change is ongoing, most of the future pharmaceutical product pipelines are not ideal, and where the industry is in an environment in which unit share is the name of the margin game.

Celibacy is unlikely to figure strongly in any company's future, and the immediate short term is likely to be dominated by an explosion of strategic alliances. These will be horizontal with competitors, vertical with managed care organisations and, and tangential with suppliers ranging from diagnostic manufacturers through delivery system developers to distributors, as pharmaceutical companies experiment to figure out how best they can compete to survive.

### **3.12 NEW CHALLENGES FOR THE PHARMACEUTICAL INDUSTRY**

The forces shaping business strategy and organisation in the pharmaceutical industry in the new millennium are vastly different from those which determined the business over the last thirty years. The industry is in transition. Markets are changing and fragmenting in response to new customers (managed health care organisations) with new demands which require new, faster and more targeted responses, while information technology is changing the nature, speed and reach of customers.

At the same time, government deregulation is bringing to the market new low-priced competition which is rapidly eating away at the industry's old and new products, which are vulnerable to generic and therapeutic substitution. While these changes are dramatic on an individual basis, collectively they demand a fundamentally new approach to both strategy and organisation. Strategies are beginning to move away from yesterday's unidimensional focus on products as the sole source of competitive advantage through cost and volume, which are the main sources of today's competitive strengths, to increasing value to a new breed of customers. The traditional "command and control" organisational model is no longer effective, and a number of pharmaceutical companies has devolved the organisation into a collection of areas based on products, functions, technology and geography. The widespread use of "command and control" models in the pharmaceutical industry can now result in competitive disadvantage, as follows.

- *Cost overhangs:* Institutionalised bureaucracy, with layers of management and unnecessary staff functions to communicate and control management directives to large numbers of underemployed people creates overheads which pharmaceutical companies can no longer afford. As much as 30% of the overheads could be removed from the typical pharmaceutical company with no effect on the ability of the company to function competitively.
- *Slow reaction:* Standardised procedures with inflexible and unresponsive roles and responsibilities created organisations which were unable to sense and react to the transition from a producer-driven to a customer-led environment. When customers' demands for value-for-money were met by premium price for undifferentiated brands, customers reacted by institutionalising generic substitution and minimum medical aid pricing (MMAP), and making takeoffs with class and therapeutic substitutes.
- *Declining creativity:* Narrowly defined tasks, and the dominant organisational focus on providing new products, obscured the need and reduced or removed the incentives for initiatives to develop new and imaginative ways to meet the driving demand for high-value, low-priced solutions to customers' health care concerns (Pharmaceutical Research and Manufacturers Association 1999:52-54).

### 3.13 CONCLUSION

The new realities faced by pharmaceutical companies in a turbulent environment, are changing the boundary of the industry and in their wake is overturning the management practices which made the industry so successful and are rendering obsolete the industry's conventional models of strategy and structure. In the context of these turbulent changes, pharmaceutical companies are being forced simultaneously to develop new strategic approaches for the future, design new structures which will link them more firmly to their new customers, and implement the cultural changes necessary to accomplish the transformation from yesterday's successful pharmaceutical company to tomorrow's customer-led, integrated health care supplier.

Tomorrow's opportunities have still to be defined clearly. Nevertheless, companies who have a clear vision of the future environment facing the pharmaceutical industry and are capable of organising internal and external resources to get there ahead of their competitors will be well positioned to take advantage of the many opportunities which the new marketplace will provide. However, success for tomorrow depends almost entirely on a company's ability to create tomorrow's marketplace and compete successfully. But, companies have to understand that tomorrow's competition will be radically different from today's. The change will be so different that strategies will have to be redefined.

## CHAPTER 4

### THEORETICAL FOUNDATION

#### 4.1 INTRODUCTION

The rapidly changing environment in the pharmaceutical industry's key markets, which has shifted power away from the manufacturers to customers, will have a domino effect not only on the marketplace for pharmaceuticals, but also on how pharmaceutical companies operate. Against a background of accelerated change, pharmaceutical companies have responded in a number of different ways. Most have tried to do things better, with a few tries to do things differently. Almost all the pharmaceutical companies have already gone through one transformation process and are on to a second, or even third, round in an attempt to deal with their structural cost overhangs. Many are re-engineering their business process to improve their overall efficiency. A few are transforming by developing new value propositions for customers as the old product-based approach loses its viability. But the real challenge lies in changing the whole nature of the game by attempting to refocus the pharmaceutical industry's approach.

Seen from the viewpoint of general management, there are two basic types of change. First, there are the fluctuations in the operating levels and conditions: in sales, profits, inventory, labour force, budgets and productive capacities. This kind of change expands and contracts the activities of the organisation, but leaves the nature of the organisation intact. The other type transforms the organisation: its products, its markets, its technology, its culture, its systems, its structure, its relationships with governmental bodies. It is this kind of change that is affecting the pharmaceutical industry in South Africa with the implementation of managed care processes. This second type of change is called "strategic change". Ansoff (1965:127) defines strategic change as a realignment of the organisation's product - market environment. Ansoff (1979:6) explains strategic change as the situation when either the external linkages or the internal configuration or both change.

Before an investigation into the factors that influence market response decisions can be made, there should be an identification process how such responses are likely to vary and might be characterized. Ansoff (1979:16) identifies three levels of responses that firms make to changing market conditions. Firstly, awareness strategies, in which a state of alertness is established. Secondly, flexibility strategies, in which contingency plans are formulated to flexibly position the firm to cope with future market developments as they unfold. Thirdly direct action strategies where prompt and vigorous programmes of action are implemented. Ansoff's topology regards direct action response strategies as the most responsive level, flexibility strategies as the intermediate responsive level, and awareness strategies as the least responsive.

For each of these three levels of response, according to Ansoff, there may be either internal responses (those that take place within the firm, such as the acquisition of new skills and competencies, the organisational changes or external responses (those that take place in the marketplace, such as price changes, the introduction of new or reformulated products). Strategic management literature takes a different view. It examines the effects of prior performance on strategic change, both conceptually and empirically. Boeker (1989) and Schendel, Patton and Riggs (1976) all found that, at the corporate level, poor recent performance increased the likelihood of responsive changes in strategy by exerting pressure for changes to improve performance. Thus, strategic management literature predicts that poor prior performance is likely to lead to high levels of responsiveness (Mullins 1996:91-93).

While the speed of environmental change was such as to permits a deliberate formulation and execution of strategy, in many situations today strategic surprises do not give sufficient warning to permit advance strategic planning (Ansoff 1979:42) Ansoff (1979:6) says in a working paper on strategic issue management, early detection of strategic issues increases the time available for response. De Geus (1997:30) agrees with this point in his book, *The living company*, but adds “only after seeing that something is about to change outside the company will management be ready to deal with the effects of that change”.

The resistance to change the management frequently leads to a gap between the behaviour of an organisation and the imperatives of the environment (Ansoff 1979:47).

## **4.2 DISCONTINUOUS CHANGE AND ENVIRONMENTAL TURBULENCE**

The need for a transformation stems from discontinuous change and environmental turbulence that can render current organisational practices valueless. To respond, leaders must transform their organisations. A transformation creates a jump to a new level of organised complexity that provides added value for all organisational stakeholders (Nutt and Backoff 1997:490). The introduction of managed health care principles has been the impetus for turbulence in the South African health care environment.

### **4.2.1 Defining discontinuous change**

Discontinuous change occurs when an organisation rebuilds itself from scratch. The new configuration means a complete and radical break from the past and a major reconstruction with new strategy, new work, new formal organisation arrangements and so forth. In other words, “the core competency for business leaders in the 21st century will be change management”. In many respect, discontinuous change is planned spontaneity and deliberate opportunism. The bad news is that, in some case’s change of this type is beyond the control of those seeking to control it. Discontinuous change touts norms, values and common operating principles rather than rules and direct supervision, but requires forceful leadership at all levels of the organisation to implement (Standke 1995:72).

As a framework for this discussion there is two types of change. Firstly; incremental change, which occurs during periods of environmental stability or equilibrium and is part of a pattern of ongoing change to improve or modify the fit among the components of the organization, and secondly; discontinuous change, which occurs during periods of disequilibrium in which there is a radically changing environment and the organisation must build a whole new configuration with a new strategy.

Discontinuous change is “more traumatic, painful, and demanding on the organisation. By it’s very nature, discontinuous change means that a certain degree of shock will be administered to the organization. It is often a radical departure from the past, and therefore carries with it all of the challenges associated with discontinuity. People, groups, and whole organisations not only have to learn new ways of thinking, working, and acting, but they also have to unlearn the habits, orientations, assumptions, and routines that have been baked into the enterprise over time. This unlearning can be difficult and even confusing for individuals” (Gray 1995:77).

According to Gray (1995:78), most change management approaches have drawn on models of incremental change. Participation by organisational members is solicited in order to create ownership and lessen resistance to the change. Likewise, a detailed vision of the future of the organisation is developed before any changes are made to the organisation’s structure and management processes. This is not the case in the management of discontinuous change. In fact, there is no simple road map to guide change leaders.

The very nature of discontinuous change involves fundamentally altering the vision, mission, general business strategy, and basic operating philosophy of an organisation. Gray (1995) emphasizes that in almost all cases requiring discontinuous change, an organisation’s current core competencies must be challenged and modified. The final element of the discontinuous change process is the articulation of a broad organisational architecture. Gray (1995:79) maintains that architecture is more than an activity: “When I talk about organisational architecture, I define it as a framework or a system for design and construction of human organisations and also a way of thinking about that design process. It involves shaping organisational space to meet human needs”.

Discontinuous change also requires innovative approaches in the development of people. Linking people’s motivation and skill to the change agenda is important. Discontinuous change provides a different insight into the management of large-scale organisational change. Clearly, organisational leaders must develop innovative strategies and learn new leadership behaviours and skills that enable them to manage complex organisations during periods of constant change (Gray 1995:80).



#### 4.2.2 Defining environmental turbulence

As a result of all this change, today's work environment has become more turbulent. Key characteristics of this turbulent environment include the following:

- More interactive components
- More interdependence among components
- More unanticipated consequences
- Less time to react to events (The Severin Group 1997:25)

These characteristics are a true reflection what the introduction of managed health care has brought about in the health care environment.

“Turbulence” according to the Oxford Dictionary means a “violent disorder” or “commotion” (Oxford Dictionary, 1992:1316). Where, then, is the violent disorder in our organisations? Arie de Geus (1997:36) clarifies this question by defining turbulence as the continuous changes in the external world.

In their article, *Optimizing profitability in turbulent environments: a formula for strategic success*, Ansoff and Sullivan (1993) describe environmental turbulence as a measure of the degree of changeability (or discontinuity) and predictability of the organisation's environment. They see environmental turbulence as the external variable, whose values specify the type of behaviour necessary for success.

There are five different turbulence levels. Each level is further described by four factors which determined the turbulence level.

- (1) complexity of events which occurs in the environment
- (2) familiarity of the successive events
- (3) rapidity with which the events evolve after they are first perceived
- (4) visibility of the consequences of these events (Ansoff and Sullivan 1993:13)

Table 4.1 depicts the four elements at each turbulence level. The environment at turbulence level one is essentially unchanging. When change does occur, it is very slow and response is gradual over a long period of time. In an environment at turbulence level two, change is slow and incremental. Change is slow and an organisation can respond in the time between initial and full impact. Change is fast and incremental in an environment at turbulence level three. The future is a logical extension of the historical past. Organisations at this level must have a proactive strategy so response starts before initial impact. In turbulence level four, change is very fast and discontinuous, and the future is only partially predictable. Since the future bears little or no resemblance to the historical past, organisations must have both a forward-looking strategy, and an environmental scanning system that are not based on extrapolation of the past. The environment at turbulence level five is full of surprises.

	<b>TURBULENCE LEVEL</b>				
	<b>Low 1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>High 5</b>
<b>COMPLEXITY</b>	<b>National economic</b>	<b>+</b>	<b>Regional technological</b>	<b>+</b>	<b>Global socio-political</b>
<b>FAMILIARITY OF EVENTS</b>	<b>Familiar</b>	<b>Extrapolable</b>	<b>Extrapolable</b>	<b>Discontinuous familiar</b>	<b>Discontinuous novel</b>
<b>RAPIDITY OF EVENTS</b>	<b>Slower than response</b>	<b>Comparable to response</b>	<b>Faster than response</b>	<b>Faster than response</b>	<b>Much faster than response</b>
<b>VISIBILITY OF FUTURE</b>	<b>Recurring</b>	<b>Forecast able</b>	<b>Predictable</b>	<b>Partially predictable</b>	<b>Unpredictable surprises</b>

Table 4.1 Environmental turbulence scale (Ansoff and Sullivan, 1993:13)

Turbulence is thus not some condition out there, existing in some abstract “environment” or imposed by some malevolent deity. It is simply uncertainty in the marketplace, due to the unexpected. But while these may be surprises to the recipients, they are not to the organisations that created the changes in the first place. In other words, “turbulence” may often be no more than serious competition from organisations in full control of the marketplace.

In fact, the real cause of this so-called turbulence may be planning itself, which, by imposing formalised procedures on organisations has desensitised them, and made them vulnerable to unexpected changes. Organisations less enamoured of planning, who have approached their markets in more flexible, adaptive ways, may well be less susceptible to these problems. The average trends in the escalation of turbulence, while descriptive of the environment as a whole, are not adequate for analysis of strategic behaviour. As indicated, different industries in the average pattern find themselves on different levels.

### 4.3 TURBULENCE IS EQUAL TO CHANGE MANAGEMENT

Like dinosaurs threatened by cataclysmic climatic changes, organisations often find it impossible to cope with a radically altered environment. The often used analogy of dinosaurs is, thankfully, not entirely apropos to companies. Dinosaurs died off because the species was unable to adapt quickly enough to changing conditions. Evolution is a slow process, relying as it does on small, unplanned genetic mutations – some of which incrementally improves the species' chances of survival, but most of which do not. Fortunately for corporate dinosaurs, an organisation's "genetic coding" can be altered in various ways.

In fact, any organisation that fails to transform its genetic coding periodically will be as much at the mercy of environmental upheaval as a Tyrannosaurus Rex. Just what to do, is meant by "corporate genetics?" Every manager carries around in his or her head a set of biases, assumptions, and presuppositions about the structure of the relevant "industry", how to make money in that industry, and who the competition is, who the customers are, what customers want, and which technologies are viable. This genetic coding also encompasses beliefs, values, and norms about how best to motivate people; the right balance of internal cooperation and competition; the relative ranking of shareholder, customer and employee interests, and what behaviours to encourage and discourage. These beliefs are, at least in part, the product of a particular industry environment. When that environment changes rapidly and radically, those beliefs may become a threat to survival (Hamel and Prahalad, 1994:49).

As the competitive environment becomes more complex and variegated, the need for greater genetic variety – a broader range of managerial beliefs and a greater repertoire of managerial actions – grows apace. Any organisation that hopes to survive must create within itself a reasonable proportion of the genetic variety to be found in the industry at large (Hamel and Prahalad 1994:56). So what can a company do to change its genetic coding? First, it should be careful not to overtighten the bolts that hold the managerial frame together (Hamel and Prahalad 1994:57).

To escape the gravitational pull of the past, managers must be convinced that future success is less than inevitable. No company will walk away from part of its past unless it feels that repeating the past will not guarantee future success. To create an incentive to prepare for tomorrow today, senior managers must first be convinced of the impermanence of present success. The urgency thus engendered is critical for providing an incentive to enlarge traditional managerial frames and begin the painful work of genetic transformation. The trick is to create this urgency while a company is still at the peak of its success (Hamel and Prahalad 1994:67).

The success of this will rest on change and a clear understanding of change management. Strebel (1992:vii) describes turbulent change as unlike any encountered before. He goes on to say: "Today's change is more rapid, more complex, more turbulent, and more unpredictable."

The dazzling rate of change in our age confronts business with challenges of a new order. Thinkers and “gurus” see a need for entirely new modes of management in the “nanosecond nineties”, dominated by the “three Cs”: customers, competition and change.

New approaches for change are recommended under labels such as:

- integrated management
- ecological management
- human resource’s management
- total quality management
- information management

Espejo et al (1996:1) go further, demanding that the organisations are reconceptualised and evolve in entirely new ways. They postulate the need for change through:

- organisational transformation or corporate transformation
- using the learning organisation
- redesigning organisational architecture
- using the virtual corporation
- through business process redesign or reengineering the corporation

But organisational change is only one response to the competitive pressures that organisations and people are experiencing today. At a deeper level, organisations are changing from a competitive environment in which mass-market products and services were standardised, long-lived, information-poor and exchanged in once off transactions to an environment in which organisations compete globally with niche market products and services that are individualised, short-lived, information-rich, and exchanged on an ongoing basis with customers.

Only organisations that respond to the deeper structural changes taking place in the underlying system of commercial competition will be able to make sense of - and profit from - the superficially chaotic changes at the level of the marketplace (Goldman, Nagel and Preiss 1995:4). Tichy (1983:3) adds that there will also be reorientations in products, services, markets and human resources in a changing environment.

### 4.3.1 The forces of change

In his book, *Breakpoints: how managers exploit radical business change*”, Strebel (1992:47) believes that identifying the forces in the environment are the critical first step anticipating breakpoints. Sensitivity to the change forces and their timing is essential if they are not to be a threat, but rather an opportunity to be exploited. And yet many organisations are not even aware of the established trends in their environment, not to mention the timing of potential turning points and cycles.

The keys to identifying forces of change are:

- (a) Identify the established trends in the socio-political, economical, technological and competitive environments. The rate of change in the environment created by the trend is an indication of its strength. Emerging or declining trends are typically weak, whereas growing or mature trends are strong. Specific demographic, political and economic factors determine the design of the health care delivery system in any country and the trends that impact on the South African health care environment was discussed in chapter two.
- (b) Use the basic cyclical pattern and the leading indicators of convergence; look for the limits and stimuli pointing to the next turning point:
  - When in a phase of a divergent behaviour look for the leading indicators of convergence; look for the limits to divergence and the stimuli of convergence.
  - When in a phase of a convergent behaviour look for the leading indicators of divergence; look for the limits to convergence and the stimuli of divergence.
- (c) Assess the timing of the next turning point based on the relative strengths of the existing trend, its limits, and the stimuli of a new trend (Strebel 1992:47).

In a research paper Troy (1994:7) states that the following six conditions will lead to the implementation of change management in today’s business environment:

- (a) Increased competition
- (b) Fluctuations in financial performance
- (c) Introducing and adapting to new technology
- (d) Global expansion

- (e) Development of new relationships through strategic alliances
- (f) Development of new relationships through mergers and acquisitions

James (1994:30) adds changes in customer needs to the list. Troy (1994:7) indicates that five of the six change conditions or scenarios are a priority for change management today, with the following scenarios taking a high priority:

- *Competition and financial performance.* These are a high priority for change management and considered key drivers of this effort.
- *New technology and globalization.* The introduction of new technology is high on organisations' agendas for change management and a similar priority to globalization.
- *Developing new relationships.* Change is linked to partnerships and strategic alliances as a top priority, and this technique is the key in mergers and acquisitions.

According to Troy (1994:8) the key initiatives in a general change management strategy are:

- Corporate strategy; work force size and composition; leadership style; and vision, values and culture. Such changes can generally be driven top-down.
- Others include steps to decentralise decision making and to streamline business systems and work process design. Such action requires a loosening of the traditional command structure, more employee participation in work processes, and a collaboration across functional lines.
- A marked shift in performance management and reward systems as well as training and development, an indicator that there is an altering to key human resource practices to reinforce the new order can be added to the above key initiatives.

By incorporating some of the points that were discussed above, Porter's "dynamic diamond" framework, as discussed in his book *The competitive advantage of nations* (Porter 1990:69), was used to create a model to work from to investigate the major factors influencing business transformation in a pharmaceutical organisation in a managed health care environment.

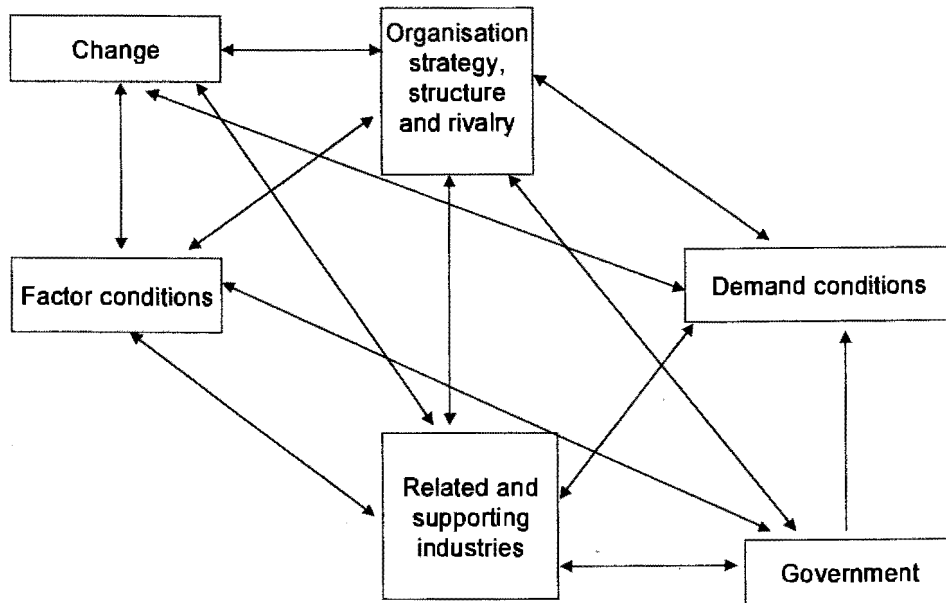


Figure 4.1 Porters' "dynamic diamond" framework (Porter 1990:127)

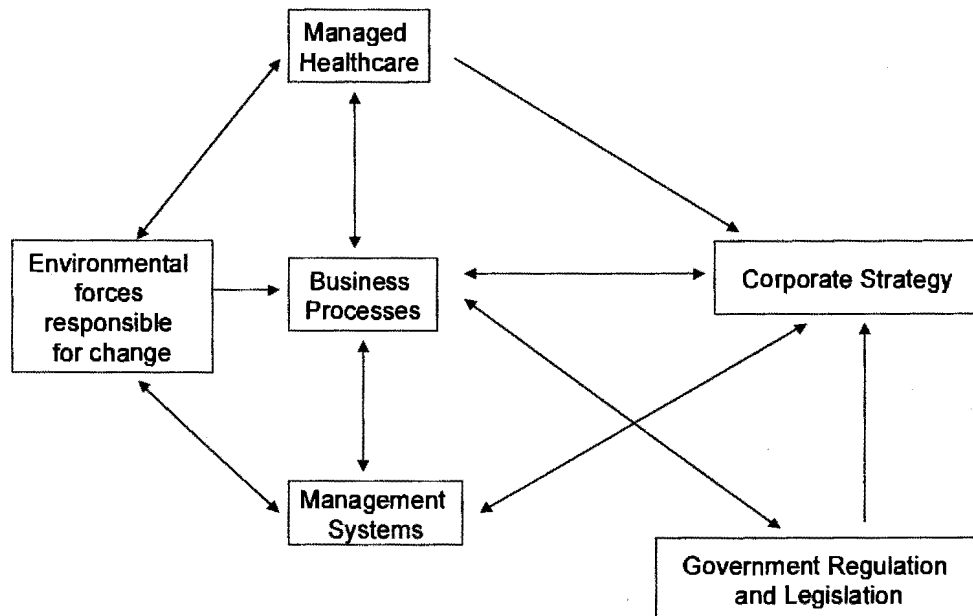


Figure 4.2 Managed care business transformation diamond

The KPMG report, *Managing transformation in the new economy* (1995:2-4), explains what they see as the drivers of change for future business. These factors are very relevant to today's pharmaceutical organisation especially in a managed health care environment.

- *Quality* has become a necessary first step or basis of entry in most industries. However, as new technologies and competitive pressures in the economy increase consistent high quality will become more a given and less a differentiator. Everyone will be expected to provide a high degree of quality and to get their products and services right early on. Those who do not will not survive.
- *Speed* is replacing quality as a primary basis of new competition. Reducing development time to market for new products, introducing simultaneously versus sequential production techniques, providing just-in-time (JIT) distribution, increasing product turnover in retail outlets, and utilizing electronic transfer of funds are all examples of driving time (and therefore unnecessary cost and waste) out of the economic value chain. These knowledge-enabled cost savings can be used to fund further process and product improvements, and to reduce selling prices, both of which focus on increasing delivered value to the customer.



- Striving for long-term, *mutual advantage* is an emerging hallmark of the new economy, which contrasts with the old laissez-faire, mercantilist reliance on invisible market forces. The dramatic increase in the number of international joint ventures and alliances, often between former cutthroat antagonists, is indicative of the changes in the very sources and nature of competition in the new economy.
- In the future *value chains* will more and more emphasize partnership: cooperative efforts to generate increased value while reducing time, cost and risk. What must be emphasized again is the value resident in many different kinds of knowledge, in this case the accumulated experience of some managers and companies in successfully handling the complexities of “cooperative competition”.
- A dominant by-product of the transition to the new, knowledge-based economy is *structural change*. At the national, industry and corporate levels we are choosing or being forced to restructure the way in which we operate to adapt to a rapidly evolving marketplace. As economies and industries restructure and new rules apply, the danger becomes greater for companies not keeping up with developments — the time available for recovery is shortening while the time required to develop a corporate culture that embodies current realities and effectively innovates is long.

#### 4.3.2 Paradigms and resistance to change

According to Morris and Brandon (1993:50), paradigms are often the cause of unconscious resistance. Bush and Dooley (1992:184-185) consider a paradigm to be a system of theories and concepts that constitute an individual's *a priori*. The evolution of a *a priori* is the key to the transformation practices, as the employees' beliefs, motivation, control and behaviour are challenged. If a proposed change clashes with a paradigm, the result will be a feeling of a threat; a natural defence mechanism working on a subconscious level. The business person experiencing this feeling will then rationalise to defend against the threat, and a real problem will confront the change being proposed. The Oxford Dictionary defines a paradigm as an example or pattern, especially an outstandingly clear or archetypical one. In his widely distributed videotape, *The business of paradigms* (Charthouse Learning, Burnsville, MN, 1990), Barker, a futurist, defines a paradigm as a set of rules that establish boundaries and describe how to solve problems within these boundaries. Paradigms influence our perception; they help us organise and classify the way we look at the world. Taking this slightly further, a paradigm can be considered a model that helps us comprehend what we see and hear. It determines, to some extent, how we react to new information and can, in extreme cases disable objective thinking regarding new information (Morris and Brandon 1993:49).

Judson (1991:39) believes the way change is introduced and implemented also influences the attitudes of those involved. The effects of how change is brought about may be quite independent of the effects generated by the change itself. Insufficient information about change and its probable effects and implications can cause those involved to become apprehensive. When someone's mind is filled with unanswered questions about change and its possible impact, that person is likely to invent the answers. These will be products of that individual's own imagination, hope and fears (Judson 1991:40). This fear of change revolves around a feeling of loss of control, encompassing the belief that all power and autonomy will be subsumed. Slowly skills degenerate and the employees' ability to do their job as effectively as the system becomes less of a reality (Schwarz and Brock 1998:73). Hoerr (1995:1) agrees that most of our efforts are focused on structural or systems change and that we ignore the important areas of personal and interpersonal change.

Paradigms set expectations. When reality fails to adhere to our rules in a given circumstance, we have difficulty understanding it. We may even reject a finding if it fails to fit in with our rules. In these circumstances, only a paradigm change will allow progress to be made. As the paradigm changes, so does perception and the ability to assess new information. In practice, advances are often made by people who are unencumbered with past paradigms. Because they are unaware that something is impossible, they are free to find a way to do it. Changes are necessary to meet the challenges and increased competition of the new global market. There is a growing awareness of where businesses must go to be more effective in this competitive environment. It seems as though business recognizes that the time has come to make basic changes in the ways work is being done. Some attempts to change have been made, with partial and temporary results. The need for organisational transformation and restructuring represents a fundamental paradigm shift in the relationship of the corporation to individuals and society as a whole.

Paradigm filtering is also the underlying cause of many of our communication problems. Everyone has a different set of paradigms, so what is acceptable or obvious to one person may be rejected or misunderstood by another. The magnitude of this problem has been openly acknowledged for many years, but we have not been successful in correcting it. It may be that we have failed to recognize the role of paradigms in our attempts.

Another paradigm-related problem that tends to resist change manifest itself as the "not invented here" syndrome. This occurs when the paradigm held by a group is very strongly exclusive of outside influences. To some extent, it is an element of all group paradigms, a natural by-product of the group's cohesion. Again, the paradigm itself is not a negative factor: in fact, it is the basis for teamwork. The negative influence comes from the group's unwillingness to recognize the influence of the paradigm, and then to set it aside or alter it enough not to allow a gain to be made (Morris and Brandon 1993:50-51).

Lowenthal (1995:47-48) believes that resistance to change can be reduced by involving and preparing the entire workforce for the potential changes and informing employees of their role in the effort. According to Lowenthal (1995:48-49), the workforce preparation rests on four foundation blocks:

- (1) *Peer consensus.* Most people resist change because it disrupts the ritual and order of their lives. However, one's personal ties others exert a strong influence. Sharing is a sign of belonging: few individuals will stand alone. As a result, consensus-building processes based on this natural peer-bonding relationship induce change in organisations.
- (2) *Two-way trust.* Individuals and groups communicate best in high-trust situations. When communication breaks down but individuals trust one another, they are more likely to work through differences that develop and attempt to reestablish communication. Openness about the change process and trust in it influence whether and how change occurs.
- (3) *Training.* Even if the workforce understands and accepts the upcoming change, it may not have the required skills or the ability to carry out the change. Thus, the workforce must be trained in the skills necessary for change.
- (4) *Adaptability.* The most successful change is one the work force can easily adapt to the unique circumstances that always develop. Therefore, leaders should only articulate a change idea, or general sense of where the change is headed, and give the employees significant opportunities to adapt the ideas and the resulting processes as they see fit.

The purpose is to provide a foundation for future change activity, the critical mass necessary for any change effort, building on people's understanding and support, and increase awareness of the change process. It also provides direction for the transformation. Employees are encouraged to buy into the upcoming change process. This buy-in is critical if the transformation effort is to avoid stalling or failing completely.

#### 4.3.2.1 Attitudes and paradigms

Personal attitudes are closely related to paradigms. People's attitudes, not their paradigms, determine their willingness to change. Attitudes are a combination of individual personalities and experiences. As such, just as with paradigms, they evolve. But unlike paradigms, which are sets of rules, attitudes are much more nebulous. Therefore, they are much more difficult to change. Paradigms act as filters, attitudes colour and shade how people view things. Literally, people's attitudes govern how they will use their paradigms. For this reason, when organisations look at change, they need to consider both the rules people use to understand their world and the attitudes they have developed throughout their lives (Morris and Brandon 1993:55).

#### 4.3.2.2 *Paradigms and paradigm shift*

A paradigm change or shift is essentially a significant change in the rules, and assumptions and attitudes related to an established way of doing something. A paradigm shift has the effect of a new beginning. So the future cannot be viewed through current paradigms. It must be recognized that the ideas and techniques that succeeded in the past may not be the ones that will take a business into the future (Morris and Brandon 1993:55).

#### 4.3.2.3 *Why change?*

Where competition is low and business is good, a company will reject significant change and continue to do business as it always has. It will not evolve. It will not reinvest. There is really no reason to “rock the boat”. If it isn't broken, don't fix it. If management wants to increase profit, it will simply raise the price of the product. If inefficiency and waste creep into the processes, they will be handled by increasing staff and passing the cost back to the customer. Certainly there are limits to this behaviour, but the companies who have no real competition seem to reach these limits and gradually push them higher.

When competition arrives, the picture changes. There is a paradigm shift. Companies who make the transition to the new paradigm succeed. Those who resist may not. Today there is just such a marketplace paradigm shift. The business operation must be changed as market pressures force companies to respond. The rules of the past are being rewritten and survivors must recognise and accept the new rules (Morris and Brandon 1993:57-58).

Changes are necessary to meet the challenges and increased competition of the new global market. There is a growing awareness of where businesses must go to be more effective in this competitive environment. It seems as though business recognises that the time has come to make basic changes in the ways work is being done. Senior management must recognise the need for change. The driving forces can come from feedback generated by a variety of sources, including the following:

- a review of financial projections on profitability/growth
- a review of business trends
- competitive analysis and bench marking
- market trends and requirements
- market share growth/protection analysis
- customer demands and satisfaction analysis (Lowenthal 1995:46)

#### 4.3.2.4 *The implications of change*

The KPMG report, *Managing transformation in the new economy* (1995:5-7) identifies three major implications of change.

- (1) *Change cannot be avoided.* It is less and less possible to remain isolated from the effects of change. Generally the people, companies and countries who recognise the new rules and organise around intellectual assets, knowledge, skills and technologies will thrive while others will wither away. As old skills become commodified and much more complex, higher-level capabilities taking years to develop become requirements. The underskilled will find it harder and harder to catch up, and may be permanently left behind.
- (2) *Cost-cutting is not sufficient for survival; developing knowledge-based growth strategies is essential.* Some observers suggest that if one go too far in driving people out of a business in a cost-cutting exercise, that some companies may now be too lean to operate effectively. The stress alone produced by continuous “right-sizing” reduces corporate productivity, and misguided cost-cutting can cause profitability to shrink by more than the incremental overhead saved. Once costs are appropriately in line with the size of the company, it is no longer the denominator (cost) in the profit equation but the numerator (sales growth) that ultimately becomes important. Given that improving both the skills and abilities of staff and the effectiveness with which they are applied is the only way for a company to generate greater value for its customers, is there some lesson we can take from this to guide us toward a generic growth strategy? There is, and it focuses on the distinction between the product it and the service bundle that accompany it.
- (3) *In a changing environment non-product attributes are becoming more important than the inherent attributes of the product themselves.* To explain: recognise that more and more products have a significant service component attached to them. Examples are 0800 help-lines, product information and instructions, designs that incorporate convenience in buying and usage or provide a desired “look and feel”, and marketing programmes to illustrate potential benefits and generate brand confidence are all examples of value added beyond the essential utility of the product itself. Companies competing successfully in the changing environment should pay increasing attention to improving the non-product components of their product-service offerings. This is where they can direct the efforts of staff members who might otherwise not be able to create extra value.

#### 4.3.2.5 How to stay competitive in a changing environment

Organisations compete in product markets on the basis of resources which they have either acquired externally or built up by themselves. The first kind of resource, even if not necessarily tangible, can be specified and hence bought and sold. The second kind is much more difficult to specify. It represents a slow accumulation of know-how and competences become strategic or “core” when they confer distinct benefits on an organisation’s customers and provide the firm with competitive advantages that are hard to imitate. Not all organisations possess core competences, and those that do find it difficult to identify and nurture them. Their effective exploitation requires a corporate level perspective which does not always sit comfortably with the more extreme forms of decentralisation to strategic business units that are associated with profit centre management (Boisot 1996:4572).

The obvious answer to sustaining competitiveness in the midst of this constant change is to actually deliver greater value as perceived by the customer. The less obvious answer is how to go about that. The KPMG report, *Managing transformation in the new economy* (1995:8), suggests companies focus on one of the following three goals:

- (1) *Operational excellence*: producing ever faster and/or at ever lower cost compared to your competitor
- (2) *Customer intimacy*: developing a closer relationship with your customer than your competitor, in order to integrate the customer into a process to figure out together how to provide a better overall solution (which may be more expensive or time consuming but nevertheless holds more delivered customer value)
- (3) *Product leadership*: better exploiting previously unseen opportunities as opposed to merely imitating or improving on existing products and services.

Note that all of these knowledge-based competitive approaches require flexibility to adapt to continually evolving situations, and all can be applied to almost any business, large or small. The next question is how to develop the organisational capabilities required to operate in the emerging new economy.

#### 4.3.2.6 Core competencies

Prahalad and Hamel (1994) produced a body of work more than five years that addresses this question. They accept the assumption that innovation drives profitability and growth, but examined more closely how innovation is derived – not by chance or from occasional flashes of insight, but from particularly valuable capabilities which they call core competencies. This is the term most widely used to describe strategic resources. Other terms used in the literature include: strategic assets (Amit and Schoemaker 1993; Dierickx and Cool 1989); firm resources (Barney 1991) and intangible resources (Hall 1992).

These core competencies are bundles of aligned knowledge, skills and technologies in an organisation that are repeatedly utilised to provide new solutions valued by customers (Hamel and Prahalad 1994:202-203). Core competencies may exist without companies realising that they possess them, and can also be carefully selected and systematically nurtured to ensure ongoing future competitiveness.

Hamel and Prahalad (1994) set five tests for a competency to be considered a core competency. First, a core competency is more than just a bundle of skills and technologies. In a core competency these skills must be organisationally integrated in some way – a typical large organisation might have no more than five or six core competencies. They are consequently neither a property of individuals nor of small teams. Secondly, core competency is more than just an asset as used in the accounting sense: it is the product of a learning process, incorporating both tacit and explicit knowledge, the value of which tends to appreciate rather than depreciate over time.

Thirdly, a core competency delivers a highly valued customer benefit. Fourthly, a core competence must, in a sense, be unique and sustainable if it is to convey competitive advantage. Finally, a core competency should provide a “gateway to new markets”. It should provide a bridge from “what is now” in terms of the market concept and definition to “what might be” in the future. In doing so, it moves a firm beyond a “product-centric” view of itself.

Core competencies thus differ from products in a number of important ways: they are embodied in a variety of products and hence are “more generic” than any particular product; they are typically longer-lived than products; and they provide organisations with more routes to competitive advantage. Hamel and Prahalad (1994) divide core competencies into three types:

- (1) market-access competencies which bring the firm into contact with its customers
- (2) integrity-related competencies which enable the firm to do things better and faster
- (3) functionally-related competencies which confer distinctive customer benefits

The *Economist's* Intelligence Unit (1992) produced a report on core competencies in which it identifies a number of ways in which the concept could be applied. It can be used:

- (1) *To guide diversification:* It facilitates a move into new markets on the basis of established strengths.
- (2) *To drive revitalisation:* It facilitates the recognition of shared competencies between business areas and hence of a strategic operation based on these.
- (3) *To protect competitiveness:* Organisations often realise, too late, that they have lost key skills through outsourcing or disinvestment

- (4) *To focus research and development efforts:* The development and maintenance of core competencies provide a rationale for the selection of research and development (R & D) projects as well as a justification for research and development (R & D) expenditure.
- (5) *To choose strategic alliances:* These should build complementary core competencies.
- (6) *To balance SBU goals with company-wide objectives:* Core competencies build linkages between SBUs and promote corporate integration.

Once investments in these selected core competencies are made, core products (or services) should be the next objective of management. These core products are ones that can provide a steadily improving series of products and/or a base from which whole product families can be created. However, to continue to consistently select, build and apply competencies in ways that rapidly changing markets value, require a company to develop what Prahalad and Hamel (1994:81-82) call "foresight", a deep and profound understanding of how both the business and the market it serves operate and might evolve. From this awareness, a business can create its own, unique "strategic intent", a clear, unifying long-term vision of what it has to do in order to be successful in its chosen arena (Hamel and Prahalad 1994:129-130). Reinvesting in core competencies will be required to command and maintain dominance in that niche.

The winning strategy usually involves driving down the learning and experience curves as quickly as possible, becoming better at improving on chosen products and services than anyone else. As suggested above, this progress includes driving out cost and adding value faster than competitors, who will hopefully fall too far behind over time to catch up. Part of the commitment to this strategy involves competing with yourself, making your own products obsolete as quickly as possible by introducing new and better ones, so that there is no profit for your competitor to follow you. In its purest form, this carefully focused approach is the continuous improvement and deployment of knowledge itself, encapsulated temporarily in better and better products and services. To consistently see and capitalise on these attractive, emerging market opportunities before its competitors, an organisation must not rely purely on the fortune of having good leaders with vision, and knowing its own current competencies well. According to Prahalad and Hamel (1994:107), truly competitive organizations must also develop an internal "strategic architecture" designed to generate ongoing foresight, refresh strategic intent as needed, and develop and protect its core competencies.



#### 4.4 THE SYSTEMS APPROACH TO MANAGEMENT IN A TURBULENT ENVIRONMENT

Robbins (1990:12) defines a system as a set of interrelated and interdependent parts arranged in a manner that produces a unified whole. Societies are systems and so too are cars, plants and human bodies. They take inputs, transform them and produce some output. The unique characteristic of the systems viewpoint is the interrelationship of parts within the system. Every system is characterised by two diverse forces: differentiation and integration. In a system, specialised functions are differentiated, which replace diffuse global patterns. In the human body, for instance, the lungs, heart and liver are all distinct functions. Similarly, organisations have divisions, departments and like units separated out to perform specialised activities. At the same time, in order to maintain unity between the differentiated parts and form a complete whole, every system has a reciprocal process of integration. In organisations, this integration is typically achieved through devices such as coordinated levels of hierarchy, direct supervision, and rules, procedures and policies. Every system, therefore, requires differentiation to identify its sub parts and integration to ensure that the system does not break down into separate elements. Although organisations are made up of parts or subsystems, they are themselves subsystems within larger systems. Systems are classified typically as either closed or open. Closed-system thinking stems primarily from the physical sciences. It views the system as self-contained. Its dominant characteristic is that it essentially ignores the effect of the environment on the system. A perfect closed system would be one that receives no energy from an outside source and from which no energy is released to its surroundings. The open system recognizes the dynamic interaction of the system with its environment. A simplified graphic representation of the open system appears in Figure 4.3.

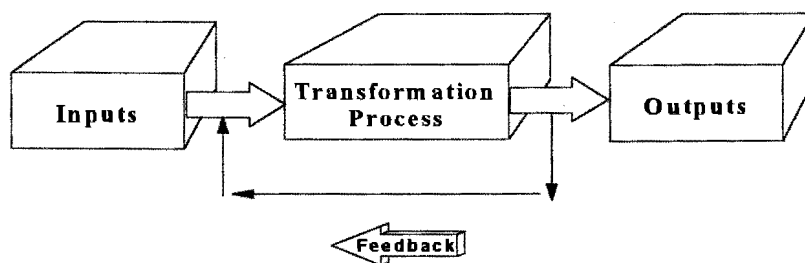


Figure 4.3. An open system (Robbins 1990:13)

In practice, it is difficult to conceive of any system for being fully closed. All systems must have some interaction with their environments if they are to survive. Probably the most relevant way in which to look at the closed-open dichotomy is to consider it as a range rather than two clearly separate classifications. In this way, we can explain that the degree to which a system is open or closed varies in systems. An open system, for instance, may become more closed if contact with the environment is reduced over time. The reverse would also be true.

All systems have inputs, transformation processes and outputs. They take things, such as raw materials, energy, information and human resources, and convert them into goods and services, profits, waste materials and the like.

Open systems, however, have some additional characteristics that have relevance:

- *Environment awareness.* One of the most obvious characteristics of an open system is its recognition of the interdependency between the system and its environment. Changes in the environment affect one or more attributes of the system, and conversely, changes in the system affect its environment.
- *Feedback.* Open systems continually receive information from their environment. This helps the system to adjust and allows it to take corrective actions to rectify deviations from its prescribed course. This process allows a portion of the output to be returned to the system as input so as to modify succeeding outputs from the system.
- *Cyclical character.* Open systems are cycles of events. The system's outputs furnish the means for new inputs that allow for the repetition of the cycle.
- *Negative entropy.* The term "entropy" refers to the propensity of a system to run down or disintegrate. A closed system, because it does not import energy or new inputs from its environment, will run down over time. In contrast, an open system is characterized by negative entropy – it can repair itself, maintain its structure, avoid death and even grow because it has the ability to import more energy than it puts out.
- *Steady state.* The input of energy to arrest entropy maintains some constancy in energy exchange, resulting in a relatively steady state. Even though there is a constant flow of new inputs into the system and a steady outflow, on balance the character of the system remains the same.
- *Movement towards growth and expansion.* As the system becomes more complex and moves to counteract entropy, open systems move towards growth and expansion. To ensure their survival, large and complex systems operate in this way to acquire some margin of safety beyond the immediate level of existence.

- *Balance of maintenance and adaptive activities.* Open systems seek to reconcile two, often conflicting, activities. Maintenance activities ensure that the various subsystems are in balance and that the total system is in accord with its environment. This, in effect, prevents rapid changes that may unbalance the system. In contrast, adaptive activities are necessary so that the system can adjust over time to variations in internal and external demands. Stable and well-maintained organisations that do not adapt as conditions change will not endure long.
- *Equifinality.* A system can reach the same final state from differing initial conditions and by a variety of paths. This means that an organisational system can accomplish its objectives with varied inputs and transformation processes (Robbins 1990:12-14).

The characteristics of an open system were used in developing the managed care business transformation diamond model (Fig 4.2) to work from to investigate the major factors influencing business transformation in a pharmaceutical organisation in a managed health care environment. Thinking of the organisation as “a system” entails stepping outside many of the traditional, linear, rational frame of references and “learning to see things backwards, inside out, upside down” (Tosey 1988:190).

Systems thinking reveals the synthesising, relational and integrative qualities of an organisation. It fosters awareness of the complex interactions and patterns of causal relationships that exist, both internally and external to the organisation. By thinking of interactions in the form of mutually influencing networks and loops rather than linear cause-effect chains, managers are provided with a potentially powerful and practical framework for managerial action (Doyle 1995:11). The systems metaphor also stimulates a more holistic appreciation in which managers come to think of their organisation in terms of its “wholeness”. Rather than seeing the organisation and their role or a managerial situation in isolated parts or as a series of unconnected events, they begin to see it as a complex, interactive whole (Tosey 1988:191). While this may not simplify the world, it does provide an antidote to the feelings of helplessness which often overwhelm individuals when faced with complexity and who feel “It’s the system. We have no control” (Senge and Fulmer 1993:24). Management development is conceptualised as an open system consisting of “an assemblage of interrelated elements directed towards common goals” (Hitt 1987:46). The system components or elements are arranged and linked in the form of a linear process. Inputs (resources, existing levels of competence, managerial and organisational expectations, standards) are received both from within and beyond the organisation. They are then transformed (through a series of formal and informal development activities) to produce different outputs (increased competence, new attitudes, behaviours and levels of performance). Feedback channels (performance management systems, pre- and post-course evaluation) monitor the efficiency and performance of the development process. Implicit within the model is the view that the process of developing managers is not considered to be piecemeal or fragmented. Instead, the process is seen to be integrated, congruent and supportive of organisational goals and strategies, which they are a vital input to the process (Doyle 1995:12-13).

#### 4.4.1 Practical applications of the system approach in the health care environment

A health care system structure includes:

- health care funding subsystems
- health care delivery subsystems
- health care management subsystems – including clinical and administrative management at both operational and strategic levels.

An individual with a health care problem enters the health care system and undergoes a clinical process. Such a process usually starts with a consultation in which a history is taken, the patient is examined, and the health care provider makes some assessment as to what the health care problem is likely to be (ie, reason for encounter or diagnosis) and also what to do about it. This could include various investigations and/or treatments. The patient's progress is then monitored as part of this health care process until the problem is stabilised or resolved and the patient leaves the system. Effective clinical and administrative management of this process requires data and information about all of this.

A health care episode is the period from when an individual develops a health problem until that problem is resolved. During that episode the patient may have one or more encounters with various health care providers and/or facilities.

The diagnoses define an individual's health care problem. Diagnoses can be:

- primary (the main reason for an individual entering a health care system)
- complications (health care problems that occurs as a result of the primary diagnosis)
- co-morbidities (health care problems that coexist with, but are not necessarily associated with the primary diagnosis)

Procedures are activities that are carried out as part of the health care process to clarify and/or resolve the health care problem. Procedures can be:

- cognitive – consultations
- investigative – pathology and/or radiology; therapeutic – surgical (operations) or medical (radiotherapy)

The outputs of health care processes are individuals who have had their health care problems dealt with. The quality of a health care process is a measure of the “goodness” of the outputs (outcome) of that process.

#### 4.5 ORGANISATIONAL TRANSFORMATION

Transformation has become a corporate strategy for organisations coping with the turbulence that characterises today’s environment. The need for transformation stems from this environmental turbulence and can render current organisational practices valueless. To respond, leaders must transform their organisations. A transformation creates a jump to a new level of organised complexity that provides added value for all organisational stakeholders. Corporate strategy is an integral part in the managed care business transformation diamond model (Fig 4.2) Corporate strategy is part of the research problem of this thesis. As stated in the research problem the second purpose was to determine the possible impact that the change in the environment, brought about by managed health care, will have on the modus operandi of multinational pharmaceutical organisations in South Africa. What should the pharmaceutical organisation’s corporate strategy be to adapt to the change envisaged by managed health care?

Corporate strategy must be driven by a point of view about the future of the industry: How do we want this industry to be shaped in five or ten years? What must we do to ensure that the industry evolves in a way that is maximally advantageous for us? What skills and capabilities must we begin building now if we are to occupy the industry high ground in the future? How should we organise for opportunities that may not fit neatly within the boundaries of current business units and divisions? Since most companies do not start with a shared view of the future, senior managers’ first task is to develop a process of pulling together the collective wisdom within the organisation. Concern for the future, a sense of where opportunities lie, and an understanding of organisational change is not the province of any group; people from all levels of a company can help define the future (Hamel and Prahalad 1994:127).

Any company that is more of a bystander than a driver on the road to the future will find its structure, values, and skills becoming progressively less attuned to an ever-changing industry reality. Such a discrepancy between the pace of change in the industry environment and the pace of change in the internal environment spawns the daunting task of organisational transformation. The organisational transformation strategy agenda typically includes downsizing, overhead reduction, employee empowerment, process redesign and portfolio rationalisation. As important as these initiatives are, their accomplishment cannot restore a company to industry leadership, nor ensure that it intercepts the future (Hamel and Prahalad 1994:6) Organisational transformation is a living methodology.

Every day we learn more and more about business transformation – about what works, and what leads to dead ends; about how strategies and visions can be translated into action programmes at every level of an organisation; and about the role of business leadership, in the alchemy of transformation. For most companies, the organisational transformation agenda is reactive rather than proactive.

Successfully managing the task of organisational transformation can make a firm lean and fleet footed; it cannot turn a firm into an industry pioneer. And although being a fast follower is better than being a slow follower, neither is a recipe for extraordinary growth and profitability. To be a leader, a company must take charge of the process of industry transformation (Hamel and Prahalad 1994:19). The requirement for organisational transformation presents a troubling paradox for would-be leaders of change. To achieve significant and lasting transformation, everything about the organisation must change (Spector 1995:382). Smith (1993:378-379) warns that fundamental organisational transformation does not take place quickly. Smith warns further that executives should not rush out and hire consulting firms to redefine or to transform the organisation, but that internal learning should precede the use of consultants.

A transformative change, however, is accompanied by a fundamental shift in consciousness, values, attitudes and perceptions. In a very real way, it is a constitutional change of the individual or the organisation. This level of change entails a profound transmutation of the prevailing vision of reality. This fundamental paradigmatic shift occurs only when the boundaries of the current frames of reference are pushed back to embrace a new vision of what is possible. This process is what Rossiter and Aucamp (1990:21) see as organisation transformation.

#### **4.5.1 Defining organisational transformation**

Gouillart and Kelly (1995:7) define organisational transformation as:

the orchestrated redesign of the genetic architecture of the corporation, achieved by working simultaneously - although at different speeds - along the four dimensions of reframing, restructuring, revitalisation and renewal.

Transformation is the organisational search for a better way to be. It is what happens when the environment alters radically that the old ways of doing business are no longer appropriate or possible, and a new way becomes essential. The trust towards transformation is usually not something that the organisation itself initiates and for good reason, for the process of transformation is always painful, and if carried to completion, results in a new organisation form which marks the end – we may say the death – of the old way of being (Owen 1987:5). The organisational transformation challenge faced by so many companies today is, in many cases, a direct result of their failure to regenerate their core strategies a decade ago (Hamel and Prahalad 1994:18).

Dehler and Welsh (1994:18) describe organisation transformation as “establishing a vision of what is desired and working to create that vision from the perspective of clearly articulated set of humanistic values”. Thus, as a change strategy, organisational transformation transcends the rationality associated with the traditions of scientific management to invoke a new management paradigm that addresses concepts at a “deeper level in the organisation than those traditionally targeted for change”.

These concepts include vision, purpose, mission, energy and flow. Implicit, but as yet undeveloped, in organisational transformation is the role of emotion in the change process.

But changing everything at once is simply impossible. In seeking a way through this paradox, Spector (1995:282) suggests a sequence of interventions. This is what needs to occur first, second, third and so on, if transformation is to be effective. Spector’s statement of a so-called step-by-step process, fits in nicely with the biological model of business transformation, that consists of four broad categories of therapy, what Gouillart and Kelly (1995:6) call the four R’s of transformation.

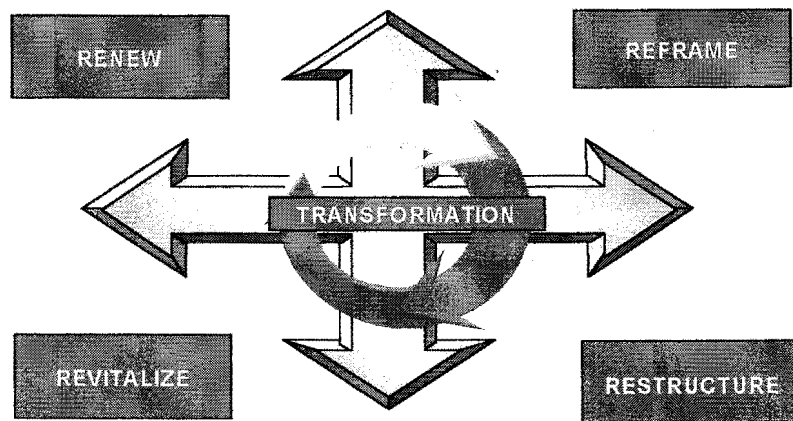


Figure 4.4 The four R's of transformation (Gouillart and Kelly 1995:6)

The four R's are to the biological corporation what the “three R's” of reading, writing and arithmetic are to schoolchildren: the life skills it needs if it is to survive and thrive.

The way forward, according to Spector (1995:282), is provided by three organising concepts. The first is customer alignment. He believes efforts at transformation start with an understanding of how the customer defines the value of the services and/or products offered by the organisation. Everything that follows involves aligning internal processes with external contingencies. The second is sequencing. It is vital to understand not just what needs to happen first in the transformation process, but also what the subsequent steps is and in what order the steps need to be undertaken. The third organising concept is learning. The sequence of interventions that lead to organisational transformation must occur in such a way as to maximize the ability of the organisation to learn: from customers and the marketplace, and from itself.

#### **4.5.2 The four R's of transformation are reframing, renewal, restructuring and revitalisation**

*Reframing* is the shifting of the company's conception of what it is and what it can achieve. It addresses the corporate mind. Corporations often get stuck in a certain way of thinking, and lose the ability to develop fresh mental models of what they are and what they could become. Reframing opens the corporate mind and infuses it with new visions and a new resolve (Gouillart and Kelly 1995:7). There are three reframing processes:

- (1) *Achieve mobilisation.* Mobilisation is the process of mustering the mental energy needed to feed the transformation process.
- (2) *Create the vision.* Vision provides a shared mental framework which gives form to that future. It must be challenging, representing a significant stretch from current reality, becoming the firm's new *raison d'être*, its most passionate aspiration. It creates a sense of purpose.
- (3) *Build a measurement system.* Leadership must translate the vision into a set of measures and targets, and define the actions needed to reach the targets. A sense of commitment (Gouillart and Kelly 1995:10).

*Restructuring* is a girding of the corporate loins, getting it to achieve a competitive level of performance. It deals with the body of the corporation, and competitiveness – the need to be lean and fit. Restructuring is the domain where payoffs are fastest and cultural difficulties are greatest, often making layoffs and the anxieties associated with them an unavoidable side effect. Many companies stop at restructuring, cajoled into contentment by their “quick wins”. But they won't gain true health unless they use those wins to fuel longer-term transformation programmes (Gouillart and Kelly 1995:7).



Restructuring also consists of three processes:

- (1) *Construct an economic model.* Constructing an economic model involves the systematic, top-down desegregation of a corporation in financial terms, from shareholder value considerations to activity-based costing and service-level assessment. It gives the company a detailed view of where and how value is created (or destroyed) in the firm.
- (2) *Align the physical infrastructure.* The redesign of a corporation's physical infrastructure is one of the most visible and telling measures of the overall health and strategic direction of a company.
- (3) *Redesign the work architecture.* In the corporation, work gets done through a complex network of processes, the *work architecture*. Work processes are the vehicles of business life (Gouillart and Kelly 1995:11).

*Revitalisation* is about igniting growth by linking the corporate body to the environment. Everybody wants to grow, but the sources of growth often are elusive, making the process of achieving growth more challenging and protracted than restructuring. Of all the four R's, revitalisation is the single greatest factor that clearly distinguishes transformation from mere downsizing (Gouillart and Kelly 1995:7). Three revitalisation processes are:

- (1) *Achieve market focus.* Revitalisation implies growth, and focussing on customers is a good place to start. Providing the benefits customers seek – often new, as yet undiscovered benefits – is what lead to business growth.
- (2) *Invent new businesses.* Growth also comes by starting new businesses from scratch. This requires the cross-fertilisation of capabilities which are often scattered throughout a firm's business portfolio, and the creative assembling of them to develop new offerings. In many cases the capabilities of other firms are required, spawning alliances, partnerships, mergers or acquisitions.
- (3) *Change the rules through information technology.* Technology can often provide the basis of new ways to compete. Information technology, in particular, can redefine the rules of the game in an industry (Gouillart and Kelly, 1995:12-13)

*Renewal* deals with the people side of the transformation, and with the spirit of the company. Hoerr (1995:1) agrees, saying that all that we do in business is through, with and for people. These “webs of relationships” form the essence of business. It is Hoerr’s belief that we need to embrace a paradigm of valuing people through an attitude of genuine serving. It is about investing individuals with new skills and new purposes, thus allowing the company to regenerate itself. It involves creating a new kind of metabolism, the rapid dissemination of knowledge inside the firm, and the cultivation of a reflex of adaptation environmental changes. Renewal is the most subtle and difficult; the least explored, and potentially the most powerful of transformation’s dimensions (Gouillart and Kelly 1995:7-8). Lastly, the three renewal processes:

- (1) *Create a reward structure.* Rewards are not the only motivators of people, but they are very powerful ones. The compensation system should reward risk-takers, and encourage people to link their own futures to the transformation of the company.
- (2) *Build individual learning.* There can be no corporate transformation without the transformation of a large number of individuals. Companies must commit themselves to the development of their people by encouraging the acquisition of skills and cultivating mutual learning.
- (3) *Develop the organisation.* Companies need to organise themselves for learning, so that they can adapt constantly to their changing environments (Gouillart and Kelly 1995:14).

These twelve systems do not exist in isolation. They are perpetually being challenged to adapt to changes in their environment (such as the arrival of new competitors and technologies), shifts in the attitudes of customers and regulators, and signs of the impending extinction of their industries. An ability to sense environmental change, and whether it carries threats or opportunities, is essential for survival, because the biological corporation is always evolving. Rewards systems are changing, work architectures are being redefined, visions are being refreshed. We once assumed that corporate evolution consists of long periods of a stasis, punctuated by periodic adaptations, but the pace of change is too fast for that now. Now, the company needs to adapt every day (Gouillart and Kelly 1995:15).

## 4.6 CONCLUSION

Discontinuous change and environmental turbulence are “more traumatic, painful, and demanding on the organization. By its very nature, discontinuous change means that a certain degree of shock (turbulence) will be administered to the organisation. It is often a radical departure from the past, and therefore carries with it all of the challenges associated with discontinuity. People, groups, and whole organisations not only have to learn new ways of thinking, working, and acting, but they also have to unlearn the habits, orientations, assumptions, and routines that have been baked into the enterprise over time. This unlearning can be difficult and even confusing for individuals”(Gray 1995:77). According to Drucker (1992), “our age is a period of transformation” and as a result “every organisation has to build the management of change into its structure”. If today’s transforming companies continue to do business in a world of rapid change and turmoil, and if the process of transformation requires a change management system that can harness the energy from a transformation, traditional assumptions about management may also need to be revamped (Welbourne1995:33).

Successfully managing the demand for change requires a commitment to focussing on the major changes that must be accomplished. Commitment to major change is evident when people do the following:

- Invest resource to ensure a desired outcome
- Consistently pursue their goal, even when under stress and with the passage of time
- Reject ideas or action plans that offer short-term benefits but are inconsistent with the overall strategy for ultimate goal achievement
- Stand fast in the face of adversity, remaining determined and persistent in their quest for the desired goal
- Apply creativity, ingenuity, and resourcefulness to resolving problems or issues that would otherwise block their achievement of the goal.

Commitment is the glue that bonds people and their change goals. It is the key source of energy that propels resilient people and organisations through the transition process at the fastest, more effective pace possible (The Severin Group 1997:33).

## CHAPTER 5

### THE NEED FOR RESTRUCTURING THE NATIONAL HEALTH SYSTEM IN SOUTH AFRICA

#### 5.1 INTRODUCTION

Many South Africans face substantial obstacles in obtaining access to adequate health services, including geographical and financial barriers, and those caused by disorganised and poor quality services which are primarily the legacy of the apartheid health care system. These problems impact profoundly on the health status of those who depend on public sector services, and particularly the poor. Dealing with these problems is therefore a fundamental precondition for the fulfilment of providing access to adequate health care services for the entire population and meeting basic needs.

One of the most critical problems affecting health care in South Africa is the weak and fragmented public sector primary health care (PHC) system. The primary health care (PHC) system and the National Drug Policy with the establishment of an essential drug list (EDL) will be discussed in this chapter. The faults of this system are attributable to a combination of problems, critical among which is maldistribution of resources (financial, physical and human) between hospitals and the primary care system, and between urban and rural areas as was discussed in chapter 2.

South Africa therefore faces serious problems in both public and private sectors, as well as in the interface between them. These will become increasingly serious as the burden on the health services increases over time due to the rapidly expanding HIV/AIDS epidemic, the ageing of the population and other epidemiological shifts. Solving these problems effectively will require a significant level of restructuring of both sectors and their interactions (*Report of the Committee of Inquiry into a National Health Insurance System 1995:S1-S2*). Some elements of this restructuring can be undertaken in the short term, while other elements will require at least five years to implement. Particular priorities in this restructuring process include:

- efforts to restrict the growth of global health sector expenditure in South Africa, by focussing on the more efficient and effective use of existing resources
- improvement of the access of South Africans to health services, as well as of the quality of services, particularly at the primary care level and in geographic areas which are currently under-resourced
- promoting the redistribution of resources between levels of care within the public sector
- achieving a redistribution of resources currently used only in the private sector to make them accessible to a broader section of the population
- promotion of cost-containment efforts within the private sector. (*Restructuring the National Health System for universal primary health care, Main Report 1995:6*)

## 5.2 INTRODUCTION OF A PRIMARY HEALTH CARE SYSTEM (PHC)

The Committee of Inquiry into a National Health Insurance System proposed that a publicly funded primary health care (PHC) system should be introduced in stages from 1996 onwards to provide a comprehensive package of primary health care (PHC) services, including district hospital services, environmental health services and other preventive, promotive and monitoring services, and comprehensive personal ambulatory services, including access to essential medicines for primary health care delivery. Furthermore, the package should be defined in terms of access to defined providers serving a defined population (*Restructuring the National Health System for universal primary healthcare, Main Report 1995:8*). The following basic principles in the implementation of the delivery of a primary health care approach inform the Committee's recommendations:

- (1) All permanent residents of South Africa should be guaranteed access, on equal terms, to all services provided by the publicly funded primary health care system. This implies that the financial, geographical and other barriers to access to primary health care services, and the quality of services delivered, should be equivalent for all users of the system.
- (2) The publicly funded primary health care system should build on and strengthen the existing public sector primary health care system.
- (3) The primary health care system should be congruent with and should strengthen the emerging district-based health care system.
- (4) The primary health care system should be based on a comprehensive primary health care approach, and should use population-based planning and delivery mechanisms.
- (5) The primary health care delivery system should be fully integrated with and consistent with other levels of the health care system.
- (6) The primary health care system should optimise the public-private mix in health care provision, and should ensure the achievement of redistribution of resources between the current private and public sectors.
- (7) The primary health care system should preserve the choice of individuals to use private providers and to ensure themselves for doing so. While the proposals laid out in this report envisage the development of a high quality, publicly funded primary health care system to which all would have access, and which all taxpayers would ultimately be required to finance, these proposals nevertheless recognise the right of individuals to use private sector providers for their primary health care services, and to insure themselves for the use of these services (*Restructuring the National Health System for universal primary healthcare, Main Report 1995:8-10*).

In compliance with the basic principle of universal access to the primary health care system, all permanent residents, whether or not they have private health insurance, will have the right to have access to the publicly funded primary health care system on equal terms. This implies that a uniform policy on user charges should be implemented throughout the country.

It was proposed that access to all personal consultation services and all non-personal services provided by the publicly funded primary health care system will be free of charge to all users of the system at the point of service. Specific exceptions to this principle may apply in the case of medicines, for which a small co-payment per script may be required. However, no-one will be denied access to medicines on the grounds of inability to pay. In addition, where patients bypass primary health care facilities and present at public hospitals for outpatient services, they will be penalised by an additional user charge, except in emergencies, or where public primary health care facilities are closed or not available.

Finally, as part of a more general policy on user charges in public hospitals, charges will be put on inpatient hospital care at district level (*Restructuring the National Health System for universal primary health care, Main Report 1995:14-15*).

The Committee was strongly supportive of this general policy direction, and believes that the district-based health care system will facilitate both increased equity and efficiency in health services management, as well as increased community participation, and responsiveness to the needs of patients and communities. It is envisaged that the district health authority (DHA) will play the key administrative role, as the lowest tier of government, within the publicly funded primary health care system (*Restructuring the National Health System for universal primary health care, Executive Summary 1995:S4-S5*).

Public providers would provide comprehensive personal services on site, including curative, preventive and promotive services. It is intended that public providers would begin as direct subsidiaries of the district health authority, but would shift over time to functioning with greater autonomy. The purpose of this shift to greater autonomy is once again to create more powerful incentives for efficient behaviour by public providers. Primary health care nurses (PHCNs) are envisaged as the *front-line providers* of clinical primary health care services in public facilities, with referral to medical and to other allied health personnel, as appropriate. The details of the actual responsibilities and relationships between a primary health care nurse and medical practitioners will be determined at district and institutional level.

Payments to individual health workers in public facilities will initially be based on the remuneration systems and frameworks currently in practice. However, it is intended that conditions of service should be substantially improved. Part of the improvements might involve a shift towards some combinations of remuneration and capped fee-for-service type payment, or other reimbursement arrangements designed to maximise incentives for efficiency (*Restructuring the National Health System for universal primary health care, Executive Summary 1995:S6*).

Accredited private providers are envisaged as health care teams, involving a range of personnel, including medical practitioners, primary health care nurses and allied health personnel. The teams would be expected to provide a defined, comprehensive range of personal services to a registered patient group.

These private providers would need to be accredited and would then compete for contracts from the district health authority. The ideal arrangement would be for most services to be available under one roof, and for some limited services to be subcontracted, if essential. The major mode of organisation is thus seen as the multi disciplinary group practice, and it is not envisaged that solo general practitioners (or health professionals) could obtain contracts as accredited private providers, and then subcontract all other services. This would inconvenience patients, and most general practitioners (and other health professionals) practising alone are generally not able to offer the type of comprehensive primary health care services envisaged here. It will be also inefficient and logistically difficult for the district health authorities to enter into and monitor large numbers of contracts with solo practitioners.

All of these arrangements should be flexible enough to cope with variations in local conditions. In some rural areas, or in some townships, it may be impossible for the district health authorities to find accredited private providers who meet all the criteria, thus making it necessary to contract with solo practitioners. The district health authorities will be more interested in the range and quality of services offered than in the details of health personnel employed and accredited private providers will enjoy some flexibility over staff arrangements. Constraints on flexibility will emerge from cost pressures, and from range of service requirements (*Restructuring the National Health System for universal primary health care, Executive Summary 1995:S6-S7*).

The precise details of the contractual arrangements between district health authorities and accredited private providers remain to be worked out in the planning process. Certain criteria for these relationships have been defined at this stage. Contracts will need to spell out the contractor's responsibilities in some detail, and will also have to specify the nature and timing of reporting requirements, details of monitoring and regulation by the district health authorities, and mechanisms and penalties for breach of contract. Efficient contracting also requires that the risk of the contract is distributed between the contractor and the purchaser.

Accredited private providers would not be entitled to charge any patients for their services. This would not preclude medical practitioners who operate within accredited provider practices from operating in private practice at a different location. These arrangements could not, however, be undertaken at the expense of patient care in the accredited provider practice.

The specific details of the accreditation process remain to be finalised. Criteria to be included in the framework might include:

- minimum standards for numbers, range and qualifications of personnel
- provision of equipment and facilities of required standard
- demonstrated capacity to store and handle medicines and other materials
- fulfilment of minimum information system requirements
- quality of services provided, evaluated in terms of process and outcome measures (*Restructuring the National Health System for universal primary health care, Executive Summary 1995:S7-S8*).

These proposals will require registration of the populations served by the district health authorities. This should ideally be done under the auspices of a national database, but may have to be undertaken by the Department of Health for its own purposes. Registration issues will need to be investigated urgently.

The delivery of comprehensive, high quality primary health care services is currently constrained by substantial gaps in both the quality and number of suitably trained primary health care nurses, doctors, other paramedical staff and managers in the public sector. The strengthening the human resources capacity of public primary health care facilities is a central component of these proposals.

In the case of primary health care nurses, extensive and rapid investments in training are required, and detailed training programmes are planned. The gap in medical staff requirements would best be filled through substantial increases in the number of full-time doctors working in public facilities and urgent steps are planned to achieve this goal. The improvement of governance and service delivery in the primary health care system will also require rapid and extensive investments in management training. Two basic forms of management training are proposed. Extensive in-service training will be required for nurses and other staff currently holding management positions in the public primary health care system. In addition, full-time training programmes will be implemented to train new managers for the districts, and for health facilities (*Restructuring the National Health System for universal primary healthcare, Executive Summary 1995:S8*).



### **5.3 INTRODUCTION OF THE ESSENTIAL DRUG LIST**

The Committee strongly supports the intended introduction of a national essential medicines programme for the public sector as a whole, as proposed by the Drug Policy Committee. A national essential drugs list (EDL) is being developed and will be implemented in conjunction with a national essential medicine programme (EDP). The essential drugs list will consist of medicines critically required for use in the public sector for the prevention and management of 90% to 95% of the common and important conditions in the country. These medicines should meet the highest standards of safety, efficacy and quality, and should be available at lowest cost to all South Africans. The essential drugs list will serve as the basis for the national system of medicines procurement, distribution, utilisation, review, training of health personnel, pricing and policies on support to the local pharmaceutical industry.

The essential drugs list will be introduced alongside comprehensive treatment guidelines for use in the public sector and will specify the appropriate prescriber level for each drug. Several elements of the proposed changes to the primary health care delivery system are already an integral part of the current health sector restructuring process. The Committee is of the view that a phased approach should be adopted in the implementation of the new proposals set out here. This will allow for the required discussion, consultation and negotiation, which are a crucial part of the decision making process (*Report of the Committee of inquiry into a National Health Insurance System 1995:S8-S12*).

### **5.4 FAST TRACK ELEMENT OF THE RESTRUCTURING PROGRAMME**

#### **5.4.1 Improvement of access to the primary health care system**

Eliminate user charges for consultation services at public providers. Simultaneously, implement payment for medicines, and penalty charges for unreferral consultations at outpatients departments of non-district hospitals.

#### **5.4.2 Development of the district-based health care system**

Continue current negotiations and planning aimed at the establishment of district health authorities over the next two years. Establish priorities for investment in administrative and management capacity at district health authorities level.

#### **5.4.3 Increased autonomy and efficiency of public providers**

Investigate mechanisms for increasing the managerial autonomy of public primary health care providers and shifts from global budgets to capped fee-for-service or other transitional payment systems (*Report of the Committee of Inquiry into a National Health Insurance System, 1995:S13*).

#### **5.4.4 Introduction of accredited private providers**

Begin negotiations with the appropriate representative bodies and provinces on the structure and functions of accredited private providers, and nature of contractual arrangements required. Investigate, at provincial level, appropriate sites for the introduction of accredited private providers, and begin designing pilot projects. This should be linked to capital development planning so as to avoid duplication of facilities between the public and private sectors.

#### **5.4.5 The accreditation process**

Investigate the establishment of a national accreditation body, and determine the relationship between the national body and the provincial district health authorities. Begin negotiations on criteria for accreditation of providers and draw up a timetable for the implementation of accreditation for private and public providers (*Report of the Committee of Inquiry into a National Health Insurance System, 1995:S14*).

#### **5.4.6 Registration**

Initiate discussions with the Department of Home Affairs, the RDP Office and other relevant government authorities on plans for a national population database. Begin planning alternative strategies for health sector registration if no national database is planned.

#### **5.4.7 Increasing the supply of primary health care nurses (PHCN) in public facilities**

Start urgent investigations into areas of shortages of professional nurses and the transfer of some professional nurse (PRN) posts from hospitals to primary health care facilities, where required. Begin the negotiation, planning and implementation of a national primary health care nurses training programmes.

Plan and implement of short-term, in-service training in clinical skills for professional nurses currently working as clinicians in the primary health care system. Begin negotiations and investigations into improved conditions of service for primary health care nurses. Start investigations into longer term changes to nursing career structures to allow for advancement to senior posts at clinic level (*Report of the Committee of Inquiry into a National Health Insurance System, 1995:S15*).

#### **5.4.8 Increasing the supply of medical personnel working in public primary health care facilities**

Increasing the number of full-time medical staff in public primary health care facilities by:

- rapidly identifying, assessing and filling vacant posts regarded as appropriate.

- rationalising and redeploying of posts with particular emphasis on redistribution of posts from hospitals to the primary health care level
- creating new posts, where required
- implementing incentives to attract staff to work in undeserved areas
- begin investigations into improvements in compensation and working conditions for full-time medical staff.

Increase the number of medical staff working on a sessional basis in the public primary health care system by:

- undertaking similar short-term measures as those noted under full-time staff
- begin investigating the feasibility of the various longer-term proposals for improving supply of sessional staff
- introduce direct referral contracts and changes to the district surgeon (DS) system
- start urgent negotiations with the appropriate representative bodies on changes to the district surgeon system
- change the name from a district surgeon to a district family practitioner (DFP)
- eliminate the direct access to a district family practitioner on the basis of a certificate of indigency from a magistrate, and replace it with the requirement for referral to a district family practitioner from a public facility and where no public facilities exist, a district family practitioner to continue seeing patients in own rooms, but discriminatory practices to be abolished, and rigorously regulated
- investigate incentives/regulations for a district family practitioner to see patients in public facilities
- desegregate current district family practitioners duties into separate contracts with more appropriate allocation of tasks
- include new duties within the district family practitioner contract, including training and support for primary health care nurses
- increase the number of district family practitioners posts in areas where district family practitioners currently overloaded, as well as in other areas, with the intention of increasing competition

- urgently investigate methods and levels of remuneration of district family practitioners  
(*Report of the Committee of Inquiry into a National Health Insurance System, 1995:S16*).

#### **5.4.9 Addressing the gap in provision of primary health care facilities**

Continue and expand current clinic building programmes to cover all areas currently without adequate primary health care facilities. Investment priorities to be determined at provincial level. Investigate a range of short-term arrangements for the provision of facilities prior to the construction of permanent public facilities. These might include the loaning of facilities by the private sector, and by churches and schools, the conversion of some hospital facilities, and the use of temporary structures in some areas. Investigate financing and other incentive arrangements to encourage the provision of facilities by accredited private providers.

#### **5.4.10 Provision of an essential drug list (EDL) medicines at all public primary health care facilities**

Finalise the national essential drug list (EDL), related therapeutic protocols, and other elements of the essential drug list. Urgently investigate and implement improvements in the central purchasing function carried out by COMED, and manage the medicines logistics pipeline, including warehousing, distribution and medicines management at facility level. In this regard, proposals for the contracting out of these functions should be urgently investigated.

Train all pharmacy, medical and clinical staff in the public primary health care system in the principles and operations of the essential drug list system. Begin planning to ensure the availability of essential drug list medicines at all public primary health care facilities. Start investigating and negotiating the extension of essential drug list medicines to retail pharmacies and, where permitted, to dispensing doctors (*Report of the Committee of Inquiry into a National Health Insurance System, 1995:S17*).

### **5.5 THE SOUTH AFRICAN NATIONAL DRUG POLICY**

Medicinal substances have conferred enormous health benefits on many South Africans. They have transformed the prevention and treatment of many diseases to the extent that lives have been saved and quality of life greatly improved. In the past, however, medicines were not available to all South Africans, due to the structural inequity and inaccessibility caused by Apartheid. This situation will be changed through the implementation of a national drug policy, which will reflect and provide the means for carrying forward many of the elements of the National Health Policy.

A National Drug Policy Committee was established in August 1994 to investigate specific issues related to the cost and availability of drugs. The Committee completed its report at the end of November 1994. This report, although based on an investigation which was narrow in its focus, was nevertheless regarded as a basis for the development of a comprehensive national drug policy (*White Paper, Towards a National Health System*, 1996:55)..

The National Drug Policy aims at ensuring an adequate and reliable supply of safe, cost-effective drugs of acceptable quality to all citizens of South Africa, and the rational use of drugs by prescribers, dispensers and consumers.

The specific objectives of the National Drug Policy are as follows:

(a) *Health objectives*

- (i) to ensure the availability of essential drugs to all citizens;
- (ii) to ensure the safety and efficacy of drugs;
- (iii) to ensure sound dispensing practice;
- (iv) to promote the rational use of drugs by prescribers, dispensers and patients through the provision of the necessary education, training and information.

(b) *Economic objectives*

- (i) to lower the cost of drugs in both the private and public sectors;
- (ii) to promote the cost-effective and rational use of drugs;
- (iii) to establish a complementary partnership between Government bodies and private providers in the pharmaceutical sector;
- (iv) to optimise the use of scarce resources through cooperation with international and regional agencies.

(c) *National development objectives*

- (i) to improve the knowledge, efficiency and management skills of pharmaceutical personnel;
- (ii) to reorientate medical, paramedical and pharmaceutical education and training towards the principles underlying the National Drug Policy;

- (iii) to support the development of the local pharmaceutical industry and local production of essential drugs;
- (iv) to promote the acquisition, documentation and sharing of knowledge and experience through the establishment of advisory groups in pharmaco-economic and other spheres of the pharmaceutical sector (*White Paper, Towards a National Health System, 1996:55-56*).

The key elements of the policy are given below under the following headings: legislation and regulation; pricing of drugs and related issues, drug selection, rational use of drugs, traditional medicines and monitoring and evaluation.

### 5.5.1 Legislation and regulation of pharmaceutical products

Ensuring that the drugs reaching patients are safe and effective and meet approved standards and specifications through strengthening the Medicines Control Council; rationalising drug registration, controlling the registration of practitioners and the licensing of premises; enhancing the inspectorate and laboratory functions and promoting other quality assurance measures.

### 5.5.2 Drug pricing

Ensuring the acquisition of safe and effective drugs at the lowest possible price through monitoring and negotiating drug prices and rationalising the drug pricing system in the public and private sectors, and by promoting the use of generic drugs.

#### 5.5.2.1 Rationalizing the pricing structure

- (a) A pricing committee, with the clearly defined functions of monitoring and regulating drug prices will be established within the Ministry of Health.
- (b) Transparency in the pricing structure of the pharmaceutical distribution chain will be mandatory (*White Paper, Towards a National Health System, 1996:57*).
- (c) A single exit (ex-factory) prices (nondiscriminatory pricing) will be introduced.
- (d) The wholesale and retail percentage markups will be replaced with a pricing system based on professional fees, so that prices will be uniform nationwide.
- (e) All public institutions will procure essential drugs through the public tender system. In the long run this system will be extended to non-governmental organisations and parts of the private sector.

- (f) A fixed, affordable co-payment for drugs supplied by the State will be levied. A system of exemption will be introduced for patients without the means to meet such payment, to ensure that they are not deprived of treatment. PHC drugs are excluded from the above exemption.
- (g) A database will be developed to monitor the cost of drugs in South Africa compared with prices in developing and developed countries.
- (h) Price increases will be regulated (*White Paper, Towards a National Health System, 1996:58*).

### 5.5.3 Use of generic drugs

The use of generic drugs (interchangeable multi source pharmaceutical products), using the generic name, is recommended to reduce drug costs.

- (a) The availability of essential generic drugs will be encouraged through the implementation of incentives that favour the use of generic drugs and their production in South Africa.
- (b) The present generic prescribing policy in the public sector will be reinforced. It will also be encouraged in the private sector.
- (c) In the interim, generic substitution will be legalised and made mandatory in the public and private sector.

### 5.5.4 Drug selection by the National Essential Drugs List Committee (NEDLC)

To promote the rational choice of drugs and associated items to be used in South Africa, in accordance with the essential drug concept, National Essential Drugs List Committee (NEDLC) will draw up and, periodically, review a national essential drugs list (EDL). The list will be accompanied by standard treatment guidelines and be prepared for the three levels of health care providers, namely primary contact, secondary care and tertiary care.

The selection of drugs for the essential drug list will be based on the following criteria:

- (a) patterns of diseases prevalence in the country
- (b) recommended treatment guidelines
- (c) evidence-based assessment of safety and efficacy

- (d) cost (including the cost of treatment), cost-effectiveness, reduction in other expenditure, reduction in loss and waste
- (e) when two or more drugs are equivalent in the above respects, "preference will be given to drugs which have been the most thoroughly investigated, which exhibit the most favourable pharmacokinetic properties, or for which reliable local manufacturing facilities exist".

In exceptional circumstances, drugs not appearing on the essential drugs list may be requested for specific patients. A standardised procedure for such requests will be developed. In public sector secondary and tertiary care hospitals at least 80% of all drug expenditure shall be spent on drugs appearing on the essential drug list. A national formulary containing standard treatment protocols and reliable, accurate drug information will be drawn up (*White Paper, Towards a National Health System, 1996:59*).

### **5.5.5 The rational use of drugs in South Africa**

The objective is to promote the rational prescribing, dispensing and use of drugs by medical, paramedical and pharmaceutical personnel, and to support the informed and appropriate use of drugs by the community.

#### *5.5.5.1 Education and training*

The objective is to ensure that all health personnel involved in diagnosing, prescribing and dispensing drugs, receives adequate theoretical and practical training.

- (a) The core curricula of all educational programmes for medical, paramedical and pharmaceutical personnel will be assessed and, if necessary, revised by the relevant statutory councils to ensure sufficient exposure to the concepts of primary health care and essential drugs.
- (b) A systematic and comprehensive programme of continuing education will be developed and implemented.

#### *5.5.5.2 General public*

A public education programme will be developed to ensure improved public appreciation of the benefits and limitations of the role of drugs in health care, a more critical attitude towards advertising and commercial information, responsible self-prescribing and the confidence required to interact effectively with health care providers.



### 5.5.5.3 *Drug information*

The objective is to ensure the provision of practical and scientifically validated information on the correct handling and rational use of drugs to health personnel at all levels.

- (a) Scientifically validated information on drugs will be collected, compiled and disseminated by supporting and/or establishing independent drug information centres, which will also assist with drug surveillance.
- (b) The public will be provided with access to objective information on the use of drugs, written in lay language, and including appropriate self-diagnosis and treatment.

### 5.5.5.4 *Appropriate prescribing*

The objective is to ensure that all drugs are prescribed by their generic names in accordance with recommended standard treatment guidelines and the essential drug list (EDL). At the primary level, prescribing will be competency and not occupation-based.

### 5.5.5.5 *Dispensing*

The objective is to ensure that all drugs are dispensed according to regulations and sound dispensing practice. Health care providers who have not been trained in dispensing practice will not be permitted to dispense. In the public sector, all drugs will be dispensed and labelled according to their generic names.

### 5.5.5.6 *Advertising and marketing of drugs*

The objective is to ensure that the advertising and marketing of drugs are in keeping with the National Drug Policy (NDP) and comply with national regulations.

- (a) All promotive claims should be reliable, accurate, truthful, informative, balanced and up to date.
- (b) Claims should not contain misleading or unverifiable statements or omissions likely to induce medically unjustifiable drug use, or give rise to undue risks.
- (c) Bonusing will be discontinued and sampling limited to the most basic quantities required to provide information on new drugs to prescribers.
- (d) Ethical criteria and guidelines for the promotion and advertising of drugs will be established.

- (e) The approved generic name of a drug must appear immediately below the brand name in print, and be at least one half the size of the largest print used for the branded name (*White Paper, Towards a National Health System*, 1996:61-62).

#### **5.5.6 The inclusion of traditional medicines in the National Drug Policy**

The objective of the National Drug Policy is to identify and investigate the appropriate use of traditional medicines for safety and efficacy.

- (a) Traditional medicines must be identified and investigated for safety, efficacy and quality with a view to incorporating their use in the health care system.
- (b) In addition to the therapeutic effects of these medicines, this recognition might foster cooperation between traditional healers and health workers in the formal sector, and encourage their participation in primary health care programmes, such as immunisation monitoring and AIDS management.
- (c) In the longer term, the feasibility of setting up a national reference centre for traditional medicines, referred to as a National Institute for Traditional Medicines, should be investigated.

#### **5.5.7 Monitoring and evaluation of the National Drug Policy**

The objective is to support the successful implementation of the National Drug Policy (NDP) through establishing mechanisms for the monitoring and evaluating performance and impact that will reveal possible problems and suggest effective strategies.

- (a) Indicators for monitoring the National Drug Policy will be developed and will form part of the National Health Insurance Scheme for South Africa.
- (b) Progress in the implementation of the National Drug Policy will be monitored at regular intervals.
- (c) Systems for monitoring the private sector and, to a limited extent, international pharmaceutical markets will be developed and implemented (*White Paper, Towards a National Health System*, 1996:64-65).

## 5.6 COMMENTS ON THE NEW PRIMARY HEALTH CARE (PHC) POLICY

Appropriately, primary health care is the major focus of the Report of the Committee of Inquiry into a National Health Insurance System, indeed its original *raison d'être* before the Committee sought and obtained ministerial approval to embrace a wider set of concerns, namely “consideration of both the public and private components of the national health system.”

The Committee (*Report of the Committee of Inquiry into a National Health Insurance System, Executive Summary*, 1995:S2-S3) set out a clear vision of these proposals that leaves little room for either complacency or misinterpretation: These proposals should be interpreted as part of a broader and continuing restructuring and transformation of the entire national health system. They are also informed by the perspective that the restructuring of the health sector must be achieved in the context of controlled global health sector expenditures, requiring more efficient and effective use of existing resources. This will in turn require redistribution of resources between levels of care within the public sector, as well as of resources currently used only in the private sector to make them accessible to a broader section of the population.

The **second** core recommendation is the creation of a new cadre of primary health care nurses (PHCNS) as the front-line providers of clinical primary health care services in public facilities, with referral to medical and other allied health personnel, as appropriate.

The most likely scenario, according to Gross (1995:6-7), is that the required number of primary health care nurses will not be available on day one of the first year of implementation, private doctors or salaried doctors will not fill the gap, the average cost of all nursing services in South Africa will increase because of the stimulus of increased remuneration obtained by primary health care nurses, and the consumer may not use public primary health care services until they are sure that primary health care nurses offer care at least equivalent to doctors.

The **third** core recommendation is the creation of accredited private providers (AAPs) envisaged as “health care teams involving a range of personnel, including medical practitioners, primary health care nurses and allied health personnel”. The teams would be expected to provide a defined, comprehensive range of personal services to a registered patient group.

These private providers would need to be accredited and would then compete for contracts from the district health authorities. With the committee asserting that these services should, ideally, be available under one roof, the multi disciplinary group practice is seen as the preferred organisation structure for the accredited private providers with solo general practitioners (or other health professionals), unable to obtain district health authorities contracts as accredited private providers because they would generally not be able to offer the type of comprehensive primary health care services envisaged and because district health authorities would find it difficult to enter and monitor large numbers of contracts with solo practitioners.

The most likely scenario is that private medical practitioners will react slowly to the challenge of accredited private providers accreditation. They will not risk their own capital in the creation of dual facilities, unused space and staff (Gross 1995:7).

The **fourth** substantive recommendation is to create an Essential Drugs List (EDL), as proposed originally by the Drug Policy Committee. The EDL will consist of medicines required for use in the public sector for the prevention and management of 90% to 95% of the common and important conditions in the country. The medicines should meet the highest standards of safety, efficacy and quality, and should be available at the lowest possible cost to all South Africans (*Report of the committee of inquiry into a National Health Insurance System, Executive Summary*, 1995:S2-S3).

The Committee (1995: S12) explicitly rejects the option of using cost-effectiveness analysis to select appropriate medicines in primary health care:

The primary health care medicines on the essential drug list (EDL) will be made available, at state tender costs, via retail pharmacies, with additional payment of a dispensing fee which would be retained by the dispenser. Thus, individuals who choose to use private practitioners for their primary health care services would be able to purchase primary health care level essential drug list medicines at substantially lower cost than is presently the case. All medicines not on the essential drug list would need to be purchased at full retail price. The dispensing fee of the pharmacist would represent payment for "handling the medicines, and a reasonable profit". The rights of doctors to dispense medicines on the essential drug list would be permitted primarily where there were no licensed pharmaceutical outlets within a reasonable distance.

The report estimates that the distribution of primary health care drugs on the essential drug list at cost to private sector consumers would save R1.2 billion per year and reduce the serious problem of theft of drugs purchased by the public sector, which are then resold in the private sector (Gross 1995:8)

Finally, in estimating the financial consequences of introducing the essential drug list, the model suggests (with appropriate caveats on the conclusions because input data are missing) that:

- the pharmaceutical manufacturers would lose up to 12% of their R500 million turnover if the national health insurance (NHI) principle of free drugs was extended to the private sector
- the 3 500 private pharmacies might lose R46 million (R13 000 per pharmacy) and the 4 000 plus dispensing doctors might lose R40 million (R10 000 per doctor). with both losses partially compensated by a dispensing fee (R10 assumed) (Gross 1995:10).

At a workshop, Gross (February 1996), stated that “while reducing the number of available drugs could theoretically save money, but due to the existing budget cuts, this effect will probably be undone by an increase in consumption”.

The report endorses another facet of the Drug Policy Committee (DPC) report, namely, the formal recognition of essential traditional medicines. The report calls for the registration and control of traditional medicines as well as a national formulary on Medicines Control Council approved “essential traditional medicines”.

The final recommendation of the Committee, evolving from its expanded terms of reference, is the creation of mandatory coverage of basic care in public hospitals. Noting that many employees use public hospitals without paying (even when they can afford to), the Committee recommended that at least the costs of use of public hospitals might be covered by indemnity insurance with the possibility of a specified maximum limit per beneficiary per year (*Report of the Committee of Inquiry into a National Health Insurance System, Main Report, 1995:72-74*).

The cost of this mandatory coverage of basic care in public hospitals will be split equally between employers and employees (with an employee share related to income) and an average payroll tax of 0.66% might be required (Gross 1995:14-15).

If the proposed public hospital insurance scheme with this type of reinsurance pool were introduced in South Africa, the most likely scenario is the emergence over one or two years of the same problems that are occurring in Australia’s current “basic hospital insurance table” because fewer people want it as government regulations of the “core” package force health insurance funds to include benefits that should never be included. In addition risk averse young persons flee constrained core public hospital insurance, opting instead to pay for hospital care out of pocket using a health care bank savings account, thereby weakening the overall demand for health insurance and increasing risk selection against the health insurance companies and medical aid schemes (Gross 1995:16).

## **5.7 SOME PARTICULAR INCONSISTENCIES AND POLITICAL IMPLICATIONS OF THE REPORT**

The Committee refused to adopt the World Bank cost-effectiveness method in defining an affordable cost-effective primary health care package. The three reasons given are inadequate defences. Lacking data did not stop Ghana in 1978 or Mauritius in 1995 from initiating the necessary data collection. The cost of such data collection and analysis is a defensible use of World Bank or other donor subsidies as the ongoing Mauritian study shows.

Secondly, having rejected the tools of cost-effectiveness for primary health care, the Committee then calls on government to provide guidance on the cost-effectiveness of hospital care. It is less difficult to measure the cost-effectiveness of primary health care (certainly a vertical programme of PHC) than it is to measure its equivalents for inpatient services. Gross (1995:18) hopes that political realism will avoid the impending disaster that would occur if government accepted as a commitment all the cost-inefficient and cost-ineffective services listed in the report. It is not sufficient to argue that the Committee chose the “comprehensive” route to avoid the political problems that evolved in Oregon’s misuse of cost-effectiveness analysis to guide its decisions on what services that US government would pay for in the care of the poor. Oregon is not “best practice”, cost-effectiveness analysis, and the World Bank methodology is a superior tool, data gaps in South Africa notwithstanding.

Potential threats to doctors, health insurance and medical aid schemes, employers, private hospitals and pharmaceutical manufacturers are explicit in the Committee’s proposals. These threats may not necessarily be fatal to the cooperation of these “stakeholders” with the Government but, at the very least, some of the proposals require more detailed analysis.

### 5.7.1 Threats to doctors

The threats to doctors in the report come from at least six recommendations. First, the path to capitation is foreshadowed to be through capped fee-for-service. Apart from the fact that the intermediate path is potentially income-threatening, it is not a very effective positive incentive for private doctors to consider becoming accredited primary providers.

Secondly, the report endorses the concept of multi-disciplinary group practice in primary health care, noting *en passant* that solo practitioners would be unlikely to be acceptable because of the many contracts that a district health authorities would have to manage. This explicit exclusion of doctors of excellence now in solo practice might challenge IPAs to expand their current activities to demonstrate their value to society, including a more rapid restructuring of IPAs to become hardheaded units paid by capitation and for better health outcomes (Gross 1995:20).

Thirdly, the proposals for primary health care indicate that APPs can offer their services to primary health care patients in one office but cannot use the same facilities for their private patients. The ramifications of this concept for creating duplicate physical facilities are serious. Most GPs do not have the capital to operate two separate facilities and many of them may have available slack time in which they could see public primary health care patients at a low marginal cost in their existing office rather than incur the travel time and costs of moving elsewhere to care for their public primary health care patients. The Committee appears to soften the full cost of operating more than one practice by suggesting that the cost of capital for their primary health care clinics could be built into the contract capitation.

Fourthly, the Committee commissioned a survey of general practitioners (GP) attendees towards a National Health Insurance (NHI). Ignoring for one moment the possibility that the detailed description of a specific National Health Insurance (NHI) might have been required to obtain meaningful responses, the reported survey results suggest that 21% of the sample of respondents would not find attractive referrals from a public primary health care, and 31% don't like a National Health Insurance anyway. One can only assume that if the Committee's proposed primary health care model was implemented, a proportion of that 31% might relocate outside South Africa, particularly if they perceived the public sector to be a major paymaster if they located to a public primary health care facility. In a situation where the Committee is committed to the creation of sessional posts rather than referral contracts, only 58% of GPs surveyed would find attractive sessional posts at public facilities, leaving a healthy plurality who does not find the concept attractive (Gross 1995:21).

Fifthly, on the one hand, young doctors in training may find the notion of a compulsory national service before they are entitled to earn other income unacceptable. On the other hand, if medical undergraduates (trained at a relatively high cost to taxpayers) viewed the national service as part of a bursary offsetting part of their costs to society the proposal has merit.

Sixthly, any profession which stood to lose dispensing fees of R10 000 per doctor per year would normally not be tranquil, particularly at a time when the national economy may not create any offsetting income, or when the dominant primary health care model seems to create an almost free competing service supplied by primary health care nurses (PHCNC).

### **5.7.2 Threats to health insurance and medical aid schemes**

The health insurance/medical aid system would face some particularly challenging times if the report was implemented without major changes. First, the proposed regulation to differentiate between health insurance and medical aids will attract the usual response that:

- (1) the industry is only just getting used to the effects of legislative reforms less than two years old
- (2) legislation which creates community rating or a level playing field in which all applicants for coverage must be accepted (even with risk pools) is likely to confuse employees, employers and the industry (Gross 1995:21).

These defences are unlikely to be accepted by the Committee or the government but such warnings may justify the staging of the introduction of any national legislation over two to three years.

Secondly, the proposal that public hospital services be covered by a new defined hospital benefit package funded at about 0.67% of income may confuse a number of medical aid schemes that have found it difficult to achieve:

- (1) annual hospital costs per insured member of R400 suggested by the Committee
- (2) the Committee's suggested family premium of R56 per month.

Even if the Committee's castings are in error (and there must be a reasonable chance of them being so), the estimated R1.32 billion per year paid to public hospitals by the insurers is sufficiently large for the insurers to first want to set standards for accreditation of public hospitals to ensure that the covered (basic) services are of adequate quality and defensible cost. It remains a moot point whether the Committee's proposal would stabilise risk pools by the entry of several relatively low income contributors, particularly if low income and poor health status are well-recognised bedfellows that could cause adverse risk selection (Gross 1995:22).

In essence, the funding of the basic (public) hospital benefits package is a tax on those who pay the estimated hospital insurance premium. No matter how the premium is described, it is a tax to provide an estimated extra R1.3 billion for the funding of government hospitals. The major burden of the new tax seems likely to fall on employers, particularly if one aim of the hospital "tax" is to obtain payments for inpatient care of low remuneration workers who now use public hospitals at no cost because no-one in need is refused admission because of lack of ability to pay, or they cannot be billed post-discharge if they give fictitious or difficult-to-locate addresses. Low wage employees (and employers) might be attracted to a basic public hospital insurance scheme as an alternative to paying the rising premiums of medical aid schemes or health insurance funds. The actual level of employer contribution to the tax will no doubt evolve as part of the negotiations of the total wage package in South Africa in an employment environment already clouded by the draft labour legislation (which would confer unparalleled powers to employees if it was passed into law) and by the other potential future costs to employers mentioned *en passant* in the report.

### 5.7.3 Threats to employers

The costs to employers of health care for their employees seem unlikely to decrease under the Committee's proposals. First, there is a hint that employees would be able (or want) to argue with employers about the need for employers to cover benefits above the basic hospital insurance package.

Secondly, the report hints that health insurance coverage of dependents is a good idea in the next stage of reform of health care financing.



Thirdly, the current tax subsidy of employees for health coverage would disappear, although differential subsidies, dependent on a take-up of managed care principles, are probably now justified, if not overdue in South Africa.

Fourthly, there is the threat of employers being asked to consider an embryonic much larger social security system. This possibility is not diminished by the Committee's decision to refrain from recommending a particular method of funding the preferred primary health care proposal, referring that matter to Cabinet for its review and decision.

Fifthly, there is at least one offsetting positive message for employers, namely that they could apply for funding to set up employer-run primary health care clinics, at which they could offer primary health care to their employees and local residents, ostensibly collecting at least the revenue from the primary health care drug co-payments (Gross 1995:23-24).

#### **5.7.4 Threats to private hospitals**

The message to the private hospitals is less ambiguous. First, by encouraging private wards in public hospitals funded by the core hospital benefits package, private hospitals must lose some customers unless they cut their costs per admission and length of stay.

Secondly, unlike employers, private hospitals do not seem to be eligible for primary health care funding to set up associated primary health care clinics.

Thirdly, ongoing reforms in private hospitals to control their drug costs will certainly be accelerated in the aftermath of lower prices for primary health care drugs. It is conceivable that the costs of nonessential drug list (EDL) drugs to private providers of care may stay at historical levels. or that, faced with the potential collapse of a market for cost-effective brand drugs, manufacturers, doctors, health insurance funds and other parties will begin to focus on home care, case management and patient education for self-care. This approach will further reduce the number of inpatient bed-days (roughly 600 bed days per 1000 covered lives) now provided in private hospitals. International trends in bed usage suggest that the current admission rate and total bed days per 1 000 will decrease in South Africa (Gross 1995:24).

#### **5.7.5 Threats to pharmaceutical manufacturers**

The Report of the Committee of Inquiry into a National Health Insurance System effectively targets the pharmaceutical chain from manufacturers to retailers as a major source of financing for the primary health care reforms. A foreign observer, Gross (1995:24) assessing the lack of transparency in drug pricing from a manufacturer through the distributor to retail pharmacists and dispensing doctors, concludes that if the whole chain had acted more quickly to make prices transparent and remove unnecessary "middle-men" from the pricing markups, the Committee would not have needed to send such a direct challenge as the estimated R1.3 billion cut in income that will occur in all parts of the chain.

The pharmaceutical manufacturing industry presented one easy target because it is multinational and competitive. The search for cost containment by the Drug Policy Committee and the Committee of Inquiry effectively ignored any arguments that cost-effectiveness is the appropriate criterion for societal acceptance of the prices of breakthrough medicines in a nation that represents less than 0,8% of the world pharmaceutical market.

According to Gross (1995:25-26), the Committee ignored the World Bank's 1993 report demonstrating the cost-effectiveness of many modern medicines and the policies of other nations which recognise cost-effectiveness in setting the price of medicines (eg, Ontario Canada, Australia) and focussed purely on cost containment as its goal. Medicines are an obvious target if this criterion is paramount, erroneous as the criterion may be if cost-effective health outcomes are to be achieved in South Africa.

The weakness of the Committee's recommendations is starkly revealed on the one hand by its endorsement of the package of primary health care benefits, and on the other hand, by its willingness to cut the prices of all medicines in the search for cost containment. Its philosophy of cost containment is sadly paralleled in a report issued by the Centre for Health Policy at the University of Witwatersrand by the ex Director: Regulation, Registration and Procurement in the Department of Health, Bada Pharasi.

The Centre's report, lacking essential data, assumes that cost containment alone is the major goal of pharmaceutical pricing strategy (Pharasi 1995). That opinion is in error if judged by one landmark decision by Australia's policy to allow one manufacturing industry representative to sit on the major committee assessing cost-effectiveness in drug pricing decisions in a monopolistic national government controlled system (Gross 1995:26). Recent evaluations of government-imposed regulations in Europe and in the USA indicate quite clearly that various price controls, formularies or drug benefit limits (reflected in the primary health care castings of a limited number of essential drug list scripts per visit) cause cost blowouts elsewhere in the health budget that are up to seventeen times the "savings" in the government drug budget.

## **5.8 IMPLICATIONS FOR THE PHARMACEUTICAL INDUSTRY**

This report has serious implications for the pharmaceutical industry. The most immediate problems are as follows:

- (1) the introduction of an essential drug list for primary health care that is so encompassing in its impact that it must accelerate the introduction of a parallel import policy in South Africa
- (2) the extension of the essential drug list for primary health care into secondary and tertiary care, influencing the prices, volumes and health outcomes of use of patented medicines in South Africa

- (3) the extension of the essential drug list for primary health care into private sector medicine, leading to a steady reduction of the average price of prescribed medicines in South Africa
- (4) an acceleration in Africa of the South African proposals which expand most previous applications of an essential drug list in health care in developing nations

In such an environment, it is reasonable to expect that an essential drug list for primary health care will be implemented. The consequences of an essential drug list covering 100 to 120 conditions are fairly predictable, nothing much remains outside the essential drug list ambit. While average drug prices and volumes in South Africa will remain high by first world standards, the essential drug list proposal will attract a large political constituency. The markups in the chain beyond manufacturers are indefensible on any value-added assessment. Some manufacturers have reduced prices across the board. The Committee's report would achieve much larger cuts, which would effectively threaten the viability of the manufacturers and research and development (R&D) in Africa as other nations could adopt South African drug pricing policy as a gold standard for their drug pricing. In such circumstances pharmaceutical manufacturers need to consider the appropriate political response.

The media are generally silent on the report. The net result will be that an unfordable primary health care scheme will evolve and political disillusionment will grow. The people of South Africa deserve better even if the needed reforms take years to implement.

## **5.9 THE YEAR 2000 HEALTH GOALS, OBJECTIVES AND INDICATORS FOR SOUTH AFRICA**

The mission of the Department of Health is to provide leadership and guidance to the National Health System in its efforts to promote and monitor the health of all South Africans, and provide caring and effective services through a primary health care approach.

The goals of the Department of Health offer a vision of improved health status, and are based on several principles. These include the need to provide comprehensive and integrated services at all levels of health service delivery, and a commitment to primary health care principles. Some objectives have specific, measurable outcomes, based on recommendations submitted to the Department of Health. These are not final outcomes, but should initiate discussion to achieve a consensus on measurable outcomes.

For many of the objectives, additional information is required to determine baseline data and develop specific outcomes. Outcomes may be modified, based on information collected in future years. Improvements to the information systems will require eliminating deficiencies in vital statistics, health facility records, and existing surveillance systems. The development of new surveys and data collection systems will be required to supplement existing information. The legacy of apartheid has created marked differences in health status, based on race.

The creation of a healthier South Africa depends on narrowing the difference in mortality and morbidity, and improving access to comprehensive health services for all population groups. Outcomes for these population groups, as well as South Africans as a whole, will be developed (*White Paper for the Transformation of the Health System in South Africa*, 1997:203).

## 5.10 CONCLUSION

Although the National Health Plan for South Africa was first written in 1994 and the Report of the Committee of Inquiry into a National Health Insurance System, on restructuring the national health system for universal primary healthcare, was published in 1995, many South Africans still face substantial obstacles in obtaining access to adequate health services in 2001. All indications are that most of the issues discussed in this chapter will only be implemented from January 2003.

Geographical and financial barriers, and those caused by disorganised and poor quality services which are primarily the legacy of the apartheid health care system still impact profoundly on the health status of those who depend on public sector services, and particularly the poor. Dealing with these problems is therefore a fundamental precondition for the fulfilment of providing access to adequate health care services for the entire population and meeting basic needs.

South Africa therefore faces serious problems in both public and private sectors, as well as in the interface between them. These will become increasingly serious as the burden on the health services increases over time due to the rapidly expanding HIV/AIDS epidemic, the ageing of the population and other epidemiological shifts. Solving these problems effectively will require a significant level of restructuring of both sectors and their interactions. Some elements of the restructuring the national health system took relatively quickly to implement, while the majority of elements will require at least another two to three years to implement.

As discussed in the introduction the following priorities in this restructuring process were identified in 1995: (I have added in brackets a yes or no on the priorities that has been successfully or not successfully been addressed at the time of submitting this thesis)

- efforts to restrict the growth of global health sector expenditure in South Africa, by focussing on the more efficient and effective use of existing resources (No)
- improvement of the access of South Africans to health services, as well as of the quality of services, particularly at the primary care level and in geographic areas which are currently under-resourced (Yes)

- promoting the redistribution of resources between levels of care within the public sector (No)
- achieving a redistribution of resources currently used only in the private sector to make them accessible to a broader section of the population (No)
- promotion of cost-containment efforts within the private sector (No).

One of the main cost-containment models in addressing rising health care cost is managed health care. Bringing down health care cost will achieve in the redistribution of resources and therefore make health care more accessible to a broader section of the South African population. Managed health care as a health care delivery mechanism will be discussed in chapter 6.

## **CHAPTER 6**

### **MANAGED HEALTH CARE AS AN ALTERNATIVE HEALTH CARE SOLUTION FOR SOUTH AFRICA**

#### **6.1 INTRODUCTION**

Over the last decade the paradigm of whom the private health care consumer is has moved dramatically towards the managed health care scenario. In the United States the 20<sup>th</sup> century witnessed the transformation from rural to an urban society, from an individual orientation to institutional domination, from agricultural to manufacturing economy, and from self employment to employee status in increasingly larger businesses. During the same period medical practice made the transformation from generalist to specialist, from solo to group practice, from fee-for-service to group payment, and from a cottage industry to corporate management of medical care (Kongstvedt 1989:3).

Managed medical care - a uniquely American development - dates back to the 1930s. During that period one saw group practices and group payment for health and the evolution into the popular marketable entities called health maintenance organizations (HMOs) and preferred provider organizations (PPOs) (Buchanan 1998:617-618). With the globalization strategies of companies and concepts the managed health care concept is taking roots in Europe, South America, Australasia and South Africa.

The term, "managed health care" that is used to embrace a whole range of organisations, approaches and techniques which together comprise a system of health care delivery which influence's utilisation and cost of services, and measures performance will be discussed in this chapter as an alternative for the escalating health care costs of South Africa. The goal of managed health care is to establish a system which delivers value by giving people access to quality and cost-effective health care (Hall 1994:32). Managed health care is an alternative health care system to the primary health care system discussed in the previous chapter, but both systems have similar objectives in providing cost-effective health care to more South Africans.

But managed health care is not a product, it is an administrative process that utilises a coordinated approach to health care finance and provision, linking patient, care a provider and medical insurer. The seemingly endless increase in health care costs has been a major impetus for the introduction of managed care. The upward pressures on health care costs stem from a number of sources. First, there is a growing demand for more health care provision – both privately and publicly. The aspiration of a long, healthy life is one that most people hold and, with modern advances in housing, diet and medical care, three decades of life in retirement is no longer uncommon. In addition, advances in medical technology have achieved unprecedented success but they have been accompanied by increased treatment costs. There is clearly a critical path between health care demand and the cost of fulfilment (Whitehead 1994:34).

McGuire (1994:10) attributes the growth of managed care to two strong economic forces in the health care marketplace: excess capacity in the current health care delivery system and the continuing escalation in health care costs for major purchasers due to the inflation rate, utilisation levels, technology costs and cost-shifting.

To predict the likelihood of managed care in South Africa, it is necessary to understand the nature of the health care systems and the degree to which they meet the criteria for the creation of a managed health care system. This was discussed in chapters two and five. Several factors need to be considered:

- the degree of patient and/or employer responsibility for health care funding
- the degree of pressure on national governments' health care spending
- the openness of governments to change and their attitudes toward health care
- physicians' willingness to cooperate and to accept budgetary responsibility
- the willingness of patients to accept a restricted choice of provider and treatment (Chetty 1999:1).

As the balance of power in the health care system shifts toward managed care companies, the control and influence traditionally enjoyed by the physician are eroded. The physician ceases to be an autonomous decision-maker and becomes merely a cog in a wheel or an instrument of the payer that is the health maintenance organisation or preferred provider organisation (PPO). The level of physician cooperation will therefore depend on the openness of doctors to change and their willingness to accept more financial responsibility for their own business. The problems will come if and when the "encouragement" becomes "enforcement." The level of patient cooperation will depend on current expectations of healthcare coverage and choice.

Attitudes vary widely depending on the degree of freedom of choice to which patients have been accustomed. Therefore, they can be expected to respond better to managed care in countries where they have traditionally had relatively limited choice of a doctor, a specialist, a hospital, (eg., Spain, the UK, Germany) rather than those where freedom of choice has been an integral part of the system and seen as a right (eg., France, Belgium and South Africa) (Hall 1994:33).

In the current political and economic environment, managed health care appears to be the approach most likely to be used to achieve the desired level of performance. Quality improvement efforts are greatly enhanced in a managed care environment, which has a defined population not readily available in the fee-for-service sector.

## 6.2 DEFINING MANAGED HEALTH CARE

Although there is no standard definition of managed health care, the term is used to embrace a whole range of organisations, approaches and techniques that together comprise a system of health care delivery which influence's utilisation and cost of services, and measure's performance. Managed health care characterises a spectrum of financing and structural arrangements among purchasers, insurers and providers that can favourably affect the quality and cost of health care for a defined population (Miller and Luft 1994:437).

Managed care is a term commonly used – but often not precisely – to refer to forms of health benefits' coverage and health service delivery that are alternatives to traditional fee-for-service medicine. These alternatives range from delivery systems such as health maintenance organisations and preferred provider organisations, to utilization review procedures exercised by payers, insurers or providers, to hybrid forms of insurance, service delivery and utilization management. The exact meaning of the term depends largely on the context in which it is used, and frequently upon the interests of those who use it; use of the term is seldom value-neutral. The people who coined the concepts of managed care apparently believed that it could be a highly cost-effective remedy for the feverish rise in health care costs. Others came to see it as an anathema to the highly prized physician-patient relationship. If a true definition of “managed care” is to emerge, it will likely be found somewhere between these extremes. There is, no doubt however, that managed care dramatically modifies the traditional fee-for-service, free enterprise approach to medical care (Rimler and Morrison 1993:493-494). The mechanism of managed health care is to control costs and eliminate the oversupply of health services (Pharma Strategy 1997:61)

The basic goal of managed health care programs is to reduce both the unit price and volume of health care services provided to employees. While there is no uniform agreement on what constitutes a managed care program, most include the following features:

- channelling patients to high-quality, efficient providers
- creating reimbursement systems where physicians and hospitals are accountable for the cost and quality of medical services
- monitoring and analysing medical practice patterns
- establishing quality assurance programs
- designating primary care physicians (PCPs) and catastrophic case managers
- installing rigorous utilization management components (The Conference Board 1991:10)



- groups of insurers/medical aid schemes which will provide a range of services to members varying from the most sophisticated packages to basic care
- partnerships between providers to enable cost efficiencies in supply of care and products and to build up information systems, providing data on prescribers, patients and products
- a move away from fee-for-service to capitated contracts with providers (Pharma Strategy 1997:61)

By definition, managed care refers to a co-ordinated approach of organising, financing, and delivering quality health services while balancing price and utilisation controls. In the broadest context of this definition, managed care is a system that:

- (1) direct insureds to selected health care providers who offer quality care at reduced costs (eg., providers at health maintenance organisations, preferred provider organisations, and exclusive provider organisations)
- (2) intervenes on behalf of insureds with major illnesses to monitor the quality and appropriateness of their care (case management)
- (3) educates and compensates providers for administering appropriate and cost-effective care (utilisation review)
- (4) provides economic disincentives to influence insureds to reduce inappropriate and unnecessary care (varying co-payment, and deductible schedules)
- (5) educates people with medical cover to be more prudent health care consumers (medical care education)
- (6) educates people with medical cover to be personally responsible for their health status (lifestyle education) (Golaszewski and Douma 1991:53-54).

The *Genesis Report* (1995:4) defines managed health care as a system that integrates the financing and delivery of appropriate health care services to covered individuals by means of the following basic elements:

- arrangements with selected providers to furnish a comprehensive set of health care services to members
- explicit criteria for the selection of health care providers
- formal programs for ongoing quality assurance and utilisation review

- significant financial incentives for members to use providers and procedures associated with the plan.

Hall (1994:32), in *Script Magazine*, describes managed health care as the “payers revolt” to gain control over health care costs. Chetty (1999:1) defines managed health care as the practice of evidence-based medicine and is an approach to managing both quality and cost of medical care.

The American Medical Association defines managed health care as a system or techniques generally used by third party payors expressly to provide what they consider an appropriate mix of medical and social services at the lowest cost possible to the payors and patients (www.AMA.com). In their article, *Healthcare and Managed Care: How compelling a Fit*, Heinen and Chase (1994:6) state that managed health care should be able to generate for the purchasers of health care meaningful information on health care costs, quality and access within a delivery system to be effective.

Gross (1994:19) add the following elements to the above definitions of managed health care features:

- (a) community-based case management
- (b) patient-centred care
- (c) consumer education, including for example, information on risk factor reductions and videodisc education
- (d) clinical practice guidelines
- (e) outcomes-based reimbursement
- (f) managed competition (purchaser/provider splits)

In a Faulkner and Gray report, *Managed Care 1992: Greater Profits, Greater Pressures*, HMO expert Traska characterises managed care as:

- Simply assembling networks of providers or discounting fees does not constitute managed care. Rather, HMO representatives say that the groups must be able to selectively contract only with those providers who deliver the best care and patient outcomes.
- Managing care means monitoring and analysing medical practice and patient outcomes, comparing them to appropriate benchmarks and making whatever changes are needed to produce improvements.

Although there are many definitions of managed care, these variants are all consistent with the following three commonly accepted definitions:

- Managed care “encompasses any measure that, from the perspective of the purchaser of healthcare, favourably affects: the price of services; the site at which services are received; or their rate of use” (Fox and Wasserman 1983:85-86).
- Health care systems that integrate the financing and delivery of appropriate health care services to covered individuals by arrangements with selected providers to furnish: a comprehensive set of health care services; explicit standards for the selection of health care providers; formal programs for ongoing quality assurance and utilisation review; and significant financial incentives for members to use providers and procedures associated with the plan (Pharma Strategy 1997:62).
- Managed competition is a system which seeks to create a truly competitive environment within which the greatest market rewards will go to providers most successful at producing health outcomes while containing cost (Gross 1994:19).

However, stripped of their veneer, most (although not all) systems of managed care are belated attempts to reorient health care toward affordable care that achieves measurable health outcomes by addressing specific constraints on the supply side, the long neglected demand side, or both the supply and demand sides.

Hughes’ (1999) business definition of managed health care states that:

managed care is a process for the application of standard business practices to the delivery of health care in a traditional free enterprise system.

### **6.3 THE GOALS OF MANAGED HEALTH CARE**

The basic goal of managed health care programs is to reduce both the unit price and the volume of health care services provided to employees and therefore providing health care of the highest quality at the lowest cost (Hughes 1999) These goals can be achieved by implementing a “managed health care program,” that include the following features:

- (a) channelling patients to high-quality, efficient providers
- (b) creating reimbursement systems where physicians and hospitals are accountable for the cost and quality of medical services
- (c) monitoring and analysing medical practice patterns
- (d) establishing quality assurance programs

- (e) designing primary care physicians and case managers
- (f) installing rigorous utilization management components.

According to Coile (1990:133), managed care is the latest of the forms of alternative health care delivery that today competes with fee-for-service for dominance in the health care market.

The *Economist* (1998:24-25) reported that managed care can cut costs in several ways. First, big HMOs have the bargaining power to squeeze discounts from their suppliers, whether hospitals, drug firms or doctors. All three have long been more expensive in America than anywhere else in the world, with doctors' fees ruinously so. Secondly, managed care can cut the number of unnecessary tests, operations and days spent expensively recuperating in a hospital. Thirdly, managed care focuses more on preventive care, which may save money in the long run. Fourthly, managed care makes better use of information technology to crunch reams of data about patients in order to discover which treatments work best and which are the most cost-effective.

Most managed care plans provide consumer-directed information services to support decisions that foster good health and enable appropriate use of medical services. Studies of these demand management strategies between 1983 and 1995 demonstrated significant reductions in an employee sick time, absenteeism, outpatient utilisation and costs and even inpatient costs (Thompson and Taplin 1995:1132).

According to Cooper (1994:680-687) the trend, of consumer-directed information services, in health care delivery will continue to have a major impact on medical practice. The best managed health care systems, using the most effective management tools and securing the greatest cooperation of clinicians, will be the most likely to succeed. Increasingly, physicians are coming together in more highly organized systems of practice that use fewer resources. Information systems are playing a large role in measuring the quality, cost, and patient satisfaction with the services provided. The practice of medicine is changing in this way not simply because of economic imperatives, but because the technological and social demands on medicine have become too complex to be achieved outside collaborative frameworks. As a result, service volume is shifting from being a physician directed to being system directed. One consequence is that physicians are losing the implied guarantee of full employment that resulted from their ability to control service volume. Another is that all physicians are developing practice styles that are more collaborative and cost-effective.

#### **6.4 THE GROWTH OF MANAGED CARE**

In 1910, the first evidence of managed care started in the state of Washington. A health care clinic was developed and offered a wide range of medical services. Commercial health insurance underwent a complex evolution in response to political and market forces. In the 1930's two approaches to health insurance were emerging. The first approach used the indemnity model and the second was an elementary managed care model.

The managed care plans were prepaid group practices, best known as The Kaiser Foundation Health Plan. In the 1930s, Kaiser entered the insurance business to offer needed health care to employees in California. These employees lived in a remote desert region of California because they were building an aqueduct to transport water to Los Angeles. This posed a unique problem for Kaiser: Access. During this same period, the Group Health Association (GHA) started in Washington, D.C. The GHA was formed to curb high hospital medical cost.

Starting in the late 1940s and continuing on through the 1960s, independent prepaid group practices were emerging. Many of these were considered group health cooperatives. As the first health maintenance organisations became established throughout the United States, the prepaid practice became the model for the future managed care insurance plans.

As the 1970s approached, US health care costs began to inflate above the Consumer Price Index. The US government began to study alternative ways to deliver health care at a lower cost. The role of government began to take shape in the early 1970s when US Congress passed the Health Maintenance Organisation Act (HMO). This Act provided specific grants to support the development of health maintenance organisations and attempted to set health care standards throughout the industry. Thus, prepaid group practices were now called health maintenance organisations. By 1977, health care inflation in the United States exceeded all other types of inflation and by the late 1970s it was nearly double the Consumer Price Index. Again, employers began to look at ways to stop this inflation and moved toward reducing fee-for-service business.

By 1980, health maintenance organisations were well established and became the norm in the health care business. This is when the US federal government began to recognise health maintenance organisations as cost containment entitlement programs and started to set up Medicaid and Medicare health maintenance organisations. By the mid-eighties, health maintenance organisations were starting to be known as profit making companies, and in 1984, health maintenance organisations went public. The health maintenance organisations industry grew to more than one million members with gross revenues reaching more than one billion dollars. This was the time when insurers started to develop new insurance products called preferred provider organisations (PPOs). The preferred provider organisations offered greater freedom of choice than that of the health maintenance organisations, and were promoted as an alternative to the traditional health maintenance organisations, reimbursing providers on a discounted fee-for-service basis. This discount is the primary cost-containment mechanism used in preferred provider organisations, especially in the early development stage. By 1985, preferred provider organisation enrollment reached more than one million and added to the success of the managed care industry. The preferred provider organisation industry exploded within the self-insurance industry because the employers became the underwriter instead of the licensed insurance company.

As the health maintenance organisation industry began to experience a shake out, many health maintenance organisations suffered heavy financial losses and mergers began to take place. With the explosive growth of preferred provider organisation and the merger mania of health maintenance organisations, the insurance industry assumed a leadership role in managed care.

Since the 1980s, the managed care industry has skyrocketed, in the United States, into enrolling millions of individuals and is experiencing high percentages of growth. Saturation of health maintenance organisations and proffered provider organisations has started to occur and new products are being introduced to allow companies to remain competitive.

Today, nearly 30% of the general US public is enrolled in health maintenance organisations, 50% in preferred provider organisations and Point of Service (POS) plans, and only about 20% in indemnity plans. The people of the United States will keep their appetite for the best health care possible and will spend billions of dollars to obtain it. What managed care will provide is a system for spending those dollars intelligently. Managed care has caused a new era in the health care delivery system and will continue to transform itself (Managedcare info.com/history\_of\_managed\_care.htm,2000:1-4).

The first big managed care organisation, Kaiser Permanente, was founded in 1945. Henry Kaiser, a Californian industrialist, was looking for a way to keep the employees at his construction firm healthy. His idea was to contract with a group of doctors to look after his builders in return for a flat fee per head. This gave the physicians an incentive to provide cheap preventive care to ward off future sickness. The programme was such a success that it grew into what is now the second largest nonprofit HMO. Kaisers' ideas took a long time to catch on. As recently as 1990, more than 90% of Americans with jobs that provided health coverage still received traditional, fee-for-service insurance: if they fell ill, they went to the doctor, and passed the cost on to the insurer. The more consultations, tests and operations the doctors performed, the more they earned. This gave them an incentive to order batteries of unnecessary tests, over prescribe pills to the point where drug-resistant bacteria flourished, and perform invasive surgery when doing nothing might have been more prudent. Medical costs soared, with insurance premiums rising 13.6% a year between 1988 and 1992. Doctors bought BMWs, and employers found it increasingly hard to pay for their workers' health coverage (*Economist* 1998: 24-25). Since 1997 the cost of providing health care in South Africa also continued to increase a fee-for-service environment. The evidence so far for 1999 supports the view that contribution increases will again be high and could in fact surpass the high average of 16% for 1998 (*The Old Mutual Health Care Survey* 1999:8).

## 6.5 MODELS OF MANAGED HEALTH CARE APPROACHES

There is no ideal managed health care model and optimal models are those that best satisfy distinct environmental needs and competitive factors. These models are simply used as examples to assist in the understanding of the managed health care environment. The distinction between many of these models has narrowed considerably, and in many instances the managed health care organisations will be a hybrid of several different models.

According to Veliotis, Magennis and Brown (1993:56), the building blocks which determine the structure of all managed health care plans include:

- (a) the method of provider reimbursement
- (b) patient freedom of choice of providers
- (c) risk definition and risk-sharing methods
- (d) patient cost-sharing methods
- (e) benefits offered by the managed health care plan
- (f) the promotion of preventive health care and wellness programmes
- (g) the use of utilisation review and quality assurance programmes
- (h) administrative capabilities
- (i) ownership of facilities

The best-known examples of managed health care plans are:

- (a) health maintenance organisations (HMO)
- (b) preferred provider organisations (PPO)
- (c) exclusive provider organisations (EPO)
- (d) pharmacy benefit management (PBM)

### **6.5.1 Health maintenance organisations**

The rapid spread of private market reform through managed care in the United States has revolutionized the country's health services sector. Managed care is most closely associated with health maintenance organisations (HMOs) and similar plans that integrate the financing and delivery of a comprehensive set of health services to an enrolled population (Stano 1997:45).

Although much remains to be learned about the behaviour and performance of health maintenance organisations, there is a general consensus among scholars that health maintenance organisations are able to economize by substituting outpatient care for inpatient care and, in general, by using fewer and less-costly treatment procedures (Folland, Goodman, and Stano 1997:65).

The research literature also indicates that HMO enrollees receive more preventive care and that, with some possible exceptions such as those suffering from depression, the quality of care is not compromised (Miller and Luft 1994:1512-1519). Patients who suffer from colorectal cancer, acute myocardial infarction, hypertension, diabetes and several other closely-studied conditions appear to receive medical and surgical care that is at least comparable to fee-for-service (FFS) care (Rogers, Wells and Meredith 1993:517-525).

Health maintenance organisations are coordinated health care systems that provide health care services to members for a fixed, prepaid premium. Under the federal USA HMO Act, a health plan must have three characteristics to call it self an HMO:

- (1) an organised system for providing or assuring health care delivery in a geographic area;
- (2) an agreed upon set of basic and supplemental health maintenance and treatment services
- (3) a voluntarily enrolled group of people (*Ignagni* 26-28 June 1995).

A health maintenance organisation (HMO) is an arrangement between health fund administrators and providers of health care for the purpose of delivering health care services to an enrolled population for a prepaid fee. The mission of the HMO form of managed health care is generally accepted to be the delivery of high-quality health and medical care services at a competitive price (*Pharmacoeconomic and Outcome News* 1999:7).

Kongstvedt (1989:12) defines health maintenance organisations (HMOs) as,

“organized healthcare systems that are responsible for both the financing and delivery of a broad range of comprehensive health services to an enrolled population for a prepaid, fixed fee”.

According to Kongstvedt (1989:13), a health maintenance organisation can be viewed as a combination of a health insurer and a health care delivery system. Whereas traditional health care insurance companies are responsible for reimbursing covered individuals for the cost of their health care, health maintenance organisations are responsible for providing health care services to their covered members through affiliated providers. As a result of their responsibility to provide covered health services to their members, health maintenance organisation must assure that their members have access to covered health care services. In addition, health maintenance organisations generally are responsible for assuring the quality and appropriateness of the health services they provide.



By definition a health maintenance organisation must comprise the following features:

- (a) an organised system to ensure the provision of health care in a specific geographical area
- (b) an agreed set of basic and supplemental health services
- (c) voluntary enrolment of a group of people
- (d) a financial plan to underwrite the costs of services provided
- (e) a management organisation to manage the affairs of the HMO

There is five well-described basic health maintenance organisation models: staff model health maintenance organisations, independent practice associations (IPA), group model health maintenance organisations, network model health maintenance organisations and direct contract models. The primary differences, as described by Kongstvedt (1989:12), between these model are based on how the health maintenance organisation relates to its participating physicians. These relationships are described in more detail later. The major differences between each model pertain to the relationship between the health maintenance organisation and its participating physicians. Until recently, individual health maintenance organisations could usually be neatly categorized into a single model type for descriptive purposes. Currently, many health maintenance organisations have different relationships with different groups of physicians. As a result, many health maintenance organisations cannot easily be classified as a single model type.

According to the *Genesis Report* (1995:4), a health maintenance organisation constitute an organised system for providing delivery of healthcare in a certain geographical area; they provide an agreed-on set of basic and supplemental health-maintenance and treatment service to a voluntary enrolled group of people.

All health maintenance organisations have two common characteristics. First, the health maintenance organisation contractually agrees to provide medical services to enrollees. Secondly, in exchange for a contractually defined set of services provided by the health maintenance organisation, the patient pays a fixed monthly or annual fee to the health maintenance organisation (Olsen 1993:1451).

Today's health maintenance organisations offer each patient access to a personal physician, who serves as the patient's advocate and navigator through an increasingly complex health care system. Secondly, health maintenance organisations are prepaid. Health maintenance organisations today offers the same basic rate to persons of similar age, gender, and geographic location. Thirdly, health maintenance organisations focus on prevention. By intervening early – taking care of little health problems before they became big ones. Fourthly and the most important – health maintenance organisations do all this in a way that satisfies their members.

The potential role of health maintenance organisations in promoting health and preventing disease are systematic approaches to programmes for breast cancer screening, childhood vaccinations, influenza vaccinations for at-risk populations, smoking cessation and prevention, cholesterol screening, increased use of bicycle safety helmets by children, and detection and management of depression is presently being investigated by these managed health care organisations (MCOs) (Baker et al 1994:1278).

The health maintenance organisation philosophy is based on a democratic goal: providing every citizen with access to comprehensive health care at a price he or she can afford. Health maintenance organisations have also reinvented the concept of the family doctor, who played a major role in American communities throughout the country's history. Moreover, health maintenance organisations offer the advantage of centralized record keeping. Health maintenance organisation physicians can view a patient's entire medical history in one file, instead of seeing only snapshot glimpses based on their own investigations of a particular problem. Health maintenance organisations also offer their health professionals feedback on their performance, both in terms of medical outcomes and patient satisfaction. These systems promote continuous quality improvement – constantly raising the bar so that doctors are motivated to provide better care in more efficient ways, while customer service staff are motivated to provide patients with topnotch service quality. With their organised delivery systems, focus on prevention and preservation of the doctor patient relationship, health maintenance organisations can lead the antiquated public system to better outcomes and greater choices for seniors.

This is supported by an article by Baker, Melton and Stange: *Health reform and the health of the public: forging community health partnerships* (JAMA 272:1276-1282, 1994), where the authors discuss assumptions, opportunities, and barriers related to managed health care and public health in America. These assumptions, opportunities and barriers I believe can be transferred to the South African health care environment. The assumptions are:

- (a) The health system in South Africa will remain dynamic, with continuing mergers and evolution in the system's organizations and their roles.
- (b) Managed health care will continue to grow rapidly as a source of care for South Africans insured by employers. This growth will result in increased privatization of care for the poor and underserved.
- (c) Managed health care has provided leadership in the integration of health care services, and increased integration can potentially increase the continuity of care.
- (d) Because health maintenance organisations offer the capacity to both characterize and influence the services delivered to and the health status of enrolled populations, these health maintenance organisations are held accountable by purchasers, consumers, and regulators for delivering services and improving health status. This accountability is an inherent advantage of managed health care.

- (e) The problem of the uninsured remains and may be increasing. The responsibility for caring for the uninsured rests with local government departments, such as health departments and public hospitals.
- (f) Access to needed preventive services depends on more than insurance. It also depends on provision of enabling services, such as transportation and reduction of language barriers.
- (g) Staff of public health departments need more practical knowledge about managed health care and how it works.
- (h) The potential for improving the health status of populations results from community-based action (eg, reduction of risk behaviours, such as tobacco use).

The opportunities for private and public health care partnerships are:

- (a) Managed health care organises health care into delivery systems with potential for prevention-related surveillance, monitoring, intervention and health services research.
- (b) The electronic information systems of managed care organisations are still evolving and should be important components of any new national health information system. To realize the potential of health information systems as a society, concerns about confidentiality and privacy issues and the proprietary nature of the data of managed care organisations must be looked into.
- (c) Public health departments bring valuable skills and experience to partnerships with managed care organisations and purchasers (eg., experience with surveillance and information systems, epidemiologic and laboratory skills, health promotion skills, experience in developing and implementing prioritized prevention strategies, experience in using policy and legislation to promote public health, and experience in case management and providing enabling services to promote access to health service for vulnerable populations).
- (d) Managed care organisations have the opportunity to become active leaders in promoting and protecting the health of the communities in which they are located.
- (e) Public health departments have the opportunity to define their roles in the largely reorganised health system.
- (f) Partnerships among managed care organisations and public health agencies will require all entities involved to augment their skills through continuing education and training.

Baker et. al. anticipate the following barriers:

- (a) As government beneficiaries convert to managed health care arrangements and no longer receive care from local health departments, those health departments will lose the government reimbursement that has helped subsidize care for the uninsured. As a result, fewer resources may be available with which to care for the uninsured.
- (b) Some local health departments might elect to become part of a health maintenance organisation and compete with other health maintenance organisations in the delivery of health care. This competition may affect their ability to form partnerships with health maintenance organisations.

The health maintenance organisation revolution has major implications for pharmaceutical companies both in the United States and throughout the world. Health maintenance organisations' success has already changed the face of prescription sales and delivery systems in the United States, and these changes will only intensify as health maintenance organisations continue to grow. It will become crucial for drug manufacturers to negotiate contracts that will result in their drugs being listed on health maintenance organisation formularies. Health maintenance organisations look for long-term contracts with pharmaceutical manufacturers who can offer high-quality products with proven cost-effectiveness. Health maintenance organisations also seek value-added services, such as educational programmes for physicians and assistance with drug distribution. In negotiating with pharmaceutical manufacturers, health maintenance organisations seek answers to a variety of questions. Does the given drug improve medical outcomes in a measurable way? Did treatment with a less effective agent result in more doctor visits? How quickly did the patient return to work? How did the patient rate his or her own health after therapy? (*Ignagni* 26-28 June 1995).

Health maintenance organisations are also at the forefront of "disease management" – an area that is becoming increasingly important to pharmaceutical manufacturers. Disease management has had a rapid, profound impact on the health care industry. It has played a role in key mergers, and new companies have emerged in its name. But for all the hustle and hype surrounding disease management, some basic questions remain: What exactly is it? Who's doing it? Does it work? Is it really something new? (A section in this chapter is devoted to this new phenomenon.) Although the pharmaceutical industry has recently expressed interest in the field, disease management is something many health maintenance organisations have been quietly developing and improving for a long time. Disease management is essentially a coordinated, proactive, disease-specific approach to patient care that seeks to produce the best clinical outcomes in the most cost-effective manner. It spans the entire continuum of care, from prevention to treatment to ongoing health maintenance. Disease management initiatives most often target chronic, costly conditions, such as asthma, diabetes and hypertension, where coordinated intervention and careful monitoring can help prevent acute care episodes and improve a patient's health status.

Throughout the 1990s, a wave of mergers and alliances between drug manufacturers and pharmacy benefit management firms (PBMs) was said to be largely motivated by the movement towards disease management. Even drug makers who did not buy PBMs have entered the disease management arena. Some have spun off new companies devoted to developing disease management programmes, while others have established special departments or divisions for the task. Disease management entities have begun to approach health maintenance organisations, seeking to partner in these efforts or sell disease management on a “carve out” basis.

#### *6.5.1.1 Staff model health maintenance organisation*

The staff model health maintenance organisation owns the hospital and employs the doctors to provide healthcare to its members (Gotlieb 2000:6). Doctors are subject to internal policies on continuing medical education, peer review and management reporting. These health maintenance organisations usually include doctors in all common specialities to provide for the health care needs of their members.

In a staff model health maintenance organisation, the physicians who serve the health maintenance organisation’s beneficiaries are employed the health maintenance organisation. These physicians typically are paid on a remuneration basis and may also receive bonus incentive payments, based on their performance and productivity. Staff model health maintenance organisations must employ physicians in all of the common specialties in order to provide for the healthcare needs of their members. These health maintenance organisations may contract with selected sub-specialists in the community for infrequently needed health services.

Staff model health maintenance organisations are also known as “close panel” health maintenance organisations because most participating physicians are employees of the health maintenance organisation and common physicians are unable to participate (Kongstvedt 1989:14). Some well known examples of staff model health maintenance organisations, in South Africa include Vaalmed and KDM. Physicians in staff model health maintenance organisations usually practise in one or more centralised ambulatory care facilities, which resemble outpatient clinics, contain physician offices and ancillary support facilities (eg, laboratory and radiology) to support the health care needs of the health maintenance organisation’s beneficiaries. Staff model health maintenance organisations usually contract with hospitals and other inpatient facilities in the community to provide non-physician services for their members.

Staff model health maintenance organisations can have an advantage relative to other health maintenance organisation models because they have a greater degree of control over the practice patterns of their physicians. As a result, it can be easier for staff model health maintenance organisations to manage and control the utilisation of health services. Offsetting this advantage is several disadvantages for staff model health maintenance organisations. First, staff model health maintenance organisations are usually more costly to develop and implement because of the large remuneration expenses the health maintenance organisation Must incur for staff physicians while membership is small?

Second, staff model health maintenance organisations provide a limited choice of participating physicians for potential health maintenance organisation members to select. Many potential members are reluctant to change from their current physician and find the idea of a “clinic” setting uncomfortable. Finally, it is expensive for staff model health maintenance organisations to expand their services into new areas because of the need to construct new ambulatory care facilities (Kongstvedt 1989:15).

#### 6.5.1.2 *Group practice health maintenance organisation*

The group practice health maintenance organisation is a separate entity which can be organised as a partnership, a professional corporation or other association (Gotlieb 2000:6). Group practices can be single or multi-specialty practices and facilities, equipment, accounting systems and supporting staff are normally shared. The health maintenance organisation contracts with the group practice to provide part or all of the clinical services to an enrolled population (*Genesis Report* 1995:4). The plan compensates the medical group for contracted services at a negotiated fee, and that group is responsible for compensating its participating doctors and contracting with hospitals for care of their patients. The way doctors are remunerated in a group practice depends on how the entity has been constituted. It can be by way of remuneration, dividend or profit sharing. Group models can be captive groups which cater exclusively for the health care needs of the plan or independent groups in which participating doctors are free to see non-health maintenance organisation members and private patients.

In group model health maintenance organisations, the health maintenance organisation contracts with a multi-specialty physician group practice to provide all physician services to its members. The physicians in the group practice are employed by the group practice and not by the health maintenance organisation. In some cases, these physicians may be allowed to see both health maintenance organisations patients and other patients, although their primary function may be to treat health maintenance organisation members. Physicians in a group practice share facilities, equipment, medical records, and support staff. The group may contract with the health maintenance organisation on an all-inclusive capitation basis to provide physician services to health maintenance organisation members. Alternatively, the group may contract on a cost basis to provide its services.

There are two broad categories of group model health maintenance organisations as described below.

In the captive group model, the physician group practice exists solely to provide services to the health maintenance organisation’s beneficiaries. In most cases, the health maintenance organisation formed the group practice to serve its members, recruit physicians and provides administrative services to the group.

In the independent group model health maintenance organisation, the health maintenance organisation contracts with an existing, independent, multi-specialty physician group to provide physician services to its members. In many cases, the independent physician group is the sponsor or owner of the health maintenance organisation.

Typically, the physician group in an independent group model health maintenance organisation continues to provide its non-health maintenance organisation services while it participates in the health maintenance organisation. Although the group may have an exclusive relationship with the health maintenance organisation, this relationship usually does not prevent the group from engaging in non-health maintenance organisation business (Kongstvedt 1989:15).

Both types of group model health maintenance organisation are also referred to as closed panel health maintenance organisations because physicians must be members of the group practice in order to participate in the health maintenance organisation. As a result, the health maintenance organisation is considered "closed" to physicians who are not part of the group. Both types of group model health maintenance organisation share the advantage of staff model health maintenance organisations of making it somewhat easier to conduct utilization management because of the integration of physician practices.

In addition, group practice health maintenance organisations may have lower capital needs than staff model health maintenance organisations because they do not have to support large fixed remuneration cost associated with staff physicians. Group model health maintenance organisations have several disadvantages in common with staff model health maintenance organisations. Like staff model health maintenance organisations, group model health maintenance organisations provide a limited choice of participating physicians for the potential health maintenance organisation members to select. The limited physician panel can be a disadvantage in the marketing of the health maintenance organisation.

The limited number of office locations for the participating members medical groups may also restrict the geographical accessibility of the physicians for the health maintenance organisation's members. The lack of accessibility can make it difficult for the health maintenance organisation to market its coverage to a wide geographic area. Finally, group practices may be perceived by some potential health maintenance organisation members as offering an undesirable clinic setting. Offsetting this disadvantage may be the perception of high quality associated with many of the physician group practices that are affiliated with health maintenance organisations (Kongstvedt 1989:15-16).

### 6.5.1.3. *Individual practice association (IPA)*

The term "IPA"(individual practice association) is unfortunately a victim to the confusing nomenclature of managed care. The term is most correctly used to refer to the type of physician organization, described above, that acts as an intermediary between managed care plans and individual office-based physicians. Some health maintenance organisations themselves, however, are often described as individual practice association-type plans, in an attempt to distinguish health maintenance organisations that contract with individual physicians or multiple physician networks from group and staff model health maintenance organisations that contract with a single group or employ their own physician staff. When applied to health maintenance organisations rather than to physician groups, the term individual practice association tends to be used as a generic label for any health maintenance organisation that is not a classic, vertically integrated system (Edward 1998:230).

The term individual practice association is used here with a more specific intent to indicate a particular type of physician organisation that occupies the middle tier between health maintenance organisations and office-based physicians in three-tier managed care structures.

As managed-care companies, hospitals and insurers lure more and more physicians out of private practice, many doctors recognize the need to band together into individual practice associations and other three-letter groups. And although IPA now stands for individual practice association, it will come to mean integrated practice association (Guillory 1996:194). The formation of independent practice associations (IPAs) and similar organisations are accelerating as the health care industry evolves (King 1995:24).

According to Shenkin (1995:1938) and Bodenheimer and Grumbach (1994:973), an individual practice association consists of a network of physicians who agree to participate in an association to contract with health maintenance organisations (HMOs) and other managed care plans. Although physicians maintain ownership of their practices and administer their own offices, the IPA serves as a corporate structure for negotiating and administering health maintenance organisation contracts for its physicians.

Chetty (1999:8) describes an independent practice association (IPA) or an individual practice association, as an association of individual independent physicians or small groups of physicians that have been formed for the purpose contracting with one or more managed care organisations. IPAs may adopt any of several organisational forms, including not-profit membership corporations, for-profit stock corporations, partnerships, and associations.



Most individual practice associations choose to organise as either taxable not-for-profit membership corporations or for-profit stock corporations. IPA models contract with an association of physicians – the independent practice association (IPA) - to provide physician service to their members in return for a negotiated fee. The individual practice association may compensate participating doctors on a per capita fee schedule or on a fee-for-service basis. Generally, all doctors who meet predetermined credential criteria can participate in the entity. IPAs provide a broad choice of participating doctors and create an organised forum for providers to negotiate as a group with the health maintenance organisation. However, providers retain the ability to negotiate directly and contract with other managed care plans and to accept private patients. The physicians who are members of the individual practice association, which is a separate legal entity, can remain individual practitioners and retain their separate offices and identities. According to the *Genesis Report*, individual practice associations can have arrangements with more than one health maintenance organisation.

Individual practice associations serve several important functions for health maintenance organisations and other managed health care organisations. First, they provide a mechanism for translating capitation payments from a health maintenance organisation into another form of physician payment. Health maintenance organisations find it desirable to make their payments to physicians and other providers on a capitation basis. In contrast, many physicians are reluctant to accept capitation payments for their services. Many individual practice associations bridge this gap by accepting capitation payments from health maintenance organisations and converting these payments into fee-for-service payments to individual participating physicians. Secondly, individual practice associations help managed care organisations to attract broad panels of participating physicians. Many health maintenance organisations and other managed health care organisations find it difficult to recruit large groups of physicians to participate without the assistance of other physicians in the community. Individual practice associations provide a mechanism for health maintenance organisations to recruit a few physicians to act as leaders of the individual practice association, who will subsequently recruit their colleagues to join the individual practice association. As a result, individual practice associations can provide a rapid and cost-effective mechanism for health maintenance organisations to recruit large panels of participating physicians. Thirdly, individual practice associations provide a vehicle for implementing peer review, quality assurance, and utilization management programmes on the behalf of managed health care organisations (Kongstvedt 1989:12-13).

IPA model health maintenance organisations are open panel plans because participation is open to all community physicians who meet the health maintenance organisation's and individual practice association's credentials criteria. Generally, individual practice associations attempt to recruit physicians from all specialties to participate in their plans. Broad participation of physicians allows the individual practice association to provide all necessary physician services through participating physicians and minimizes the need for individual practice association physicians to refer health maintenance organisation members to nonparticipating physicians to obtain services.

In addition, broad physician participation can help to make the individual practice association model health maintenance organisation more attractive to potential health maintenance organisation members. IPA model health maintenance organisations usually follow one of two different methods of establishing relationships with their individual practice associations. In the first method, the health maintenance organisation contracts with an individual practice association that has been independently established by community physicians. These individual practice associations often have contracts with more than one health maintenance organisation on a nonexclusive basis. In the second method, the health maintenance organisation works with community physicians to create an individual practice association and recruit physicians to participate in it. The health maintenance organisation's contract with these individual practice associations is usually on an exclusive basis because of the health maintenance organisation's large role in forming the individual practice association. IPAs may be formed as large community-wide entities where physicians can participate without regard to the hospital with which the physician is affiliated. Alternatively, individual practice associations may be formed so that only physicians from one or two hospitals are "eligible" to participate in the individual practice association.

These hospital-based individual practice associations are generally preferred by health maintenance organisations over larger community-based individual practice associations for at least two reasons. First, hospital-based individual practice associations can restrict the panel of the individual practice association to physicians who are familiar with one another's practice patterns. This familiarity can make the utilisation management process easier. Secondly, by using several hospital-based individual practice associations, a health maintenance organisation can limit the impact of a termination of one of its individual practice association agreements to a smaller group of physicians. Most health maintenance organisations compensate their individual practice associations on an all-inclusive physician capitation basis to provide services to the health maintenance organisation's members. The individual practice association then compensate its participating physicians on either a fee-for-service basis or a combination of fee-for-service and primary care capitation. In the fee-for-service variation, individual practice associations pay all of their participating physicians based on a fee schedule or usual, customary, and reasonable (UCR) approach and withhold a portion of each payment for incentive and risk-sharing purposes.

Under the primary care capitation approach, individual practice associations pay their participating primary care physicians on a capitation basis and their specialist physicians based on a fee schedule or UCR approach. The primary care capitation payments are based on fixed amounts per member per month and usually vary, depending on the health maintenance organisation member's age and sex. The individual practice association typically withholds a portion of both the capitation and fee-for-service payments for risk-sharing and incentive purposes.

IPA model health maintenance organisations overcome all of the disadvantages associated with staff, group and network model health maintenance organisations. They require less capital to establish and operate. In addition, they can provide a broad choice of participating physicians who practise in their private offices. As a result, IPA model health maintenance organisations offer marketing advantages in comparison to the staff and group model plans. There are two major disadvantages of IPA model health maintenance organisations from the health maintenance organisation's perspective. First, the development of an individual practice association creates an organised forum for physicians to negotiate as a group with the health maintenance organisation. The organised forum of an individual practice association can help its physician members achieve some of the negotiating benefits of belonging to a group practice. Unlike a group practice, however, individual members of an individual practice association retain their ability to directly negotiate and contract with managed care plans.

Because of their acceptance of combined risk through capitation payments, individual practice associations are generally immune from antitrust restrictions on group activities by physicians as they do not prevent or prohibit their member physicians from participating directly with a health maintenance organisation. Secondly, the process of utilization management is generally more difficult in an IPA model health maintenance organisation than in staff and group model plans because physicians remain individual practitioners with little sense of being part of the health maintenance organisation. As a result, IPA model health maintenance organisations may devote more administrative resources to managing inpatient and outpatient utilization than their staff and group model counterparts (Kongstvedt 1989:16-18).

According to Walker (1995:28), individual practice associations are not what they used to be, but many have changed for the better. Far beyond merely surviving, the best individual practice associations have found ways to thrive even in today's variable health care climate. The individual practice associations that are prospering now might be called fourth-generation and are much more sophisticated than their predecessors. They are selecting doctors who want to work with managed care and are willing to adapt to its demands, so long as the doctors still make the treatment decisions. Good individual practice associations help their members become more cost-effective while including them in the utilization review process (Walker 1995:28-30). Further more individual practice associations are strengthened by democratizing governance and equity, development of a progressive group culture, reducing financial volatility by capitating as many specialties as possible (*Medical Economics*, 10 Aug. 1998:127).

Independent practice association (IPA) physician groups in California were surveyed about their approaches to staffing, physician payment and governance. Most independent practice associations desired more primary care physicians but not more specialists. Capitation was the major mode of remuneration for primary care physicians in 77% of independent practice associations (Edward 1998:227) and with peer review to reduce physician incentives to increase healthcare costs (Olsen 1993:1453).

#### 6.5.1.4 *Network model health maintenance organisation*

In the network model health maintenance organisation, the health maintenance organisation contracts with more than one group practice which can be single or multi-specialty groups (Gotlieb 2000:7). Typically, the health maintenance organisation compensates each group practice on an all-inclusive capitation basis. Each group is responsible for providing all medical services to the health maintenance organisation members assigned to that group, and may refer to other doctors as necessary. Usually, however, each group practice is financially responsible for reimbursing specialist referrals, hospitalisation and ancillary services (Kongstvedt 1989:16). Kongstvedt description of a network model health maintenance organisation is similar than that of the Genesis Report but names the speciality groups clearly as group practices that provide physician service to the health maintenance organisation members. These group practices may be broad-based, multi-speciality groups, in which case the health maintenance organisation resembles the group practice model described above.

Alternatively the health maintenance organisation may contact with several smaller groups of primary care physicians (i.e., family practice, internal medicine, paediatrics, and obstetrics-gynaecology), in which case the health maintenance organisation can be classified as a primary network model. In the primary care network model, the health maintenance organisation contracts with several groups consisting of seven to 15 primary care physicians, representing the specialities of family practice and/or internal medicine, paediatrics, and obstetrics-gynaecology to provide physician services to its members. Typically, the health maintenance organisation compensates these groups on an all-inclusive physician capitation basis. The group is responsible for providing all physician services to the health maintenance organisation members assigned to the group and may refer to other physicians as necessary. The group is financially responsible for reimbursing other physicians for any referrals it makes. In some cases, the health maintenance organisation may negotiate participation arrangements with specialist physicians to make it easier for its primary care groups to manage their referrals.

In contrast to the staff and group model health maintenance organisations described previously, network models may be either closed or open panels. If the network model health maintenance organisation is a closed panel plan, it will only contract with a limited number of existing group practices. If it an open panel plan, participation in the group practices will be open to any physician who meets the health maintenance organisation's and group's credentials criteria. In some cases, network model health maintenance organisations will assist independent primary care physicians with the formation of primary care groups for the sole purpose of participating in the health maintenance organisation's network. Network model health maintenance organisations address many of the disadvantages associated with staff and group model health maintenance organisations. In particular, the broader physician participation that is usually identified with the network model health maintenance organisations helps to overcome the marketing disadvantages associated with the close panel staff and group models. Nevertheless, network model health maintenance organisations usually have more limited physician participation than either IPA model or direct contract model plans (Kongstvedt 1989:16).

### 6.5.1.5 *Direct contract model health maintenance organisation*

The direct contract model allows the health maintenance organisation to contract directly with individual practitioners to provide services to the enrolled population. Individual practitioners may be paid on a fee-for-service or a capitation basis. In most cases, practitioners are free to see non-health maintenance organisation patients and private patients. Contracting directly with individual practitioners eliminates the potential for doctors to negotiate collectively and can therefore place them at a disadvantage (Kongstvedt 1989:16).

With the exception of their direct contractual relationship with participating physicians, direct contract model health maintenance organisations are similar to independent practice association model plans. A well-known example of direct contract model health maintenance organisations is United Healthcare and its subsidiary health maintenance organisations in the Anglo American mines. Direct contract model health maintenance organisations attempt to recruit broad panels of community physicians to provide physician services as participating providers. These health maintenance organisations usually recruit both primary care and specialist physicians and typically use a primary care case management approach (also known as the “gatekeeper” system). Like independent practice association model plans, direct contract model health maintenance organisations compensate their physicians on either a fee-for-service basis or primary care capitation basis.

Primary care capitation is much more commonly used by direct contract model health maintenance organisations because it helps to limit the financial risk assumed by the health maintenance organisation. Unlike independent practice association model health maintenance organisations, direct contract model health maintenance organisations retain most of the financial risk for providing physician services; independent practice association model plans transfer this risk to their independent practice associations.

Direct contract model health maintenance organisations have most of the same advantages as independent practice association model health maintenance organisations. In addition, direct model health maintenance organisations eliminate the potential of a physician “bargaining unit” by contracting directly with individual physicians. This contracting model reduces the possibility of mass termination of physician participation agreements. Direct contract model health maintenance organisations have several disadvantages. First, the health maintenance organisation assumes additional financial risk for physician services relative to an independent practice association model health maintenance organisation as noted above. This additional risk exposure can be very expensive if primary care physicians generate excessive referrals to specialist physicians. Secondly, it can be more difficult and time consuming for a direct contract model health maintenance organisation to recruit physicians because it lacks the physician leadership inherent in an independent practice association model plans. It is very difficult for non-physicians to recruit physicians as several direct contract model health maintenance organisations have discovered in their attempts to expand into new markets.

Finally, utilisation management may be more difficult in direct contract model health maintenance organisations because all contact with physicians is on an individual basis and there may be little incentive for physicians to participate in the utilisation management programmes (Kongstvedt 1989:18).

### 6.5.2 Preferred provider organisation (PPO)

A variation on managed care can be found in the preferred provider organisation (PPO). The pure preferred provider organisation is a contractual arrangement between professional and/or institutional health care providers and employers, insurance carriers or third-party administrators to provide health care services to a defined population at established fees (Gotlieb 2000:7). Preferred provider organisations send members to doctors and hospitals in their networks in exchange for discounts. Traditionally, preferred provider organisations have placed few restrictions on patients' access to providers in their networks (Bell 1998:32).

The preferred provider organisation first appeared in the medical marketplace in the early 1980s as an evolutionary outgrowth of the health maintenance organisation. This corporate model offers a "discount" to enrollees who agree to use the services of selected sets of physicians and hospitals usually at 15% to 20% below what competitors charge. Unlike the health maintenance organisation, however, the preferred provider organisation reimburses the patient for covered services obtained from any provider at the discounted rate set for preferred providers; the patient then has to pay the difference between the scheduled fee and the billed amount out of his or her own pocket (American Medical Association 1983:134).

Managed health care in health maintenance organisations, preferred provider organisations, or indemnity arrangements with preadmission certification and prospective utilisation review are intended to control inappropriate utilization. Preferred provider organisations are entities through which employer health benefit plans and health insurance carriers contract to purchase health care services for their members from a selected group of participating providers. These organisations often employ utilisation management programmes to control the utilisation and cost of services. Preferred provider organisations also negotiate payment rates that provide them with a competitive cost advantage over indemnity plans. Unlike health maintenance organisations, preferred provider organisations allow their members to use non-network providers. Outside the network, patients generally pay 20% of the cost of services out-of-pocket, with the preferred provider organisations paying the remaining 80% (Ignagni 26-28 June 1995).

Preferred provider organisations (PPOs) entities through which employer health benefit plans and health insurance carriers contract purchase health care services for covered beneficiaries from a selected group of participating providers. Typically, participating providers in preferred provider organisations agree to abide by utilisation management and other procedures implemented by the preferred provider organisation and agree to accept the preferred provider organisation's reimbursement structure and payment level.

In return, preferred provider organisations often limit the size of their participating provider panels and provide incentives for their covered individuals to use participating providers instead of other providers. In contrast to typical health maintenance organisation coverage, individuals with preferred provider organisation coverages are permitted to use non-preferred provider organisation providers, although higher levels of coinsurances or deductibles routinely apply to services provided by these nonparticipating providers.

A preferred provider organisation (PPO) is a plan that contracts with providers of medical care. Providers under such contracts are referred to as preferred providers. Members must have incentives to use preferred providers but are generally also allowed benefits for nonparticipating providers. The key features of a preferred provider organisation include:

- (a) The preferred provider organisation contracts with doctors and hospitals to provide services to its members.
- (b) Medical services are typically provided on a traditional fee-for-service basis. Providers are normally paid a predetermined fee, generally at a discount from their usual and customary charges. In return for the discount, preferred provider organisations often limit the size of their participating provider panels and provide incentives for their covered individuals to use participating providers.
- (c) Favourable rates and discounts are usually linked to quick payment made directly to the health care provider.
- (d) Typically, participating providers in preferred provider organisations agree to abide by utilisation management and other procedures implemented by the preferred provider organisation, and agree to accept the preferred provider organisation's reimbursement structure and payment level.
- (e) In contrast to typical health maintenance organisation cover, individuals with preferred provider organisation covers are permitted to use non-preferred provider organisation providers, although higher levels of coinsurances or deductibles routinely apply to services provided by these nonparticipating providers.

### 6.5.3 Exclusive provider organisations (EPO)

Where preferred provider organisations generally extend cover from non-preferred provider care as well as preferred provider services, exclusive provider organisations (EPO) provide cover only for contracted providers and limit their beneficiaries to these practitioners (Gotlieb 2000:7). The *Genesis Report* (1995:3) describes an exclusive provider organisation as similar to a health maintenance organisation in that it uses primary physicians as gatekeepers, often capitates providers, has a limited provider panel uses an authorization system. People belonging to an exclusive provider organisation must receive their care from affiliated providers; services rendered by unaffiliated providers are not reimbursed. The main difference is that exclusive provider organisations are generally regulated under insurance statutes rather than health maintenance organisation regulations. Exclusive provider organisations (EPOs) are similar to preferred provider organisations in their organisation and purpose. Unlike preferred provider organisations, however, exclusive provider organisations limit their beneficiaries to participating providers for the health care services. In other words, beneficiaries covered by an exclusive provider organisation are required to receive all of their covered health care services from providers who participate with the exclusive provider organisation. Exclusive provider organisation does not cover services received from other providers.

Some exclusive provider organisations parallel health maintenance organisations in that they only require exclusive use of the exclusive provider organisation provider network, but also use a "gatekeeper" approach to authorizing non-primary care services. In these cases, the primary difference between a health maintenance organisation and an exclusive provider organisation is that the former is regulated under health maintenance organisation laws and regulations while the latter are regulated under insurance laws and regulations. Exclusive provider organisations usually are implemented by employers whose primary motivation is cost saving. These employers are less concerned about the reaction of their employees to severe restrictions on the choice of healthcare provider (Kongstvedt 1989:13).

### 6.5.4 Point of service

Hybrids of health maintenance organisations and preferred provider organisations have also emerged in recent years. The most common of these is the point-of-service (POS) plan, which many health maintenance organisations offer as a "first step" for patients inexperienced with coordinated systems. In a point-of-service plan, a health maintenance organisation offers some level of indemnity coverage for its members, and patients decide "at the point of service" whether to visit network or non-network providers. Patients pay a small co-payment or nothing at all out of-pocket for visits to providers in the network. When they visit providers outside the network, patients are charged some form of cost sharing similar to that in a preferred provider organisation (Ignagni 26-28 June 1995).



### **6.5.5 Independent practitioner organisation (IPO)**

Independent practitioner organisations (IPOs) - not to be confused with initial public offerings - is a hybrid form of entity that has characteristics in common with both IPAs and medical associations. Independent practitioner organisations are generally organised by community physicians to provide a mechanism for evaluating and negotiating participation in health maintenance organisations and other managed health care organisations. Whereas the primary purpose of an IPA is to act as a vehicle for physicians to participate in a health maintenance organisation, the primary purpose of an independent practitioner organisation is to serve as a clearing house for information about managed health care organisations for its member physicians.

In general, independent practitioner organisations do not accept financial risk for providing services to members of health maintenance organisations or preferred provider organisations. Instead, independent practitioner organisations collect and review information about how the health maintenance organisations and preferred provider organisations in their communities operate so that they can advise their members about participation. Their proper role of providing information to physicians and serving as a vehicle for health maintenance organisations and preferred provider organisations to approach large groups of physicians can be achieved without issuing recommendations that their physicians boycott specific plans (Kongstvedt 1989:13).

### **6.5.6 Capitated PPOs, primary care PPOs, and “swing out” HMOs**

These are recently introduced hybrids of more traditional health maintenance organisation and preferred provider organisation models. In both these types of plans, primary care physicians (PCPs) are reimbursed through capitation, there is often a withhold on physician compensation, the primary care physician acts as a gatekeeper for referral and institutional medical services, but the member retains some coverage for services rendered that are either not authorised or are delivered by nonparticipating providers. Such coverage is typically significantly lower than coverage for authorized services delivered by participating providers (eg, 100% versus 60%). Traditional health maintenance organisations may offer a similar option through an “out-of-plan benefit rider”. (Kongstvedt 1989:14).

The ability of these types of plans to control costs or succeed in the marketplace is as yet unknown due to their relatively short history.

## 6.5.7 Pharmacy benefit management (PBM)

### 6.5.7.1 *Introduction to pharmacy benefit management*

In today's alphabet soup of health care organisations, one acronym is increasingly visible: PBM (pharmacy benefit management). A pharmacy benefit management company provides pharmacy management services to employers, managed health care organisations, and other insurers. Pharmacy benefit management is an outgrowth of third-party prescription plans, most of which historically only processed claims. Today's pharmacy benefit management has evolved beyond processing claims to providing clinical and cost containment services.

The rapid increase in health care costs resulted in an increase in the demand for pharmacy benefit management services. In 1992, PBMs provided pharmaceutical services to approximately 33% of the US population (Sneiden 1993:9). In 1994, approximately 20% of all retail prescriptions were paid by PBMs, and the top five companies accounted for more than 75% of this prescription volume (Cascade 1995:6). US managed care analysts predict that the number of patients receiving PBM services could grow to half of the US population – 135 million people – by 1997 (Sneiden 1993:7). Because PBMs represents more than half of all third-party prescriptions, managers who interact with the pharmaceutical industry will need an understanding of PBMs to succeed in this rapidly changing environment. Pharmacy benefit management customers now extend past the traditional health maintenance organisation or managed care organisation to include looser or mixed insurance plans and preferred provider organisations. PBMs also offer pharmacy services directly to insurance companies and employer groups (Gray 1994:2). According to the *Old Mutual Health Care Survey* (1999:18) more than 51% of employers in South Africa have implemented pharmacy benefit management programmes through their medical aids.

### 6.5.7.2 *Definition and description of pharmacy benefit management*

Pharmacy benefit management is the systematic management of outpatient pharmaceutical usage through interventions affecting the patient, pharmacist, physician and the pharmaceutical company. Historically performed by managed care organisations for their own members, PBM has grown to an industry of specialised organisations providing services on a for-profit basis. PBM organisations define their mission as “to improve the quality of pharmaceutical care, and minimise the cost of appropriate pharmaceutical care”. Quality objectives are achieved through the avoidance of inappropriate or unnecessary utilisation (Health Industries Research Company 1996:115).

PBMs play an integral role in the pharmaceutical delivery process. PBMs interact with patients, employers and health maintenance organisations pharmaceutical manufacturers, and pharmacists and physicians. PBMs provide the patient with mail order services and educational materials; contract with employers, health maintenance organisations, and other insurers to manage pharmaceutical services, and negotiate with pharmaceutical manufacturers for price discounts (ie, rebate programmes based on the quantity of products dispensed). The proactive clinical management services that pharmacy benefit management provide include designing formulary plans, monitoring drug usage, managing drug costs, checking for appropriate prescribing patterns, monitoring patient compliance with a prescription regimen, and following quality assurance procedures to protect the patient. These comprehensive services provide cost savings by monitoring patients' drug therapies to obtain desired therapeutic outcomes as well as promote patient wellness (Konnor 1995:1).

Pharmacy benefit management firms specialise in managing the cost of pharmaceutical care. They provide innovative programmes for patient compliance and optimal therapeutic outcomes to comply with appropriate drug therapy prescribed by physicians (Konnor 1995:2). PBMs typically interact with physicians and pharmacists by performing four clinical services: physician profiling, drug utilisation review (DUR), formulary management, and prior authorisation. Many of these clinical services are not unique to the PBM environment; they may also be used by managed care, hospital, and retail pharmacies.

(a) *Physician profiling*

Physician profiling involves generating data on physician prescribing and comparing physicians to expected prescribing patterns within select drug categories. Peer comparison is typically specialty specific and regionalised. The pharmacy benefit management then targets aberrant prescribers for educational intervention. During prescriber education, the pharmacy benefit management reviews with physicians the appropriateness and cost of their prescribing patterns. These educational sessions typically occur via mailings, telephone calls and face-to-face visits.

(b) *Drug utilisation review*

Pharmacy benefit management monitor patient-specific drug problems through concurrent (at dispensing or during drug therapy) or retrospective (after dispensing or post-drug therapy) review. Patient-specific DUR is typically used to identify the following: drug/disease conflicts, drug-drug interactions, chronic-over utilisation, underutilisation (noncompliance), drug/sex and drug/age conflicts, drug/pregnancy contraindications. As an integral component of DUR, pharmacy benefit management may follow up with physician and patient education programmes. (Concepts in managed care pharmacy number 5 1999:1)

(c) *Formulary management*

A formulary is a list of drugs classified by therapeutic category or disease class that are considered preferred therapy for a given managed population (Hailemeskel 1999:819). Drugs can be preferred for both clinical and financial reasons. Most PBMs use the formulary to perform generic and therapeutic substitution. Generic substitution is the dispensing of a generic equivalent, whereas therapeutic substitution is the dispensing of a different chemical entity in the same drug class. Generic substitution can be performed without physician approval in most cases, but therapeutic substitution always requires physician approval. Many PBMs use benefit design (eg, co-pay differentials) to encourage both therapeutic and generic substitution. In many PBMs, the formulary also serves as a physician education tool, incorporating prospective guidelines along with the list of preferred therapeutic agents. (Concepts in managed care pharmacy number 3 1999:1)

(d) *Prior authorisation*

Prior authorisation, sometimes known as a medical-necessity review, is a programme that requires physicians to obtain certification of medical necessity prior to drug dispensing. Many PBMs have established protocols for physicians to receive prior authorisation over the telephone, using a semi-automated system. In some of these programs, the physician is prompted through a series of interactive menus requesting clinical and patient information. At the end of the telephone menus, the physician is either given a prior authorisation number or connected to a pharmacist, who asks further questions.

(e) *Fee-for-service*

In fee-for-service arrangements, the pharmacy benefit management (PBM) receives a claims administration fee to create a retail pharmacy network that offers discounts on prescription drugs and can perform on-line claims adjudication. Analysts suggest that savings from PBM management of pharmacy services could total 10% to 15%, compared with a previously unmanaged benefit.

(f) *Risk sharing*

In a risk-sharing contract, the pharmacy benefit management (PBM) and employers agree on a target cost per employee per month. If the actual cost per employee per month is greater than the target cost, then the pharmacy benefit management (PBM) will share in the overrun and refund money to the employer. Similarly, if the cost per employee per month is less than the target, the PBM shares in the savings. The PBM establishes the target cost per employee per month based on a performance guarantee that may include, among other things, a price discount (ie, a percent reduction in average wholesale price), rebates for formulary products, and savings from clinical services.

PBMs set the target cost per employee per month based on a combination of discounts, rebates, and clinical services that may be disease-specific or related to therapeutic drug class. One benefit's manager described a typical PBM contract as including a price discount of wholesale price minus 10% (a rebate of R1.00 per prescription) plus savings from clinical services (Navarro and Wertheimer 1996: 97-101).

(g) *Capitation contracts*

In a capitation contract, the pharmacy benefit management (PBM) agrees to provide all pharmaceutical care for a fixed rand amount per employee per month. To date, the majority of contracts have been fee-for-service and risk sharing, but capitation contracts are gaining in popularity. However, according to one report, fewer customers have been asking for capitation contracts than originally expected (Muirhead 1994:18). One reason for the slow transformation to capitation may be that PBMs have not yet determined how to accurately project or account for future pharmaceutical expenditures. Additionally, many employers are hesitant to put strong utilisation-control measures in place (eg, prior authorisation, closed formularies), particularly when they may affect a negotiated benefit of a trade union (Navarro and Wertheimer 1996: 97-101).

6.5.7.3 *Relationships with pharmaceutical companies*

During the 1990s the health care market in the USA underwent a period of mergers and acquisitions; the pharmaceutical industry was no exception. In addition to both horizontal and vertical consolidation, market forces were also driving strategic partnerships or "virtual integration". While the structure of consolidation in the pharmaceutical industry varies, the primary objective remains the same: to achieve greater margins through increased market share and/or economies of scale (Roberts and Stephens 1994:12). Mergers and acquisitions among pharmaceutical manufacturers, pharmacies, and drug distributors included both horizontal and vertical integration activity. Horizontal consolidation consists of the merger of two competitors who perform similar functions in the value chain (eg, the combination of two pharmaceutical companies). Vertical consolidation is a merger of businesses occupying different positions along the value chain (eg, the combination of a pharmaceutical company and a PBM).

In 1994 three-vertical consolidations occurred between PBMs and pharmaceutical manufacturers: Merck and Medco Containment Services of Montvale, NJ; SmithKline Beecham (SKB) and Diversified Pharmaceutical Services (DPS) of Minneapolis; and Eli Lilly and PCS Health Systems of Scottsdale, Arizona. Vertical M & A with a PBM offers a pharmaceutical company the opportunity to control customer channels primarily through restrictive formularies. In essence, the parent pharmaceutical company could gain access to the PBM formulary by matching the deepest discount within a therapeutic class. Once the formulary is established, PBMs can implement managed care techniques, such as therapeutic substitution to shift market shares to formulary products (i.e., the parent pharmaceutical company's products) (Cascade 1995:8).

In addition to the benefits from restrictive formularies, pharmaceutical manufacturers also hoped to leverage the PBMs' experiences in managing pharmaceutical care into new business opportunities, such as disease management and international expansion (*Script Magazine*, 1994:12).

As an alternative to mergers and acquisition (M & A), many pharmaceutical companies instead have opted to enter into strategic relationships with PBMs. These manufacturers believed that strategic partnering can provide the benefits of vertical integration without spending millions of dollars on an M & A. ValueRx of Bloomfield Hills, Michigan, for example, established a strategic alliance with Pfizer. The ValueRx/Pfizer agreement assures Pfizer products a position on the ValueRx formulary in exchange for rebates. In addition, Value Health (the parent company of ValueRx) and Pfizer created a 50-50 joint partnership to develop disease-management programmes (FDC Reports, 9 May 1994). Caremark, another independent PBM, formed strategic alliances with Pfizer, Rhone-Poulenc Rorer, and Bristol-Myers Squibb to develop disease-management programmes based on drug utilisation information from Caremark's drug database (FDC Reports, 18 April 1994). Another alliance was ValueRx Health's collaboration with Sandoz and Baxter (Scrip, 1996:11). Zeneca set up disease management services subsidiary, Salick, to offer value added disease management services to managed health care organisations. Marion Merrel Dow also emphasised disease management (Sneiden 1994:70).

#### 6.5.7.4 *Potential for growth*

Despite high growth projections for lives covered under PBMs, the pharmaceutical benefits market is a buyer's market with fierce competition among PBMs for covered lives. In fact, the increased competition has begun to erode the high margins traditionally received by PBMs. Over the past year, PBM margins have also been under pressure from employers and health insurers (medical aids in South Africa). As PBMs have become more common, employers and health insurers have learned how to negotiate with them to get better prices and improved managed care services. One area that employers and health insurers have focussed on is negotiating price discounts.

PBM responses to declining margins, other than decreasing operating costs, have been to search for new methods to control costs (eg, disease management) and to investigate new opportunities (eg, international expansion). This we have seen in South Africa with all the major PBMs now operating in the local health care market.

Many industry analysts agree that disease management is the next frontier for PBMs and the pharmaceutical industry (Roberts and Stephens, 1994:13). Recognising this trend, some pharmaceutical manufacturers opted to pursue a pharmaceutical-based disease management strategy with PBMs, while others implemented a best-practice approach. Pharmaceutical-based disease management is conducted through pharmaceutical claims databases such as those maintained by PBMs. After identifying patients at risk through pharmacy claims records and comparing patient drug utilisation to clinical protocols, the PBM then distributes educational material to the patient and the physician in an effort to improve compliance with protocols and keep chronic diseases under control (Cascade 1995:9).

As the concept of managed care expanded beyond the US in the 1990s, PBMs analysed the viability of exporting their product. PBMs looked at expanding their services to Canada, Western Europe, and other areas where pharmacy services were organised and information systems were available. Despite the existence of national health insurance for inpatient and outpatient services, approximately two-thirds of Canadians, or 18 million people, received pharmaceutical coverage through their employers. Recognizing the potential for PBM-like products in Canada, several companies began to provide mail order (eg, FoxMeyer Drug Company of Carrollton, Tex.) and DUR/formulary management services (eg, Health Care Pharmacy Providers of Carrollton, Tex.).

In general, most Western European countries have national health insurance systems that include extensive coverage of pharmaceuticals. The pharmaceutical benefits in these countries have been managed primarily through price controls. However, countries expressed interest in other methods of quality assurance and utilisation control such as drug utilisation review. To capitalise on the interest in quality assurance and utilisation control, several PBMs in the US have begun to focus on Europe. For example, Medco established a 30-person office in the Netherlands to bring PBM and mail order services to Europe, and PCS have initiated demonstration projects with the UK National Health Service and the Swedish National Insurance Board. Managed health care organisations also emerged in other areas. Kaiser opened HMO offices in Turkey, and Aetna became part of a joint venture to operate a managed care plan in New Zealand. Although PBMs analysed opportunities in these areas, no public deals were announced.

#### 6.5.7.5 *Pharmacy benefit management in South Africa*

In some ways, health care in South Africa is uncannily like the US indemnity system (Ryan 1998:9). Until 1987, only one PBM, Medikredit, existed in South Africa. Medikredit, which was later purchased by a partnership of Glaxo and Eli Lilly, was owned by the Pharmacy Association of South Africa and was established to provide processing and transmission services for pharmacies. Until 1994, the processes were paper-based and, thus labour intensively. The company receives their claims electronically now. Medikredit also provides a retail pharmacy network, which include nearly every pharmacy in the country, for its clients it offers 10% of the retail price. The understanding is that Glaxo and Ely Lilly purchased Medikredit to increase sales and to gain access to utilisation data that they can use to design disease management programmes.

In 1987, a new PBM, Mediscor, entered the market in competition to Medikredit. Although Mediscor was slow to take off, by 1995 it controlled about 30% of available medical aid lives. Mediscor used a smaller network and offered more aggressive discounts, up to 30% in some cases. It also started off on a paper-based processing system but moved more quickly to electronic claim submission than Medikredit. South African Druggists (SAD), a large pharmaceutical manufacturer/wholesaler/franchiser, purchased Mediscor in 1994. SAD allegedly purchased the company to increase product distribution through its franchises (Link pharmacies) and to increase its number of franchises by offering Mediscor's lives. Unfortunately, SAD suffered some setbacks as the South African Competition Board chose to review the purchase for restraint-of-trade issues (Zappa 1995:28-32). In 1999 the Canadian PBM, Assist Rx, opened offices in Cape Town.

## 6.6 PHARMACY BENEFIT MANAGEMENT AN EXPANDING IDEA WORLDWIDE

Managed health care has radically changed the US health care environment but in Europe, there are considerable barriers to the direct transfer of the US model and the state run systems should prevail (versus free market forces) for a number of years still. Pujol (1998:6) foresees that managed healthcare would play an increasing role in Europe and will adopt an integrated approach and use some or most of the US managed health care techniques. Table 6.1 below show some of the managed care techniques being implemented in Europe.

	Limited access	Formulary	Generics	Mail-order	Increased roles of traditional payers	Emerging new payers	New IT	Outcomes data Disease management	Treatment protocols
UK	√	(√)	√	?	√	√	√	(√)	√
Germany	(√)	(√)	√	(√)	√	√	√	(√)	√
France	(√)	(√)	√	×	√	√	(√)	(√)	√
Italy	√	√	√	√	√	√	√	(√)	(√)
Spain	?	?	√	×	√	√	(√)	(√)	(√)
Netherlands	(√)	(√)	√	√	√	√	(√)	(√)	√
Switzerland	√	√	√	√	√	√	√	(√)	√

√ in place

(√) about to be implemented

× difficult to foresee

Table 6.1 Implementation process of managed care techniques in Europe (Pujol 1998:17)



Lane (1998:58) feels that the following fundamental differences between US and European health care delivery systems will hinder the direct importation of “US-style” managed care organisations and initiatives.

- The US private healthcare industry operates in relatively free market where changes comes rapidly with greater opportunities to experiment. While government regulations are influential, they do not give fundamental structure to the market.
- European governments want to maintain control over health care as a social mandate and financial responsibility therefore a prerequisite to change are active corporate and industry health policy initiatives. Minimally, any market changes will have to be “blessed” by the governments.
- European cultural factors are also important to the adaption of managed care. Especially, patient data confidentiality, attitudes towards “free access” to care givers and high-quality care standards and attitudes of medical practitioners towards therapeutic restrictions.

Nevertheless, Lane (1998:76) feels that the following weaknesses in the European health care delivery systems present opportunities for managed health care to solve.

- Inability to monitor important aspects of health care (cost measurement, outcomes measurement, etc.).
- Excessive bureaucracy associated with “national monopoly”.
- Minimal provider incentives to control costs at point of service.

Lane (1998:87) says that the following factors will influence the receptiveness of the European Union countries to change towards managed care.

- The degree of involvement the patient/employer have in health care funding.
- The presence of organisations challenging government monopoly may take the initiative to change.
- Consumer emphasis on free health care and freedom of choice.
- The strength of various special-interest groups and their willingness to support changes.
- The openness of the government to change and willingness to implement reform.

Managed care is already operational in Switzerland (US-style HMOs), the Netherlands (mail-order pharmacy), France (PBM), UK (fund holding GP groups or IPAs) and Germany (Krakenkassen contracts with provider groups, mail-order pharmacy).

## **6.7 DISEASE MANAGEMENT: THE COST-EFFECTIVE FUTURE OF MANAGED HEALTH CARE**

A new evolution in the dynamic managed health care environment is the concept of disease management. This concept will not only have a great impact on the managed care delivery mechanism but also on the pharmaceutical industry as it slices across the healthcare spectrum according to illness rather than the stage of treatment. Disease management is an information-based process incorporating continuous improvement for all aspects of care. The aim is to increase the cost efficiency of healthcare delivery by taking a holistic approach to treat a particular illness. In the worldwide pharmaceutical industry, disease management is a current but little understood buzz word. Disease management in its most conceptual form, offers nothing less than the optimization of medical therapy for an entire disease state. In its most practised form, disease management packages tend to be a form of product bundling put together by pharmaceutical companies.

For pharmaceutical companies, the growing maturation of their industry, which is illustrated by their growing competitive intensity, the volume of sales facing patent expiry and the reduction in launches of new chemical entities, has forced them to seek new strategies for competitive advantage. Among such strategies are bundling together of products that are required for the treatment of a disease, rather than simply bundling one company's products.

The increasing maturation in the pharmaceutical industry is reflected in a number of ways, including:

- the sheer number of drugs in certain therapeutic categories with very little differentiation between competing compounds
- the significant number of compounds nearing the end of their patent life
- the reduction in the number of new chemical entities (NCEs) launched over the past few years

Disease management is not likely to happen overnight. Already companies are presenting individual parts of the tools required to set up a full disease management offering, but as yet, are not providing the overall coherence and structure to bring the tools together. Equally, there are factors that may hold disease management back in its development. Resistance from various players (eg, academics, hospitals) which do not really fall under the remit of disease management is just one potential for the full implementation of the concept. Other factors conspiring against disease management include regulation (single-sourcing, collaboration and anticompetitive laws), information (availability, ethical issues and ownership) and risk (cost shifting, unreliable outcomes and liability). While some of these factors may be considerable, they are surmountable. A gradual spreading of risk down the health care value chain seems certain to come to pharmaceutical companies before long. And while pharmaceutical companies will have to respond to this change, which could be a grave threat to their profitability (*Marketletter* 1995:25).

At the same time, pharmaceutical companies' traditional customer profile has been changing. Cost pressure throughout the health care industry has resulted in a shift in the decision makers from the care providers to the care payers (managed health care organisations). These are the new customers for the drug industry. These new customers have radically different requirements to the old. Simple intrinsic benefits of a drug (eg, its therapeutic index) are no longer enough. Extrinsic benefits (eg, education packages, reduction in inpatient care) are now critical. A pharmaceutical company that cannot demonstrate considerable extrinsic benefits alongside its product's intrinsic benefits will not be able to sell that product. These pressures have forced pharmaceutical companies to look at specific diseases in a new light: can drug therapy reduce overall costs? Is the disease a high-cost element of overall health care expenditure and is it possible to educate physicians and patients to improve therapy? (*Marketletter* 1995:24).

The objectives of disease management include:

- (a) encouraging disease prevention
- (b) promoting correct diagnosis and treatment planning
- (c) maximising clinical effectiveness of interventions
- (d) eliminating ineffective or unnecessary care and interventions
- (e) utilising only cost-effective diagnostics and therapeutics
- (f) maximising the efficiency of healthcare delivery while maintaining appropriate standards of quality
- (g) continually improving the outcomes of the process, and the process itself (Concepts in managed care pharmacy number 2 1999:4)

Disease management incorporates a number of skills – some of which the pharmaceutical industry has great experience. The pharmaceutical industry has a strong background in clinical and medical research. Disease management utilise these skills to understand the particular disease status, which will help managed care organisations to develop clinical practice guidelines for their customers. Presently the pharmaceutical industry does not have the expertise or do not make use of this clinical and medical research for disease management purposes.

The concept of disease management has become one of the most discussed issues in the pharmaceutical industry and many organisations are busy developing programmes and determining their strategies on this subject. But some observers and players are convinced that disease management is just another fad and that the long-term future for the pharmaceutical industry must lie in sticking to the core business and doing what it does best: discovering, developing and selling pharmaceuticals.

### **6.6.1 Defining disease management and the aim of the concept**

Disease management can be likened to the Greek sea deity, Proteus, who, having received the gift of a prophecy from Neptune, often refused to give answers and puzzled those who consulted him by assuming different shapes. Surely not even Proteus could have imaged him could sow so much confusion by assuming so many different shapes. And yet disease management is the future, without it pharmaceutical companies will be unable to compete in an increasingly cost conscious managed health care market. Such diversity of interpretation and action is due to the lack of both a single definition for disease management and a clear understanding of its role in a pharmaceutical organisation.

There are two crucial elements to a disease management definition. The first is that it is a competence comprising skills, which should infuse the organisation as a whole, and is not a business or service in its own right. According to Hamel and Prahalad (1994:202), “A core competence is a bundle of skills and technologies that enables a company to provide a particular benefit to customers”. The commitment a firm makes to building a new core competence is a commitment to creating or further perfecting a class of customer benefits, not a commitment to a specific product-market opportunity. The second is that it has both a short-term and long-term perspective, the transition being determined by the speed with which a company gains the required skills (Eckett 1995:9).

The short-term and long-term definition of disease management enables a pharmaceutical company to pursue a low-risk evolutionary strategy and for the disease management competence to permeate the marketing, medical and commercial departments. The pharmaceutical company does not need to evolve from the short-term to the long-term definition of disease management, diversifying away from its core pharmaceutical business and into health care management. However, at least the company has generated an option to do so at a future date (Eckett 1995:10).

*The Academy of Managed Care Pharmacy* (Concepts in managed care pharmacy number 2 1999:1) describes disease management as a continuous, co-ordinated, evolutionary process that seeks to manage and improve the health status of a carefully defined patient population over the entire course of a disease. Disease management, as described by the Boston Consulting Group (Cohen 1995:68), recognizes that “each disease has its own distinctive pattern of cost elements ... and a unique range of available therapies and interventions. Only by focussing on the cost drivers and their interactions over the course of each disease across all elements of the system, can the health care delivery system make rational choices between therapeutic alternatives and best balance economic and clinical needs.” Understanding “cost drivers” is the key to effective disease management. In addition, disease management cuts across different care settings and allows for full continuity of care (Zitter 1994:74).

Mangold (Short 1996:3) put the following forward as a working definition at a conference on disease management: “Disease management is an integrated regimen of patient care activities. It is coordinated according to the illness, rather than a particular aspect of its treatment. It is delivered in partnership with healthcare providers, healthcare organisations and others (such as information technology experts). The aim is to produce the best total outcomes for patients and providers.”

The Mercer Consulting Group (1995:2) defines disease management as an approach to treating diseases that improve the quality of life for the patient while reducing the overall costs of healthcare.

According to Promar (1995:8), the most important ideas which recur in a number of the above definitions are that:

- (1) Disease management is a “systems approach” rather than a “component approach”, that is, essential to look at every aspect of a disease, its causes and its treatments as a whole, and that trying to improve cost-effective or quality issues in one delivery component alone will not result in long-term improvements being made.
- (2) Coordination and cooperation between every player in the health care value chain, including payers and patients, is essential if a broad approach to prevention and treatment is to evolve.
- (3) Shared information is the key without which a global picture cannot be built up and disease management can never be established.

There are many definitions of disease management. The definition used by Promar (*Management Summary* 1995:i) defines it as follows:

A systems approach to healthcare, involving cooperation and coordination between every player in the healthcare value chain, based on the collection, sharing and application of information, with the ultimate goal of improving quality and reducing costs.

Other definitions range from the very narrowest, which simply formalises what already exists, to the broadest which involves restructuring of the health care chain and the full participation of all players. Which definition is used by which player appears to depend more on the individual organisation than the player. The apparent need for disease management has arisen from the obvious inability of health care systems in the developed world to cope with the demands which an aging population, shrinking workforce, rising expectations and advances in technology have placed upon them. However, there is also a widespread belief between health care providers and payers that disease management is also now being used by pharmaceutical manufactures simply as a vehicle to sell more drugs and that, in fact, the trend is being pushed by the pharmaceutical industry rather than pulled by the market demand.

The aim of disease management in its broadest sense is to produce cost savings and improve the quality in treating particular disease areas by:

- improving communication and cooperation between players in the health care value chain, particularly between primary and secondary care
- building incentives into the system to encourage players to work together
- eliminating duplication of effort and technology
- building a picture of total health care provision for individual patients
- standardising medical practice across localities/regions/countries
- measuring outcomes to improve future treatment (*Promar Management Summary 1995:iii*).

Although disease management has become a widely talked about concept in recent times, it still means many things to different people and interpretation of the phrase depends largely upon whom you ask! Views of what disease management entails cover a wide spectrum of opinion from:

- a narrow focus in which disease management is seen to revolve around the development of best practice and clinical guidelines within the confines of the existing health care systems, or is to be a means of selecting the most cost-effective drug to treat a certain illness,
- through to a broader understanding in which disease management is seen as a means of co-ordinating inpatient and outpatient care,
- and finally to the widest interpretation of all in which disease management is perceived to encompass every aspect of health care from prevention to diagnosis and treatment, on to an aftercare and finally full circle to prevention (*Promar 1995:6*).

Similarly, the perception of who is driving change and who stands to benefit from the adoption of a disease management approach also varies from one player to another, with perceptions largely reflecting each player's current role and view of health care in existing systems. The multitude of ideas about the concept of disease management will undoubtedly add to the difficulties of introducing this approach to health care delivery. Developments will necessarily be slow while players throughout the chain attach their own interpretation to the concept. Furthermore, lasting progress is unlikely to be made until each player in the delivery chain is working towards the same goal.

Moving towards a disease management approach will require a significant culture change in every market. A number of key characteristics of current systems will have to change considerably before disease management becomes realisable.

Table 6.2. shows that disease management cannot simply be imposed on existing health care systems and that a degree of structural and cultural change will be necessary. Certain characteristics of the macro environment must be present, and certain conditions must exist before a disease management approach to health care provision can become a realisable option.

<i>Progression from current health systems to a disease management environment</i>			
	South African systems	US Managed Care	Disease Management
Degree of fragmentation	Many independent providers	Some providers linked by managed care networks	All providers across delivery segments connected electronically
Coordination of healthcare delivery	Little communication between primary, secondary and tertiary providers	Most MCOs separate across the spectrum of primary and secondary delivery segments	Provision extends from education and prevention through diagnosis and treatment to aftercare in each disease area
Information availability	Minimal data collection and strict confidentiality regulations	Pharmacy and medical claim data available within individual MCOs' analysis techniques being developed and improved	Cross-segment information available to a provider re. costs, alternative treatments, patient records, etc.; sophisticated analysis techniques in use
Payment system	Payers largely in a monopoly situation; few systems have financial links between payment and provision	Consumers and employers have a high degree of financial responsibility	Consumers, providers, public + private payers and suppliers all have financial incentives and responsibilities
Provider incentives	Treat as many patients as possible	Treat as cost effectively as possible	Prevention and long term control of illness; cost-effective treatment developed in conjunction with other providers
Consumer responsibilities	Little financial responsibility and no emphasis on proactive involvement in healthcare	Financial responsibility for health insurance	Financial responsibility for health insurance plus obligations regarding preventive & non-pharmaceutical measures
Healthcare philosophy	Delivery settings operate in isolation from each other	Control of component costs by monitoring delivery process	Global approach taken to prevent illness and treat cost-effectively where necessary

Table 6.2 Progression from current health systems to a disease management environment (Promar, 1995:10)

Key elements which must be in place before a programme of this nature can be achieved, and which will play a pivotal role in determining its potential success can be largely divided into three components: (See figure 6.1 on the prerequisites for adoption of a disease management approach)

- (1) *Physical infrastructure requirements.* One of the fundamental requirements of a disease management programme is the coordination of health care provision and information, which inherently involves the use of physician networks, probably along the lines of those established by a number of managed care organisations in the US. Health care provision in South Africa is a very fragmented activity with little, if any, communication between the providers themselves, or with other players in the chain. A network of providers is therefore needed to enable communication to take place across the health care infrastructure to ensure consistency and avoid duplication. Physician networks are also essential if patients are to be encouraged to always visit the same doctor. Although this is not crucial, it will greatly facilitate the keeping and analysing of patient information and the development of outcomes data. As well for being centrally co-ordinated in terms of health care delivery, physician networks must also incorporate electronic links to enable a free flow of information among all involved in the health care value chain. If a consistent approach is to be taken by all involved in health care delivery, information such as patient records, medical outcomes and cost benefit analyses, must be instantly available to all players involved.



An infrastructure suitable for disease management will ideally incorporate information sharing and electronic communication as an integral part of the health care process, rather than as an “add-on” which risks not being fully utilised. In addition to formalised networks of providers, looser partnerships will also be required for disease management to work successfully. Health care delivery must be carried out in such a way that suppliers, providers and payers no longer operate in isolation and in a manner which allows transparency along the value chain to be achieved. In practice, it is unlikely that these partnerships will emerge before disease management programmes, rather than the two will evolve parallel. However, any system which is to embrace the concept of disease management will have to be one in which barriers between players are removed or lowered and restrictions on communication are lifted to facilitate the levels of cooperation for a disease management strategy to operate (Promar 1995:11-12).

- (2) *Financial requirements.* For disease management to operate effectively, the means by which health care is paid for must incorporate incentives for all players, who should be involved in the process to actually participate. This will certainly include financial incentives to those who provide health care and may also need to present patients with the financial incentive to become involved in disease management. The method of finance chosen for any health care system will play a significant role in influencing the health care delivered through that system. Therefore, systems of funding must reflect the requirements of a disease management approach and be designed so that they directly encourage providers to:

- treat disease as cost-effectively as possible and work together with providers from other sectors involved in health care delivery
- look beyond traditional health care horizons to consider wellness programmes, alternative medicine, preventative medicine and patient education

Current reimbursement systems perpetuate health care practices which are at the opposite end of the spectrum from those described above. A prerequisite of adoption of a disease management philosophy must therefore be that current funding procedures are reviewed and redesigned with a view to incentivising those on whom the success of disease management depends.

- (3) *Medical requirements.* As well as the physical and financial requirements mentioned above, the enormous variations which still exist in current medical practice must be eliminated in order for disease management to be effective. The development of protocols and clinical guidelines will be essential to ensure that all health care providers adhere to best practices, which must initially be drawn up with reference to desired medical outcomes and historical patient records. This will clearly require a huge amount of effort, given the current levels of divergence, and will always need to be monitored and updated as more information becomes available for analysis. However, the ability to look at medical practices and develop preliminary guidelines will be the first necessary steps in establishing disease management protocols. A further requirement of a successful disease management programme - which cannot yet be achieved given the levels of information available - will be outcome analysis. This will follow on from clinical guidelines and will incorporate a wider number of parameters which are not quantifiable to date.

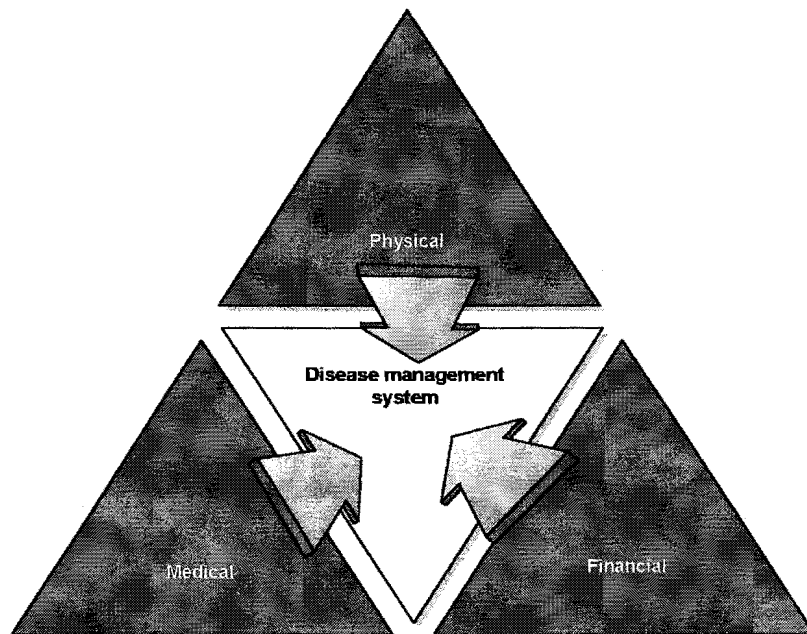


Figure 6.1 Prerequisites for adoption of a disease management approach (Promar 1995:11) [Discussion takes place from page 113-114]

In addition to the specific components outlined above, there are two other factors which will significantly influence the success or otherwise of any future disease management projects. Firstly, for disease management to succeed, national and international legislation must keep pace with change and enable those with an interest in furthering developments to do so freely. Health care delivery systems and the relationship among all the players involved are currently tightly regulated in all Western markets. The evolution of regulations in line with the three components given above is essential for effective disease management programmes to be put into place. Secondly, any attempt to introduce disease management must be underpinned by long-term planning and an equivalent long-term commitment to health care improvements. This will require a major cultural shift for many currently involved in the process, notably governments and many South African employers and managed health care organisations, and health care systems must be allowed to adapt to reflect long-term strategies regardless of individual players' short-term ambitions.

Although many health care players are already talking about the adoption of a disease management approach to health care, the above list illustrates that arriving at a comprehensive and effective system of disease management will not be a matter of simply imposing new national requirements on existing systems. The process will be long and painful and will require commitment from a diverse range of participants throughout the health care sector. It must be remembered that the creation of this type of health care delivery cannot be achieved by any one player, nor can it be implemented in isolation from the wider health care environment. Therefore, at the end of the day, how successfully influential players and practices are combined will determine the viability of adopting a disease management approach to health care (Promar 1995:12-14).

## 6.7 CONCLUSION

Managed medical care - a uniquely American development - dates back to the 1930s. With the globalisation strategies of companies and concepts the managed health care concept is taking roots in Europe, South America, Australasia and South Africa.

The term, "managed health care" that is used to embrace a whole range of organisations, approaches and techniques which together comprise a system of health care delivery which influence's utilisation and cost of services, and measures performance was discussed in this chapter as an alternative for the escalating health care costs of South Africa. The goal of managed health care is to establish a system which delivers value by giving people access to quality and cost-effective health care. Managed health care is an alternative health care delivery system to the primary health care system, which was discussed in chapter 5, but both systems have similar objectives in providing cost-effective health care too more South Africans.

There is no ideal managed health care model and optimal models are those that best satisfy distinct environmental needs and competitive factors. These models are simply used as examples to assist in the understanding of the managed health care environment. The distinction between many of these models has narrowed considerably, and in many instances the managed health care organisations will be a hybrid of several different models.

Disease management as a new concept in the dynamic managed health care environment was also discussed. This concept will not only have a great impact on the managed care delivery mechanism but also on the pharmaceutical industry as it slices across the healthcare spectrum according to illness rather than the stage of treatment. Disease management is an information-based process incorporating continuous improvement for all aspects of care. The aim is to increase the cost efficiency of healthcare delivery by taking a holistic approach to treat a particular illness. The concept of disease management has become one of the most discussed issues in the pharmaceutical industry and many organisations are busy developing programmes and determining their strategies on this subject. Moving towards a disease management approach will require a significant culture change in the pharmaceutical organisation. A number of key characteristics of current systems will have to change considerably before disease management becomes realisable.

Before the managed care occurred in America, medical costs were swelling out of control. They are still high by world standards, but the pace of inflation has been drastically curbed - and this has been achieved without a measurable drop in the quality of care (*The Economist* 1998:23).

An analysis published in the *Journal of the American Medical Association* in 1994 showed that managed health care organisations reduce hospital stays by 30% (although managed care members are slightly more likely to visit their doctors). A study of firms with more than 200 employees by KPMG, a consultancy, found that as managed care enrolment soared between 1992 and 1996 in the United States, inflation in health care premiums fell from 10.8% a year to 0.5%. According to a Lewin Group study sponsored by the American Association of Health Plans, the total savings attributable to managed care in 1996 were between \$23.8 billion and \$37.4 billion. These savings are enjoyed by employers, who save money on benefits payments; by workers, who receive a substantial chunk of the savings in the form of higher wages; and by taxpayers, who pay less for beneficiaries of Medicare (the government health scheme for the elderly and disabled in US) who opt for a managed health care plan (*The Economist* 1998:26).

These results are a good enough reason why managed health care is a viable option for the South African health care environment. The goals of managed health care also fit into the goals of the South African government's primary health care and health care to all policies. Financial stability could return to the medical scheme industry. Although managed health care will raise the efficiency level of the entire health care industry and possibly even reduce costs to the patients, it will not solve the problem of diminishing memberships which though healthier in the early to mid 1990s is still suffering from increasing medical inflation. Managed health care, though still at an almost experimental stage in South Africa, seems to have a chance of success.

The main disadvantage of managed health care is that patients are generally restricted in their choice of health care providers to various degrees and through the "gatekeeper" system have restricted access to specialists and special investigations. Authorisation is also required for referrals to specialists, tests and hospitalisation (Gotlieb 2000:2-3)

## CHAPTER 7

### RESEARCH DESIGN AND METHODOLOGY

#### 7.1 RESEARCH METHODOLOGY

Methodology is merely an operational framework in which the facts are placed so that their meaning may be seen more clearly (Leedy 1993:121). Facts, more properly called data, are the lifeblood of research and are of two types only: writings and observations. Statistics are a way to get information from data (Keller and Warrack 1997:3).

In this study, the descriptive survey method or, as it is sometimes called, the normative survey method was used as it is appropriate for data derived from simple observational situations where these are actually physically observed or observed through the benefit of questionnaire technique and exploratory in nature.

The method of research which looks with intense accuracy at the phenomena of the moment and then describes precisely what the researcher sees is called the descriptive survey. The name implies the assumption that whatever is observed at any one time is normal and under the same conditions could be observed again in the future. The basic assumption underlying such an approach is that given phenomena usually follow a common pattern, or norm (Leedy 1993:186).

Data sometimes lie buried deep in peoples minds or in their attitudes, feelings or reactions. As with oil beneath the sea, the first problem is to devise a tool to probe below the surface. A commonplace instrument for observing data beyond the physical reach of the observer is the questionnaire. The questionnaire may be sent to people hundreds of kilometres away, whom the researcher may never see, and is hence a totally impersonal probe (Leedy 1993: 187).

It was decided to use a questionnaire due to the fact that it was more time consuming to conduct individual meetings with senior management in the pharmaceutical industry. However a small number of personal questionnaires (5) was done as field testing to determine the respondents understanding of the questionnaire. The questionnaire (see appendix 1) was designed in four parts. The first section collected demographic data on and tested attitudes towards managed health care in South Africa. The second section established the importance versus performance of core competencies in marketing, sales and general business functions, as perceived by respondents in a managed health care environment. The third section collected some actions which South African pharmaceutical companies might take to keep their competitive advantage and the importance of listed terms as a contribution to their future competitiveness in a managed health care environment. The last section is a measure of where the organisation presently stands in the turbulent health care environment.

The demographic data sought in the first section were to determine the current designation of the respondent and in which main market sector the respondent company/division operates.

In the importance versus performance section guidance was taken from a KPMG survey on *Biopharmaceutical Industry Key Issues* (KPMG, 1996). The survey focussed on strategic thinking of the pharmaceutical industry's leaders as they face a time of tumultuous change. Respondents were requested to show their opinion by circling one number under importance and one number under performance. A five-point Likert scale or ordinal scale was used.

The five-point Likert scale was also used to establish what actions pharmaceutical companies might take to keep their competitive advantage in a turbulent health care environment. This question was followed by determining the importance of some listed statements of their contribution to future competitiveness. The last section collected data on the present nature of the organisation.

In April 1999, the questionnaire was sent out with covering letters from the researcher and the Graduate School of Business Leadership (UNISA), explaining to the respondents that independent research is required in order to complete the Doctorate in Business Leadership programme and that the resulting information will be treated confidentially and anonymously. It was also stated that the completion of the questionnaire would take approximately ten minutes and that the results of the research would be made available to respondents on request.

## 7.2 QUESTIONNAIRE DESIGN

The purpose of this research was to identify and evaluate the impact of managed health care on the South African multinational pharmaceutical organisation.

The first subproblem was to establish theoretically what is understood by managed health care and then to determine if it is transferable (from the United States) and a viable option for controlling the ever-increasing health care costs in South Africa under the proposed aims of the government health care policy.

Secondly, the purpose was to determine the possible impact that the change in environment, brought about by managed health care, will have on the modus operandi of multinational pharmaceutical organisations in South Africa. How should the pharmaceutical organisation transform and/or re-engineer its structure, operating processes to focus on its core competencies and to adapt to the change envisaged by managed health care?

Lastly to determine the strategic options (mergers, acquisitions and/or alliances with managed care organisations – health maintenance organisations, pharmaceutical benefit management and medical insurers; the development of disease management, outcomes research and pharmacoconomics studies for optimal functioning and positioning in a managed health care environment.

### 7.3 THE SAMPLE

The research population was defined as all multi-national South African pharmaceutical executives. The address list of the pharmaceutical Blue Book was used to determine the number and addresses of multi-national pharmaceutical companies operating in South Africa. A clear trend of reduced number of multi-national pharmaceutical companies operating within the borders of South Africa can be seen over the last couple of years. This is a result of mergers and acquisitions in the pharmaceutical market. The number of multi-national pharmaceutical companies dropped from 52 to 31 between 1995 and 1998 (Blue Book 1998:1/4- 4/4) This trend will, in all probability continue into the next millennium.

Individual interviews combined with questionnaires were to be used in gathering the data needed. After numerous attempts to schedule meetings with individuals for personal interviews, it was decided to use the questionnaires only due to time constraints. The questionnaires, together with a post-paid envelope were mailed to the 120 pharmaceutical executives of the multi-national pharmaceutical organisations presently operating in South Africa.. Telephonic, e-mail and faxed reminders were used on a few occasions to determine whether the respondents has received the questionnaires and had completed the questionnaires. Due to level of management, the expected occurrence of non-response was expected to be typically high in this population and that was the reason for the reminders. All completed questionnaires returned within a specified time frame (2 months) were used in the statistical analyses.

### 7.4 QUESTIONNAIRE VALIDITY AND RELIABILITY

With any type of measurement, two considerations are very important: validity and reliability. Validity is concerned with the soundness and the effectiveness of the measuring instrument and looks to the end result of measurement. The principal question that validity asks is: Are we really measuring what we think we are measuring (Leedy 1993:40)?

A pilot study was conducted to determine whether the true meaning of the questions was being understood. Questionnaires were submitted to the promoter of this study, Professor Chris van Veijeren, Mrs Arien Strasheim, lecturer in statistics at the School of Business Leadership, Mrs Leonie Venter, a lecturer in statistics at the University of South Africa, and eight pharmaceutical executives for comment. During the sessions with pharmaceutical executives, all determinants and core competencies mentioned by the group were written on flip charts and stuck to the walls of the room for easy reference.

The nominal group technique was used to eliminate those determinants and core competencies which the group felt were ambiguous and mentioned more than once in different words. This was followed with face-to-face interviews with the same group of pharmaceutical executives in an open-ended manner. The objective of these interviews was to try adding to the list those determinants and core competencies which had not been mentioned in the group discussions, but which also play a definite role in the strategic thinking process. The questionnaire was adapted, taking into consideration the various recommendations.

Reliability deals with accuracy. It asks such questions as: How accurate is the instrument that is used in making the measurement ? (Leedy 1993:42)

This is the reason why the questionnaire was divided into the four sections is mentioned in section 7.1.

## **7.5 RESPONSE AND SAMPLE CHARACTERISTIC**

The questionnaires returned by the end of May, which was the specified deadline, were evaluated and completed questionnaires were captured and verified by the University of South Africa.. Of the 120 questionnaires sent out to multi-national pharmaceutical executives, 50 were returned by the end of May 1999. Three questionnaires were returned well after the specified deadline date and were not used in the research. Two respondents were contacted to verify their current designation as they had circled more than one choice.

Of the 50 respondents, 30% are currently employed as CEOs or general managers of multi-national pharmaceutical companies, 20% work as marketing managers, 18% as sales managers and 32% have a current designation within managed health care; 70% are employed in researched-based ethical multinational pharmaceutical companies, 2% in biotech therapeutics and 26% in a multinational pharmaceutical company that is operating within more than one of the specified market sectors.

The sample can thus be regarded as representative of the pharmaceutical executive population in multinational pharmaceutical companies, and the results of analyses done in respect of the sample can therefore be generalised to the total multinational pharmaceutical population in the South African health care market.

## **7.6 DATA CAPTURE AND VERIFICATION**

The questionnaires returned by the end of May 1999, which was the specified deadline, were evaluated and completed questionnaires were captured and verified by the University of South Africa. All the responses to the questionnaires were coded according to a code list and then recorded on a magnetic computer tape.



## 7.7 CONCLUSION

The research plan endeavoured to ascertain, by means of a questionnaire, the impact of managed health care on the South African multinational pharmaceutical company and the factors influencing organisation transformation to adapt core competencies and operating processes in a turbulent health care environment.

## **CHAPTER 8**

### **FINDINGS, DISCUSSION AND ANALYSIS OF THE RESEARCH RESULTS**

#### **8.1 RESPONSE AND DATA ANALYSIS METHODS USED**

Of the 120 questionnaires sent out, a total of 50 was returned, of which all 50 were usable – a response rate of 41.67%. The questionnaire is presented in appendix A. No questionnaires were discarded as they were all complete. The 50 individuals whose questionnaire responses were processed served as the respondent group of this study. Data analysis methods used were exploratory analyses, analysis of variances, Wilcoxon signed rank sum test, Kruskal-Wallis test and Spearman rank correlation coefficients. The theoretical aspect of the implications of each statistical analysis will be discussed along with the research results.

#### **8.2 EXPLORATORY ANALYSIS**

Frequency analyses were used to explore and describe the basic tendencies in the data. Descriptive statistics (means and standard deviations) were used to ascertain the relative importance of the influence of the different determinants on the pharmaceutical executives' choices.

##### **8.2.1 Frequency analysis**

The complete results of the frequency analyses were recorded in histograms and are presented in appendix B.

##### **8.2.2 Descriptive analysis**

Means and standard deviations were calculated and used to ascertain the relative importance of the influence of the different determinants on the pharmaceutical executives' choices. Please note that the discussions of the tables presented below will be discussed in section 8.2.3.

**TABLE 8.1 IMPORTANCE OF COMPETITIVE WEAPONS IN ORGANISATIONAL STRATEGY**

Description	Minimum	Maximum	Mean score	Std dev.
Price	1	4	3,34	0,481
Quality of care	1	4	3,61	0,532
Cost-effectiveness	1	4	3,80	0,400
Discounting/rebates	1	4	2,77	0,781
Added value services	1	4	3,44	0,547
Introducing new products	1	4	3,61	0,643
Introducing cheaper generics	1	4	1,94	0,904

Source: Question 1 (As managed healthcare is introduced into the South African healthcare market, how important will the following competitive weapons be in your organisational strategy?)

Discussion of research results will be done later in the chapter when the mean scores are ranked.

**TABLE 8.2 IMPORTANCE OF MANAGED HEALTHCARE USAGE REGULATORS**

Description	Minimum	Maximum	Mean score	Std dev.
Capitation	1	4	3,04	0,671
Disease management	1	4	3,34	0,777
Formularies	1	4	3,18	0,728
Treatment guidelines and protocols	1	4	3,50	0,741
Drug utilisation review	1	4	3,38	0,735
Outcomes management	1	4	3,34	0,800
Pharmaco-economic studies	1	4	3,38	0,671
Therapeutic substitution	1	4	3,08	0,675
Generic substitution	1	4	3,02	0,803

Source: Question 2 (An increasing number of usage regulators are being introduced in the South African healthcare market to influence the choice of the type of pharmaceutical therapy/care selected for a specific diagnosis.)

Discussion of research results will be done later in the chapter when the mean scores are ranked.

**TABLE 8.3 POSSIBLE ACTIONS TO KEEP COMPETITIVE ADVANTAGE**

Description	Minimum	Maximum	Mean score	Std dev.
Replacing key prescription products with lower margin products	1	5	1.92	0.831
Withdrawal of lower margin products	1	5	1.84	0.776
Increasing product life through patent protection of individual chemical entities	1	5	4.04	0.645
Use of pharmaco-economic data to justify product prices	1	5	4.08	0.854
Development of value-added services	1	5	4.30	0.815
Alliances/partnerships with managed care organisations	1	5	2.60	0.700
Developing new sales and marketing strategies to new customer base	1	5	2.80	0.575
Collecting and using outcomes data to prove product efficacy	1	5	4.16	0.772
Transforming the organisation to adapt to new environment	1	5	4.32	0.744
Focussing on demand side management	1	5	2.44	0.616
Partnerships/alliances with other manufacturers	1	5	2.36	0.831
Product differentiation	1	5	4.44	0.612
Investing in sophisticated information technology	1	5	3.88	0.900
Fast product development/progress products to launch on times	1	5	4.40	0.763
Controlling the rising cost of R & D	1	5	2.66	0.562
Pricing policies	1	5	4.20	0.571
Product bundling	1	5	4.20	0.572
Controlling costs of rising marketing and sales expenditures	1	5	4.26	0.696
Quality of new products	1	5	4.52	0.612
Use novel drug delivery systems and other methods to expand product life cycle	1	5	4.32	0.746

Educating marketing and sales on managed care principles	1	5	2.76	0.521
Discounting to keep products on limited lists/formularies	1	5	1.70	0.742
Rebates to keep products on limited lists/formularies	1	5	1.90	0.798
An integrated health care delivery approach	1	5	4.18	0.835

Source: Question 6 (Respondents had to indicate whether they agree or disagree which listed actions which pharmaceutical companies might take to keep their competitive advantage)

Discussion of research results will be done later in the chapter when the mean scores are ranked.

**TABLE 8.4 IMPORTANCE OF CONTRIBUTION TO FUTURE COMPETITIVENESS**

Description	Minimum	Maximum	Mean score	Std dev.
Management of information	1	3	2.94	0.310
Leadership and vision	1	3	2.98	0.147
Global presence	1	3	2.72	0.509
Customers' perception of the cost of new products	1	3	2.82	0.444
Customers' perception of the value of new products	1	3	2.98	0.145
Adaptability	1	3	2.88	0.440
Managing up	1	3	2.56	0.645
Demand side management	1	3	2.52	0.652
Reframing vision and cultures	1	3	2.70	0.614
Integrated programmes of top-down and bottom-up business transformation	1	3	2.82	0.486
Development of core competencies	1	3	2.92	0.271
Ability to manage a diverse set of alliances	1	3	2.74	0.602
Becoming a high-value, low-cost supplier	1	3	2.54	0.000

Ability to create lasting relationships with customers	1	3	3.00	0.203
Supplying solutions perceived as valuable	1	3	2.96	0.682
Outsourcing skills and functions	1	3	2.48	0.391
Creating new value propositions	1	3	2.82	0.532
Positioning in the new health care value chain	1	3	2.74	0.516
Change management	1	3	2.78	0.512
Foster new behaviour and attitudes	1	3	2.84	0.514
Modernise organisational culture and values	1	3	2.76	0.598
Less functional integration	1	3	2.12	0.774

Source: Question 8 (How importantly do you rate the following in terms of their contribution to future competitiveness of pharmaceutical companies in a managed health care environment?)

Discussion of research results will be done later in the chapter when the mean scores are ranked.

**TABLE 8.5 CHARACTERISTICS OF ORGANISATION IN THE TURBULENT HEALTH CARE ENVIRONMENT**

Description	Minimum	Maximum	Mean score	Std dev.
Level of proactiveness	1	3	2,23	0,591
The organisation's functional culture	1	4	2,10	0,933
Management systems	1	4	2,12	0,926
Speed with which organisation responds to change	1	3	2,06	0,663
Measurement systems are based on past performance or contribution to growth or contribution to innovation or entrepreneurship	1	4	1,86	0,781
Organisation's management style	1	4	2,06	0,895
Propensity for risk	1	4	1,98	0,800
Organisational structure	1	4	2,14	0,990
Organisational "success model"	1	4	2,58	0,971
Transforming the organisation to adapt to a new environment	1	2	1,60	0,493

Source: Question 10 (In terms of the following criteria, how do you presently characterise your organisation in the turbulent health care environment?)

Discussion of research results will be done later in the chapter when the mean scores are ranked.

With the introduction of managed care into the South African market, the importance of usage regulators or managed health care management tools will play an important role in the choice of the type of pharmaceutical care/therapy that will be selected for a specific diagnosis (Table 8.2). Pharmaceutical organisations should take note of how important they view these usage regulators as noted by the high mean scores and strategise how they will approach these regulators to ensure a continued market growth of their products and companies without compromising profitability unnecessarily (all above 3, with a minimum score of 1 and a maximum score of 4).

For the benefit of persons without managed health care knowledge the key points of these usage regulators are listed and their impact on the pharmaceutical industry explained briefly. Usage regulators are increasingly being introduced to influence the choice of the type of drug therapy or products selected for a specific medical diagnosis. *Formularies* are lists of approved drugs. The trend is towards closed formularies where non-listed drugs are not reimbursed and must be paid for in full by the beneficiary. A variation is the exclusive formulary which contains only a few products in each therapeutic indication: typically, pharmaceutical companies pay a listing fee and pay rebates based on market share growth or as a flat fee for information. *Generic substitution* takes place when prescriptions for off-patent branded products are filled with lower-priced generic versions rather than higher-priced brands. In South Africa this is implemented through the MMAP (maximum medical aid price) process. This means that the medical aid will only reimburse the product to the maximum price of an available generic pharmaceutical product.

*Therapeutic substitution* is the use of a different class of drugs approved for the same diagnosis: for example, methyldopa for hypertension rather than an ACE inhibitor. Here, the perception is that the two drugs have essentially the same therapeutic effect and that the marginal difference in clinical effect for a few patients does not justify the significant difference in treatment costs between the two therapies. Substitution is probably the most powerful check on pharmaceutical companies. In most markets at least 50% of all products are generically substitutable. Around 70% of all products are class substitutable, while about 90% of all products can be therapeutically substituted. *Treatment guidelines and protocols* advocate a minimalist and incremental approach to overall treatment. This approach calls initially for diet and exercise and other non pharmaceutical programmes, followed by low-cost generic drugs and only ultimately therapies based on newer and more expensive branded products. Clinical practice guidelines are a mechanism for rationing and are potential tools to improve the quality of healthcare and to reduce costs. The criteria of importance must be related to the potential impact of the guideline, in particular with respect to improving the quality of the health care delivered (Norheim 1999:1426). Guidelines reduce inappropriate prescribing and result in cost savings (O'Connor 1999: 2117). Compare the prescribing patterns of individual physicians with a peer group to identify and correct deviations from the norm are called *drug utilisation review*. *Pharmaco-economic studies* provide economic data for use in evaluating the value of a drug as a measure for drug approval, pricing, inclusion in reimbursement programmes, for formulary listing and establishing the level of co-payment from patients.

*Outcomes management* are studies which measure the effect or result of treatment or care and are used to demonstrate the overall quality of a therapy. And finally, the risk-sharing vehicle which involves setting a fixed fee per head for providing the entire drug benefit is called capitation. Some health maintenance organisations in the USA have started requiring pharmaceutical companies to tender to provide a drug to their entire patient population with a specific diagnosis on the basis of a fixed cost per head (James 1994:12-13). *Disease management* is a systematic population-based approach to identify those patients at risk, intervening using information from the growing field of evidence-based medicine, and measuring patient outcomes once an intervention is in effect (Epstein and McGlynn, 1997:3).

When looking at actions which pharmaceutical organisations might take to keep their competitive advantage, the following actions came to the forefront with high mean scores: development of value-added services; transforming the organisation to adapt to the new environment; product differentiation; faster product development/progress products to launch on time; and quality of new products. Ranking according to mean scores will be done in the next section.

Leadership and vision; management of information; development of core competencies; and the ability to create lasting relationships was seen as the most important factors by pharmaceutical management when asked to list their opinion on the importance of listed terms, question 8, as a contribution to future competitiveness of their pharmaceutical companies (again, comparing the values of the mean scores).



### 8.2.3 Discussion and analysis of exploratory results

Of the 50 respondents, 30% are currently employed as CEOs or general managers of multinational pharmaceutical companies, 20% work as marketing managers, 18% as sales managers and 32% of the sample's current designation is in managed health care; 70% of the respondents are employed in research-based ethical multinational pharmaceutical companies, 2% in biotech therapeutics and 26% in a multinational pharmaceutical company operating within more than one of the specified market sectors.

For questions 1, 2, 6 and 8 mean scores and standard deviations were calculated for each question and then ranked from those with the highest mean score to those with the lowest mean score (mean score and standard deviation results were presented in section 8.2.2). It can be argued that factors with high mean scores are rated by pharmaceutical executives as having a greater importance than those with low mean scores. Tables 8.6, 8.7, 8.8 and 8.9 below show the listed choices ranked from completely unimportant to very important for the sample (n=50) for questions 1, 2, 6 and 8.

**TABLE 8.6 IMPORTANCE OF LISTED COMPETITIVE WEAPONS**

Ranking	Mean importance score	Std Dev.	Description
1	3,80	0,40	Cost-effectiveness
2	3,61	0,53	Quality of care
2	3,61	0,64	Introducing new products
3	3,44	0,56	Added value services
4	3,34	0,48	Price
5	2,77	0,78	Discounting/rebates
6	1,94	0,90	Introducing cheaper generics

Source: Question 1 (As managed health care is introduced into the South African health care market, how importantly will the following competitive weapons be in your organisational strategy?)

In the analysis of the results in this table it can clearly be seen that pharmaceutical companies in South Africa view cost-effectiveness as the most important competitive weapon in their organisation's strategy. This could be the result of managed health care placing a great emphasis on the pricing of pharmaceutical products in South Africa. Squeezing pharmaceutical suppliers on the cost of their products is a typical managed health care strategy in lowering health care cost and is usually one of the first strategies to be implemented.

Since lower prices require lower costs, suppliers will be the main contributors to the new cost structures of the providers. Although pharmaceuticals are arguably the most cost-effective as well as the smallest element in health care costs, and are dwarfed by the cost of labour, pharmaceutical companies' defencelessness makes them an easy target for becoming the major contributor to the margin shift from suppliers to providers in the short term. Pressure on prices will intensify in line with the expected consolidation of providers and will continue over time.

This will result from the sequential impact of managed competition, due to the different stages of evolution of the managed care concept in the industry's key markets. For example, while cost pressures are already strong from health maintenance organisations, preferred provider organisations and pharmacy benefit management in the USA, the full impact of fund-holding general practitioners and of the conversion of hospitals to self-governing trusts will start to be felt in the UK, due to the incremental effect of the implementation of these managed health care developments. Similarly, the planned competition between the Krankenkassen in Germany and the economic neutralisation in Japan of the prescribing dispenser will become important. Locally, in South Africa, the cost pressures from pharmacy benefit management, health maintenance organisations, preferred provider organisations, general practitioner-driven independent practitioner associations and the private hospital sector already play an important role in the daily operations of multinational pharmaceutical companies.

In the researcher's opinion the South African pharmaceutical organisation must make the full paradigm shift of focussing on the cost effectiveness and the quality of their products by investing in good pharmacoeconomic and outcome studies. It is promising to see that these two factors feature in positions 1 and 2 on the list in table 8.6. Not unexpected is the high value placed on discounting and rebates of pharmaceutical products. This is the typical strategy used in the USA with mixed results. South African pharmaceutical organisations have adopted the same approach with very similar results as the USA market. Again, the paradigm shift needs to be made and the focus should be rather on value added-services. The fact that cost-effectiveness and quality head the list of means scores shows an understanding by pharmaceutical management of the fundamentals of managed health care where the primary competitive weapons are price and quality of care. The paramount factors in South Africa are attracting new and retain existing beneficiaries/patients.

**TABLE 8.7 IMPORTANCE OF MANAGED CARE USAGE REGULATIONS**

<b>Ranking</b>	<b>Mean importance score</b>	<b>Std dev.</b>	<b>Description</b>
1	3,50	0,74	Treatment guidelines and protocols
2	3,38	0,73	Drug utilisation review
2	3,38	0,67	Pharmacoeconomic studies
3	3,34	0,8	Outcomes management
3	3,34	0,77	Disease management
4	3,18	0,72	Formularies
5	3,08	0,67	Therapeutic substitution
6	3,04	0,67	Capitation
7	3,02	0,80	Generic substitution

Source: Question 2 (An increasing number of usage regulators are being introduced in the South African health care market to influence the choice of the type of pharmaceutical therapy/care selected for a specific diagnosis.)

As mentioned it is interesting to note that pharmaceutical management has taken note of the importance of managed health care usage regulators. However, it is one thing to note the importance of something and another to strategise and align organisational objectives in a proactive manner. The high ranking of treatment guidelines and protocols was somewhat surprising. Formularies were expected to be at the top of the list, as formulary participation is the current focus of pharmaceutical organisations. The ranking of drug utilisation review as a usage regulator at the top of the table, with two of the instruments that drug utilisation uses as a usage regulator at the bottom of the table (therapeutic and generic substitution) shows that the pharmaceutical industry does not fully understand the process of usage regulators. The three usage regulators that the pharmaceutical industry currently spends a lot of resources on in developmental strategies (pharmacoeconomic studies, outcomes management and disease management) rank highly as would be expected.

**TABLE 8.8      ACTIONS TO KEEP COMPETITIVE ADVANTAGE**

<b>Ranking</b>	<b>Mean importance Score</b>	<b>Std dev.</b>	<b>Description</b>
1	4,52	0,61	Quality of care
2	4,44	0,61	Product differentiation
3	4,40	0,76	Faster product development/progress products to launch on time
4	4,32	0,74	Transforming the organisation to adapt to new environment
4	4,32	0,74	Use of novel drug delivery systems and other methods to expand product life cycle
5	4,30	0,81	Develop added value services (eg, disease management)
6	4,26	0,69	Controlling the rising costs of marketing and sales
7	4,20	0,57	Product bundling
7	4,20	0,57	Pricing policies
8	4,18	0,83	An integrated health care delivery approach
9	4,16	0,77	Collecting and using outcomes data to decide product efficacy
10	4,08	0,85	Use of pharmacoeconomic data to justify product prices
11	4,04	0,64	Increasing product life through patent protection of individual chemical entities
12	3,88	0,90	Investing in sophisticated information technology
13	2,80	0,57	Developing new sales and marketing strategies to new customer base

14	2,76	0,52	Educating marketing and sales on managed health care principles
15	2,66	0,56	Controlling the rising cost of R & D
16	2,60	0,70	Alliances/partnerships with managed care organisations
17	2,44	0,61	Focussing on demand side management
18	2,36	0,83	Partnerships/alliances with other manufacturers
19	1,92	0,83	Replacing key prescription products with lower margin products
20	1,90	0,79	Rebates to keep products on limited lists/formularies
21	1,84	0,77	Withdrawal of low margin products
22	1,70	0,74	Discounting to keep products on limited lists/formularies

Source: Question 6 (Respondents had to indicate whether they agree or disagree with listed actions which pharmaceutical companies might take to keep their competitive advantage)

It was surprising to see that discounts and rebates paid to keep pharmaceutical products on formularies/limited lists appeared low on the mean scores. This is surprising as this is the present strategy of most pharmaceutical organisations in the South African health care environment with rebates being paid to many managed care organisations (cannot be substantiated with published documents as this strategy is a confidential agreement between parties involved. Knowledge of the preferred practice comes with managing the managed care division of a big multinational pharmaceutical company for the last six years). It must be noted that most of the actions measured in this question will, if applied as actions to keep a competitive advantage for pharmaceutical organisations, be subjective to and a function of management's perceptions, beliefs and attitudes regarding certain strategic actions.

Issues which James (1994) viewed as important in reducing health care costs similar to disease management, patient education programmes, pharmacoeconomic data collection and providing these studies to managed care organisations to justify products prices, positioning pharmaceutical products in an integrated health care delivery approach, collecting and using outcomes data to show pharmaceutical products efficacy, alliances with managed care organisation who has the capabilities in information technology management tools to assist pharmaceutical companies in disease management, and outcomes management, education on managed health care principles was not mentioned

Various reasons could be put forward for the ranking of the mean score results, but it is the researcher's opinion that pharmaceutical organisations are still in a state of denial regarding the impact of managed health care on their organisations. Other reasons could be that the present strategy of discounts/rebates for formulary listings and market share growth could have positive spinoffs; the pharmaceutical industry in South Africa is still in a state of prosperity and the attitude of why address these issues if we are still achieving our sales targets and above average profitability.

The first three actions ranked in table 8.8 to keep a competitive advantage is in line with the success story of a traditional marketing strategy adapted by the multinational pharmaceutical organisations over the last 10 years. Focus on the quality of a product received, product differentiation and bring new products to the market as fast as possible even without added benefits to existing products on the market. The influence of the traditional marketing strategy (focus on the medical practitioner) can also be seen with the high ranking of novel drug delivery systems and other methods to expand the product life cycle, product bundling and pricing policies to stay competitive against other pharmaceutical products.

Table 8.9

## FUTURE COMPETITIVENESS 200

Ranking	Mean importance score	Std dev.	Description
1	3	0,00	Ability to create lasting relationships with customers
2	2,98	0,14	Customer's perception of the value of new products
2	2,98	0,14	Leadership and Vision
3	2,96	0,20	Supplying solutions perceived by customers to be valuable
4	2,94	0,31	Management of information
5	2,92	0,27	Development of new core competencies
6	2,88	0,44	Adaptability
7	2,84	0,51	Foster new behaviour patterns and attitudes
8	2,82	0,39	Creating new value propositions
8	2,82	0,44	Customer's perception of the cost of new products
8	2,82	0,48	Integrated programmes of top-down and bottom-up business transformation
9	2,78	0,51	Change management
10	2,76	0,59	Modernise organisational culture and values
11	2,74	0,53	Positioning in new health care value chain
11	2,74	0,60	Ability to manage a diverse set of alliances
12	2,72	0,50	Global presence
13	2,70	0,61	Reframing visions and cultures
14	2,56	0,64	Managing up
15	2,54	0,65	Becoming a high-value, low-cost supplier
16	2,52	0,65	Demand side management
17	2,48	0,68	Outsourcing of skills and functions
18	2,12	0,77	Less function integration

Source: Question 8 (Respondents had to indicate whether they consider listed statements as important or unimportant to future competitiveness of pharmaceutical companies in a managed health care environment)

The most influential factor in the successful marketing and sales of any product and service, besides the price and quality, is the ability to create lasting relationships with customers. This strategy has been the success factor of the pharmaceutical industry for many years so it is not surprising that it is still regarded as the most important factor for the industry's success in future competitiveness by pharmaceutical management. This factor scored a perfect 3 as a mean score, which indicates that all respondents were unanimous on the importance of creating lasting customer relationships.

The researcher was surprised though not to see change management also heading the list as it is one of the most discussed topics in the health care industry at present. The recognition of strong leadership and a clear vision to be competitive in the future health care environment was encouraging.

The perception of customers of the value of new pharmaceutical products and supplying solutions perceived by customers to be valuable were rated second and third based on the means importance scores. Could the importance of this be as a result of managed care organisations' view (customers) of declining satisfaction with new pharmaceutical products? According to James (1994:17), many managed care customers now perceive that a great deal of the new products reaching the market is either derivatives, like the twenty-eight ACE inhibitors (anti-hypertension tablets) on the market or in a late stage of development, or offer a low level of therapeutic or safety advantages or cost savings over existing products. Class and therapeutic substitution are customer responses to poorly perceived value. James (1994:18) is adamant that in customer-led markets (managed health care) the customers' perception of value is paramount. Products that do not meet customers' criteria will not recoup the investment made in them. The key question for pharmaceutical companies is what can be done to tailor innovative output to match more closely the needs of sophisticated, cost-conscious, value-driven customers? With sophisticated managed health care customers able and motivated to make choices based on their perceptions of value, will there be a future market for a large number of "me too" products in a category, or is it becoming economically futile to develop such products? Only products that offer significant cost saving through the health care chain will be chosen.

The burning issue for most pharmaceutical companies is whether they have the capability to convince their customers to pay a premium to cover the cost and return of an acceptable profit for developing products with little differentiation. Many of the unconquered conditions that offer new business opportunities, like cancer, migraine and multiple sclerosis, have relatively small numbers of patients under treatment. In a number of categories significant products have yet to be introduced due both to the difficulty of finding appropriate new compounds and the complexity of the development process.



At the same time, providers and medical aids in South Africa are wrestling with the thorny issue of whether society can afford the costs of heroic efforts to keep every patient alive for as long as possible. For pharmaceutical companies, the question is not only whether they can rapidly bring to the market unique products which are truly successful in treating unconquered diseases, but also whether they can obtain the high unit prices necessary to pay for leading-edge research in small volume markets. Paradoxically, while there are overwhelming pressures to invest further up the technology curve to develop truly innovative products, companies will now incur severe economic penalties for failure.

### **8.3 ANALYSIS OF VARIANCE**

Analysis of variances (ANOVA) allows a researcher to compare two or more populations of quantitative data and to determine whether differences exist among population means (Keller and Warrack 1997:577). The technique analyses the variance of the data to determine whether a researcher can infer that a population means differs (Keller and Warrack 1998:578).

In this study, the reason for using analysis of variances is to decide which of the independent variables, CEO/general manager, marketing manager, sales manager and managed health care manager and their attitudes regarding the competitive weapons in strategy, usage regulators used by managed healthcare, actions that can be taken to keep competitive advantage and contribution of named factors to future competitiveness, are different among the pharmaceutical designation (population) means.

#### **8.3.1 Analysis of variance results for question 1 (competitive weapons)**

The ANOVA results of question 1 provided no statistical evidence that there is a difference among population means of CEOs, marketing managers, sales managers and managed health care managers of the importance of price, quality of care, cost-effectiveness, discounting/rebates, introducing new products and introducing cheaper generics as competitive weapons in pharmaceutical organisational strategy in a managed health care environment.

There was no significant evidence in using this statistical technique (ANOVA) to allow a comparison of the views of different pharmaceutical designations on the importance of competitive weapons in organisational strategy, (eg, marketing managers believing that price is more important as a competitive weapon than the sales managers or managed health care managers).

### 8.3.2 Analysis of variance results for question 2 (usage regulators)

When populations are not the same, the between-column variance (which was derived from the variance among the sample means) will tend to be larger than the within-column variance (which was derived from the variances within the samples, and the value of F will tend to increase. There was no significant evidence in using this statistical technique (ANOVA) to allow a comparison of the views of different pharmaceutical designations on the importance of usage regulators in organisational strategy. Other techniques were explored to relate the data received for this section of the questionnaire. The ANOVA results for CEOs/general managers, marketing managers, sales managers and managed care managers' views of importance for managed care usage regulators in the pharmaceutical company's strategy with the introduction of managed health care can now be reported, analysed and discussed.

**TABLE 8.10 CAPITATION**

Source of Variation	Sum of squares	D.F.	Mean of squares	F	P-value
Between groups	4,1603	3	1,3868	3,5919	0,0205
Within groups	17,7597	47	0,3861		
<b>Total</b>	<b>21,9200</b>	<b>50</b>			

The P-value is 0.0205, which means there is evidence to infer that capitation as a managed care usage regulator is viewed differently in at least two pharmaceutical designations who answered the questionnaire. The statistical data provide enough evidence to infer that there is a difference of opinion in the pharmaceutical management ranks on the importance of risk-sharing on a fixed fee per head, otherwise known as capitation, as a usage regulator to influence the choice of the type of pharmaceutical therapy/care selected for a specific diagnosis. Capitation scored a mean rank of importance of 3.04 and was ranked as the sixth most important managed health care usage regulator. Based on frequency analysis results, 28 respondents viewed capitation as important, with 12 respondents viewing capitation as a very important usage regulator. Thus, 80% of the respondent viewed capitation as an important usage regulator. Where the difference of opinion lies within the different pharmaceutical designations has to be determined by using another statistical analysis. This is done later in this chapter.

**TABLE 8.11 DISEASE MANAGEMENT**

Source of variation	Sum of squares	D.F	Mean of squares	F	P-value
Between groups	4,4478	3	1,4826	2,7531	0,0532
Within groups	24,7722	47	0,5386		
<b>Total</b>	<b>29,2200</b>	<b>50</b>			

The purpose of calculating the F-statistic is to determine whether or not the value of the sum of squares treatment (SST) is large enough to reject the assumption. The value of F is 2.7531. Thus, it can be concluded that there is enough evidence to suggest that pharmaceutical management opinion on the importance of disease management as a usage regulator differ between the different designation. The assumption must be rejected. Further statistical analysis is needed to determine where the differences of opinion in the population lie.

### 8.3.3 Analysis of variance results for question 6 (possible actions to be taken to keep a competitive advantage)

The ANOVA results for pharmaceutical designations views on actions to be taken in a managed care environment to keep their competitive advantage (question 6 in the questionnaire) can now be reported, analysed and discussed.

**TABLE 8.12 EDUCATING MARKETING AND SALES ON MANAGED CARE PRINCIPLES**

Source of variation	Sum of squares	D.F	Mean of squares	F	P-value
Between groups	1,6867	3	0,5622	2,2620	0,0938
Within groups	11,4333	47	0,2486		
<b>Total</b>	<b>13,1200</b>	<b>50</b>			

The analysis of variances determines that there is enough statistical evidence to show that the assumption that education of managed care principles is viewed the same by all managers questioned. This implies that there is enough evidence to suggest that education of marketing and sales on managed care principles is not viewed the same by the different management designations with the pharmaceutical organisation, as an action the gain a competitive advantage. Further statistical analysis must be done to reveal where the differences of opinion lie within pharmaceutical management.

**TABLE 8.13 REBATES TO KEEP PRODUCTS ON LIMITED LISTS/FORMULARIES**

Source of variation	Sum of squares	D.F	Mean of squares	F	P-value
Between groups	4,4403	3	1,4801	2,6126	0,0625
Within groups	26,0597	47	0,5665		
<b>Total</b>	<b>30,5000</b>	<b>50</b>			

This factor was probably the most discussed issue in the pharmaceutical industry during the period when this study was done, so it comes as no surprise that there are different views on paying rebates to managed care organisations to keep products on limited lists or formularies in the ranks of a pharmaceutical management team. Statistically it means that the assumption must be rejected as there is no evidence to suggest that the sample means are equal.

#### **8.4 CHI-SQUARED TEST FOR A CONTINGENCY TABLE**

In this section, investigation of qualitative data is done by using the statistical technique, a chi-squared test of a contingency table. The chi-squared test of a contingency table is used to determine whether there is enough evidence to infer that two qualitative variables are related and to infer that differences exist among two or more populations of qualitative variables. The problem objective is to analyse the relationship between the two variables (Keller and Warrack 1997:682).

As a result of a low number of cells with expected frequency of less than a 5% confidence interval it was necessary to look at the mean rank data. The discussion of the results is being done on the mean ranks and the assumption that there is significant difference in the mean ranks of the different factors and designations. This is the case for the majority of the factors. If there was significant statistical evidence, the Pearson and Likelihood ratio chi squared results are given and the results discussed.

#### 8.4.1 Chi-squared test for question 6 (actions which pharmaceutical companies might take to keep their competitive advantage)

TABLE 8.14 WITHDRAWAL OF LOW MARGIN PRODUCTS

Importance of contribution	CEO/GM	Marketing manager	Sales manager	Managed care	Row total
Disagree	5	4	4	6	19
Neither	9	5		6	20
Agree	1	1	5	4	11
Column total	15	10	9	16	50

Chi-square significance	Value	D.F.	P-value
Pearson	12,50020	6	0,05140
Likelihood ratio	15,27101	6	0,01825

The null hypothesis must be rejected with a 95% confidence interval. There is thus no correlation between the designations in a pharmaceutical organisation and the option on agreement of future action for their organisations. From the mean rank data 38% of the pharmaceutical management team disagree with the action of withdrawal of low margin products; 40% of the respondents neither agree nor disagree and the remaining 22% agree that this action would be a good strategy.

#### 8.4.2 Chi-squared test for question 8 (contribution to future competitiveness in a managed health care environment)

Histograms based on the frequency of the respondent's choices for this question are presented in appendix B. Based on a low number of cells with an expected frequency, statistical evidence is not as reliable as expected and assumptions based on mean rank scores are used in the interpretation of the data.

TABLE 8.15 MANAGEMENT OF INFORMATION

Importance of contribution	CEO/GM	Marketing manager	Sales manager	Managed care	Row total
Unimportant		1			1
Neither	1				1
Important	14	9	9	16	48
Column total	15	10	9	16	50

Minimum expected frequency 0,180  
 Cells with expected frequency <5 8 of 12 (66,7)

Looking only at the mean rank data the following assumption can be made: the management of information is viewed as important to pharmaceutical executives. The distribution of the importance of this factor is also equally distributed between the different designations (populations) who completed the questionnaire. The current investment by pharmaceutical organisations in information technology highlights the importance of information technology as strategy for future competitiveness in the healthcare environment. It is predominately used to analyse information purchased from providers on own and competitor market shares within a given market, targeting of key customers, measurement of sales representatives and market trends.

**TABLE 8.16 LEADERSHIP AND VISION**

Importance of contribution	CEO/GM	Marketing manager	Sales manager	Managed care	Row total
Unimportant					
Neither			1		1
Important	15	10	8	16	49
Column total	15	10	9	16	50

Minimum expected frequency            0,180  
 Cells with expected frequency        <5    4 of 8 (50%)

Considering the mean rank data only, the following assumption can be made from the data: leadership and vision are an important factor in the South African pharmaceutical management team. Those who lead the transformation process largely determine its course. Therefore, strong and good leadership is the key in contributing to future competitiveness and sets the tone and direction of the company's future. Senior leadership, in turn, encourages key qualities of transformational leadership at lower levels of management, creating a top-down, cascading migration of responsibility, motivation, and commitment, down and throughout the organisation. A vision outlines a strategic and lofty action plan and provides a shared mental framework that gives form to that future. The notion of an unrealized vision provides energy to make a transformational jump.

**TABLE 8.17 GLOBAL PRESENCE**

Importance of contribution	CEO/GM	Marketing manager	Sales manager	Managed care	Row total
Unimportant				1	1
Neither	3	5	1	3	3
Important	12	5	8	12	12
Column total	15	10	9	16	50

Minimum expected frequency 0,180  
 Cells with expected frequency <5 8 of 12 (66,7%)

A global presence is viewed as important by 74% of the respondents in this study; 24% did not view a global presence of a pharmaceutical company as either important or unimportant and 2% viewed global presence as unimportant in contributing to the future competitiveness of a pharmaceutical company in a managed health care environment. Based on the fact that most of the research and development innovation is done internationally, it could be a natural choice that most South Africa pharmaceutical managers would prefer to have that international pipeline in an organisation with a global presence. Networking with colleagues in other markets can also benefit local managers. A good example is using the US experiences with managed care.

**TABLE 8.18 CUSTOMERS' PERCEPTION OF THE COST OF NEW PRODUCTS**

Importance of contribution	CEO/GM	Marketing manager	Sales manager	Managed care	Row total
Unimportant		1			1
Neither	2		3	2	7
Important	13	9	6	14	42
Column total	15	10	9	16	50

Minimum expected frequency 0,180  
 Cells with expected frequency <5 8 of 12 (66,7%)

Of the respondents, 84% see the customer's perception of the cost of pharmaceutical products as important, while 14% selected neither important nor unimportant. One person (2% of the sample) viewed the customer's perception of the cost of new products as unimportant. The perception of price of pharmaceutical products will always be a contentious issue as managed health care implements cost reducing programmes to modify the behaviour of prescribers, dispensers and patients.

**Table 8.19 CUSTOMERS' PERCEPTION OF THE VALUE OF NEW PRODUCTS**

Importance of contribution	CEO/GM	Marketing manager	Sales manager	Managed care	Row total
Unimportant					
Neither			1		1
Important	15	10	8	16	49
Column total	15	10	9	16	50

Minimum expected frequency 0,180  
 Cells with expected frequency <5 4 of 8 (50%)

Of the respondents, 98% see the customer's perception of the value of pharmaceutical products as important, while 1 respondent (2%) selected neither important or unimportant. As discussed previously, could the importance of this be as a result of managed care organisation's declining satisfaction with new pharmaceutical products? The key question for pharmaceutical companies is what can be done to tailor innovative new pharmaceutical products to match more closely the needs of sophisticated, cost-conscious, value-driven customers? With sophisticated managed healthcare customers are able and motivated to make choices based on their perceptions of value, will there be a future market for a large number of "me too" products in a category, or is it becoming economically futile to develop such products?

**TABLE 8.20 ADAPTABILITY OF ORGANISATION TO A MANAGED HEALTH CARE ENVIRONMENT**

Importance of contribution	CEO/GM	Marketing manager	Sales manager	Managed care	Row total
Unimportant		1		1	2
Neither	1		1		2
Important	14	9	8	15	46
Column total	15	10	9	16	50

Minimum expected frequency 0,360  
 Cells with expected frequency <5 8 of 12 (66,7%)

There is enough evidence to infer that South African pharmaceutical management's opinion of the importance of the adaptability of their organisations to be competitive in a future managed health care environment is high. Of the respondents, 92% view this factor as crucial with 4% saying it is unimportant. The remaining 4% are undecided.



**TABLE 8.21 MANAGING UP IN A MULTINATIONAL ORGANISATION HIERARCHY**

Importance of contribution	CEO/GM	Marketing manager	Sales manager	Managed care	Row total
Unimportant		2	2		4
Neither	5	3		6	14
Important	10	5	7	10	32
Column total	15	10	9	16	50

Minimum expected frequency 0,720  
 Cells with expected frequency <5 8 of 12 (66,7%)

The data infer that there is enough evidence to show that in the pharmaceutical management's opinion the factor of managing up in the multinational organisation is an important factor (64%), to be competitive in a turbulent healthcare environment. Fourteen respondents or 28% of the sample was undecided on the importance of managing up. Eight percent of the respondent views this factor as unimportant. This can be attributed to the fact that most South African multinational pharmaceutical organisations report into a European region with management responsibilities for a number of countries with a higher ranked strategic importance than South Africa.

**TABLE 8.22 DEMAND SIDE MANAGEMENT (PATIENTS ASKING FOR SPECIFIC PRODUCTS)**

Importance of contribution	CEO/GM	Marketing manager	Sales manager	Managed care	Row total
Unimportant		2	2		4
Neither	5	3	2	6	16
Important	10	5	5	10	30
Column total	15	10	9	16	50

Minimum expected frequency 0,720  
 Cells with expected frequency <5 7 of 12 (58,3%)

Of the respondents, 60% see patients asking their medical practitioners for specific pharmaceutical products (demand side management) as important, 28% selected neither important nor unimportant; 8% or 4 respondents viewed this factor as unimportant. In the USA, where managed care has been established for more than forty-five years respondents in Scott-Levin (2000:11) reported an interesting response to the managed care presence by commenting that the pharmaceutical industry has increased its direct-to-consumer (DTC) advertising. DTC advertising is intended to push consumers to question managed care formularies and are typical of a demand side management strategy.

**TABLE 8.23 REFRAMING VISIONS AND CULTURES**

Importance of contribution	CEO/GM	Marketing Manager	Sales Manager	Managed Care	Row Total
Unimportant		2	2	4	4
Neither	2	1		12	7
Important	13	7	7		39
Column Total	15	10	9	16	50

Minimum expected frequency 0,720  
 Cells with expected frequency <5 8 of 12 (66,7%)

Of the respondents, 78% view reframing of vision and cultures in the pharmaceutical organisation as important; 14% do not view this factor as either important or unimportant, and 8% view it as unimportant. Gouillart and Kelly (1995:7) define reframing as the shifting of the company's conception of what it is and what it can achieve. Organisations often get stuck in a certain way of group thinking, and lose the ability to develop fresh mental models of what they are and what they could become.

**TABLE 8.24 INTEGRATED PROGRAMMES OF TOP-DOWN AND BOTTOM-UP BUSINESS TRANSFORMATION**

Importance of contribution	CEO/GM	Marketing manager	Sales manager	Managed care	Row total
Unimportant		2			2
Neither	1	1	1	2	5
Important	14	7	8	14	43
Column total	15	10	9	16	50

Minimum expected frequency 0,360  
 Cells with expected frequency <5 8 of 12 (66,7%)

The majority (86%) of pharmaceutical executives view programmes of integrated top-down and bottom-up business transformation as important to pharmaceutical executives. The distribution of the importance of this factor is also equally distributed between the different designations (populations) who completed the questionnaire. Only 2 or 4% of marketing managers were of the opinion that this factor was unimportant.

**TABLE 8.25 DEVELOPMENT OF NEW CORE COMPETENCIES**

Importance of contribution	CEO/GM	Marketing manager	Sales manager	Managed care	Row total
Unimportant					
Neither	1		3		4
Important	14	10	6	16	46
Column total	15	10	9	16	50

Minimum expected frequency 0,720  
 Cells with expected frequency <5 4 of 8 (50%)

Of the respondents, 92% view the development of new core competencies as very important to be competitive in a future managed health care environment. The key issue in marketing and sales in a managed care environment (according to the KPMG survey) is a movement from the traditional product-based marketing approach to a customer-based approach, designed to meet customer needs. The existence of managed care will drive the requirement for a new set of core competencies not yet required to fundamentally launch and promote new products successfully (Scott-Levin 2000:10).

**TABLE 8.26 ABILITY TO MANAGE A DIVERSE SET OF ALLIANCES**

Importance of contribution	CEO/GM	Marketing manager	Sales manager	Managed care	Row total
Unimportant		2	2		4
Neither	3	1		1	5
Important	12	7	7	15	41
Column total	15	10	9	16	50

Minimum expected frequency 0,720  
 Cells with expected frequency <5 8 of 12 (66,7%)

Of the respondents, 82% view the ability of a pharmaceutical organisation to manage a diverse set of alliances with customers as very important to pharmaceutical executives. The reason for this might be the understanding that in the future alliances will have to be formed to gain access to markets and forge lasting relationships with a wide array of customers. For example, putting together an effective disease management programme requires not only strong education and communication skills, but also partnerships with providers to ensure that the programme functions effectively at the prescriber and patient levels through the use of monitoring and counselling services. Similarly, opportunities exist for integrating managed health care organisations into the clinical development programme, not only to improve product-customer fit but also to reach large numbers of patients to get early information on pharmacoeconomic as well as clinical value so as to speed up the regulatory process.

**TABLE 8.27 BECOMING A HIGH VALUE, LOW COST SUPPLIER**

Importance of contribution	CEO/GM	Marketing manager	Sales manager	Managed care	Row total
Unimportant	1	1	1	1	4
Neither	4	4		7	15
Important	10	5	8	8	31
Column total	15	10	9	16	50

Minimum expected frequency                      0,720  
 Cells with expected frequency            <5      8 of 12 (66,7%)

Of the respondents, 62% see that becoming a high value, low cost supplier is important as a future pharmaceutical strategy in a managed care scenario; 30% regard it as neither important nor unimportant, and 8% (4) view this factor as unimportant as a future strategy. In the absence of other measures, product acquisition cost has become the driving issue for cash strapped medical aids, managed care organisations and patients. Even when the market turns away from cost to value as the key criterion for product selection, cost will remain a critical factor in survival and success. With managed health care customers probably having more say on pharmaceutical product acquisition costs or price in the future, pharmaceutical companies need to re-examine the underlying assumptions and premises on which every decision is made and action taken, not only within the discrete components but also along the chain from finding, developing, manufacturing and marketing to selling a pharmaceutical product. The objective must be to determine what needs to be done not merely better but, more important, differently, in order significantly to reduce system costs. It is the researcher's opinion that pharmaceutical companies now have little option but to take a relentless approach to becoming low-cost suppliers.

**TABLE 8.28 ABILITY TO CREATE LASTING RELATIONSHIPS WITH CUSTOMERS**

Importance of contribution	CEO/GM	Marketing manager	Sales manager	Managed care	Row total
Unimportant					
Neither					
Important	15	10	9	16	50
Column total	15	10	9	16	50

All the respondents (100%) indicated that the ability of a pharmaceutical organisation to create a lasting relationship with customers is very important to pharmaceutical executives. A number of companies have now moved beyond the traditional focus on medical practitioners: for example, Rhone Poulenc Rorer's direct marketing effort to drug utilisation pharmacists and case managers in medical aids, health maintenance organisations, pharmacy benefit management and mail order pharmacies accompanied with general health care marketing to benefit managers in large employers groups in South Africa.

In tomorrow's managed health care marketplace, while the decision points will be more heavily focussed at the organised buyer level in pharmacy benefit management, managed care organisations and medical aids, the influence points are becoming much more dispersed. Patients, their families and advisory groups, community and social services, nurses, paramedics, clinical pharmacologists, health care economists and employers are all growing in their ability to influence the treatment of disease and, ultimately, the therapies and drug regimens selected. To compete successfully in a world of exploding influence, companies have to build not only an intimate knowledge of their customers and identify their agendas but also develop specific programmes to meet their needs. The move towards a seamless, integrated health care market is creating a network of influences in its wake. The price for admission to full partnership with customers is the ability to create shared values for all customers along the value chain.

The KPMG Report, *Managing transformation in the new economy* (1995:8), states that developing a closer relationship to the customer than the competitor, in order to integrate the customer into a process to figure out together how to provide a better overall solution (which may be more expensive or time consuming but nevertheless holds more delivered customer value) can contribute to future competitiveness.

**TABLE 8.29 SUPPLYING SOLUTIONS PERCEIVED BY CUSTOMER'S TO BE VALUABLE**

Importance of contribution	CEO/GM	Marketing manager	Sales manager	Managed care	Row total
Unimportant					
Neither	1	1			2
Important	14	9	9	16	48
Column total	15	10	9	16	50

Minimum expected frequency                      0,360  
 Cells with expected frequency                      <5      4 of 8 (50%)

Of the respondents, 96% view supplying solutions perceived by customers to be valuable as important and only 2% are unsure if it will help them in creating a competitive advantage for their organisations. This indicates that pharmaceutical management is realising the fact that the old approach of a prescription drug as a discrete entity is no longer valid. Managed health care customers are able to make their own value judgements which go beyond the traditional measures of safety and efficacy into the realm of price. With large numbers of undifferentiated products, price has become the sole arbiter. Unless managed health care customers clearly see that future products fulfil their value expectations, pharmaceutical companies are unlikely to achieve prices which cover their development and introduction costs. Managed health care organisations now realise that solutions require more than just the provision of a product. Solutions may involve taking risk on products, capitating the cost of a pharmaceutical product, a therapy, the total pharmaceutical product cost, a disease state and even total health care spending, as well as the management of a disease. Thus they can encompass the provision of pharmaceutical products and related products, intervention and counselling, together with training to ensure that approved treatment programmes are followed.

To compete successfully in a managed care world of capitation and disease management, pharmaceutical companies will need to build a set of core competencies ranging from actuarial, patient and information-management skills to training and education, as well as develop the skills needed to form and manage alliances with suppliers, competitors, providers, payers and patients in order to assemble, distribute and manage a "solutions" approach.

**TABLE 8.30      OUTSOURCING SKILLS AND FUNCTIONS**

<b>Importance of contribution</b>	<b>CEO/GM</b>	<b>Marketing manager</b>	<b>Sales manager</b>	<b>Managed care</b>	<b>Row total</b>
<b>Unimportant</b>		2	3		5
<b>Neither</b>	5	3	2	6	16
<b>Important</b>	10	5	4	10	29
<b>Column total</b>	15	10	9	16	50

Minimum expected frequency                      0,900  
 Cells with expected frequency                <5      7 of 12 (58,3%)

Of the respondents, 58% of the pharmaceutical executives view the outsourcing of skills and functions as important. It is interesting to note that 66% of the CEOs/general managers view this factor as important, 32% of all the respondents selected the neither important nor unimportant box and 10% saw the outsourcing function as an unimportant competitive edge. It is the researcher's opinion that there will be an increased utilisation of contract sales representatives in the South African health care market for a *blitzkrieg* on selected target markets, increased market penetration with the launch of new products, reduction in overhead cost with fewer permanent employees, and fewer problems with labour act issues. This could be the savings needed to be competitive on pricing policies with managed care organisations.

TABLE 8.31 CREATING NEW VALUE PROPOSITIONS

Importance of contribution	CEO/GM	Marketing manager	Sales manager	Managed care	Row total
Unimportant					
Neither	2	2	3	2	9
Important	13	8	6	14	41
Column Total	15	10	9	16	50

Minimum expected frequency 1,620  
 Cells with expected frequency <5 4 of 8 (50%)

The intense fiscal pressures of the South African health care market on both payers and providers and their growing sophistication has shifted their value perceptions away from the traditional “hard” issues of product safety and efficiency towards the “soft” issues of cost-effectiveness and outcomes. This has effectively destroyed the accepted pre-eminence of the “product”, which has been the very core of pharmaceutical companies competitive advantage for the last forty years. Simultaneously, the transfer of decision-making authority away from a large and fragmented group of individual decision-makers (medical practitioners) to a concentration of decision-making power among a few large customers, has irrevocably changed the balance of power in the marketplace. To survive in this new marketplace, pharmaceutical companies must develop new value propositions that get closer to the decision-making in managed care.

According to James (1994:52), two new value propositions are emerging: capitation and disease management. Capitation is the full provision of pharmaceutical product benefits over a fixed period at a fixed price, irrespective of utilisation. Disease management is a programme which provides pharmaceutical products and related products together with comprehensive training for patients, physicians, nurses and pharmacists, to follow approved treatment programmes and to intervene where necessary and provide follow-up. Both seek to bring a pharmaceutical company closer to the customer by integrating forward and by assuming part of the payer’s and/or provider’s risk.

These new mechanisms go beyond the traditional “value-added” approach to “shared value”, creating a new value perception by looking at the problem from the customer’s perspective to create a positive selling environment over the longer term. Packaging benefits, outcomes and risk, rather than selling the physical product is seen as the prime means to create partnerships and to overcome the old adversarial style of relationship. Of the respondents, 41 saw creating new value propositions as an important factor in providing a competitive advantage for their organisations in a managed health care setting. Nine respondents were not too sure if this was the right way to go.

**TABLE 8.32 POSITIONING IN THE NEW HEALTHCARE VALUE CHAIN**

Importance of contribution	CEO/GM	Marketing manager	Sales manager	Managed care	Row total
Unimportant		1	1		2
Neither	4	1	1	3	9
Important	11	8	7	13	39
Column total	15	10	9	16	50

Minimum expected frequency 0,360  
 Cells with expected frequency <5 8 of 12 (66,7%)

The drive towards managed care is forcing the payers (employers and medical aids) and the providers (medical practitioners, pharmacists and hospitals) to reappraise their whole approach to the delivery of health care. Payers and providers have come to the conclusion that the only way to manage costs is to improve effectiveness and efficiency by both forcing competition into the system and creating a new value chain encompassing all the previously discrete players and integrating their activities into a seamless system. This new value chain marginalises the ability of pharmaceutical companies to remain isolated players maintaining their own business chain and therefore it is important for pharmaceutical management to realise this fact. Of the respondents, 78% of the pharmaceutical executives view their organisation's positioning in the new health care value chain as important.

**TABLE 8.33 CHANGE MANAGEMENT**

Importance of contribution	CEO/GM	Marketing manager	Sales manager	Managed care	Row total
Unimportant		1	1		2
Neither	2	1	1	3	7
Important	13	8	7	13	41
Column total	15	10	9	16	50

Minimum expected frequency 0,360  
 Cells with expected frequency <5 8 of 12 (66,7%)

The need for a transformation stems from discontinuous change and environmental turbulence that can render current organisational practices valueless (Nutt and Backoff 1997:490). To respond, leaders must embrace change management to successfully transform their organizations. It is thus encouraging to see that 82% of the respondents see a change management programme as a key factor to be competitive in the future pharmaceutical industry.



**TABLE 8.34 FOSTER NEW BEHAVIOUR PATTERNS AND ATTITUDES**

Importance of contribution	CEO/GM	Marketing manager	Sales manager	Managed care	Row total
Unimportant		2	1		3
Neither	1	1			2
Important	14	7	8	16	45
Column total	15	10	9	16	50

Minimum expected frequency 0,360  
 Cells with expected frequency <5 8 of 12 (66,7%)

Of the respondents, 90% perceive fostering new behaviour patterns and attitudes as important while 2 are unsure if it will help them in creating a competitive advantage for the organisations, and 3 are of the opinion that it is an unimportant factor.

**TABLE 8.35 MODERNISE ORGANISATIONAL CULTURE AND ATTITUDES**

Importance of contribution	CEO/GM	Marketing manager	Sales manager	Managed care	Row total
Unimportant	1	2	1		4
Neither		1	1	2	4
Important	14	7	7	14	42
Column total	15	10	9	16	50

Minimum expected frequency 0,720  
 Cells with expected frequency <5 8 of 12 (66,7%)

Of the respondents, 90% view a programme of modernising the organisational culture and values as important to pharmaceutical executives. The distribution of the importance of this factor is also equally distributed between the different designations (populations) who completed the questionnaire. Only 4% (2) marketing managers and sales managers were of the opinion that this factor was unimportant and 1 CEO/general manager viewed this factor as unimportant.

**TABLE 8.36 LESS FUNCTIONAL INTEGRATION**

<b>Importance of contribution</b>	<b>CEO/GM</b>	<b>Marketing manager</b>	<b>Sales manager</b>	<b>Managed care</b>	<b>Row total</b>
<b>Unimportant</b>	2	2	3	5	12
<b>Neither</b>	5	5	2	8	20
<b>Important</b>	8	3	4	3	18
<b>Column total</b>	15	10	9	16	50

The explosion in skills and knowledge in the sciences and in the marketplace is now so great that no pharmaceutical company, however large, can be totally dependent on its in-house capabilities. Despite the ability to out source work, most pharmaceutical companies have been reluctant to move towards outsourcing as a major organisational strategy. This also comes to the forefront in this study with the data providing some interesting results with 36% of the respondent viewing less functional integration as important in its contribution to the future competitiveness of pharmaceutical companies in a managed healthcare environment; 40% were undecided in their opinion and 24% viewed it as unimportant in contributing to future competitiveness. The spread of selection between the different designation was also interesting with no real "out shooters" of opinion between the different functions. It is the researcher's opinion that in a managed health care marketplace, pharmaceutical organisations will need to learn how not to do things, how not to perform the functions that "outsiders" can do more efficiently.

#### 8.4.2 Chi-squared test for question 10 (characterising your organisation in a turbulent health care environment)

The frequency analysis as presented in histograms can be seen in appendix B.

**TABLE 8.37 LEVEL OF PRO-ACTIVENESS IN A TURBULENT HEALTH CARE ENVIRONMENT**

Characteristics of Organisation	CEO/GM	Marketing manager	Sales manager	Managed care	Row total
Low		4			4
Moderate	5	5	8	11	29
High	10	1	1	5	17
Column total	15	10	9	16	50

Chi-square significance	Value	D.F.	P-value
Pearson	24.23771	6	0.00047
Likelihood ratio	21.65633	6	0.00140

If the null hypothesis is true, designation within the pharmaceutical organisation and characterisation of the organisation option are independent of one another. This means that whether someone is the CEO/general manager, marketing manager, sales manager or managed care manager does not affect his or her choice of characterising his or her organisation. Consequently, there is no difference among CEO/general managers, marketing managers, sales managers and managed care managers in their selection of their options in the questionnaire. If the alternative hypothesis is true, organisational designation does affect which organisational characteristic option is preferred. Thus, there are differences among the four managerial groups. This the case here and therefore the null hypothesis must be rejected.

From the data it can be seen that 58% of the pharmaceutical management team see their level of proactiveness in a turbulent health care environment, as moderate. Of the respondents, 34% selected a high level of proactiveness, and 8% a low level. It is interesting to note that only marketing managers viewed their organisation's proactiveness as low (4 respondents).

TABLE 8.38 THE ORGANISATIONAL FUNCTIONAL CULTURE IS:

Characteristics of organisation	CEO/GM	Marketing manager	Sales manager	Managed care	Row total
Operational	3	5	5	2	15
Marketing	7	2	1	9	19
Strategic	5	1	3	3	12
Innovation and R & D		2		2	4
Column total	15	10	9	16	50

Chi-square significance	Value	D.F.	P-value
Pearson	15.68634	9	0.07373
Likelihood ratio	17.71921	9	0.03857

The null hypothesis specifies that there is no relationship between the two variables, characteristics of the organisation and the designation of the respondent within the organisation. This is the case here and therefore the null hypothesis must be rejected with 10% statistical significance. Looking at the mean rank data, it shows that there are differences of opinion between the different pharmaceutical designations on their organisational functional culture. There is also clear evidence to suggest that the pharmaceutical industry is not too sure what the functional culture of the industry is.

TABLE 8.39 MANAGEMENT SYSTEMS

Characteristics of organisation	CEO/GM	Marketing manager	Sales manager	Managed care	Row total
Structured limited flexibility	2	4	3	5	14
Structured readily adaptable	6	2	4	8	20
Dynamic flexible	5	3	1	3	12
Entrepreneurial	2	1	1		4
Column total	15	10	9	16	50

The data provides some interesting results with 40% of the respondent viewing their management systems as structured readily adaptable, 28% as structured with limited flexibility, 24% as dynamic flexible and only 8% as entrepreneurial. This is in all probability as a result of different organisational structure, cultures and strategies. The spread of selection between the different designation was also interesting with no real "out shooters" of opinion between the different functions.

**TABLE 8.40 SPEED WITH WHICH THE ORGANISATION RESPONDS TO CHANGE IN THE ENVIRONMENT**

Characteristics of organisation	CEO/GM	Marketing manager	Sales manager	Managed care	Row total
Slow	1	2	2	4	9
Moderate	7	6	6	10	29
Fast	7	2	1	2	12
Column total	15	10	9	16	50

The data infer that there is enough evidence to show that in the pharmaceutical management's view the speed with which their organisation responds to changes in the health care environment is seen as moderate (58%). Only 24% of the respondents were of the opinion that it was fast and the rest (18%) said it was slow.

**TABLE 8.41 MEASUREMENT SYSTEMS ARE BASED MOSTLY ON:**

Characteristics of organisation	CEO/GM	Marketing manager	Sales manager	Managed care	Row total
Past performance	1	4	5	6	16
Contribution to growth	10	5	4	9	28
Contribution to innovation	2			1	3
Entrepreneurship	2	1			3
Column total	15	10	9	16	50

The contribution to growth culture in the South African pharmaceutical industry is clearly evident as the most widely used measurement system with 56% of the respondents viewing their organisation's measurement systems as based on contribution to growth, while 32% measured on past performances and the remainder of measurements systems split equally with 6% each.

TABLE 8.42 ORGANISATIONS' MANAGEMENT STYLE

Characteristics of organisation	CEO/GM	Marketing manager	Sales manager	Managed care	Row total
Custodial	2	5	2	6	15
Inspirational goal orientated	7	1	4	8	20
Entrepreneurial	3	4	3	2	12
Creative	3				3
Column total	15	10	9	16	50

Chi-square significance	Value	D.F.	P-value
Pearson	15,43981	9	0,07954
Likelihood ratio	16,71878	9	0,05331

If the null hypothesis is true, designation within the pharmaceutical organisation and characterisation of the organisation option are independent of one another. This means that whether someone is the CEO/general manager, marketing manager, sales manager or managed care manager does not affect his or her choice of characterising his or her organisations. Consequently, there is no difference among CEO/general managers, marketing managers, sales managers and managed care managers in their selection of their options in the questionnaire. If the alternative hypothesis is true, organisational designation does affect which organisational characteristic option is preferred. Thus, there are differences among the four managerial groups. This the case here and therefore the null hypothesis must be rejected with a 90% confidence interval. From the data it can be seen that 40% of the pharmaceutical management team rate the organisational management style as inspirational goal orientated, 30% selected a custodial management style, 24% an entrepreneurial management style and only 6% viewed the organisation's management style as creative.

TABLE 8.43 PROPENSITY TO RISK

Characteristics of organisation	CEO/GM	Marketing manager	Sales manager	Managed care	Row total
Accept familiar risk	1	4	3	7	15
Seek familiar risk	8	4	4	6	22
Accept high risk	1	2	2	3	12
Seek high risk	5				1
Column total	15	10	9	16	50

Familiar risk is viewed as important by the majority of the respondents. However, 24% of the respondents will accept high risk but only 2% (1 respondent) will seek high risk. In the context of this research it could mean that pharmaceutical management accept their traditional business environment to that of a perceived uncertain managed healthcare environment.

TABLE 8.44 ORGANISATIONAL STRUCTURE

Characteristics of organisation	CEO/GM	Marketing manager	Sales manager	Managed care	Row total
Functional	1	3	3	6	13
Mixed structure	8	4	6	7	25
Fixed matrix	1	2		1	4
Flexible matrix	5	1		2	8
Column total	15	10	9	16	50

From the data in the table it may be concluded that 50% of the respondents' organisations operate in a mixed organisational structure and 26% in a functional structure with the remainder in some form of a matrix organisational structure. The question was used to determine if organisational structure as a characteristic had an effect on the organisation future competitiveness in a managed healthcare environment. The evidence is not conclusive that a specific organisational structure will provide a competitive advantage.

TABLE 8.45 ORGANISATIONAL "SUCCESS" MODEL

Characteristics of organisation	CEO/GM	Marketing manager	Sales manager	Managed care	Row total
Precedent driven	1	3	4	3	11
Efficiency driven	1	1		3	5
Growth driven	8	5	5	10	28
Future driven	5	1			6
Column total	15	10	9	16	50

Chi-square significance	Value	D.F.	P-value
Pearson	15,24982	9	0,08430
Likelihood ratio	17,15485	9	0,04635

The null hypothesis specifies that there is no relationship between the two variables of respondents' designation in the pharmaceutical organisation and characteristic of the organisation. This is the case here and therefore the null hypothesis must be rejected with 10% statistical significance. Looking at the mean rank data, it shows that there are differences of opinion between the different pharmaceutical designations on their organisational "success" model. Most of the respondents (60%) viewed the "success" model as growth driven.

## **8.5 COMPARING TWO POPULATIONS: NONPARAMETRIC STATISTICS**

### **8.5.1 Wilcoxon rank sum test for independent samples**

Thus far the study, has presented statistical techniques whose objectives are to describe a single population or compare two populations when the data are either quantitative or qualitative. This section will examine statistical techniques whose objective is to compare two populations of ranked data. When the data is ranked, the mean is not the most appropriate measure of location. As a result, the methods in this sections do not allow the difference in population means to be tested. Instead, characteristics of populations without referring to specific parameters will be tested. For this reason, these techniques are called nonparametric techniques. Rather than test to determine whether the population means differ, the test will be to determine whether the two population locations differ.

The Wilcoxon rank sum test deals with problems with the following characteristics:

- The problem objective is to compare two populations.
- The data are either ranked or quantitative where the normality requirement necessary to perform the equal-variance t-test.
- The samples are independent.

Results with a 5% significance level were discussed after testing the following hypotheses.

**Ho:** The two population locations are the same.

**Ha:** The location of population A is to the left of the location of population B (Keller and Warrack 1997:694).



8.5.1.1 *Wilcoxon rank sum test for question 3 (core competencies within the marketing function of pharmaceutical organisations)*

The results of the Wilcoxon rank sum test on focussing on the traditional customer as a main area of focus for the marketing function will not be presented or be discussed as the results were outside the 5% significance level after testing.

**TABLE 8.46 FOCUS ON THE NEW CUSTOMER**

Sample	Mean rank	Sum of ranks	Rank sum	Test statistics Z-value	P-value
Importance	20,76	830,50	40 (-ranks)		
Performance	30,50	30,50	1 (+ranks) 9 (ties)		
<b>Total</b>			<b>50</b>	<b>-5,3239</b>	<b>0,0000</b>

The data provide strong evidence to infer that the new customer is perceived to be particularly important as the pharmaceutical organisation's performance in actively pursuing the new customer grouping within the managed health care environment. The null hypothesis must be rejected where the null hypothesis stipulates that importance will equal performance. There is a significant statistical variance between performance and importance with a standardised test statistic, z-value of -5,3239 (p-value = 0,000). This factor helps support the claim that the new customer is viewed as important in the future strategy of the pharmaceutical organisation but has not been translated into any strategic actions.

**TABLE 8.47 USE OF OUTCOME STUDIES TO SHOW EFFICACY OF PRODUCTS**

Sample	Mean rank	Sum of ranks	Rank sum	Test statistics	P-value
Importance	18,31	676	35 (-ranks)		
Performance	13,50	27	2(+ranks) 13 (ties)		
<b>Total</b>			<b>50</b>	<b>-4,9517</b>	<b>0,0000</b>

The data provide sufficient evidence to infer that the use of outcome studies by pharmaceutical organisations is viewed as important to convince managed care customers that their products are more efficacious than those of their competitors, but they fail to produce the necessary outcomes studies. The null hypothesis must be rejected where the null hypothesis stipulate that importance will equal performance. There is a significant statistical variance between performance and importance with a standardised test statistic, z-value of -4,9517 (p-value = 0,000).

**TABLE 8.48 USE CLINICAL DATA TO SHOW THE EFFICACY OF PRODUCTS**

Sample	Mean rank	Sum of ranks	Rank sum	Test statistics	P-value
Importance	9,88	128,5	13 (-ranks)		
Performance	8,50	42,50	5 (+ranks) 32 (ties)		
<b>Total</b>			<b>50</b>	<b>-2,0447</b>	<b>0,0409</b>

There is sufficient evidence to indicate that pharmaceutical executives view the sharing of their organisation's clinical data on the efficacy of their products, as important to managed care organisations but view the sharing of this information as lacking. The null hypothesis must be rejected where the null hypothesis stipulates that importance will equal performance. There is a significant statistical variance between performance and importance with a standardised test statistic, z-value of -2,0447 ( p-value = 0,0409)

**TABLE 8.49 FOCUS ON PRODUCT VALUE**

Sample	Mean rank	Sum of ranks	Rank sum	Test statistics	P-value
Importance	16,96	424	25 (-ranks)		
Performance	12,00	72	6 (+ranks) 19 ties		
<b>Total</b>			<b>50</b>	<b>-3,6352</b>	<b>0,003</b>

The standardised test statistic, z-value of -3,6352 (p-value = 0,003) is small, which leads to the conclusion that the data provide enough evidence to infer that the focus of pharmaceutical product value is rated higher in importance by pharmaceutical executives than their performance of communicating the product value to the managed care customer. Therefore the null hypothesis must be rejected where the null hypothesis stipulates that importance will equal performance.

**TABLE 8.50 FOCUS ON COST OF PRODUCTS**

Sample	Mean rank	Sum of ranks	Rank sum	Test statistics	P-value
Importance	16,64	416	25 (-ranks)		
Performance	13,33	80	6 (+ranks) 19 ties		
<b>Total</b>			<b>50</b>	<b>-3,4264</b>	<b>0,006</b>

The value of standardised test statistic, z-value of -3,6352 (p-value = 0,003) indicates that there is little evidence to support the hypothesis that importance on the focussing on the cost of the product matches the performance of pharmaceutical organisations in implementing the strategy in a managed health care environment.

**TABLE 8.51 EDUCATION ON MANAGED CARE PRINCIPLES**

Sample	Mean rank	Sum of ranks	Rank sum	Test statistics	P-value
<b>Importance</b>	17,13	548	32 (-ranks)		
<b>Performance</b>	23,50	47	2 (+ranks) 16 ties		
<b>Total</b>			<b>50</b>	<b>-4,3724</b>	<b>0,000</b>

There is strong evidence to infer that the population sum of ranks is unequal. It follows that it was justified in testing the null hypothesis, where importance equals performance in the sum of ranks. Education on managed care principles is viewed as important but this has not yet been translated into active education in the pharmaceutical industry (standardised test statistic of -4,3724 and a probability value of 0,000).

**TABLE 8.52 USE PHARMACOECONOMIC DATA TO JUSTIFY PRODUCT PRICES**

Sample	Mean rank	Sum of ranks	Rank sum	Test statistics	P-value
<b>Importance</b>	21,74	9,3	42 (-ranks)		
<b>Performance</b>	33,00	33	1 (+ranks) 7 ties		
<b>Total</b>			<b>50</b>	<b>-5,3698</b>	<b>0,000</b>

With this data there is enough statistical evidence to infer that the pharmaceutical industry views the use of pharmacoeconomic data to justify product prices as important but the industry has done little or nothing in producing pharmacoeconomic data (performance). Therefore the null hypothesis must be rejected where the null hypothesis stipulate that importance will equal performance. The z-value is -5,3698 with a p-value of 0,000.

**TABLE 8.53 DEVELOPING ADDED VALUE SERVICES**

Sample	Mean rank	Sum of ranks	Rank sum	Test statistics	P-value
<b>Importance</b>	18,85	678,50	36 (-ranks)		
<b>Performance</b>	24,50	24,50	1 (+ranks) 13 ties		
<b>Total</b>			<b>50</b>	<b>-5,0385</b>	<b>0,000</b>

There is overwhelming evidence to show that the importance of added value services overshadows the pharmaceutical industry's performance of implementing the added value services. The evidence is so strong with a z-value of 15,0385 and a p-value of 0,000 that the null hypothesis of importance equals performance must be rejected.

**TABLE 8.54 DISEASE MANAGEMENT**

Sample	Mean rank	Sum of ranks	Rank sum	Test statistics	P-value
<b>Importance</b>	19,76	731	37 (-ranks)		
<b>Performance</b>	10,00	10	1 (+ranks) 11 ties		
<b>Total</b>			<b>50</b>	<b>-5,3198</b>	<b>0,0000</b>

There is sufficient evidence to conclude that disease management is viewed as very important by pharmaceutical executives in South Africa. However, the implementation of disease management programmes is very limited. This reflects in the data examined where the z-value equals -5,3198 with p-value of 0,000 and therefore the null hypothesis must be rejected.

One in five US pharmaceutical executives identified value-added customer services for being of particular importance to their organisations in the KPMG survey (1996) on the biopharmaceutical industry. Specifically, respondents mentioned disease management programmes and the need to offer more services in response to pressures from managed care as well as the need to demonstrate benefits of products for patients in managed healthcare organisations (KPMG 1996:9). Disease management refers to the integrated, long-term management of high-risk chronic conditions, including prevention, diagnosis and screening, and treatment of acute episodes and complications. If disease management lives up to its expectations, it will offer a clear advantage over current cost containment efforts because it recognises that diseases can be very different from one another in terms of the appropriate treatment and the resources required. It also recognises that component costs are interrelated and that pushing costs down in one area may increase them elsewhere.

**TABLE 8.55 ANALYSE, DEVELOP AND ADJUST MARKETING STRATEGIES FOR A NEW CUSTOMER BASE**

Sample	Mean rank	Sum of ranks	Rank sum	Test statistics	P-value
<b>Importance</b>	23,10	970	42(-ranks)		
<b>Performance</b>	10	20	2 (+ranks) 6 ties		
<b>Total</b>			<b>50</b>	<b>-5,6218</b>	<b>0,0000</b>

The data provide sufficient evidence to infer that there is a need to analyse, develop and adjust marketing strategies for the new customer base as the null hypothesis is rejected with a standardised test statistic, z-value of -5,6218 and a p-value of 0,000.

A study by KPMG (1996:11) identified the need to analyse, adapt or adjust their marketing strategy in a managed care market as very important.

**TABLE 8.56 MARKET PRODUCTS IN RECOGNISED TREATMENT GUIDELINES AND PROTOCOLS**

Sample	Mean rank	Sum of ranks	Rank sum	Test statistics	P-value
Importance	19,54	664,50	34 (-ranks)		
Performance	12,83	38,50	3 (+ranks) 13 ties		
<b>Total</b>			<b>50</b>	<b>-4,7942</b>	<b>0,0000</b>

The data provide sufficient evidence to infer that there is an understanding of the importance by pharmaceutical executives to market pharmaceutical products within recognised treatment guidelines and protocols but this is not the case in the present marketing strategies. The null hypothesis must be rejected where the null hypothesis stipulates that importance will equal performance. There is a significant statistical variance between performance and importance.

**TABLE 8.57 SHOW THE OVERALL VALUE OF PRODUCTS IN TERMS OF TOTAL HEALTH CARE COST SAVINGS**

Sample	Mean rank	Sum of ranks	Rank sum	Test statistics	P-value
Importance	21,76	870,50	40 (-ranks)		
Performance	16,25	32,50	2 (+ranks) 6 ties		
<b>Total</b>			<b>50</b>	<b>-5,3066</b>	<b>0,000</b>

The data provide sufficient evidence to infer that to show overall value of pharmaceutical products in terms of total health care cost savings is viewed by pharmaceutical executives as important to convince managed care customers that their products could save money when looked at from a total health care cost point of view, but they are lacking in producing the necessary studies. The null hypothesis must be rejected where the null hypothesis stipulate that importance will equal performance. There is a significant statistical variance between performance and importance with a standardised test statistic, z-value of -5,3066 ( p-value = 0,000)

**TABLE 8.58 LAUNCH AND PROMOTE NEW PRODUCTS**

Sample	Mean rank	Sum of ranks	Rank sum	Test statistics	P-value
Importance	13,48	269,50	20 (-ranks)		
Performance	11,10	55,50	5 (+ranks) 25 ties		
<b>Total</b>			<b>50</b>	<b>-2,9937</b>	<b>0,0028</b>

There is sufficient evidence to indicate that pharmaceutical executives view the launch and promotion of new pharmaceutical products as important but there is a perception that the industry performance to produce new chemical entities is not present. The null hypothesis must be rejected where the null hypothesis stipulates that importance will equal performance. There is a significant statistical variance between performance and importance with a standardised test statistic, z-value of -2,9937 ( p-value = 0,0028)

**TABLE 8.59 ALTERNATIVE MARKETING STRATEGIES FOR MANAGED CARE**

Sample	Mean rank	Sum of ranks	Rank sum	Test statistics	P-value
Importance	19,47	720,50	37		
Performance	20,50	20,50	1		
			12		
<b>Total</b>			<b>50</b>	<b>-5,1457</b>	<b>0,0000</b>

The data provide strong evidence to infer that there should be an alternative marketing strategies for managed care customers as viewed by the respondents (important) but that it is not happening in practice (performance) The null hypothesis must be rejected where the null hypothesis stipulates that importance will equal performance. There is a significant statistical variance between performance and importance with a standardised test statistic, z-value of -5,1457 ( p-value = 0,000) This factor helps support the claim that the new customer is viewed as important in the future marketing strategies of the pharmaceutical organisation but has not been translated into any action. The key issue in marketing and sales, according to the KPMG survey (1996:11) is a movement from the traditional product-based marketing approach to a strong customer-based approach, designed to meet customer needs. Another key issue in a managed health care environment is that the traditional customer, the medical doctor, is now not the only customer anymore. The existence of managed care will drive the requirement of a new set of skills and practices not yet required to fundamentally launch and promote new products successfully.

#### 8.5.1.2 *Wilcoxon rank sum test for question 4 (core competencies within the sales function of pharmaceutical organisations)*

The results of the Wilcoxon rank sum test on increasing or decreasing the pharmaceutical sales force as a main area of focus for the sales function will not be presented or be discussed as the results were outside the 5% significance level after testing.

The issue of restructuring and developing the sales force was identified for attention by the respondents in the KPMG survey (KPMG 1996:11). Outsourcing of sales forces and co-promotions have become significant movements in the industry as pharmaceutical organisations seek flexibility in a turbulent and uncertain market. This practice is also developing in the South African health care environment but the study did not make provision for this and focussed only on increasing and decreasing of the sales force size.

**TABLE 8.60 FOCUS ON THE TRADITIONAL CUSTOMER (MEDICAL PROFESSION)**

Sample	Mean rank	Sum of ranks	Rank sum	Test statistics	P-value
Importance	10,50	63	6 (-ranks)		
Performance	13,17	237	18 (+ranks) 26 ties		
<b>Total</b>			<b>50</b>	<b>2,5887</b>	<b>0,0096</b>

With this data there is enough statistical evidence to infer that the pharmaceutical industry view their performance (calling on the traditional customer, the medical doctor), as successful but rate the importance of this customer for the future scenario as not as important as it is viewed presently. Therefore the null hypothesis must be rejected where the null hypothesis stipulates that importance will equal performance. The z-value is 2,5887 with a p-value of 0,0096. As mentioned, the Scott-Levin report, *Year in review 1999*, (2000:37) highlighted the key issue that in a managed health care environment the traditional customer, the medical doctor, is now not the only customer anymore.

**TABLE 8.61 FOCUS ON THE NEW CUSTOMER**

Sample	Mean rank	Sum of ranks	Rank sum	Test statistics	P-value
Importance	20,62	701	34 (-ranks)		
Performance	10	40	4 (+ranks) 12 ties		
<b>Total</b>			<b>50</b>	<b>-4,9045</b>	<b>0,0000</b>

There is strong evidence to infer that population sum of ranks are unequal. It follows that it was justified in testing the null hypothesis, where importance equals performance in sum of ranks. The importance of the new customer (managed care) can clearly be seen as well as the lack of performance of the industry in focussing on them. The standardised test statistic is -4,9045 with a probability value of 0,000.

While medical practitioners will always be an important element in the health care marketplace, the upstream consolidation of buyers is irreversibly changing the balance of power. Both providers, acting as gatekeepers, and intermediaries, like pharmacy benefit management in a guardian role complete with a set of control mechanisms, are quickly cutting down the ability of the pharmaceutical organisations to promote sales through individual medical practitioners. According to James (1994:24) with more than 60% of all physicians affiliated to private and public managed care organisations in the USA, and well more than 90% in Europe and Japan linked to public health care systems, the industry has very little room to manoeuvre with purely physician-focussed strategies. This could be the case in South Africa as managed health care is introduced into the country. Future success will revolve around the ability to create long-term relationships with the providers of managed care and their intermediaries, based on shared value, which goes beyond short-term product supply deals focussed on acquisition costs.

**TABLE 8.62 AGGRESSIVE DISCOUNTING/REBATES TO KEEP PRODUCTS ON FORMULARY**

Sample	Mean rank	Sum of ranks	Rank sum	Test statistics	P-value
Importance	15,83	332,50	21 (-ranks)		
Performance	10,50	73,50	7 (+ranks) 22 ties		
<b>Total</b>			<b>50</b>	<b>-3,0875</b>	<b>0,0020</b>

There is sufficient evidence to conclude that aggressive discounting/rebates to keep products on formulary is viewed as very important by pharmaceutical executives in South Africa. However, the implementation discounting/rebates programmes do not satisfy their expectations. This reflects in the data examined where the z-value equals -3,0875 with p-value of 0,0020 and therefore the null hypothesis must be rejected. Do rebates make business sense if managed care organization are of the opinion that even with maximum rebates branded drugs cannot approach the savings from increased generic utilisation (*Formulary* 1999:642).

The Scott-Levin report (2000:23) found that the use of limited list/formularies was felt to exert significant downward pressure on pharmaceutical prices through discounting and rebates.

**TABLE 8.63 DISCOUNTING TO DETER GENERIC AND THERAPEUTIC SUBSTITUTION**

Sample	Mean rank	Sum of ranks	Rank sum	Test statistics	P-value
Importance	15,90	334	21		
Performance	14,56	131	9 20		
<b>Total</b>			<b>50</b>	<b>-2,2483</b>	<b>0,0246</b>

If the null hypothesis is true, then the importance of discounting to deter generic and therapeutic substitution and the performance of the pharmaceutical industry in implementing these discounting programmes will be equal. This is not the case and therefore the null hypothesis must be rejected ( $z = -2,2483$ ,  $p = -0,0246$ ). The growing availability of generic pharmaceutical products as a cheap alternative to branded products in the post-patent expiry period and the discounting of branded pharmaceutical products featured highly in the KPMG survey (1996:23) as a practice to deter generic substitution policies.



**TABLE 8.64 EDUCATION ON MANAGED CARE PRINCIPLES**

Sample	Mean rank	Sum of ranks	Rank sum	Test statistics	P-value
Importance	19,21	691,50	36		
Performance	11,50	11,50	1		
			13		
<b>Total</b>			<b>50</b>	<b>-5,2720</b>	<b>0,0000</b>

There is strong evidence to infer that population sum of ranks are unequal. It follows that it was justified in testing the null hypothesis, where importance equals performance in sum of ranks. Education on managed care principles is viewed as important but this has not yet been translated into active education in the pharmaceutical industry, with a standardised test statistic of -5,2720 and a probability value of 0,000.

**TABLE 8.65 DEVELOPING NEW SALES STRATEGIES FOR MANAGED CARE**

Sample	Mean rank	Sum of ranks	Rank sum	Test statistics	P-value
Importance	19,70	729	37		
Performance	12,00	12	1		
			12		
<b>Total</b>			<b>50</b>	<b>-5,3558</b>	<b>0,0000</b>

The data provide strong evidence to infer that there should be alternative sales strategies for managed care customers as viewed by the respondents (important) but that it is not happening in practice (performance). The null hypothesis must be rejected where the null hypothesis stipulates that importance will equal performance. There is a significant statistical variance between performance and importance with a standardised test statistic, z-value of -5,3558 (p-value = 0,000). This factor helps support the claim that the new customer is viewed as important in the future sales strategies of the pharmaceutical organisation but has not been translated into any action.

**TABLE 8.66 POSITIONING OF SALES WITHIN CAPITATION**

Sample	Mean rank	Sum of ranks	Rank sum	Test statistics	P-value
Importance	20	780	39		
Performance	0	0	0		
			11		
<b>Total</b>			<b>50</b>	<b>-5,5188</b>	<b>0,0000</b>

There is overwhelming evidence to show that the positioning of sales strategy in a capitated managed care environment is viewed as very important (mean sum rank of importance = 720) but that there is clearly no strategy or action plan presently available in the industry, mean sum rank of performance = 0, with a z value of -5,5648 (p = 0,0000). The KPMG study (1996:9) shows the importance of capitation as viewed by American pharmaceutical organisations in their strategies by providing the example of a pharmaceutical company who has negotiated capitated contract for antibiotics with a managed care organisation.

**TABLE 8.67 USE OF PHARMACOECONOMIC DATA TO JUSTIFY PRODUCT PRICES**

Sample	Mean rank	Sum of ranks	Rank sum	Test statistics	P-value
Importance	20,50	780	40		
Performance	0	0	0		
			10		
<b>Total</b>			<b>50</b>	<b>-5,5648</b>	<b>0,0000</b>

With this data there is enough statistical evidence to infer that the pharmaceutical industry views the use of pharmacoeconomic data, by sales, to justify product prices as important but has done little or nothing in performance. Therefore the null hypothesis must be rejected where the null hypothesis stipulates that importance will equal performance.

Cost/pricing is seen as the key pharmacoeconomic issue for the pharmaceutical industry because of the requirement to improve on, or at least maintain, a good cost-benefit ratio. Specifically, the issues raised in the KPMG survey (1996:17) were as follows: costs versus results; pricing and the cost of medical care; getting the right balance of cost for the benefit it will deliver; introducing products at a realistic price, and the need to show value for money. It will only be the acceptance of disease (health) management principles that will allow pharmacoeconomics information to occupy its appropriate place in the jigsaw of preventative measures (prophylaxis, non-pharmacological interventions, disease protocols, evidence-based medicine and primary, hospital and community care). Currently it appears to be viewed by some pharmaceutical organisations as a tool to justify or defend their prices. The extent to which purchasers and prescribers rely on cost-effectiveness data is very variable and increasing cost consciousness was identified in the KPMG study. The growing use of pharmacoeconomic data in the USA to support prices was another important trend evident in the survey results. The emergence of this practice was evident when participants were asked to identify broad categories of issues most relevant to them. While not necessarily the top concern for pharmaceutical organisations in the USA, pharmacoeconomics was rated second by the respondents. That it is clearly growing in its relevance in the USA is fully consistent with other findings of the KPMG survey (1996:17).

Pharmacoeconomics is critical in the light of the dominance of managed care organisations who have introduced cost into an equation that previously considered safety and efficacy as the sole variables. The prevalence of pharmacoeconomics in South Africa is demonstrated by the fact that the health department issued draft papers for the future registration of new pharmaceutical products where the individual pharmaceutical organisations must provide the department with pharmacoeconomic data before new pharmaceutical products can be registered.

Other pharmacoeconomic issues mentioned by respondents in the USA (KPMG survey) include co-ordination with disease management programmes, the acceptance of pharmacoeconomic data by the FDA and managed care organisations, and the extent to which reimbursement can be influenced by pharmacoeconomic data.

**TABLE 8.68 DEVELOPING ADDED VALUE SERVICE**

Sample	Mean rank	Sum of ranks	Rank sum	Test statistics	P-value
<b>Importance</b>	17,27	552,50	32		
<b>Performance</b>	8,50	8,50	1 17		
<b>Total</b>			<b>50</b>	<b>-4,9420</b>	<b>0,0000</b>

There is overwhelming evidence to show that the importance of added value services overshadows the pharmaceutical industry's performance of implementing the added value services in a sales environment. The evidence is so strong with a z-value of -4,9420 and a p-value of 0,000 that the null hypothesis of importance equals performance must be rejected.

**TABLE 8.69 CONSOLIDATION AND CONCENTRATION ON KEY DECISION MAKERS**

Sample	Mean rank	Sum of ranks	Rank sum	Test statistics	P-value
<b>Importance</b>	18,94	644	34		
<b>Performance</b>	11,00	22	2 14		
<b>Total</b>			<b>50</b>	<b>-5,0246</b>	<b>0,0000</b>

The test statistic is computed in accordance with the following rationale. If the null hypothesis is true, the population means would be equal. There would be an expectation that the rank sum would be close to one another. If the alternative hypothesis is true, there would be large differences between the rank sum and therefore rejection of the null hypothesis. This is the case here and therefore the null hypothesis must be rejected as more respondents view the consolidation and concentration on key decision makers as important but do not view their organisation as performing to the same standard.

**TABLE 8.70 DEVELOPMENT OF NEW SKILL FOR SALES FORCE**

Sample	Mean rank	Sum of ranks	Rank sum	Test statistics	P-value
<b>Importance</b>	23,82	1072	45 (-ranks)		
<b>Performance</b>	9	9	1 (+ranks) 4 ties		
<b>Total</b>			<b>50</b>	<b>-5,9059</b>	<b>0,0000</b>

The z-value is -5,9059 with a p-value of 0,000, which means that the development of new skills for pharmaceutical sales force is very important in the eyes of pharmaceutical management but they lack implementing programmes to develop the new skills required in a managed health care market. The location of the population A (importance) is to the right of the location of population B (performance), which means that the null hypothesis is rejected, where the population locations are the same.

**TABLE 8.71 SELLING PRODUCTS WITHIN RECOGNISED TREATMENT GUIDELINES AND PROTOCOLS**

Sample	Mean rank	Sum of ranks	Rank sum	Test statistics	P-value
Importance	17,50	595	34 (-ranks)		
Performance	0	0	0 (+ranks) 16 ties		
<b>Total</b>			<b>50</b>	<b>-5,2627</b>	<b>0,0000</b>

There is sufficient evidence to conclude that selling products within recognised treatment guidelines and protocols is viewed as very important by pharmaceutical executives in South Africa. However, the selling techniques presently used do not reflect treatment guidelines and protocols. This reflects in the data examined where the z-value equals -5,2627 with a p-value of 0,0000 and therefore the null hypothesis must be rejected.

Patient education programs are a mere global longitudinal understanding of the implication of a particular pharmaceutical product treatment or medical intervention (Barnhaum et al 1999: 5) Patient education which emphasizes the distinction between appropriate and inappropriate utilisation of medication have a significant effect on health care cost being reduced (Edworthy and Devins 1999:1795). By promoting preventative care and early detection strategies, patient education programs can target individuals who maybe at risk (Regan 1999:203).

**TABLE 8.72 SHOWING THE OVERALL VALUE OF PRODUCTS IN TERMS OF TOTAL HEALTH CARE COST SAVINGS**

Sample	Mean rank	Sum of ranks	Rank sum	Test statistics	P-value
Importance	21,74	891,50	41 (-ranks)		
Performance	11,50	11,50	1 (+ranks) 8 ties		
<b>Total</b>			<b>50</b>	<b>-5,6131</b>	<b>0,0000</b>

The data provide sufficient evidence to infer that the use of studies to show the overall value of pharmaceutical products in terms of total health care cost savings by pharmaceutical organisations, is viewed by them as important to convince managed care customers that their products are more efficacious than those of their competitors. But they lack producing the necessary studies. The null hypothesis must be rejected where the null hypothesis stipulates that importance will equal performance. There is a significant statistical variance between performance and importance with a standardised test statistic, z-value of -5,6131 ( p-value = 0,000)

**TABLE 8.73 PRICE REDUCTION TO DETER GENERIC AND THERAPEUTIC SUBSTITUTION**

Sample	Mean rank	Sum of ranks	Rank sum	Test statistics	P-value
<b>Importance</b>	10,54	147,50	14 (-ranks)		
<b>Performance</b>	8,50	42,50	5 (+ranks) 31 ties		
<b>Total</b>			<b>50</b>	<b>-2,2762</b>	<b>0,0228</b>

There is sufficient evidence to conclude that price reduction to deter generic and therapeutic substitution is viewed as important by pharmaceutical executives in South Africa. However, the implementation of a price reduction policy does not satisfy their expectations. This reflects in the data examined where the z-value equals -2,2762 with a p-value of 0,0228 and therefore the null hypothesis must be rejected.

*8.5.1.3 Wilcoxon rank sum test for question 5 (core competencies in business strategy of pharmaceutical organisations)*

The results of the Wilcoxon rank sum test on developing a separate managed healthcare department and replacing key prescription products with lower margin products as a main area of focus for the business function will not be presented or be discussed as the results were outside the 5% significance level after testing.

According to the KPMG report (1996:6), the main issue in the American pharmaceutical industry was the need to identify, develop and expand into new markets in order to increase market shares and ensure continued growth. The researcher believes it is likely the same business strategy will head the list in South Africa. However, it was not listed in this study.

**TABLE 8.74 STREAMLINING OPERATIONS TO DEFEND MARGINS**

Sample	Mean rank	Sum of ranks	Rank sum	Test statistics	P-value
<b>Importance</b>	19,86	635,50	32(-ranks)		
<b>Performance</b>	13,50	67,50	5 (+ranks) 13 ties		
<b>Total</b>			<b>50</b>	<b>-4,4786</b>	<b>0,0000</b>

The data provide sufficient evidence to infer that a policy of streamlining operations to defend margins is seen as important, but the necessary actions are lacking. The null hypothesis must be rejected where the null hypothesis stipulates that importance will equal performance. There is a significant statistical variance between performance and importance with a standardised test statistic, z-value of -4,4786 ( p-value = 0,000)

Streamlining operations to defend margins was ranked critical by 35% of the respondents and as important by 42%, with no clear differentiation between US and European respondents in the KPMG survey (1996:21).

**TABLE 8.75 INTRODUCE/LAUNCH OF NEW PRODUCT TO DIVERSIFY MARKET**

Sample	Mean rank	Sum of ranks	Rank sum	Test statistics	P-value
Importance	18,66	597	32 (-ranks)		
Performance	11,00	33	3 (+ranks) 15 ties		
<b>Total</b>			<b>50</b>	<b>-4,7548</b>	<b>0,0000</b>

There is sufficient evidence to conclude that introducing/launching of new pharmaceutical products to diversify to market is viewed as very important by pharmaceutical executives in South Africa. However the introduction of new products is viewed as very limited if at all (poor performance). This reflects in the data examined where the z-value equals -4,7548 with a p-value of 0,000 and therefore the null hypothesis must be rejected.

**TABLE 8.76 RESTRUCTURING/REORGANISATION OF THE ORGANISATION**

Sample	Mean rank	Sum of ranks	Rank sum	Test statistics	P-value
Importance	16,92	507,50	30 (-ranks)		
Performance	17,83	53,50	3 (+ranks) 16 ties		
<b>Total</b>			<b>49</b>	<b>-4,1369</b>	<b>0,0000</b>

There is not enough evidence to believe that the sum of ranks of the importance of restructuring/reorganising the pharmaceutical organisation is the same as the performance of the pharmaceutical industry in restructuring. The null hypothesis must be rejected (z-value = 14,1369, p-value = 0,0000).

**TABLE 8.77 KEEP UP WITH MARKET TRENDS AND CHANGES WITH EFFECTIVE MONITORING**

Sample	Mean rank	Sum of ranks	Rank sum	Test statistics	P-value
Importance	19,21	691,50	36 (-ranks)		
Performance	11,50	11,50	1 (+ranks) 13 ties		
<b>Total</b>			<b>50</b>	<b>-5,2783</b>	<b>0,0000</b>

With this data there is enough statistical evidence to infer that the pharmaceutical industry views keeping up with market trends and changes as important, but has done little or nothing to implement effective monitoring tools. Therefore the null hypothesis must be rejected where the null hypothesis stipulates that importance will equal performance. The z-value is -5,2783 with a p-value of 0,000.

**TABLE 8.78 DEVELOPING A MANAGED CARE FUNCTION WITHIN SALES**

Sample	Mean rank	Sum of ranks	Rank sum	Test statistics	P-value
Importance	19,60	686	35 (-ranks)		
Performance	8,50	17	2 (+ranks) 13 ties		
<b>Total</b>			<b>50</b>	<b>-5,1147</b>	<b>0,0000</b>

**TABLE 8.79 DEVELOPING A MANAGED CARE FUNCTION WITHIN MARKETING**

Sample	Mean rank	Sum of ranks	Rank sum	Test statistics	P-value
Importance	17,82	588,00	33 (-ranks)		
Performance	7,00	7,00	1 (+ranks) 16 ties		
<b>Total</b>			<b>50</b>	<b>-5,0226</b>	<b>,0000</b>

The data in table 4.80 and table 4.81 provide sufficient evidence to infer that developing a managed care function in sales and marketing is seen as import, but the necessary function sales or marketing is lacking. The null hypothesis must be rejected in both instances, where the null hypothesis stipulates that importance will equal performance.

**TABLE 8.80 CHOOSING BETWEEN STRATEGIC ALLIANCES AND "GOING IT ALONE"**

Sample	Mean rank	Sum of ranks	Rank sum	Test statistics	P-value
Importance	17,97	575	32 (-ranks)		
Performance	10,00	20	2 (+ranks) 16 ties		
<b>Total</b>			<b>50</b>	<b>-4,8669</b>	<b>0,0000</b>

The test statistic is computed in accordance with the following rationale. If the null hypothesis is true, the population means would be equal. There would be an expectation that the rank sum would be close to one another. If the alternative hypothesis is true, there would be large differences between the rank sum and therefore a rejection of the null hypothesis. This is the case here and therefore the null hypothesis must be rejected as more respondents view strategic alliances as important but do not view their organisation as doing enough to establish strategic alliances.

The KPMG survey (1996:12) lists faster product development and quicker progression of products through the clinical research phases to ensure that these new products are launched on time, as issues identified as important in addition to the need to concentrate resources on a smaller number of projects. As a means to increase the change of finding the elusive new "blockbuster", pharmaceutical companies continue to enter into increasing alliances, joint ventures and partnerships with academic units and start-up biotechnology companies to increase the "hit rate" despite the high level of attrition inherent in drug discovery. It is also a strategy to bring down the ever-increasing research and development costs.

“Going it alone” received scores of 35% as a critical strategy and 42% as an important strategy in the KPMG survey (1996:21). There was also no clear difference of opinion between US and European respondents.

**TABLE 8.81 CONSOLIDATION AND CONCENTRATION ON KEY DECISION MAKERS**

Sample	Mean rank	Sum of ranks	Rank sum	Test statistics	P-value
Importance	15	435	29 (-ranks)		
Performance	0	0	0 (+ranks)		
			21 ties		
<b>Total</b>			<b>50</b>	<b>-4,9003</b>	<b>0,0000</b>

There is overwhelming evidence to show that the importance of consolidation and concentration on key decision makers overshadows the pharmaceutical industry’s performance in focussing on the key customer. The evidence is so strong with a z-value of -4,9003 and a p-value of 0,000 that the null hypothesis of importance equals performance must be rejected.

**TABLE 8.82 PARTNERSHIP WITH MANAGED CARE ORGANISATIONS**

Sample	Mean rank	Sum of ranks	Rank sum	Test statistics	P-value
Importance	17,28	553	32 (-ranks)		
Performance	8	8	1 (+ranks)		
			17 ties		
<b>Total</b>			<b>50</b>	<b>-4,9480</b>	<b>0,0000</b>

**TABLE 8.83 ALLIANCES WITH MANAGED CARE ORGANISATIONS**

Sample	Mean rank	Sum of ranks	Rank sum	Test statistics	P-value
Importance	15,45	432,50	28 (-ranks)		
Performance	16,25	32,50	2 (+ranks)		
			20 ties		
<b>Total</b>			<b>50</b>	<b>-4,1846</b>	<b>0,0000</b>

The data in table 4.84 and table 4.85 provide sufficient evidence to infer that partnerships and alliances with managed care organisations are viewed by the respondents as important in future, but the respondents feel their organisations lack implementing the strategy to enter into real partnerships and alliances. The null hypothesis must be rejected where the null hypothesis stipulates that importance will equal performance. There is a significant statistical variance between performance and importance with a standardised test statistic, z-value of -4,9480 for table 4.84 (p-value = 0,000). The data provide the same evidence on alliances, in table 4.85, with a z-value of -4,1846 and a p-value of 0,0000.



In Europe and the USA the specific issue of mergers and acquisitions has been identified as highly significant. In Europe there is a high expectation of enormous cost savings following from the economy of scale and product rationalisation and in the USA there is a growing view that organisations must look beyond the traditional mergers and acquisitions towards creative alliances stretching beyond the normal horizontal mergers (KPMG 1996:8). Sussex and Marchant (1999: 126) are of the opinion, that merger and acquisitions have also to do with the marketplace and the fact that managed care customers are becoming more sophisticated.

**TABLE 8.84 INVESTING IN SOPHISTICATED INFORMATION TECHNOLOGY**

Sample	Mean rank	Sum of ranks	Rank sum	Test statistics	P-value
Importance	18,39	607	33 (-ranks)		
Performance	11,50	23	2 (+ranks) 15 ties		
<b>Total</b>			<b>50</b>	<b>-4,9373</b>	<b>0,0000</b>

The data provide sufficient evidence to infer that investment in sophisticated information technology are viewed by pharmaceutical executives as important, but there is a lack of investing in information technology. The null hypothesis must be rejected where the null hypothesis stipulates that importance will equal performance. There is a significant statistical variance between performance and importance with a standardised test statistic, z-value of -4,9373 ( p-value = 0,000)

**TABLE 8.85 RISK SHARING WITH MANAGED CARE ORGANISATIONS ON PRODUCT**

Sample	Mean rank	Sum of ranks	Rank sum	Test statistics	P-value
Importance	19,12	650	34 (-ranks)		
Performance	8	16	2 (+ranks) 14 ties		
<b>Total</b>			<b>50</b>	<b>-5,0413</b>	<b>0,000</b>

The data provide strong evidence to infer that there should be risk sharing with managed care organisations on products as viewed by the respondents (important) but that this is not happening in practice (performance). The null hypothesis must be rejected where the null hypothesis stipulates that importance will equal performance. There is a significant statistical variance between performance and importance with a standardised test statistic, z-value of -5,0413 (p-value = 0,000). This factor helps support the claim that risk-sharing on products is important in the future strategies of the pharmaceutical organisation but has not been translated into any action.

**TABLE 8.86 TRANSFORMING THE ORGANISATION TO ADAPT TO NEW ENVIRONMENT**

Sample	Mean rank	Sum of ranks	Rank sum	Test statistics	P-value
Importance	23,82	1001	42 (-ranks)		
Performance	11,50	34,50	3 (+ranks) 5 ties		
<b>Total</b>			<b>50</b>	<b>-5,5682</b>	<b>0,000</b>

With the data in table 8.88 there is enough statistical evidence to infer that the pharmaceutical industry view the transformation of their organisations as important in the new managed care environment and that the transformation process has not taken place as yet (performance). Therefore the null hypothesis must be rejected where the null hypothesis stipulates that importance will equal performance. The z-value is -5,5682 with a p-value of 0,0000.

**TABLE 8.87 COLLECTING OUTCOMES DATA ON PRODUCTS**

Sample	Mean rank	Sum of ranks	Rank sum	Test statistics	P-value
Importance	20,36	73,50	38 (-ranks)		
Performance	6,50	6,50	1 (+ranks) 11 ties		
<b>Total</b>			<b>50</b>	<b>-5,4195</b>	<b>0,0000</b>

The z-value is -5,4195 with a p-value of 0,000, which means that collecting outcomes data on products is very important in the eyes of pharmaceutical management but they lack implementing outcomes-based programmes to collect the outcomes data. The location of the population A (importance) is to the right of the location of population B (performance), which means that the null hypothesis is rejected, where the population locations are the same.

## 8.6 NONPARAMETRIC TECHNIQUES: COMPARING TWO OR MORE POPULATIONS

### 8.6.1 Kruskal-Wallis test

The Kruskal-Wallis test is applied to problems with the following characteristics:

- The problem objective is to compare two or more populations.
- The data are either ranked or quantitative but nonnormal.
- The samples are independent.

H<sub>0</sub>: The locations of all k populations are the same.

H<sub>a</sub>: At least two population locations differ.

Here, k represents the number of populations to be compared.

*8.6.1.1 Kruskal-Wallis test for question 3 (core competencies of the marketing function within the pharmaceutical organization)*

The results of the Kruskal-Wallis test that fall outside the 5% significance level after testing will not be presented or be discussed. Therefore please take note that for this reason some questions will not be discussed as the results are not statistically significant.

**TABLE 8.88 FOCUS OF COST OF PRODUCTS**

Designation	Sample size	Ave rank	D.F.	Test statistics	P-value
CEO/GM	15	18,27			
Marketing	10	34,00			
Sales	9	22,72			
Managed care	16	28,53			
<b>Total</b>	<b>50</b>		<b>3</b>	<b>9,0265</b>	<b>0,0289</b>

If the rank sums are similar, then the test statistic (H-value) will be small. As a result, a small value of H (test statistic) supports the null hypothesis. If there are considerable differences among the rank sums, the test statistic will be large and the null hypothesis will be rejected as is the case with the focus on the cost of pharmaceutical products (H-value = 9.0265, p-value = 0,0289). This implies that there is a statistical significant difference between the different respondents' views on the focus of the cost of pharmaceutical products. From this test it can be said that marketing managers view the cost of products as the most important, followed by managed care managers, sales managers and CEO/general managers.

**TABLE 8.89 EDUCATION ON MANAGED CARE PRINCIPLES**

Designation	Sample size	Ave rank	D.F.	Test statistics	P-value
CEO/GM	15	22,10			
Marketing	10	21,30			
Sales	9	20,17			
Managed care	16	34,31			
<b>Total</b>	<b>50</b>		<b>3</b>	<b>9,3323</b>	<b>0,0252</b>

The problem objectives are to compare four populations (designation in a pharmaceutical organisation), and to rank the data. These two factors are sufficient to determine the use of the Kruskal-Wallis test. The null hypothesis states that the location of all four populations must be the same. The alternative is that at least three population locations differ, where the null hypothesis will be rejected. This is the case here where managed care managers believe that education on managed care principles is very important compared to the rest of the pharmaceutical management (H-value = 9,3323 with a p-value of 0,0252).

**TABLE 8.90 DISEASE MANAGEMENT**

Designation	Sample size	Ave rank	D.F.	Test statistics	P-value
CEO/GM	15	20,53			
Marketing	10	25,45			
Sales	9	17			
Managed care	16	32,91			
<b>Total</b>	<b>50</b>		<b>3</b>	<b>10,2201</b>	<b>0,0168</b>

There is enough evidence to infer that there is a difference on opinion of the importance of disease management in a managed health care environment. Managed care managers followed by marketing managers, view disease management as crucial (important) for the pharmaceutical industry. The test statistic is large value ( $H = 10,2201$ ) and therefore the null hypothesis must be rejected with 5% statistical acceptability ( $p = 0,0168$ ).

**TABLE 8.91 MARKET PRODUCTS WITHIN RECOGNISED TREATMENT GUIDELINES AND PROTOCOLS**

Designation	Sample size	Ave rank	D.F.	Test statistics	P-value
CEO/GM	15	18,43			
Marketing	10	21,10			
Sales	9	26,17			
Managed care	16	34,50			
<b>Total</b>	<b>50</b>		<b>3</b>	<b>11,9427</b>	<b>0,0076</b>

The data provide sufficient evidence to infer that there is a marked difference of view in the importance as seen by pharmaceutical executives to market pharmaceutical products within recognised treatment guidelines and protocols. The null hypothesis stipulates that the location of the four populations must be the same, which is not the case here. There is a significant statistical variance between the different pharmaceutical designations to reject the null hypothesis with a standardised test statistic, h-value of 11,9427 ( $p\text{-value} = 0,0076$ ). Again managed care managers view the importance of marketing within these guidelines and protocols higher than their colleagues.

**TABLE 8.92 SHOW OVERALL VALUE OF PRODUCTS IN TERMS OF TOTAL HEALTH CARE COST SAVINGS**

Designation	Sample size	Ave rank	D.F.	Test statistics	P-value
CEO/GM	15	21,27			
Marketing	10	25,30			
Sales	9	18,06			
Managed care	16	33,78			
<b>Total</b>	<b>50</b>		<b>3</b>	<b>10,8208</b>	<b>0,0127</b>

The data provide sufficient evidence to infer that to show the overall value of pharmaceutical products in terms of total health care cost savings is viewed by most pharmaceutical executives as important to convince managed care customers that their products could save money when looked at from a total health care cost point of view. Managed care managers again lead the importance scale, followed by marketing, CEOs/general managers and sales managers making up the rear. The null hypothesis must be rejected because the test statistic is large, value of  $h = 10,8208$  (5% statistical acceptability).

**TABLE 8.93 ALTERNATIVE MARKETING STRATEGIES FOR MANAGED HEALTH CARE**

Designation	Sample size	Ave rank	D.F.	Test statistics	P-value
CEO/GM	15	25,23			
Marketing	10	26,15			
Sales	9	16,44			
Managed care	16	30,44			
<b>Total</b>	<b>50</b>		<b>3</b>	<b>6,3930</b>	<b>0,0940</b>

The data provide enough evidence to infer that there should be alternative marketing strategies for managed care customers as viewed by the respondents (important). The null hypothesis must be rejected where the null hypothesis stipulate that all four population locations must be the same. There is a significant statistical variance, at a 10% statistical acceptability, between these locations with a standardised test statistic,  $h$ -value of 6,3930 ( $p$ -value = 0,0940). This factor helps support the claim that the new customer is viewed as more important in future marketing strategies by managed care managers than marketing managers, CEOs/general managers and sales managers (in order of importance).

**TABLE 8.94 FOCUS ON COST OF PRODUCT**

Designation	Sample size	Ave rank	D.F.	Test statistics	P-value
CEO/GM	15	18,57			
Marketing	10	35,30			
Sales	9	18,11			
Managed care	16	30,03			
<b>Total</b>	<b>50</b>		<b>3</b>	<b>12,8287</b>	<b>0,0050</b>

There is overwhelming evidence to show that the performance of focusing on the cost of pharmaceutical products differs between designations in the pharmaceutical organisation. The evidence is so strong, with a h-value of 12,8287 and a p-value of 0,0050, that the null hypothesis must be rejected. If considerable differences exist among the rank sums, then the test statistic (h value) will be large, with a result of rejection of the null hypothesis.

**TABLE 8.95 USE PHARMACOECONOMIC DATA TO JUSTIFY PRODUCT PRICES**

Designation	Sample size	Ave rank	D.F.	Test statistics	P-value
CEO/GM	15	29,77			
Marketing	10	30,30			
Sales	9	26,39			
Managed care	16	18,00			
<b>Total</b>	<b>50</b>		<b>3</b>	<b>7,3971</b>	<b>0,0603</b>

With this data there is enough statistical evidence to infer that the pharmaceutical executives differ in their opinion of the organisation's performance in the use of pharmacoeconomic data to justify product prices. Managed care managers are not of the same opinion as the rest of their colleagues and therefore at a 10% level of significance, the null hypothesis must be rejected. The h-value is 7,3971 with a p-value of 0,0603.

8.6.1.2 *Kruskal-Wallis test of question 4 (core competencies of the sales function in pharmaceutical organizations)*

The results of the Kruskal-Wallis test that fall outside the 5% significance level after testing will not be presented or be discussed. Therefore please take note that for this reason some questions will not be discussed as the results are not statistically significant.

**TABLE 8.96 INCREASING SALES FORCE SIZE**

Designation	Sample size	Ave rank	D.F.	Test statistics	P-value
CEO/GM	15	33,57			
Marketing	10	26,15			
Sales	9	14,39			
Managed care	16	23,78			
<b>Total</b>	<b>50</b>		<b>3</b>	<b>10,8483</b>	<b>0,0126</b>

The test statistic is computed in accordance with the following rationale. If the null hypothesis is true, the population will be identical in spread and shape with a small test statistic value. There would be an expectation that the ranks would be close to one another. If the alternative hypothesis is true, there would be large differences between the ranks, with a large test statistic value, therefore rejecting the null hypothesis. This is the case here and therefore the null hypothesis must be rejected as there is a difference in the respondent's view of the importance of increasing the sales force size.

**TABLE 8.97 FOCUS ON THE NEW CUSTOMER**

Designation	Sample size	Ave rank	D.F.	Test statistics	P-value
CEO/GM	15	24,20			
Marketing	10	20,60			
Sales	9	20,72			
Managed care	16	32,47			
<b>Total</b>	<b>50</b>		<b>3</b>	<b>66791</b>	<b>0,0829</b>

There is sufficient evidence to conclude that managed care managers view the focus on the new customer, managed care pharmacists, as more important than the rest of their colleagues at a 10% level of significance. This reflects in the data examined where the h-value equals 6,6791 with a p-value of 0,0829 and therefore the null hypothesis must be rejected.

**TABLE 8.98 EDUCATION ON MANAGED CARE PRINCIPLES**

Designation	Sample size	Ave rank	D.F.	Test statistics	P-value
CEO/GM	15	20,70			
Marketing	10	19,50			
Sales	9	26,50			
Managed care	16	33,19			
<b>Total</b>	<b>50</b>		<b>3</b>	<b>8,5666</b>	<b>0,0356</b>

The data provide sufficient evidence to infer that education on managed care principles is viewed differently by the different pharmaceutical executives. The null hypothesis must be rejected where the null hypothesis stipulates that the test statistic will have a small value and all four populations will have the same spread and average rank (h-value of 8.5666, p-value = 0,0356).

**TABLE 8.99 DEVELOPING NEW STRATEGIES FOR MANAGED CARE**

Designation	Sample size	Ave rank	D.F.	Test statistics	P-value
CEO/GM	15	25,13			
Marketing	10	19,80			
Sales	9	21,28			
Managed care	16	31,78			
<b>Total</b>	<b>50</b>		<b>3</b>	<b>6,3079</b>	<b>0,0976</b>

The data provide sufficient evidence to infer that developing new strategies for managed care customers is seen as important for managed care managers. Marketing managers do not share the same sentiment. The null hypothesis must be rejected because the test statistic is large, value of h = 6,3079 (10% statistical acceptability).

**TABLE 8.100 POSITIONING OF SALES STRATEGY WITHIN CAPITATION**

Designation	Sample size	Ave rank	D.F.	Test statistics	P-value
CEO/GM	15	24,43			
Marketing	10	22,05			
Sales	9	17,33			
Managed care	16	33,25			
<b>Total</b>	<b>50</b>		<b>3</b>	<b>9,6328</b>	<b>0,0220</b>

If the rank sums are similar, then the test statistic (H-value) will be small. As a result, a small value of H (test statistic) supports the null hypothesis. If there are considerable differences among the rank sums, the test statistic will be large and the null hypothesis will be rejected as is the case with the focus on the cost of pharmaceutical products (h-value = 9.6328, p-value = 0,0229). This implies that there is a statistical significant difference between the different respondent's views on positioning sales strategy within capitation. From this test it can be said that managed care managers view this strategy as the most important and sales managers as the least important.



**TABLE 8.101 SHOW THE OVERALL VALUE OF PRODUCTS IN TERMS OF TOTAL HEALTH CARE COSTS**

Designation	Sample size	Ave rank	D.F.	Test statistics	P-value
CEO/GM	15	22,07			
Marketing	10	22,10			
Sales	9	18,56			
Managed care	16	34,75			
<b>Total</b>	<b>50</b>		<b>3</b>	<b>11,5328</b>	<b>0,0092</b>

The problem objective is to compare four populations (designations within a pharmaceutical organisation), and the data is ranked. These two factors are sufficient to determine the use of the Kruskal-Wallis test. The null hypothesis states that the location of all four populations must be the same. The alternative is that at least three population locations differ, where the null hypothesis will be rejected. This is the case here where managed health care managers believe that showing the overall value of products in terms of total health care costs is very important compared to the rest of the pharmaceutical management (H-value = 11,5328 with a p-value of 0,0092).

**TABLE 8.102 DECREASING SALES FORCE**

Designation	Sample size	Ave rank	D.F.	Test statistics	P-value
CEO/GM	15	34,63			
Marketing	10	24,25			
Sales	9	15,78			
Managed care	16	23,19			
<b>Total</b>	<b>50</b>		<b>3</b>	<b>11,4395</b>	<b>0,0096</b>

There is strong evidence to infer that there is a difference of opinion on the performance of pharmaceutical organisations on the issue of decreasing the sales force size in a managed health care environment. CEOs/general managers, followed by marketing managers, view their organisation's performance in decreasing the size of the sales force as successful. The test statistic is large value ( $h = 11,4395$ ) and therefore the null hypothesis must be rejected with a 1% statistical acceptability ( $p = 0,0096$ ).

**TABLE 8.103 AGGRESSIVE DISCOUNTING/REBATES TO KEEP PRODUCTS ON FORMULARY**

Designation	Sample size	Ave rank	D.F.	Test statistics	P-value
CEO/GM	15	22,13			
Marketing	10	19,10			
Sales	9	37,72			
Managed care	16	25,78			
<b>Total</b>	<b>50</b>		<b>3</b>	<b>10,0070</b>	<b>0,0185</b>

The h-value is 10,0070 with a p-value of 0,0185, which means that there is a difference of opinion among the respondents on the performance of their organisations in discounting and rebating to keep products on the formulary.

**TABLE 8.104 DEVELOPING A SEPARATE MANAGED HEALTHCARE DEPARTMENT**

Designation	Sample size	Ave rank	D.F.	Test statistics	P-value
CEO/GM	15	22,80			
Marketing	10	32,40			
Sales	9	13,56			
Managed care	16	30,44			
<b>Total</b>	<b>50</b>		<b>3</b>	<b>11,2483</b>	<b>0,0105</b>

The problem objective is to compare four populations (designations within a pharmaceutical organisation), and the data is ranked. These two factors are sufficient to determine the use of the Kruskal-Wallis test. The null hypothesis states that the location of all four populations must be the same. The alternative is that at least three population locations differ, where the null hypothesis will be rejected. This is the case here where marketing managers and managed care managers believe that their organisation's performance in developing a separate managed care department has been successfully implemented (H-value = 11,2483 with a p-value of 0,0105).

#### *8.6.1.3 Kruskal-Wallis test for question 5 (core competencies of business strategy in pharmaceutical organizations)*

The results of the Kruskal-Wallis test that fall outside the 5% significance level after testing will not be presented or be discussed. Therefore please take note that for this reason some questions will not be discussed as the results are not statistically significant.

**TABLE 8.105 PARTNERSHIPS WITH MANAGED HEALTH CARE ORGANISATIONS**

Designation	Sample size	Ave rank	D.F.	Test statistics	P-value
CEO/GM	15	26,20			
Marketing	10	17,45			
Sales	9	20,22			
Managed care	16	32,84			
<b>Total</b>	<b>50</b>		<b>3</b>	<b>9,3053</b>	<b>0,0255</b>

**TABLE 8.106 ALLIANCES WITH MANAGED HEALTH CARE ORGANISATIONS**

Designation	Sample size	Ave rank	D.F.	Test statistics	P-value
CEO/GM	15	25,53			
Marketing	10	17,40			
Sales	9	22,33			
Managed care	16	32,31			
<b>Total</b>	<b>50</b>		<b>3</b>	<b>7,6713</b>	<b>0,0533</b>

In both sets of data (table 8.107 and table 8.108), there is enough statistical evidence to infer that the pharmaceutical industry, especially managed care managers, view partnerships and alliances with managed care organisations as very important. Their view is followed by CEOs/general manager, sales managers and marketing managers, respectively, for both sets of data. Because in both instances there are high test statistic values (partnerships h-value = 9,3053 and alliances at a h-value of 7,6713 at 5% significance), the null hypothesis must be rejected where the null hypothesis stipulates that all four population locations must be the same and the h-value must be small.

**TABLE 8.107 COLLECTING OUTCOMES DATA ON PRODUCTS**

Designation	Sample size	Ave rank	D.F.	Test statistics	P-value
CEO/GM	15	19,53			
Marketing	10	25,35			
Sales	9	22,28			
Managed care	16	33,00			
<b>Total</b>	<b>50</b>		<b>3</b>	<b>8,1079</b>	<b>0,0438</b>

There is strong evidence to infer that population ranks are unequal. It follows that it was justified in testing the null hypothesis, where all four population ranks are equal. The importance of outcomes data in the eyes of managed care managers can clearly be seen, which differs from the rest of the other three populations (h-value = 8,1079 and p-value = 0,0438). It is only logical then to reject the null hypothesis on the basis of the high value of the test statistic and the difference in population ranks.

**TABLE 8.108 DEVELOPING MANAGED HEALTH CARE WITHIN SALES**

Designation	Sample size	Ave rank	D.F.	Test statistics	P-value
CEO/GM	15	27,43			
Marketing	10	13,75			
Sales	9	32,78			
Managed care	16	26,94			
<b>Total</b>	<b>50</b>		<b>3</b>	<b>9,7897</b>	<b>0,0204</b>

The data provide sufficient evidence to infer that marketing managers differ in opinion on the performance of their organisations of developing a managed care portfolio in sales compared to their colleagues. Marketing managers do not share the sales management's sentiment. The null hypothesis must be rejected because the test statistic is large, value of  $h = 9,7897$  (p-value = 0,0204).

**TABLE 8.109 TRANSFORMING THE ORGANISATION TO ADAPT TO NEW ENVIRONMENT**

Designation	Sample size	Ave rank	D.F.	Test statistics	P-value
CEO/GM	15	32,27			
Marketing	10	24,40			
Sales	9	27,39			
Managed care	16	18,78			
<b>Total</b>	<b>50</b>		<b>3</b>	<b>7,3486</b>	<b>0,0616</b>

The data provide sufficient evidence to infer that there is strong opinion from CEOs/general managers on the successful implementation (performance), in transforming the organisation to adapt to the new environment. The null hypothesis stipulates that the location of the four populations must be the same, which is not the case here. There is a significant statistical variance between the different pharmaceutical designations to reject the null hypothesis with a standardised test statistic, h-value of 7,3486 (p-value = 0,0616).

#### *8.6.1.4 Kruskal-Wallis test on question 10 (characterising your pharmaceutical organization)*

The results of the Kruskal-Wallis test that fall outside the 5% significance level after testing will not be presented or be discussed. Therefore please take note that for this reason some questions will not be discussed as the results are not statistically significant.

**TABLE 8.110 LEVEL OF PROACTIVENESS**

Designation	Sample size	Ave. rank	D.F.	Test statistics	P-value
CEO/GM	15	32,54			
Marketing manager	10	14,60			
Sales manager	9	21,44			
Managed care	16	25,88			
<b>Total</b>	<b>50</b>		<b>3</b>	<b>131823</b>	<b>41</b>

The problem objective is to compare four populations (designations in a pharmaceutical organisation), and the data is ranked. These two factors are sufficient to determine the use of the Kruskal-Wallis test. The null hypothesis states that the location of all four populations must be the same. The alternative is that at least three population locations differ, where the null hypothesis will be rejected. This is the case here where chief executive officers/general manager's opinion of the level of proactiveness of their organisations differs from that of the rest of the pharmaceutical management team (H-value = 13,1823 with a 99% confidence level).

**TABLE 8.111 SPEED WITH WHICH ORGANISATION RESPONDS TO CHANGE**

Designation	Sample size	Ave. rank	D.F.	Test statistics	P-value
CEO/GM	15	32,30			
Marketing manager	10	24,30			
Sales manager	9	22,06			
Managed care	16	21,81			
<b>Total</b>	<b>50</b>		<b>3</b>	<b>61834</b>	<b>1002</b>

Again the null hypothesis must be rejected as the data clearly shows that chief executive officers/general managers view the speed with which their organisation responds to change differently to the rest of the pharmaceutical management involved in this study (h-value = 6,1834 with a 90% confidence level).

**TABLE 8.112 MEASUREMENT SYSTEMS ARE BASED ON**

Designation	Sample size	Ave. rank	D.F.	Test statistics	P-value
CEO/GM	15	33,57			
Marketing manager	10	23,55			
Sales manager	9	18,28			
Managed care	16	23,22			
<b>Total</b>	<b>50</b>		<b>3</b>	<b>93157</b>	<b>251</b>

There is enough evidence to infer that there is difference of opinion on what the measurement systems in pharmaceutical companies are based on. Chief executive officers/general managers have a different view to their subordinates on measurement systems. The test statistic has large value ( $h = 9,3157$ ) and therefore the null hypothesis must be rejected with 5% statistical acceptability ( $p = 0,0251$ ).

**TABLE 8.113 ORGANISATIONAL STRUCTURE**

Designation	Sample size	Ave. rank	D.F.	Test statistics	P-value
CEO/GM	15	32,53			
Marketing manager	10	25,25			
Sales manager	9	19,67			
Managed care	16	22,34			
<b>Total</b>	<b>50</b>		<b>3</b>	<b>66655</b>	<b>832</b>

The data provide sufficient evidence to infer that there is a difference of opinion on the organisational structure of pharmaceutical companies by the respondents. The null hypothesis stipulate that the location of the four populations must be the same, which is not the case here. There is a significant statistical variance between the different pharmaceutical designations to reject the null hypothesis with a standardised test statistic, h-value of 6,6655 ( $p$ -value = 0,0832).

**TABLE 8.114 ORGANISATIONAL "SUCCESS" MODEL**

Designation	Sample size	Ave. rank	D.F.	Test statistics	P-value
CEO/GM	15	33.43			
Marketing manager	10	23.20			
Sales manager	9	19.61			
Managed care	16	22,81			
<b>Total</b>	<b>50</b>		<b>3</b>	<b>82636</b>	<b>411</b>

There is strong evidence to infer that population ranks are unequal. It follows that it was justified in testing the null hypothesis, where all four populations ranks are equal. The organisational "success" model, viewed in the eyes of the respondents, differs according to their designations in pharmaceutical companies ( $h$ -value = 8,2636 and  $p$ -value = 0,0411). It is just logical then to reject the null hypothesis on the basis of the high value of the test statistic and the difference in population ranks.

As discussed, the Wilcoxon signed rank sum test deals with problems with the following characteristics:

- The problem objective is to compare two populations.
- The data are either ranked or quantitative where the normality requirement is necessary to perform the equal-variance t-test.
- The samples are independent.

Because there was enough evidence that the mean ranks of the above data differed, it was decided not to do the Wilcoxon signed rank sum test on the above data. Based on the difference in the mean ranks it is therefore assumed that there are significant differences between the different designations in a pharmaceutical organisation on the factors measured.

## 8.7 OPEN-ENDED QUESTIONS

### 8.7.1 Question 7 (other measures not mentioned to keep competitive advantage)

Other actions that pharmaceutical companies might take to keep their competitive advantage, mentioned by the respondents to the questionnaire, are extensive patient education programs on disease and drug therapy; involvement in mail order supply of chronic medication; resource flexibility through outsourcing and the employment of contract staff; relationship marketing to new managed care customers; challenging traditional methods of sales, marketing and business strategy in the pharmaceutical organisation; customer retention programs; customer satisfaction surveys and the quality of management in individual pharmaceutical organisations. The above-mentioned factors were the only ones mentioned by the respondents and that the majority of the respondents did not answer the question (question 7).

### **8.7.2 Question 9 (what will impact the most on the South African pharmaceutical industry in the future?)**

At the end of the questionnaire, respondents were asked which external factors they believe will have a significant impact on the pharmaceutical industry in the next five to ten years. Legal and regulatory issues featured highly and respondents were quite critical as they related encounters and experiences in dealing with an increasingly stringent regulatory environment. Among the issues mentioned was the legislation on intellectual property (patent protection), the new Medical Aid Act, legislation on compulsory generic substitution, legislation on price control, and legislation on parallel importation of pharmaceutical products.

Respondents also took the opportunity to comment on general issues reflected in the political and social environment of the South African economy. Crime, bribery and corruption, theft and an unstable economy were frequently mentioned. The devaluation of the Rand against all major currencies was also a major concern raised by a number of respondents. The impact of the devaluation will place more strain on the health care budgets of the private and public sector as costs will increase as most technology and pharmaceutical products are imported. AIDS was the second most frequently mentioned external factor, with the impact of AIDS still uncertain although most people are of the opinion that the impact will be devastating on health care and the economy in general.

The impact of managed care is the third most mentioned external factor with the implementation of various managed care programs from the development of disease management; capitation; new medical aid benefit design implementations; implementation of managed care cost control mechanisms (drug utilisation review, case management, co-payments); acceptance of treatment guidelines and protocols and patient education programs.

Surprisingly, only five respondents mentioned national health insurance. The researcher had expected it to feature at least in the top two external factors facing the health care industry in the next two to three years.

Other factors mentioned by the respondents were the rationalisation of the pharmaceutical distribution channel; patients' rights in exercising their rights to choose in health care delivery; one exit pricing; funder/provider relationships; disease modifying drugs; emigration (loss of skills in healthcare); declining quality of hospital care; unemployment and the level of information technology used within the health care industry.

Other issues, such as the increasing cost of health care insurance (medical aid); increased prescription and patient co-payment charges, are thought to have a relatively smaller impact as these issues exert only low or medium pressure on pharmaceutical pricing

Finally, a number of respondents suggested that there will be more emphasis on rationalisation and cost containment in all areas of the health care market as governments, employers and medical aids struggle to rein-in escalating cost, prompting further contraction within the pharmaceutical industry and a growing number of mergers and acquisitions – a scenario few would contradict.



## 8.8 CONCLUSION

In this chapter the research findings were discussed. Data analyses methods used was exploratory analysis, analysis of variances, Wilcoxon signed rank sum test and the Kruskal-Wallis test.

In the analysis of the results it can clearly be seen that pharmaceutical companies in South Africa view cost-effectiveness as the most important competitive weapon in their organisation's strategy. This could be the result of managed health care placing a great emphasis on the pricing of pharmaceutical products in South Africa. Squeezing pharmaceutical suppliers on the cost of their products is a typical managed health care strategy in lowering health care cost and is usually one of the first strategies to be implemented. Since lower prices require lower costs, suppliers will be the main contributors to the new cost structures of the providers. Although pharmaceuticals are arguably the most cost-effective as well as the smallest element in health care costs, and are dwarfed by the cost of labour, pharmaceutical companies' defencelessness makes them an easy target for becoming the major contributor to the margin shift from suppliers to providers in the short term. Pressure on prices will intensify in line with the expected consolidation of providers and will continue over time. South African pharmaceutical organisation must make the full paradigm shift of focussing on the cost effectiveness and the quality of their products by investing in good pharmaco-economic and outcome studies. The fact that cost-effectiveness and quality head the list of means scores shows an understanding by pharmaceutical management of the fundamentals of managed health care where the primary competitive weapons are price and quality of care.

It is interesting to note that pharmaceutical management has taken note of the importance of managed health care usage regulators. However, it is one thing to note the importance of something and another to strategise and align organisational objectives in a proactive manner. The high ranking of treatment guidelines and protocols was somewhat surprising. Formularies were expected to be at the top of the list, as formulary participation is the current focus of pharmaceutical organisations. The ranking of drug utilisation review as a usage regulator at the top of the table, with two of the instruments that drug utilisation uses as a usage regulator at the bottom of the table (therapeutic and generic substitution) shows that the pharmaceutical industry does not fully understand the process of usage regulators. The three usage regulators that the pharmaceutical industry currently spends a lot of resources on in developmental strategies (pharmaco-economic studies, outcomes management and disease management) rank highly as would be expected. It was surprising to see that discounts and rebates paid to keep pharmaceutical products on formularies/limited lists appeared low on the mean scores.

Issues which James (1994) viewed as important in reducing health care costs similar to disease management, patient education programmes, pharmacoeconomic data collection and providing these studies to managed care organisations to justify products prices, positioning pharmaceutical products in an integrated health care delivery approach, collecting and using outcomes data to show pharmaceutical products efficacy, alliances with managed care organisation who has the capabilities in information technology management tools to assist pharmaceutical companies in disease management, and outcomes management, education on managed health care principles was not mentioned. Various reasons could be put forward, but it is the researcher's opinion that pharmaceutical organisations are still in a state of denial regarding the impact of managed health care on their organisations. Other reasons could be that the present strategy of discounts/rebates for formulary listings and market share growth could have positive spinoffs; the pharmaceutical industry in South Africa is still in a state of prosperity and the attitude of why address these issues if we are still achieving our sales targets and above average profitability.

The main findings to keep a competitive advantage is in line with the success story of a traditional marketing strategy adapted by the multinational pharmaceutical organisations over the last 10 years. Focus on the quality of a product received, product differentiation and bring new products to the market as fast as possible even without added benefits to existing products on the market. The influence of the traditional marketing strategy (focus on the medical practitioner) can also be seen with the high ranking of novel drug delivery systems and other methods to expand the product life cycle, product bundling and pricing policies to stay competitive against other pharmaceutical products. The most influential factor in the successful marketing and sales of any product and service, besides the price and quality, is the ability to create lasting relationships with customers. This strategy has been the success factor of the pharmaceutical industry for many years so it is not surprising that it is still regarded as the most important factor for the industry's success in future competitiveness by pharmaceutical management.

The researcher was surprised not to see change management also heading the list as it is one of the most discussed topics in the turbulent health care industry at present. The recognition of strong leadership and a clear vision to be competitive in the future health care environment was encouraging. The perception of customers of the value and cost of new pharmaceutical products and supplying solutions perceived by customers was also rated highly by pharmaceutical management as future strategy to be competitive in the future. This is a burning issue for most pharmaceutical companies whether they have the capability to convince their customers to pay a premium to cover the cost and return of an acceptable profit for developing products with little differentiation.

The statistical data provide enough evidence to infer that there is a difference of opinion in the pharmaceutical management ranks on the importance of some of the usage regulators. Capitation, disease management, education of marketing and sales and payments of rebates to managed care organisations to keep products on limited lists or formularies is the usage regulators that caused differences of opinions.

Pharmaceutical management acknowledged the importance of information technology as strategy for future competitiveness in the healthcare environment. It is predominately used to analyse information purchased from providers on own and competitor market shares within a given market, targeting of key customers, measurement of sales representatives and market trends.

A very prominent finding was the fact that leadership and vision are viewed as an important factor by the South African pharmaceutical management team. Those who lead the transformation process largely determine its course. Therefore, strong and good leadership is the key in contributing to future competitiveness and sets the tone and direction of the company's future. Senior leadership, in turn, encourages key qualities of transformational leadership at lower levels of management, creating a top-down, cascading migration of responsibility, motivation, and commitment, down and throughout the organisation. A vision outlines a strategic and lofty action plan and provides a shared mental framework that gives form to that future. The notion of an unrealized vision provides energy to make a transformational jump.

Based on the fact that most of the research and development innovation is done internationally, it could be a natural choice that most South Africa pharmaceutical managers would prefer to have that international pipeline in an organisation with a global presence. Networking with colleagues in other markets can also benefit local managers. The importance of managing up can be attributed to global presence, most South African multinational pharmaceutical organisations report into a European region with management responsibilities for a number of countries.

Adaptability of their organisations to be competitive in a future managed health care environment was rated highly by most of the respondents. Reframing is the shifting of the company's conception of what it is and what it can achieve and therefore it was not surprising that reframing of vision and cultures in the pharmaceutical organisation was viewed as important. This can be achieved by an integrated top-down and bottom-up business transformation, which was viewed as extremely important by the respondents in this report.

The key issue in marketing and sales in a managed care environment is a movement from the traditional product-based marketing approach to a customer-based approach, designed to meet customer needs. The existence of managed care will drive the requirement for a new set of core competencies not yet required to fundamentally launch and promote new products successfully. The development of new core competencies was echoed by the respondents.

The reason for the importance of the establishment diverse set of alliances might be the understanding that in the future alliances will have to be formed to gain access to markets and forge lasting relationships with a wide array of customers. For example, putting together an effective disease management program requires not only strong education and communication skills, but also partnerships with providers to ensure that the program functions effectively at the prescriber and patient levels through the use of monitoring and counseling services.

All the respondents (100%) indicated that the ability of a pharmaceutical organisation to create a lasting relationship with customers is very important in creating a competitive advantage. New behaviour patterns and attitudes along with modernising the organisational culture and values also featured prominently.

The external factors that the respondents believed will have a significant impact on the pharmaceutical industry in the next five to ten years were legal and regulatory issues related to encounters and experiences in dealing with an increasingly stringent regulatory environment. Among the issues mentioned was the legislation on intellectual property (patent protection), the new Medical Aid Act, legislation on compulsory generic substitution, legislation on price control, and legislation on parallel importation of pharmaceutical products. AIDS was the second most frequently mentioned external factor, with the impact of AIDS still uncertain although most people are of the opinion that the impact will be devastating on health care and the economy in general. The impact of managed care is the third most mentioned external factor with the implementation of various managed care programs from the development of disease management; capitation; new medical aid benefit design implementations; implementation of managed care cost control mechanisms (drug utilisation review, case management, co-payments); acceptance of treatment guidelines and protocols and patient education programs.

Finally, a number of respondents suggested that there will be more emphasis on rationalisation and cost containment in all areas of the health care market as governments, employers and medical aids struggle to rein-in escalating cost, prompting further contraction within the pharmaceutical industry and a growing number of mergers and acquisitions – a scenario few would contradict.

## CHAPTER 9

### RECOMMENDATIONS AND FUTURE RESEARCH

#### 9.1. INTRODUCTION

The trend towards managed care is irrevocably altering the market that the South African multinational pharmaceutical organisations are operating in by altering the demand of services (managed care usage regulators) and the supply of pharmaceutical services. Towards the end of the millennium it is clear that the pharmaceutical market has undergone a revolutionary customer-led change and nothing short of transforming the way in which pharmaceutical organisations presently operate will enable them to survive.

The pharmaceutical industry is seething with unease and unrest as companies struggle with the threats and dimly perceived opportunities crowding in on all sides. Everyone knows that the rules of the game has changed and that all companies in the industry must adapt but, by and large, companies have been ambushed by the upheavals, and the state of preparedness is low. There is still disagreement about what to do, and whether the adaptations demanded by the dramatic changes in the trading environment are incremental or fundamental.

#### 9.2 SUMMARY OF THE MAIN FINDINGS

In the analysis of the results it can clearly be seen that pharmaceutical companies in South Africa view cost-effectiveness as the most important competitive weapon in their organisation's strategy. This could be the result of managed health care placing a great emphasis on the pricing of pharmaceutical products in South Africa. Pressure on prices will intensify in line with the expected consolidation of providers and will continue over time. South African pharmaceutical organisation must make the full paradigm shift of focussing on the cost effectiveness and the quality of their products by investing in good pharmacoeconomic and outcome studies. The fact that cost-effectiveness and quality head the list of means scores shows an understanding by pharmaceutical management of the fundamentals of managed health care where the primary competitive weapons are price and quality of care.

It is interesting to note that pharmaceutical management has taken note of the importance of managed health care usage regulators. However, it is one thing to note the importance of something and another to strategise and align organisational objectives in a proactive manner. The high ranking of treatment guidelines and protocols was somewhat surprising. Formularies were expected to be at the top of the list, as formulary participation is the current focus of pharmaceutical organisations. The ranking of drug utilisation review as a usage regulator at the top of the table, with two of the instruments that drug utilisation uses as a usage regulator at the bottom of the table (therapeutic and generic substitution) shows that the pharmaceutical industry does not fully understand the process of usage regulators.

The three usage regulators that the pharmaceutical industry currently spends a lot of resources on in developmental strategies (pharmacoeconomic studies, outcomes management and disease management) rank highly as would be expected. It was surprising to see that discounts and rebates paid to keep pharmaceutical products on formularies/limited lists appeared low on the mean scores.

The main findings to keep a competitive advantage is in line with the success story of a traditional marketing strategy adapted by the multinational pharmaceutical organisations over the last 10 years. Focus on the quality of a product received, product differentiation, bring new products to the market, focus on and create lasting relationships with the medical practitioner.

The researcher was surprised not to see change management also heading the list as it is one of the most discussed topics in the turbulent health care industry at present. The recognition of strong leadership and a clear vision to be competitive in the future health care environment was encouraging. The perception of customers of the value and cost of new pharmaceutical products and supplying solutions perceived by customers was also rated highly by pharmaceutical management as future strategy to be competitive in the future. This is a burning issue for most pharmaceutical companies whether they have the capability to convince their customers to pay a premium to cover the cost and return of an acceptable profit for developing products with little differentiation.

Pharmaceutical management acknowledged in the research the importance of information technology as strategy for future competitiveness in the healthcare environment. As a management system it is predominately used to analyse information purchased from providers on own and competitor market shares within a given market, targeting of key customers, measurement of sales representatives and market trends.

A very prominent finding was the fact that leadership and vision are viewed as an important factor by the South African pharmaceutical management team. Those who lead the transformation process largely determine its course. Therefore, strong and good leadership is the key in contributing to future competitiveness and sets the tone and direction of the company's future. Senior leadership, in turn, encourages key qualities of transformational leadership at lower levels of management, creating a top-down, cascading migration of responsibility, motivation, and commitment, down and throughout the organisation.

Adaptability of their organisations to be competitive in a future managed health care environment was rated highly by most of the respondents. Reframing is the shifting of the company's conception of what it is and what it can achieve and therefore it was not surprising that reframing of vision and cultures in the pharmaceutical organisation was viewed as important. This can be achieved by an integrated top-down and bottom-up business transformation, which was viewed as extremely important by the respondents in this report.

The key issue in marketing and sales in a managed care environment is a movement from the traditional product-based marketing approach to a customer-based approach, designed to meet customer needs. The existence of managed care will drive the requirement for a new set of core competencies not yet required to fundamentally launch and promote new products successfully. The development of new core competencies was echoed by the respondents.

The reason for the importance of the establishment diverse set of alliances might be the understanding that in the future alliances will have to be formed to gain access to markets and forge lasting relationships with a wide array of customers. For example, putting together an effective disease management programme requires not only strong education and communication skills, but also partnerships with providers to ensure that the programme functions effectively at the prescriber and patient levels through the use of monitoring and counseling services. Similarly, opportunities exist for integrating managed health care organisations into the clinical development programme, not only to improve product-customer fit but also to reach large numbers of patients to get early information on pharmacoeconomic as well as clinical value so as to speed up the regulatory process.

The external factors that the respondents believed will have a significant impact on the pharmaceutical industry in the next five to ten years were legal and regulatory issues, AIDS and the implementation of managed healthcare programs.

### 9.3 CONCLUSIONS

The conclusions and recommendations of this research will be discussed in context with the main findings and theoretical foundation using the managed care business transformation model (figure 9.1) as a discussion template.

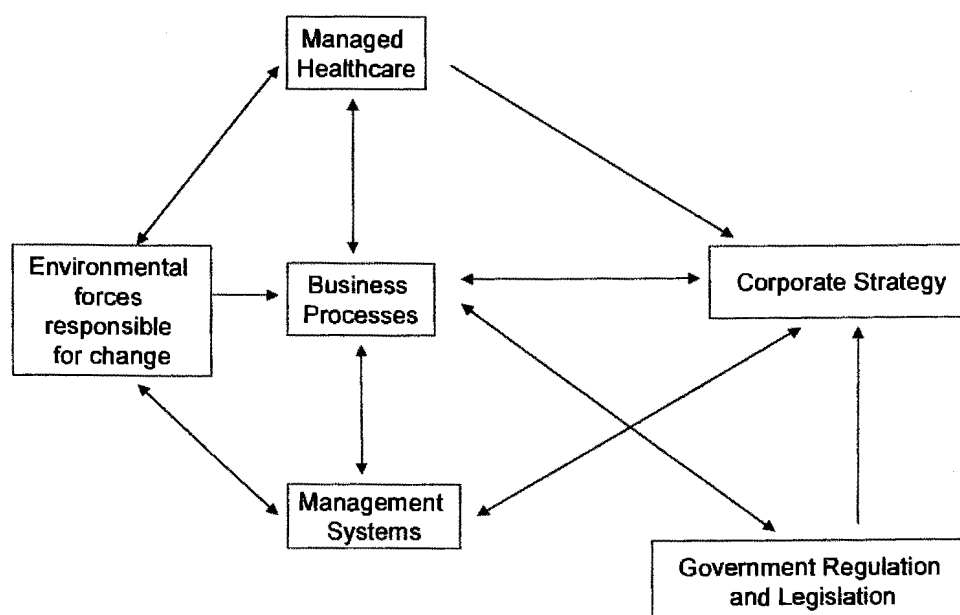


Figure 9.1 Managed care business transformation diamond

### 9.2.1 Business Processes

South African pharmaceutical management is of the opinion that after cost-effectiveness, quality of care, the introduction of new pharmaceutical products and product differentiation (traditional marketing strategy) will provide the engine for future growth, in a context of market turbulence and a set of far-from-clear opportunities in an emerging managed health care marketplace. For the pharmaceutical organisation this means a proactive approach in investing ahead of the emergence of clear opportunities and without the traditional certitude of immediate financial gains, as well as accepting a commitment to make a measurable impact on the health of its ultimate customers rather than remaining content to be merely a manufacturer and seller of pharmaceutical products.

New product development is the dominant source of competitive advantage in today's health care market for the pharmaceutical industry. While the new product will remain a key source of competitive advantage in the future market, the focus will change and new sources of competitive advantage must and will emerge. The old approach of a prescription pharmaceutical product as a discrete entity is no longer valid. As stated, managed health care customers are able to make their own value judgements, which go beyond the traditional measures of safety and efficacy into the realm of price.



Unless managed health care customers clearly see that future products fulfil their value expectations, pharmaceutical companies are unlikely to achieve prices which cover their development and introduction costs. With declining performance for most pharmaceutical companies a certainty in the frameworks of a marketplace in turmoil and an industry in transition, radically new ways of organising an organisation's capability to compete will be required. The traditional pharmaceutical business processes have been the model for success for more than fifty years. However, in tomorrow's health care market where the boundaries between companies, customers, competitors and suppliers become increasingly blurred, the traditional model will no longer be the only, or even the most effective, way to compete. Companies no longer need to be functionally integrated. The explosion in skills and knowledge in the sciences and in the health marketplace is now so great that no company, however large, is totally dependent on its in-house capabilities. Despite the ability to outsource almost all functions and skills South African pharmaceutical companies have been reluctant to move towards out sourcing as a major organisational strategy as reflected in the findings of this research project. In the low-cost managed health care market, pharmaceutical companies will need to learn how not to do things, how not to perform the functions that suppliers can do more efficiently. Companies will have to learn quickly to focus only on those activities that are critical to the organisation and that the company is distinctively good at performing. The problem has been compounded by the wide-scale use of cost accountings rather than activity-based systems, which identify those activities which really add value.

Strategic outsourcing will allow management to focus attention on what customers perceive as the most valuable attributes, cost and value, and on those specialist skills where there are few or no capable suppliers. The emphasis in the future will be on networks of alliances between companies, suppliers, competitors, providers and payers, and functional specialisation will become more important. Since no company operating on its own in tomorrow's boundaryless business can possess a broad-based competitive advantage, concentrating on core competencies and establishing alliances to acquire specialised services and skills will enable an organisation to combine the virtues of size (economies of scale and a large pool of specialised, skilled talent) with the benefits of leanness (focus, responsiveness and low overheads).

The traditional business processes of the pharmaceutical company were research and development of pharmaceutical products. Selling and marketing business processes emerged later with the advent of micro marketing. In this study, as a key success factor for the future, pharmaceutical management rated the ability to create, ahead of potential competition, a portfolio of new competencies which provide an in-depth understanding of the new health market. This will cover not only an intimate knowledge of managed care principles by sales and marketing personnel but also a good understanding of the various segments of the health care value chain and a mastery of how these fit together to form the company's own unique marketplace. Pharmaceutical companies are now competing for the competencies that will set the future standards, allowing firms to exploit turbulent change and influence other players in the health care chain.

Disease management, outcomes management, pharmacoeconomics and the marketing of pharmaceutical products within treatment guidelines and protocols, limited lists and formularies are key future competencies that were identified in the findings of this research that will determine the future standard for a competitive advantage in the South African pharmaceutical industry.

Getting to the future first may allow a company to build business processes (disease management, outcomes management, pharmacoeconomic models and new marketing and sales strategies) not easily duplicated by latecomers and to amortize more quickly its past investments in competence building, and may force competitors who are denied early revenues to downscale or abandon investment programs. Companies who fail to get to the future first often lose control over their destiny. Even when companies succeed in "catching up," their success may be less than complete. As stated in this study, the stand-alone, "lone ranger" strategy, which has served the pharmaceutical industry so well is now an anachronism. Pharmaceutical companies need to manage the growing set of alliances which will have to be formed to gain access to markets and forge lasting relationships with a wide array of customers, many of which will verge on partnerships. For example, putting together an effective disease management programme requires not only strong education and communication skills, but also partnerships with providers to ensure that the programme functions effectively at the prescriber and patient levels through the use of monitoring (managed health care usage regulators) and education services. Similarly, opportunities exist for integrating managed health care organisations into the clinical development programme, not only to improve product-customer fit but also to reach large numbers of patients to get early information on pharmacoeconomic as well as clinical value so as to speed up the regulatory process.

A competitive advantage exists for those pharmaceutical companies who are able to make the emotional and intellectual shift away from a business dominated by fixed business processes (traditional marketing strategy with the focus on the medical practitioner) and activities towards tomorrow's marketplace (managed health care usage regulators), which will be driven by a set of flexible, virtual alliances designed to address shifting coalitions of interest.

### 9.3.2 Managed health care

Managed health care customers (predominately the private health care market) now consider that solutions require more than just the provision of a product. Solutions may involve patient education on product and disease state, capitating the cost of a pharmaceutical product, a therapy, total pharmaceutical costs, outcomes management, a disease state and even total health care spending, as well as the management of a disease as was discussed in detail in chapter 3 and chapter 6. Thus they can encompass the provision of pharmaceutical products and related products, intervention and education, together with training to ensure that approved treatment protocols and guidelines are followed. The literature states that the future of managed care lies in the implementation of disease management and capitation programs. In the South African context as seen from the results of this study this has not yet been fully realised as the focus is still predominantly on the traditional marketing approach (focusing on the medical practitioner).

From the findings of the research some of the managed health care usage regulators were seen as important by the respondents include treatment guidelines and protocols, drug utilization review, pharmaco-economic studies, outcomes management and disease management. As mentioned before in chapter 3 Gotlieb (2000:6) believes there are three major control vehicles in managed health care to curtail high medical inflation in South Africa. These control vehicles are cost reducers, usage regulators and capitation, each of which offers a number of different mechanisms for cost containment. Cost reducers (co-payments, dispensing fees and mail order pharmacy) was not part of the study design as these factors are more an influence on the individual patient behavior. Capitation was not considered as important by the respondents of this research project. The reason could be that there is not any real capitation model currently being implemented in South Africa and therefore have no effect on the multinational pharmaceutical organisation.

To compete successfully in a world of capitation and disease management, pharmaceutical organisations will need to build a set of core competencies ranging from actuarial, patient and information management skills through to training and education, outcomes research and measurement, as well as to develop the skills needed to form and manage alliances with suppliers, competitors, providers, payers and patients in order to assemble, distribute and manage a “solutions” approach.

To compete successfully in a world of exploding influence (managed health care usage regulators), pharmaceutical organisations have to build not only an intimate knowledge of their new customers but also develop specific programmes to meet their needs. The move towards an integrated health care market is creating a network of influences in its wake. The price for admission to full partnership with customers is the ability to create shared values for all customers along the value chain. According to Knight (1999: 298), integrated health care management can lead to appropriate drug therapy and the concerted education of physicians and patients can lead to improved quality of care and economic outcomes.

In the absence of other measures, product acquisition cost has become the driving issue for cash strapped medical aids, managed care organisations, employers and patients. Even when the market turns away from cost to value as the key criterion for product selection, cost will remain a critical factor in survival and success. In tomorrow's market, where managed health care customers will determine price, companies need to re-examine the underlying assumptions and premises on which every decision is made and action taken, not only within the discrete components but also along the chain from research and development, manufacturing to selling the pharmaceutical products. The objective must be to determine what needs to be done not merely better but, more important, differently, in order to significantly reduce system costs.

Disease management provides both a mechanism to emphasize the value of pharmaceutical products in reducing health care costs and the promise of a new business landscape where pharmaceutical companies can compete for part of the huge non-pharmaceutical product-related healthcare market. Current approaches to disease management reflect the capabilities and visions of individual companies. Some see disease management as a cluster of services designed to add value to their product offerings, while others see it as an opportunity to build an integrated system of partnerships or even to completely control health management. The evaluation of a disease management programme of interventions should be based on an explicit theoretical framework and theory must be integrated with sociocultural logic and cultural concepts (Daniel and Green 1999:187). James (1996:109) believes that formulary-sensitive programmes requiring coverage of a particular company's product and stand-alone programs managed by pharmaceutical companies will not succeed in the future of disease management. James goes further by saying that pharmaceutical companies acting as disease managers cannot directly manage health or disease without active cooperation from numerous healthcare professionals, particularly the dominant providers.

Countless pharmaceutical companies share the risks and the financial benefits with these other industry members; they will likely be marginalised and involved in disease management only at the discretion of the providers. Disease management is the most promising and at the same time most controversial strategic approach being explored to address the challenges emerging in the new pharmaceutical industry environment. Often, however, careful evaluation of the idea of disease management, what it is, how it has evolved, where it fits into overall health care strategy, and what it implies for suppliers and users, is neglected in the stampede to deal with the key customer concern: the spiraling costs of health care.

To successfully take advantage of this new trend, pharmaceutical companies must consider the parameters of disease management, the capabilities required, and the potential risks and benefits of a disease management program. Like any emerging concept for which the boundaries lie unmarked and practice is largely experimental, disease management has as many definitions as it has proponents. Although definitions of disease management are variable, all revolve around the use of information to integrate the various components of health care as a means of reducing costs while improving quality.

The evolution of disease management is firmly linked to the growing belief among pharmaceutical industry management that traditional strategies based solely innovation is no longer viable for all pharmaceutical companies, and that approaches that move firms downstream into risk-sharing arrangements with managed health care customers will become the dominant force in determining both success and survival. Disease management offers pharmaceutical companies the opportunity to expand beyond their traditional role of selling pharmaceutical products and enter into arrangements with managed health care customers in which pharmaceutical product therapy is seen as part of a continuum of care. At the same time, disease management emphasizes the optimal use of pharmaceutical products as a cost-effective means of managing illness.

Disease management programmes help ensure that providers are prescribing the most appropriate drug therapy and that patients understand the importance of compliance with the regimen (*Pharmacoeconomics and Outcomes News* 1999:2). Thus, disease management may allow pharmaceutical companies to address the growing pressure to lower pharmaceutical product costs by demonstrating that increased pharmaceutical product use can result in greater savings elsewhere in the health care system (Merck-Medco 1999:1). However, Daniel and Green (1999:190) believe that disease prevention programmes should be of an adequate duration to realise the savings.

### **9.3.3 Management systems**

As previously stated in the summary of the main findings, South African pharmaceutical management acknowledged in the research the importance of information technology as strategy for future competitiveness in the healthcare environment. As a management system it is predominately used to analyse information purchased from managed health care providers on own and competitor market shares within a given market, targeting of key customers, measurement of sales representatives and market trends. The future health care market and the new sources of competitive advantage which focus on managed health care cannot be managed by today's management systems. The dynamic nature of tomorrow's market and competition characterised by a shifting network of interests requires strong linkage mechanisms to provide the glue to keep the network together. The ability to determine just what decisions need to be made from a mass of data derived from an expanding array of new internal processes, as well as from an exploding network of competitors and customers, is critical to success in tomorrow's market. Many of these management information systems will be new not only to companies but to the market as a whole and, as none of the current external data suppliers provide more than a small fraction of the data needed to operate in tomorrow's market, companies will largely be faced with pioneering customised management information systems.

Access to information, particularly on outcomes, will be crucial not only to capitation, pharmacoeconomics and disease management but also to influence and focus the new product selection process for formularies by pharmaceutical and therapeutics committees (P & T) as well as for research and development criteria to improve the productivity of pharmaceutical innovation. The fact that all the before mentioned managed healthcare programmes were viewed as important by the respondents to this research project was extremely encouraging. The effective management of information enabling pharmaceutical companies to make better and faster decisions in a data-rich world will probably become the overriding source of competitive advantage tomorrow's health care market.

### 9.3.4 Corporate strategy

The most difficult task confronting the pharmaceutical industry presently is change management and the management of the transformation process. Facing up to the daunting challenge of moving a pharmaceutical company away from being just a better organisation to being a totally different organisation in a new and uncharted marketplace will be the supreme test of leadership. In a marketplace with turbulent changes, change in strategic and organisational structures on an incremental basis can transform the mediocre pharmaceutical companies into market leaders. Strong leadership and a clear vision will be required to force many pharmaceutical companies to come to terms with profligate spending and cavalier decision-making which even the largest companies can no longer afford. Most of the transformation efforts will fail in the pharmaceutical industry because these processes are geared to treat the symptoms not the underlying cause, customer-induced change through managed healthcare. Customers, not management's vision, have set the agenda for the transformation of the pharmaceutical industry. Companies do not need to improve themselves; they need to be transformed or reinvented as was discussed in chapter 4. Conventional turnaround strategies, instead of complete organisation metamorphosis, may be prescriptions for failure in a marketplace undergoing turbulent change. Transformation requires altering the underlying assumptions on which decisions and actions are based: literally, the sum of the organisation's experience and interpretations of the past, which determines the company culture and dictates what is possible in the future.

Few pharmaceutical companies have yet been so grievously threatened, however, that they will voluntarily break with preserving the past and accept the turmoil and the visceral change which accompany transformation. Underlying the slowness of managerial change could be the fact that managements in the pharmaceutical industry have not been able to develop a clear and compelling vision of the kind of pharmaceutical company that needs to emerge from the turbulence of an industry in transition. Therefore, it was encouraging to see from the results of this study that leadership and vision are viewed as an important factors for the successful transformation of the South African pharmaceutical industry. Those who lead the transformation process largely determine the course. Strong and good leadership qualities are the key in contributing to the future competitiveness of South African pharmaceutical organisations and will set the tone and direction of the company.

The only way to compete in the long haul in a totally different managed healthcare marketplace is to be a totally different company. Top management must develop and communicate a clear vision. There might be a lack of experience in managing a turbulent environment and could result to leader recruitment from other industries. It is a case of the heads have turned, but the hearts are still struggling with the cultural detritus of the years of plenty.

#### **9.3.4 Environmental forces responsible for change**

AIDS was the second most frequently mentioned external factor, with the impact of AIDS still uncertain although most people are of the opinion that the impact will be devastating on health care and the economy in general. As discussed in Chapter 2, a survey released by SA Institute of Race Relations has revealed that South African's population growth rate is expected to drop by 71 percent in the next 10 years as a result of the AIDS epidemic. By 2005, about six million people here would be HIV-positive, with more than 18 percent of the workforce infected. The World Economic Forum estimates that within two years six percent of South Africans will die of AIDS-related illnesses. It said nearly three million South Africans were already living with AIDS and nine percent of the workforce was HIV-positive. The World Economic Forum said the HIV/AIDS epidemic posed a major threat to South Africa's competitiveness. Already 30 percent of South African firms surveyed by World Economic Forum said AIDS was having a moderate to major effect on time lost because of AIDS-related sickness; 28 percent said it was having an effect on time lost to attend funerals, while 34 percent said it was reducing the skilled labour force. (Healthmatters 20 June 2000. The South African government established a National AIDS Council early in 2000 to strategise on the disease and the impact of the disease on the country's future.

#### **9.3.5 Government Regulation and Legislation**

The external factors that the respondents believed will have the most significant impact on the pharmaceutical industry in the next five to ten years were legal and regulatory issues related to encounters and experiences in dealing with an increasingly stringent regulatory environment. Among the issues mentioned was the legislation on intellectual property (patent protection), the new Medical Aid Act (discussed, legislation on compulsory generic substitution, legislation on price control, and legislation on parallel importation of pharmaceutical products.

Adequate patent protection of intellectual property (patents) is of fundamental importance to the pharmaceutical industry. The high risks and costs of developing new pharmaceutical products (medicine) mean manufactures rely on intellectual property protection to protect their investments in research and development, thereby encouraging further research. The Pharmaceutical Research and Manufactures of America (1999:83) report that pharmaceutical organisations would not have developed 65% of their products if patent protection were not available. The South African pharmaceutical industry faces the loss of patent protection of intellectual property from the South African government when a consortium of 39 international pharmaceutical organisations abandoned a three-year court case to prevent Pretoria bypassing certain of their patent right in the search for cheaper pharmaceutical products. Analysts say the result could have a knock on effect on pharmaceutical prices and policy throughout the developing and first world. Only time will tell what the real effect of this decision will be (The Sydney Morning Herald, 25 April 2001:36)

### **9.3.7 The research problem**

#### *9.3.7.1 The purpose of this research*

The purpose of this research was to identify and evaluate the impact of managed health care, as a health care delivery mechanism for the private health care market, on the South African multinational pharmaceutical organisation. The primary health care delivery mechanism for the public sector falls outside the research project.

#### *9.3.7.2 The first subproblem*

The first subproblem was to theoretically establish what is understood by managed health care and then to determine if it is transferable (from the United States) and a viable option for controlling the ever increasing health care costs in South Africa under the proposed aims of the ANC government health care policy.

The research project did establish a full understanding of the managed health care principle and the transferability of the managed health care principles to the South African health care environment. A brief summary will follow.

Managed medical care - a uniquely American development - dates back to the 1930s. With the globalisation strategies of companies and concepts the managed health care concept is taking roots in Europe, South America, Australasia and South Africa. The term, "managed health care" that is used to embrace a whole range of organisations, approaches and techniques which together comprise a system of health care delivery which influence's utilisation and cost of services, and measures performance was discussed in chapter 6 as an alternative for the escalating health care costs of South Africa. The goal of managed health care is to establish a system which delivers value by giving people access to quality and cost-effective health care.



Managed health care is an alternative health care delivery system to the primary health care system, which was discussed in chapter 5, but both systems have similar objectives in providing cost-effective health care to more South Africans. There is no ideal managed health care model and optimal models are those that best satisfy distinct environmental needs and competitive factors. These models are simply used as examples to assist in the understanding of the managed health care environment. The distinction between many of these models has narrowed considerably, and in many instances the managed health care organisations will be a hybrid of several different models.

Before the managed care occurred in America, medical costs were swelling out of control. They are still high by world standards, but the pace of inflation has been drastically curbed – and this has been achieved without a measurable drop in the quality of care (*The Economist* 1998:23). These results are a good enough reason why managed health care is a viable option for the South African health care environment. The goals of managed health care also fit into the goals of the South African government's primary health care and health care to all policies. Financial stability could return to the medical scheme industry. Although managed health care will raise the efficiency level of the entire health care industry and possibly even reduce costs to the patients, it will not solve the problem of diminishing memberships which though healthier in the early to mid 1990s is still suffering from increasing medical inflation. Managed health care, though still at an almost experimental stage in South Africa, seems to have a chance of success.

#### *9.3.7.3 The second subproblem*

Secondly, the purpose was to determine the possible impact that the change in the environment, brought about by managed health care, will have on the modus operandi of multinational pharmaceutical organisations in South Africa. What should the pharmaceutical organisation's corporate strategy be to adapt to the change envisaged by managed health care?

The research project found that new realities face the pharmaceutical companies in a turbulent health care environment. These new realities are changing the boundary of the industry and their business processes which made the industry so successful and are rendering obsolete the industry's conventional models of corporate strategy and management systems. In the context of these turbulent changes, pharmaceutical companies are being forced simultaneously to develop new strategic approaches for the future, design new business processes which will link them more firmly to their new customers (managed health care organisations), and implement the cultural changes necessary to accomplish the transformation from yesterday's successful pharmaceutical company to tomorrow's customer-led, integrated health care supplier (Discussed as conclusions of this research in context with the main findings and theoretical foundation using the managed care business transformation model (figure 9.1) as a discussion template).

### 9.3. RECOMMENDATIONS

From the research there is a consensus on the most important characteristics or core competencies which South African multinational pharmaceutical organisations will need to be successful and to survive through the transformation process of the pharmaceutical industry in adapting and prospering in the new managed health care marketplace. The successful South African multinational pharmaceutical organisations will:

- have to be a customer-led business supplying a comprehensive set of solutions to its various customer groups that include pharmacoeconomic models, outcomes management and disease management programs above the normal quality and price strategies.
- have to create the ability to structure lasting and collaborative relationships with a variety of managed health care customers.
- have to be a high-value, low-cost supplier.
- have to develop exceptional skills in creating and managing dynamic alliances with managed health care customers.
- have to develop and integrated a set of management and customer information systems for a dynamic management system.
- provide training and education on managed health care principles to sales and marketing personnel for the development of new core competencies
- employ leaders that have a clear vision in a turbulent health care environment.
- provide all levels of management with training and the necessary tools to implement a business transformation process to be competitive and successful in the new managed health care marketplace.

Building the companies which can achieve these goals will require management to move beyond the traditional focus on functional excellence, the hallmark of success of yesterday's South African multinational pharmaceutical company. New business processes must be created to ensure that the fullest benefit is derived from the cross-functional co-ordination of companies' own core activities, from close linkage to networks of managed health care customers. There is no call for the total replacement of the stand-alone, functionally integrated multinational pharmaceutical company structure and business processes. Rather, each pharmaceutical company by trial and error will have to establish the mix of structures and business processes suitable to its own specific needs, unique capabilities and explicit strategic goals. The greatest barrier to success in the challenging world of tomorrow will be outmoded views of what a pharmaceutical company should look like and how it should be managed.

But the real challenge for pharmaceutical companies is not managing costs, making good deals on rebates for market share growth, focusing on managed health care customers, disease management, creating new vision and developing strong leadership; it is doing all these things at once, in an integrated program of top-down and bottom-up business transformation.

Some general recommendations or solutions, to stimulate some thoughts, as a result from interpreting the research findings, the theoretical understanding of managed health care principles and the background of the pharmaceutical industry by the author are:

- Pharmaceutical companies must build managed health care sales forces, schooled in finance along with science and cut bloated traditional sales forces. Pharmaceutical organisations are forced to take a much more sophisticated approach to meet the demands of powerful managed health care customers, using professional buying arrangements like pharmacy and therapeutic (P & T) committees. Here the sale is no longer based on the “new and improved” molecule, the clinical performance of the compound on a drug-to-placebo basis in small populations isolated from comparative therapies and costs, and on the company’s commitment to research. The sale is now based on information derived from the systematic examination of treatment options, costs and outcomes because the buyers’ focus switched to cost minimisation, using a variety of measures, including comparisons of acquisition costs of a drug, the probability of its delivering optimal outcomes and its cost effectiveness, in other words providing the desired level of clinical usefulness at the lowest overall cost. The role of managed health care is to move to lower costs without affecting the health outcomes of the patient. The burning issue for pharmaceutical companies is how far and how fast they need to shift away from the old unitary sales process to the more sophisticated approaches required by managed health care whose choices will be knowledge and experience-based. The new and clearly better will receive a premium while the marginal innovation will probably no longer cover its cost. From the old “everyone’s a winner” situation, pharmaceutical companies are going to have to start making rational decisions on resource allocation, which clearly favour the new and the obviously better, to select from among the marginal products those very few where meaningful clinical and cost value can be established for customers, and to abandon the mediocre.
- Future success for pharmaceutical companies will revolve around the ability to create long-term relationships with the providers of managed health care and their intermediaries, based on shared value which goes beyond short-term product supply deals focussed solely on acquisition costs.
- The key is not just to understand the managed health care organisation better, but to relate to their needs by identifying ways to earn and sustain their loyalty. A well-honed strategy should not only deal with the idea of value, but should also provide ample opportunities to truly tie product sales into managed health care ventures.

- In a health care market controlled by managed health care, staying in business means being able to make, find and sell products that managed health care organisations want at prices that they are willing to pay. How well a pharmaceutical company allocates its resources and structures its costs are factors in survival in a marketplace where sophisticated, value-driven, cash strapped customers are both able and motivated to make selections based on their perceptions of value-for-money.
- To avoid becoming marginalised as mere vendors, pharmaceutical companies need to reposition themselves as fully integrated contributors to improved health care delivery and as fully accredited partners to other members in the health care chain. Becoming directly involved in achieving the optimal outcomes for a product is rapidly becoming as important as the management attention directed at getting a product from concept to the finished packaged brand.
- Development of “value-add” programmes, focussing on educational activities for physicians or patients in such areas as disease management, proper pharmaceutical product use, and compliance. Value-add is expected by the customer and must be part of the marketing mix. It is an educational and support approach to working with managed health care customers and should not be seen as an alternative to giving a lower price. Simultaneously, pharmaceutical companies have to be able to convince sceptical managed health care customers, who are programmed to manage cost first and value later, that value, not cost, is the key contributor. This is a difficult task when cost has a clear and immediate impact while value is less tangible and is perceived to be less immediate and less measurable.
- New product development is the dominant source of competitive advantage in today’s health care market. While the new product will remain a key source of competitive advantage in the future market, the focus will change and new sources of competitive advantage must and will emerge. The old approach of a prescription pharmaceutical product as a discrete entity is no longer valid. As stated, managed health care customers are able to make their own value judgements, which go beyond the traditional measures of safety and efficacy into the realm of price. Unless managed health care customers clearly see that future products fulfil their value expectations, pharmaceutical companies are unlikely to achieve prices which cover their development and introduction costs. With declining performance for most pharmaceutical companies a certainty in the frameworks of a marketplace in turmoil and an industry in transition, radically new ways of organising an organisation’s capability to compete will be required. The traditional pharmaceutical company has been the model for success for more than fifty years. However, in tomorrow’s health care market where the boundaries between companies, customers, competitors and suppliers become increasingly blurred, the traditional model will no longer be the only, or even the most effective, way to compete.

#### **9.4 RECOMMENDATIONS FOR FUTURE RESEARCH**

This study focussed on four managerial groups in the pharmaceutical industry (CEO/general manager, marketing managers, sales manager and managed health care managers) However, pharmaceutical management consists of more management levels that are crucial to the success of business transformation. The researcher believes that the divisional heads of medical management research and development and financial management should have been incorporated in the study. The biggest shortcoming in the study is that regional management, product management (general and group), business development and key accounts management should have been included in the study, as they are normally at the forefront of the general day-to-day operations of the pharmaceutical organisation and their views would have been interesting to compare with those of senior management.

A study can be conducted to ascertain the views of the generic pharmaceutical industry on the impact of managed health care on their organisational strategy and then to compare them with the results of this study.

However, in the researcher's view the most valuable addition to this research project would be to repeat it at two-year intervals for several years to see how the views of pharmaceutical management have changed as managed care makes inroads in the South African health care market and to see whether the recommendations put forward by study have been realised and implemented.

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## **Annexure A**

**CONFIDENTIAL****QUESTIONNAIRE TO PHARMACEUTICAL EXECUTIVES**

Please complete the following details in the space provided.

Name and Surname

Name of Company

Company Address

Telephone Number

Date

A) What is your current designation? (Circle appropriate answer.)

CEO / General Manager	1
Marketing Manager	2
Sales Manager	3
Managed Care Manager	4

4

4

B) In which main market sector does your company/division operate? (Circle appropriate answer.)

Research-based ethical pharmaceuticals	5
Biotech therapeutics	6
OTC medicine	7
Biotech diagnostics	8
More than one of the above	9

5

6

7

8

9

Q1 As managed healthcare is introduced into the South African healthcare market, how important will the following competitive weapons be in your organisation's strategy? (Circle appropriate answer.)

1.1 Price

1.2 Quality of care

1.3 Cost-effectiveness

1.4 Discounting rebates

1.5 Added value services

1.6 Introducing new products

1.7 Introducing cheaper generics

	Completely unimportant	Unimportant	Important	Very important	
	1	2	3	4	10
	1	2	3	4	11
	1	2	3	4	12
	1	2	3	4	13
	1	2	3	4	14
	1	2	3	4	15
	1	2	3	4	16

Q2 An increasing number of usage regulators are being introduced in the South African healthcare market to influence the choice of the type of pharmaceutical therapy/care selected for a specific diagnosis. (Circle appropriate answer.)

2.1 Capitation

2.2 Disease management

2.3 Formularies

2.4 Treatment guidelines and protocols

2.5 Drug utilisation review

2.6 Outcomes management

2.7 Pharmaco-economics studies

2.8 Therapeutic substitution

2.9 Generic substitution

	Unimportant	Neither unimportant or important	Important	Very Important	
	1	2	3	4	17
	1	2	3	4	18
	1	2	3	4	19
	1	2	3	4	20
	1	2	3	4	21
	1	2	3	4	22
	1	2	3	4	23
	1	2	3	4	24
	1	2	3	4	25



Q3 With the introduction of managed healthcare, what in your opinion will be the core competencies or the main focus areas for the marketing function in your organisation? Select in the left-hand column what you view as important for any pharmaceutical company in the next five years and then select in the right-hand column how your organisation currently performs in that capacity. (Circle appropriate answer.)

IMPORTANCE						MARKETING FUNCTION CORE COMPETENCIES	PERFORMANCE					
1	2	3	4	5			1	2	3	4	5	
1	2	3	4	5	26	Focus on the traditional customer (medical profession)	1	2	3	4	5	41
1	2	3	4	5	27	Focus on the new customer (e.g. managed care pharmacy)	1	2	3	4	5	42
1	2	3	4	5	28	Use of outcomes studies to show efficacy of products	1	2	3	4	5	43
1	2	3	4	5	29	Use of clinical data to show efficacy of products	1	2	3	4	5	44
1	2	3	4	5	30	Focus on product value	1	2	3	4	5	45
1	2	3	4	5	31	Focus on cost of products	1	2	3	4	5	46
1	2	3	4	5	32	Education on managed care principles	1	2	3	4	5	47
1	2	3	4	5	33	Use of pharmaco-economic data to justify product prices	1	2	3	4	5	48
1	2	3	4	5	34	Developing added value services (patient education, disease management programmes)	1	2	3	4	5	49
1	2	3	4	5	35	Disease management	1	2	3	4	5	50
1	2	3	4	5	36	Analyse, develop and adjust marketing strategies for new customer base	1	2	3	4	5	51
1	2	3	4	5	37	Market products within recognised treatment guidelines and protocols	1	2	3	4	5	52
1	2	3	4	5	38	Show the overall value of products in terms of total healthcare cost savings	1	2	3	4	5	53
1	2	3	4	5	39	Launch and promote new products	1	2	3	4	5	54
1	2	3	4	5	40	Alternative marketing strategies for managed healthcare	1	2	3	4	5	55

**Q4** With the introduction of managed healthcare, what in your opinion will be the core competencies or the main focus areas for the sales function of your organisation? Select in the left-hand column what you view as important and then select in the right-hand column your organisation's performance or implementation. (Circle appropriate answer.)

IMPORTANCE				
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
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1	2	3	4	5
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1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5

**SALES FUNCTION CORE COMPETENCIES**

- 56 Increasing sales force size
- 57 Decreasing sales force size
- 58 Focus on the traditional customer (medical profession)
- 59 Focus on the new customer (e.g. managed care pharmacy)
- 60 Aggressive discounting/rebates to keep products on formulary
- 61 Discounting to deter generic and therapeutic substitution
- 62 Education on managed care principles
- 63 Developing new sales strategies/activities for managed care
- 64 Positioning of sales strategy within capitation
- 65 Use of pharmaco-economic data to justify product prices
- 66 Developing added value services (patient education)
- 67 Consolidation and concentration on key decision makers
- 68 Development of new skills for sales force
- 69 Selling products within recognised treatment guidelines and protocols
- 70 Show the overall value of products in terms of total healthcare cost savings
- 71 Price reductions to deter generic and therapeutic substitution

PERFORMANCE				
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
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1	2	3	4	5
1	2	3	4	5

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- 87



**Q6** Listed below are some of the actions which pharmaceutical companies might take to keep their competitive advantage. For each action state if your company agrees or disagrees in the context that it will provide a competitive advantage. (Circle the appropriate box.)

	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree	
Replacing key prescription products with lower margin products	1	2	3	4	5	120
Withdrawal of low margin products	1	2	3	4	5	121
Increase product life through patent protection of individual chemical entities	1	2	3	4	5	122
Use of pharmaco-economic data to justify product prices	1	2	3	4	5	123
Develop added value services(e.g. Disease Management Programmes)	1	2	3	4	5	124
Alliances/partnerships with Managed Healthcare Organisations	1	2	3	4	5	125
Developing new sales and marketing strategies to new customer base	1	2	3	4	5	126
Collecting and using outcomes data to prove product efficacy	1	2	3	4	5	127
Transforming the organisation to adapt to a new environment	1	2	3	4	5	128
Focusing on demand side management	1	2	3	4	5	129
Partnerships/alliances with other manufacturers	1	2	3	4	5	130
Product differentiation	1	2	3	4	5	131
Investing in sophisticated information technology	1	2	3	4	5	132
Faster product development/progress products to launch on time	1	2	3	4	5	133
Controlling the rising costs of R&D	1	2	3	4	5	134

**Pricing policies**

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	135
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	136
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	137
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	138
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	139
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	140
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	141
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	142
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	143

**Product differentiation**

**Controlling the costs of rising marketing and sales expenditures**

**Quality of new products**

**Use of novel drug delivery systems and other methods to expand product life cycle**

**Educating marketing and sales on managed healthcare principles**

**Discounting to keep products on limited lists/formularies**

**Rebates to keep products on limited lists/formularies**

**An integrated healthcare delivery approach**

**Q7** What other measures if any might you consider in the future which have not already been mentioned?

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**Q8** How important do you rate the following in terms of their contribution to future competitiveness of pharmaceutical companies in a managed healthcare environment? (Circle the appropriate box.)

	<b>Unimportant</b>	<b>Neither unimportant nor important</b>	<b>Important</b>	
Management of information	<b>1</b>	<b>2</b>	<b>3</b>	144
Leadership and vision	<b>1</b>	<b>2</b>	<b>3</b>	145
Global presence	<b>1</b>	<b>2</b>	<b>3</b>	146
Customer's perception of the cost of new products	<b>1</b>	<b>2</b>	<b>3</b>	147
Customer's perception of the value of new products	<b>1</b>	<b>2</b>	<b>3</b>	149
Adaptability	<b>1</b>	<b>2</b>	<b>3</b>	148
Managing up	<b>1</b>	<b>2</b>	<b>3</b>	150
Demand side management	<b>1</b>	<b>2</b>	<b>3</b>	151
Reframing visions and cultures	<b>1</b>	<b>2</b>	<b>3</b>	152
Integrated programmes of top-down and bottom-up business transformation	<b>1</b>	<b>2</b>	<b>3</b>	153
Development of new core competencies	<b>1</b>	<b>2</b>	<b>3</b>	154
Ability to manage a diverse set of alliances	<b>1</b>	<b>2</b>	<b>3</b>	155
Becoming a high-value, low-cost supplier	<b>1</b>	<b>2</b>	<b>3</b>	156
Ability to create lasting relationships with customers	<b>1</b>	<b>2</b>	<b>3</b>	157
Supplying solutions perceived by customers to be valuable	<b>1</b>	<b>2</b>	<b>3</b>	158
Out-sourcing of skills and functions	<b>1</b>	<b>2</b>	<b>3</b>	159

Creating new value propositions

1	2	3	160
1	2	3	161
1	2	3	162
1	2	3	163
1	2	3	164
1	2	3	165

Positioning in the new healthcare value chain

Change management

Foster new behaviour patterns and attitudes

Modernise organisational culture and values

Less functional integration

**Q9** What external factors, do you believe will have the most significant impact on the South African Pharmaceutical Industry in the next five to ten years? (3-4 key points will be appreciated.)

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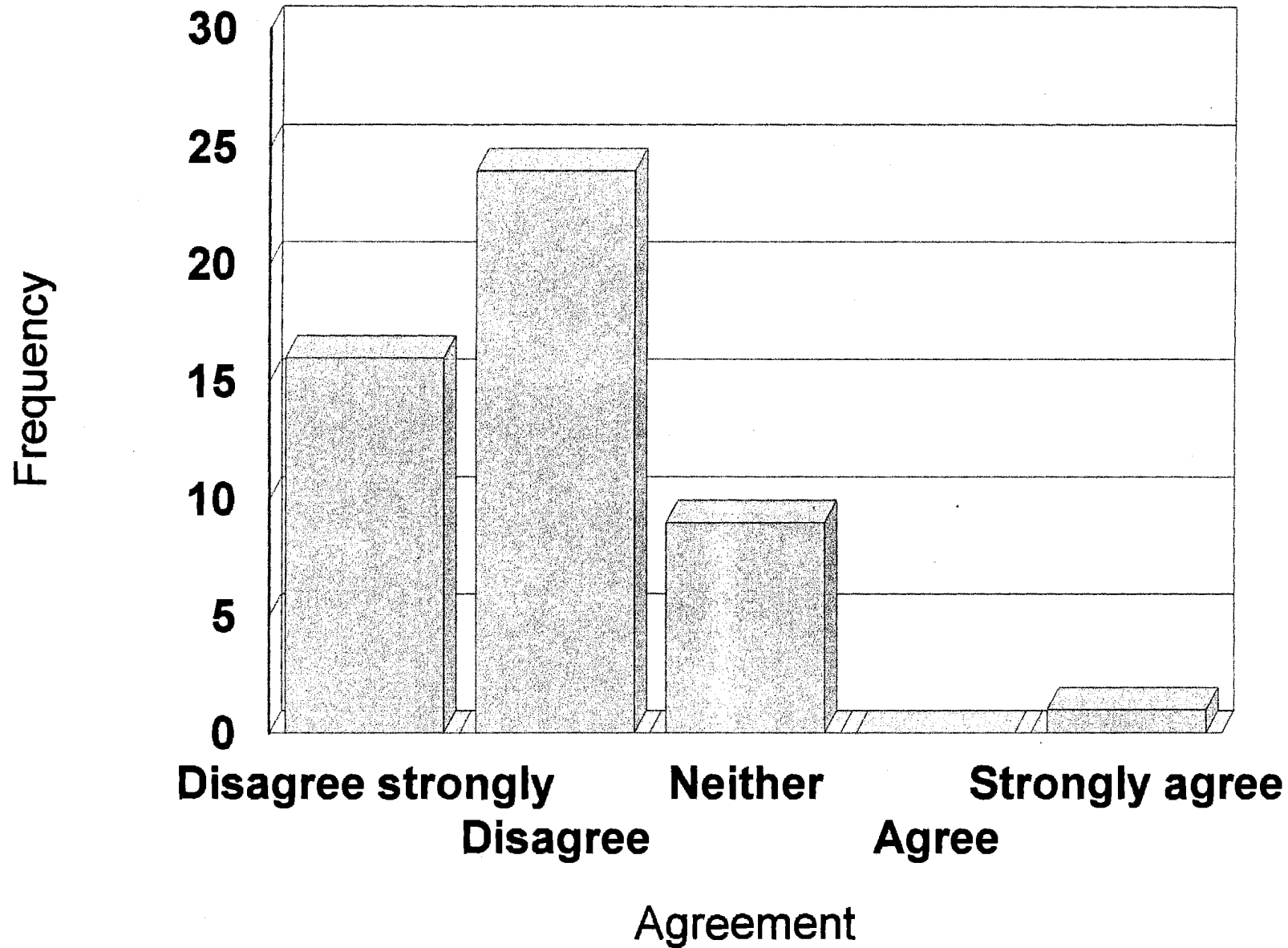
**Q10** In terms of the following criteria, how do you presently characterise your organisation in the turbulent healthcare environment? (Circle appropriate choice.)

Level of pro-activeness.	Low 1	Moderate 2	High 3		166
The organisation's functional culture is:	Operational 1	Marketing 2	Strategic 3	Innovation and R&D 4	167
Management systems	Structured limited flexibility 1	Structured readily adaptable 2	Dynamic flexible 3	Entrepreneurial 4	168
Speed with which the organisation responds to change in the environment.	Slow 1	Moderate 2	Fast 3		169
Measurement systems are based mostly on:	Past performance 1	Contribution to growth 2	Contribution to innovation 3	Entrepreneurship 4	170
Organisation's management style	Custodial 1	Inspirational goal orientated 2	Entrepreneurial 3	Creative 4	171
Propensity to risk	Accept familiar risk 1	Seek familiar risk 2	Accept high risk 3	Seek high risk 4	172
Organisational structure.	Functional 1	Mixed structure 2	Fixed matrix 3	Flexible matrix 4	173
Organisational "success model"	Precedent driven 1	Efficiency driven 2	Growth driven 3	Future driven 4	174
Transforming the organisation to adapt to a new environment.	Reactive 1	Proactive 2			175

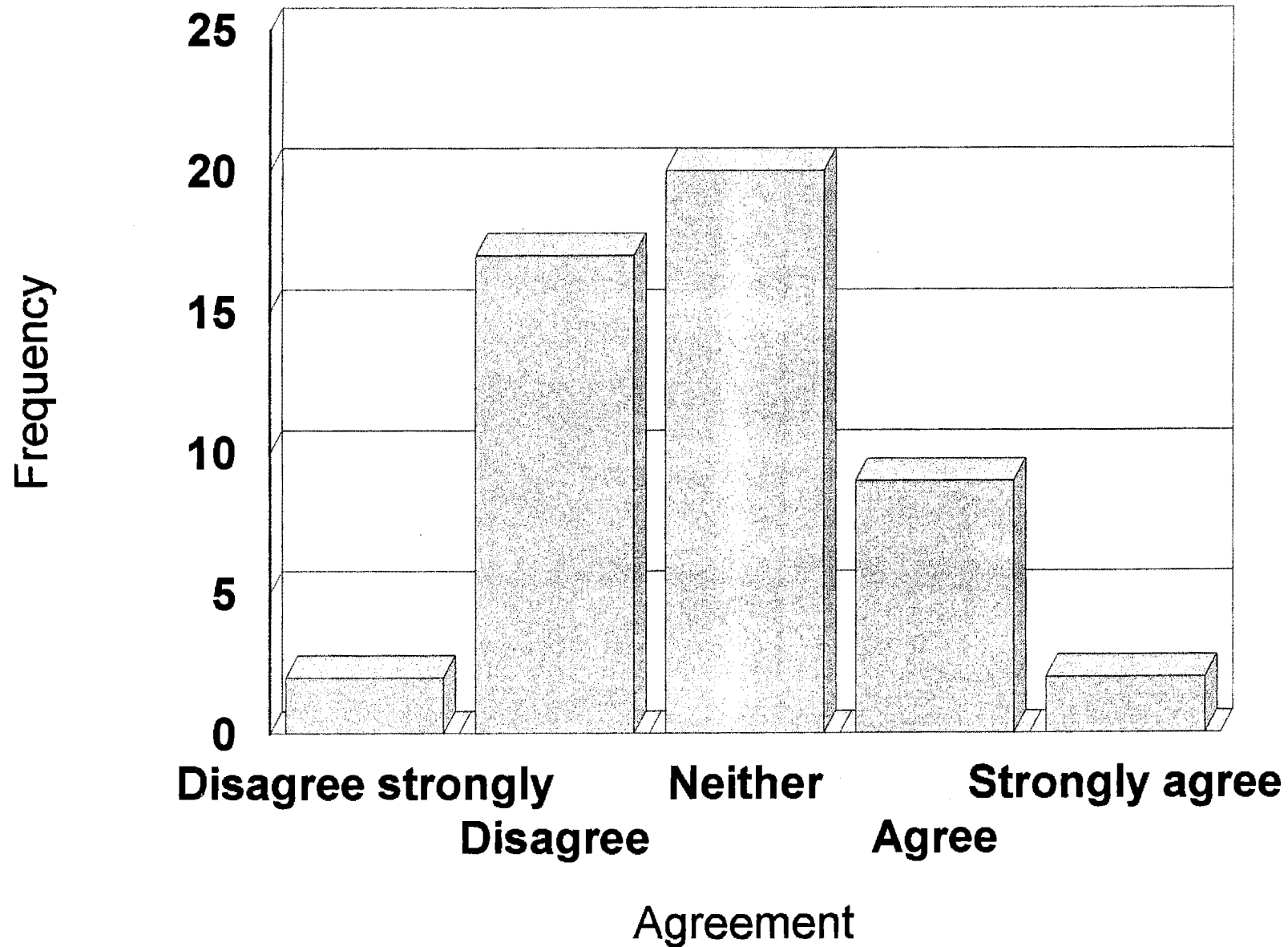


## **Annexure B**

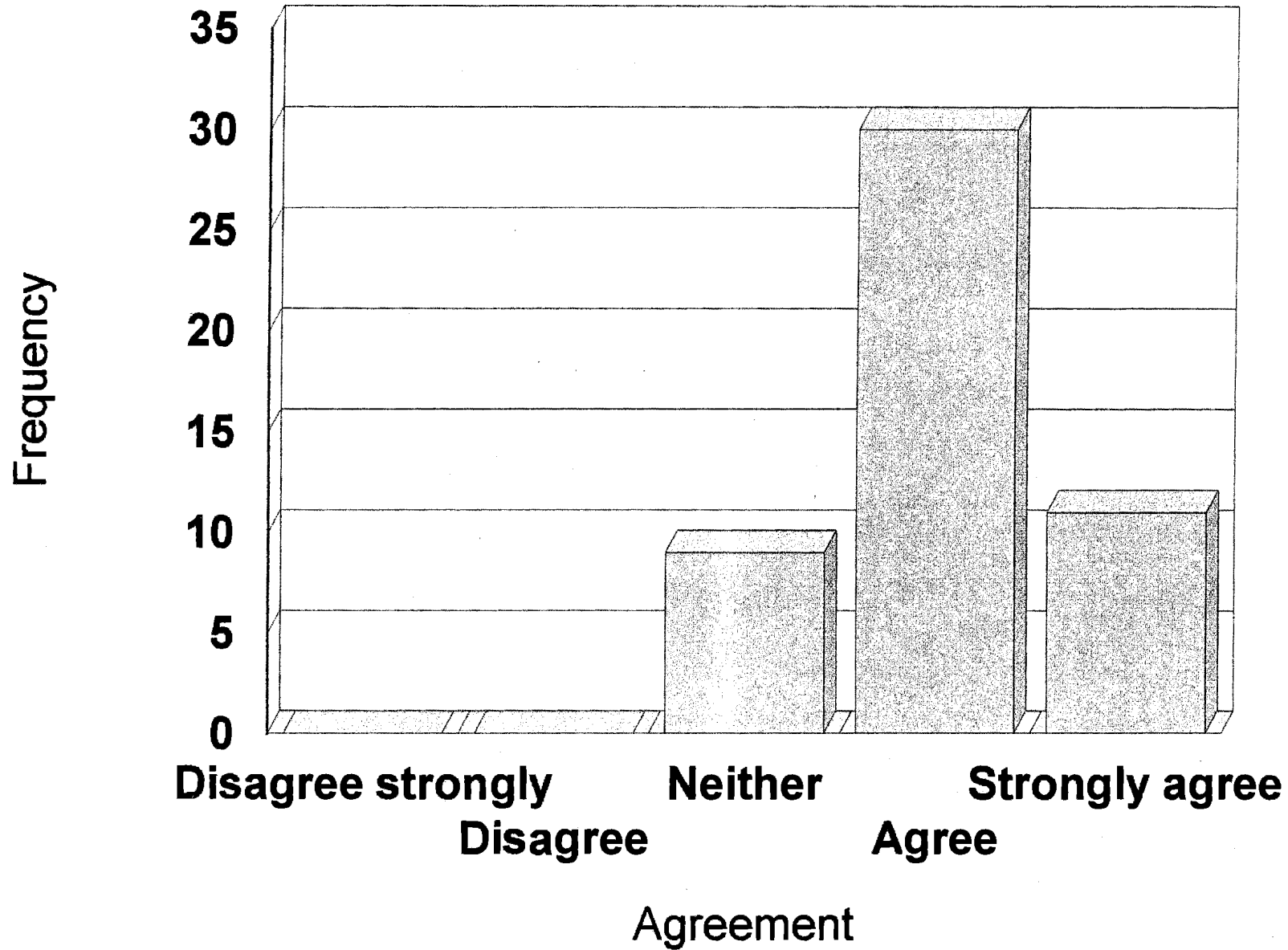
# Replacing key prescription products



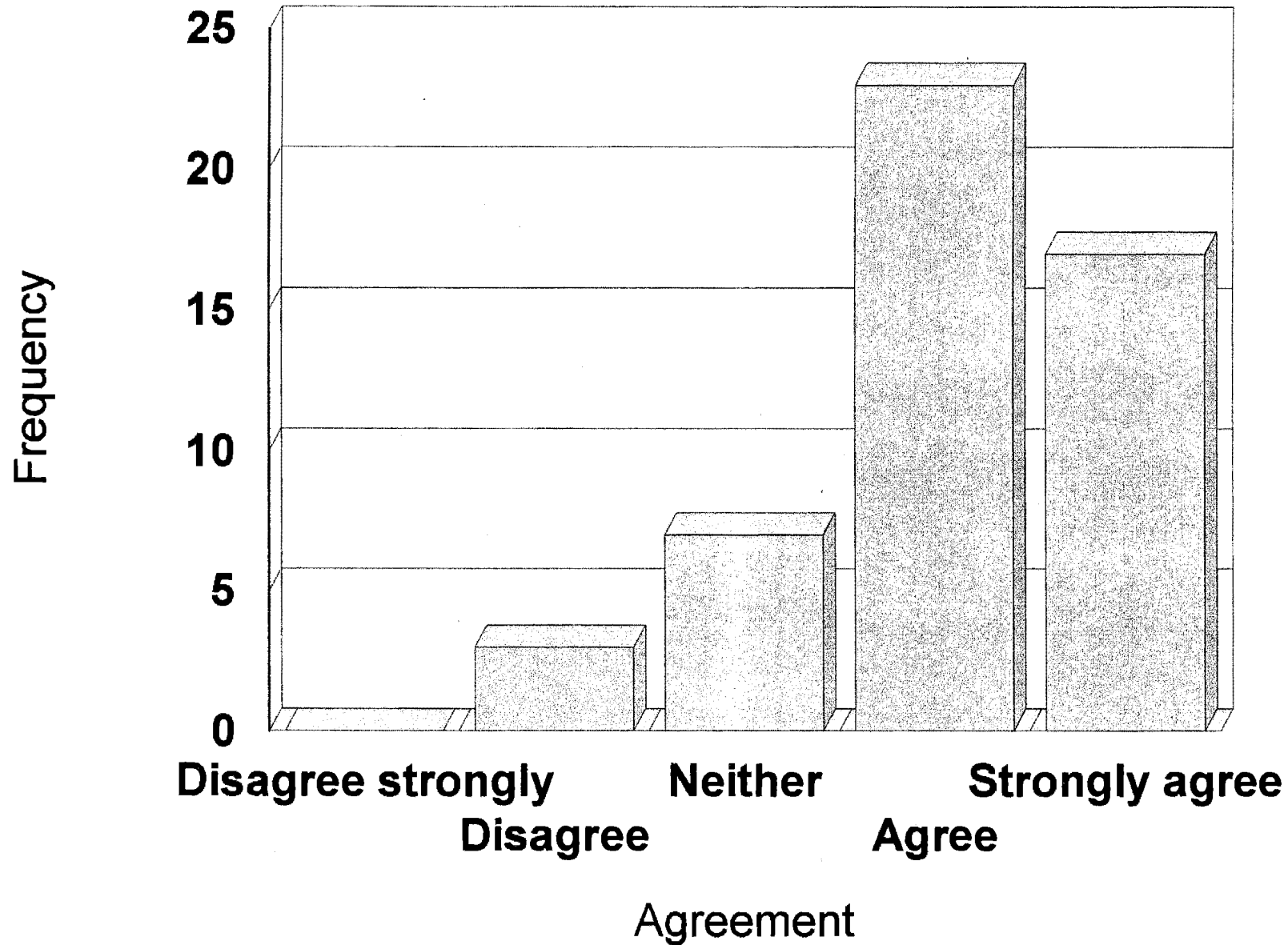
# Withdrawal low margin products



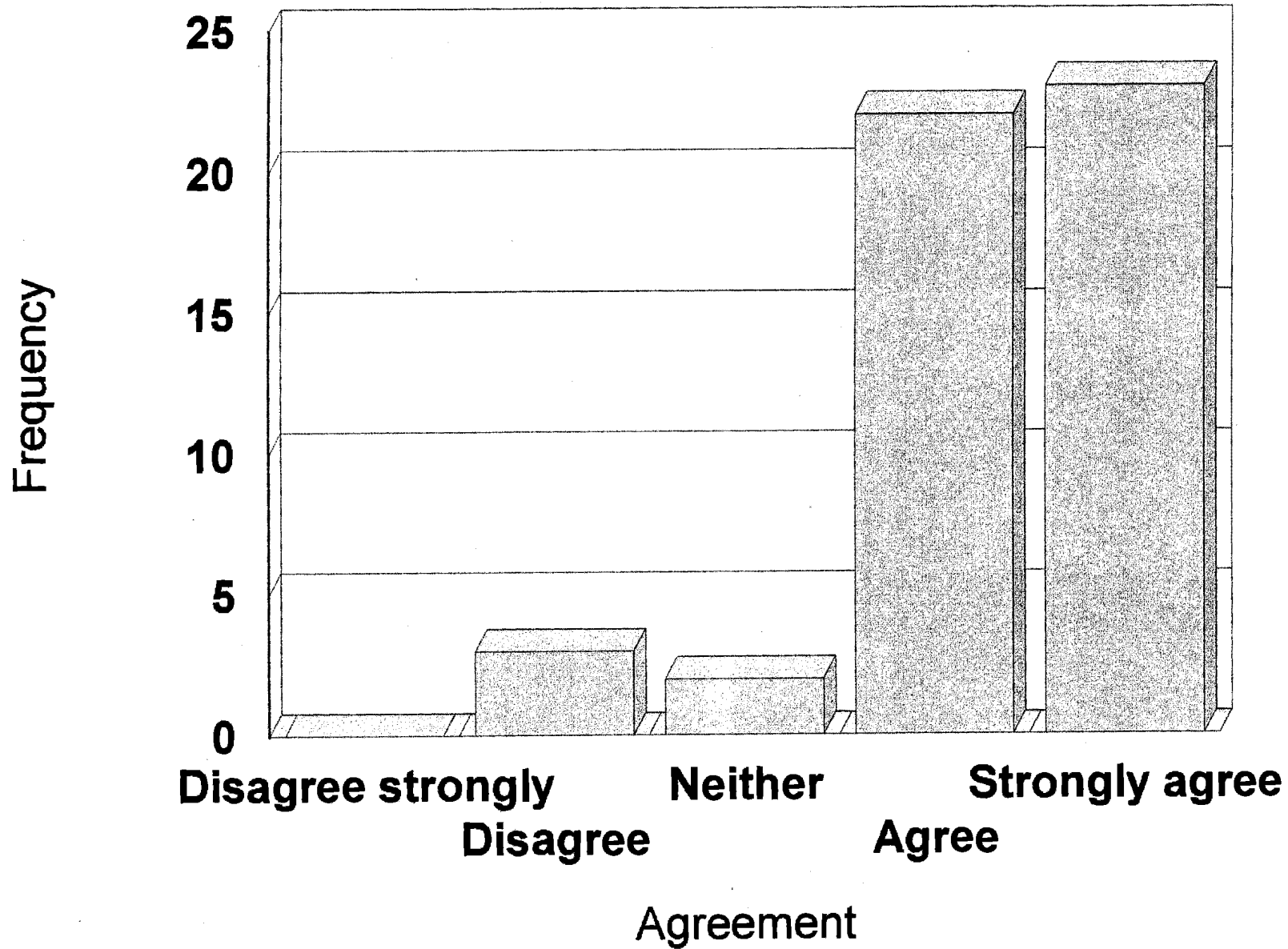
# Increase product life



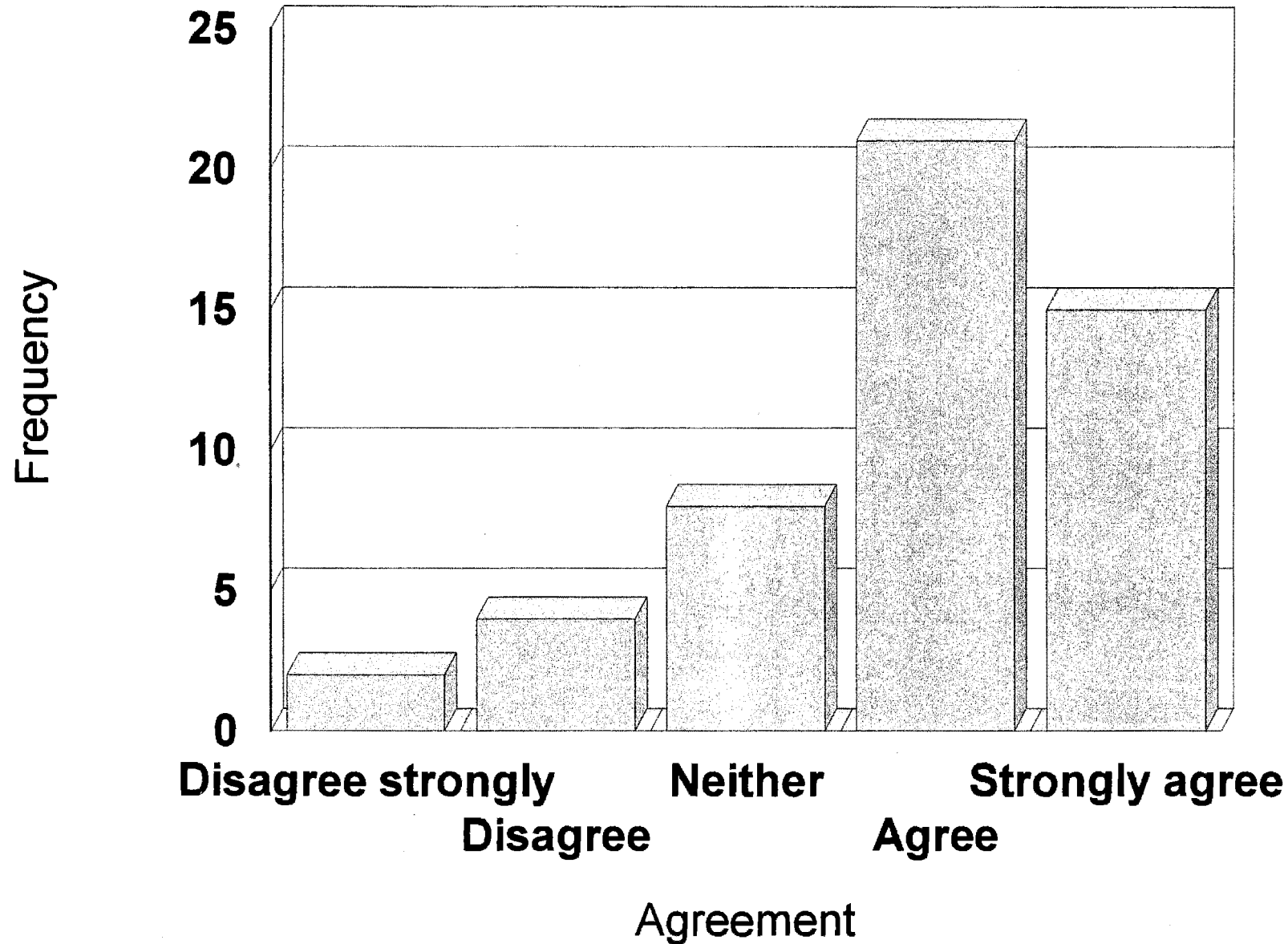
# Use of pharmaco-economic data



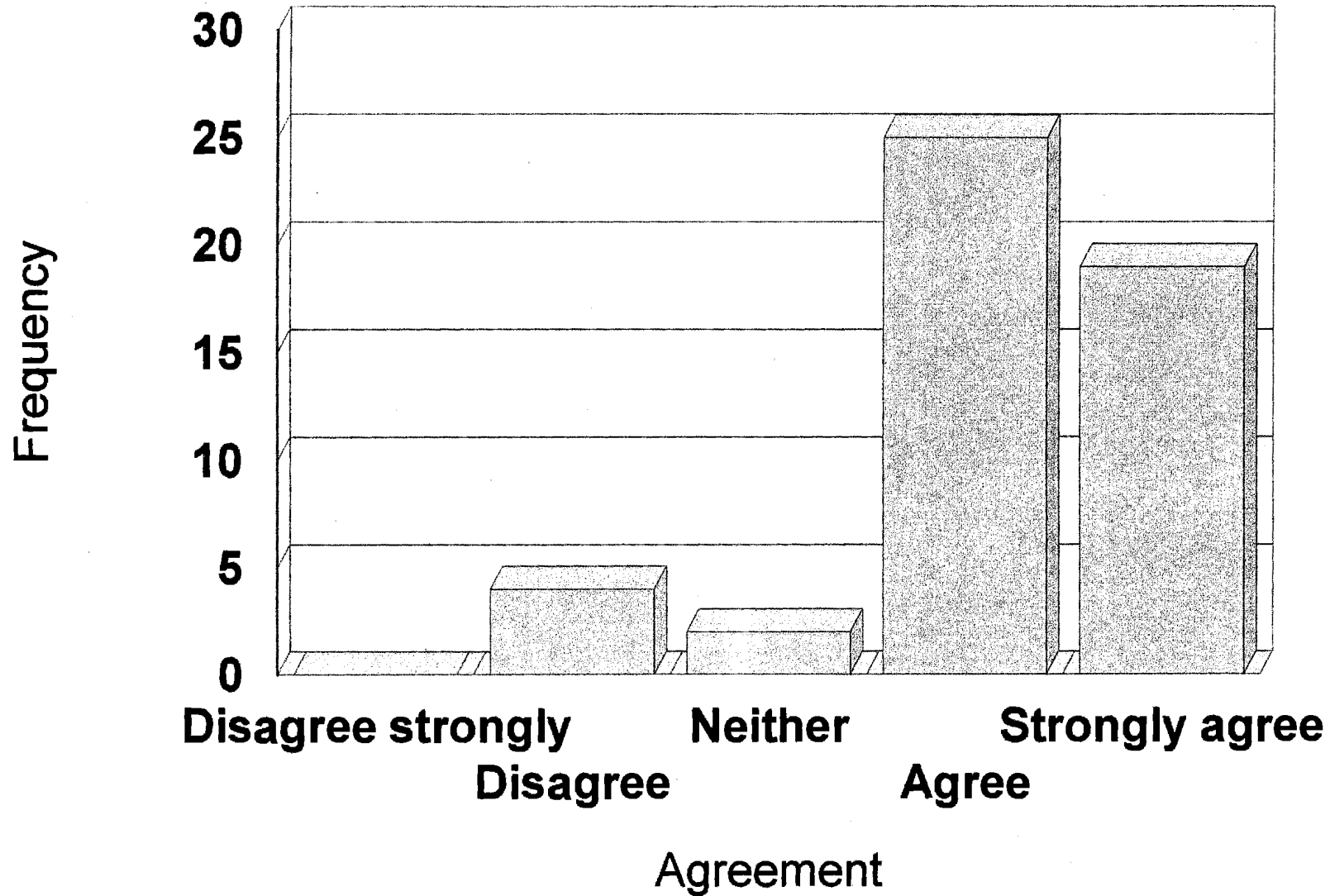
# Development of added value services



# Alliances/partnerships with MCOs

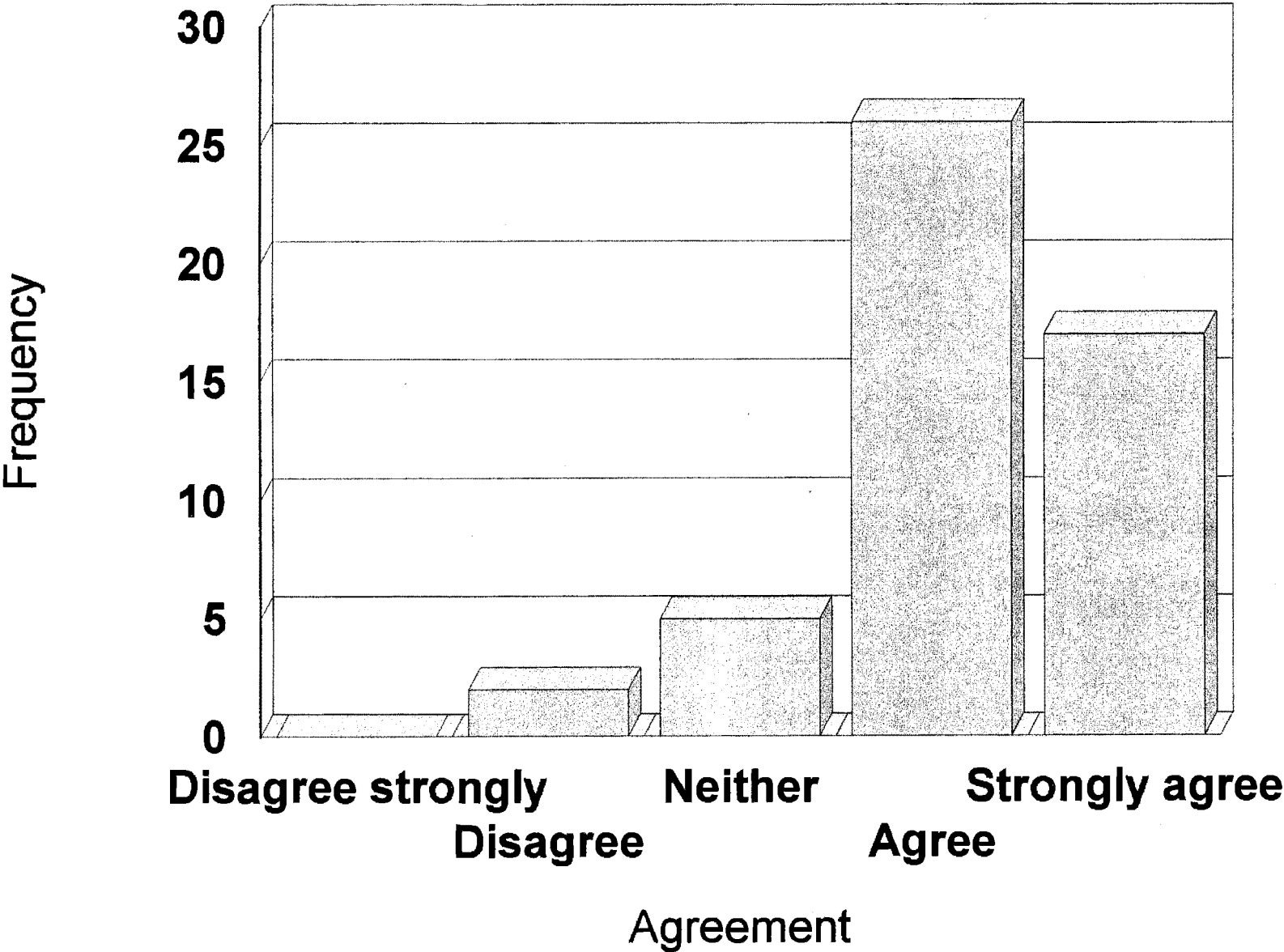


# Developing new sales and marketing strategies

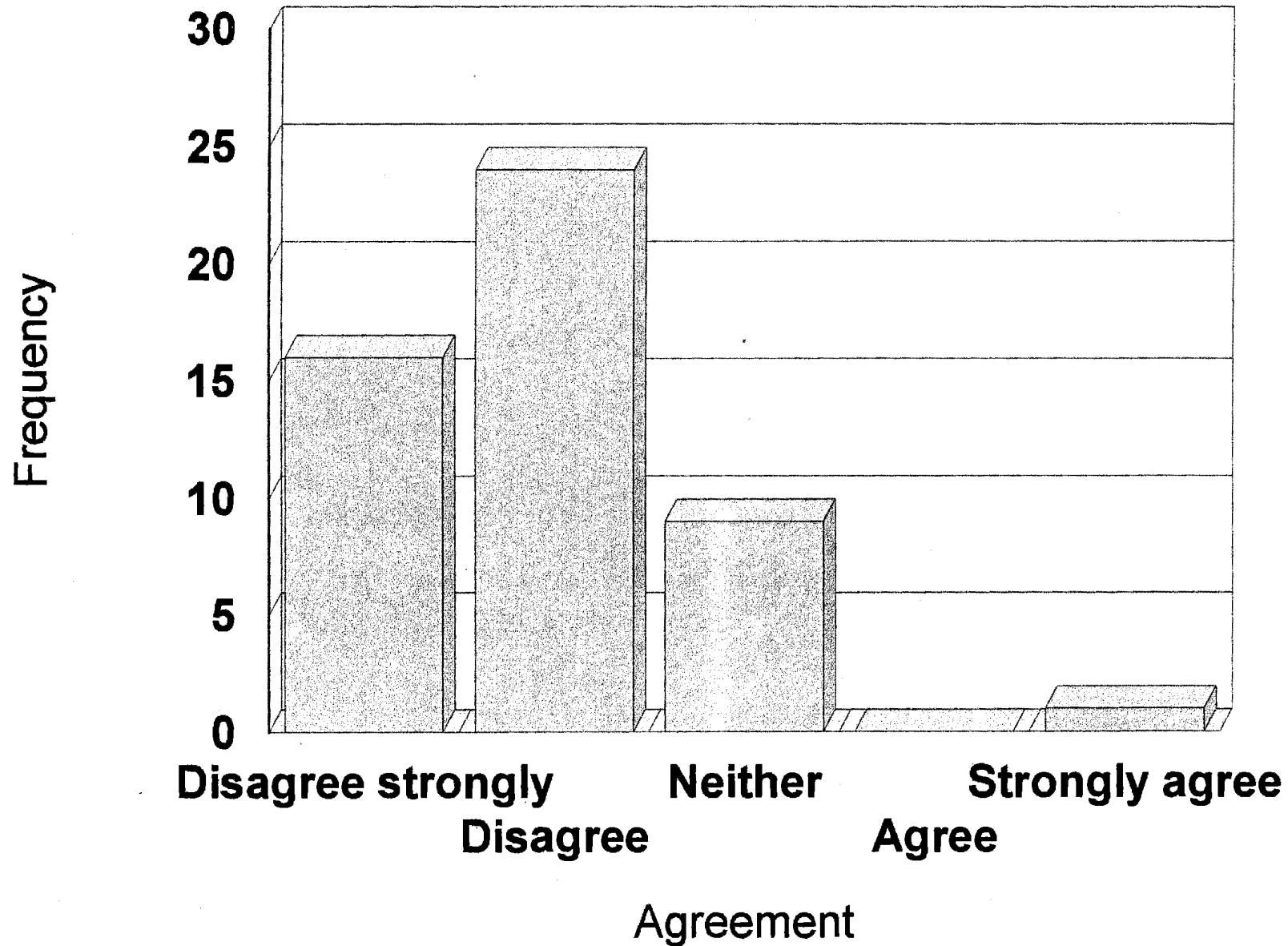




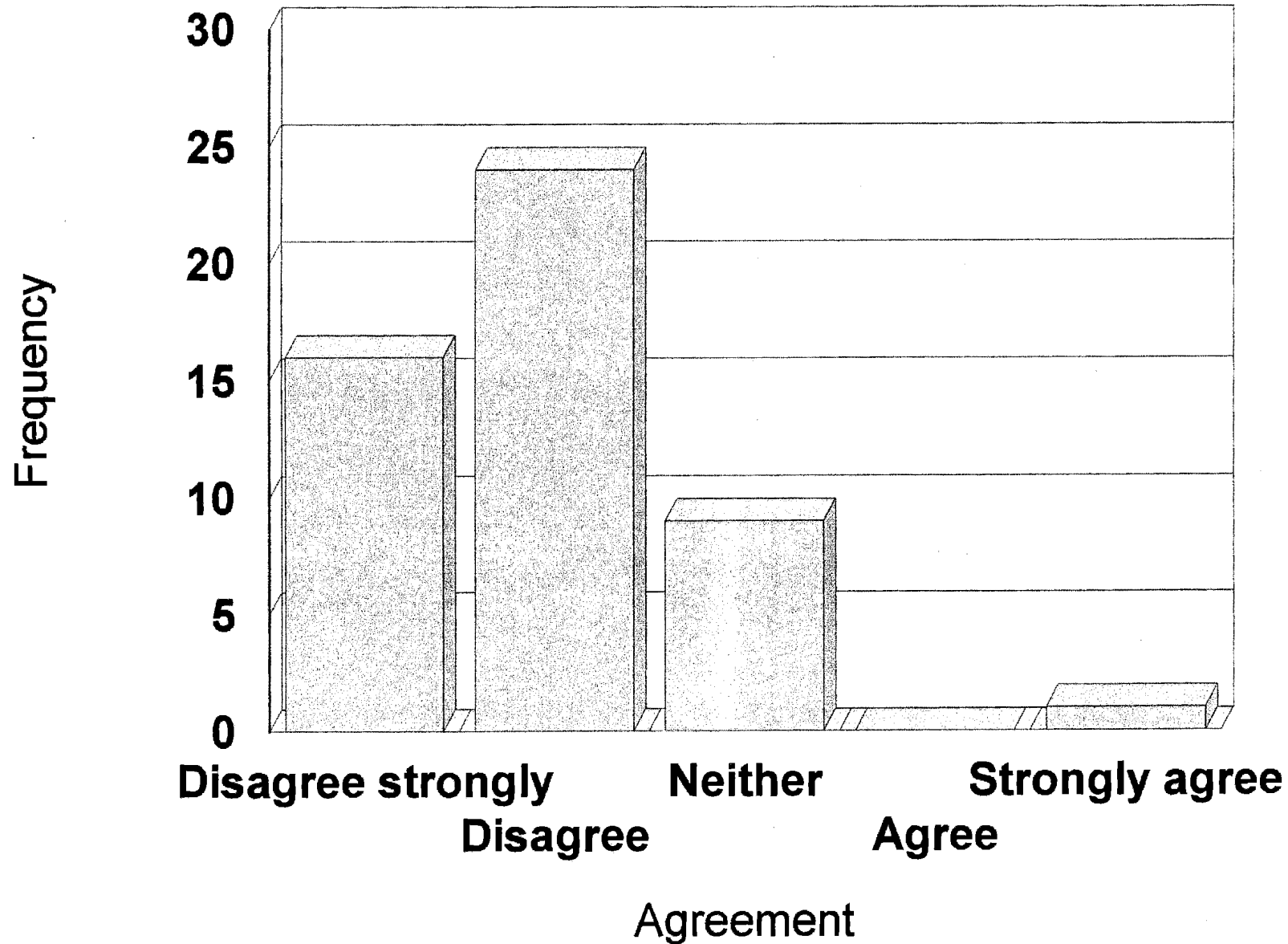
# Collecting and using outcomes data



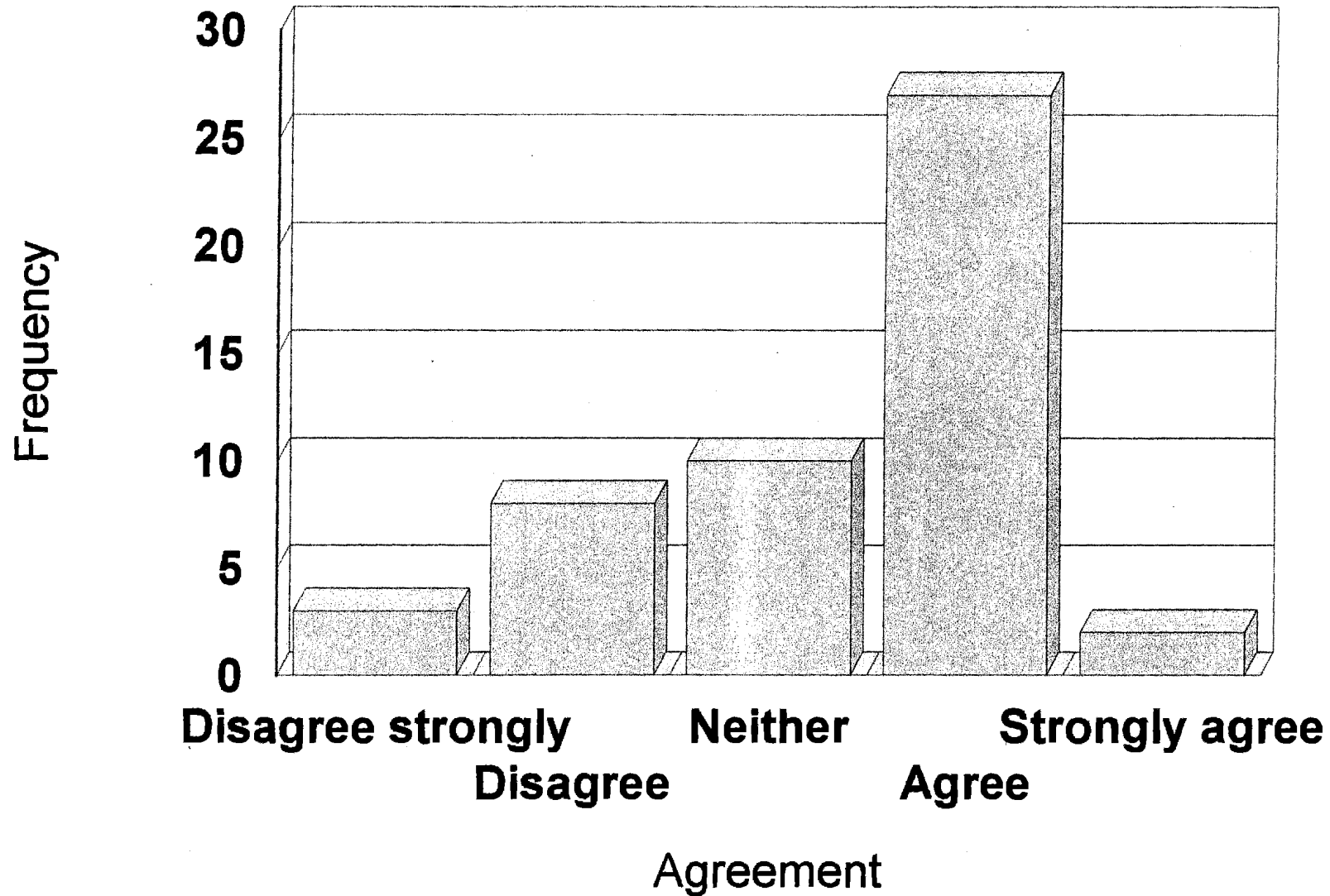
# Transforming the organisation



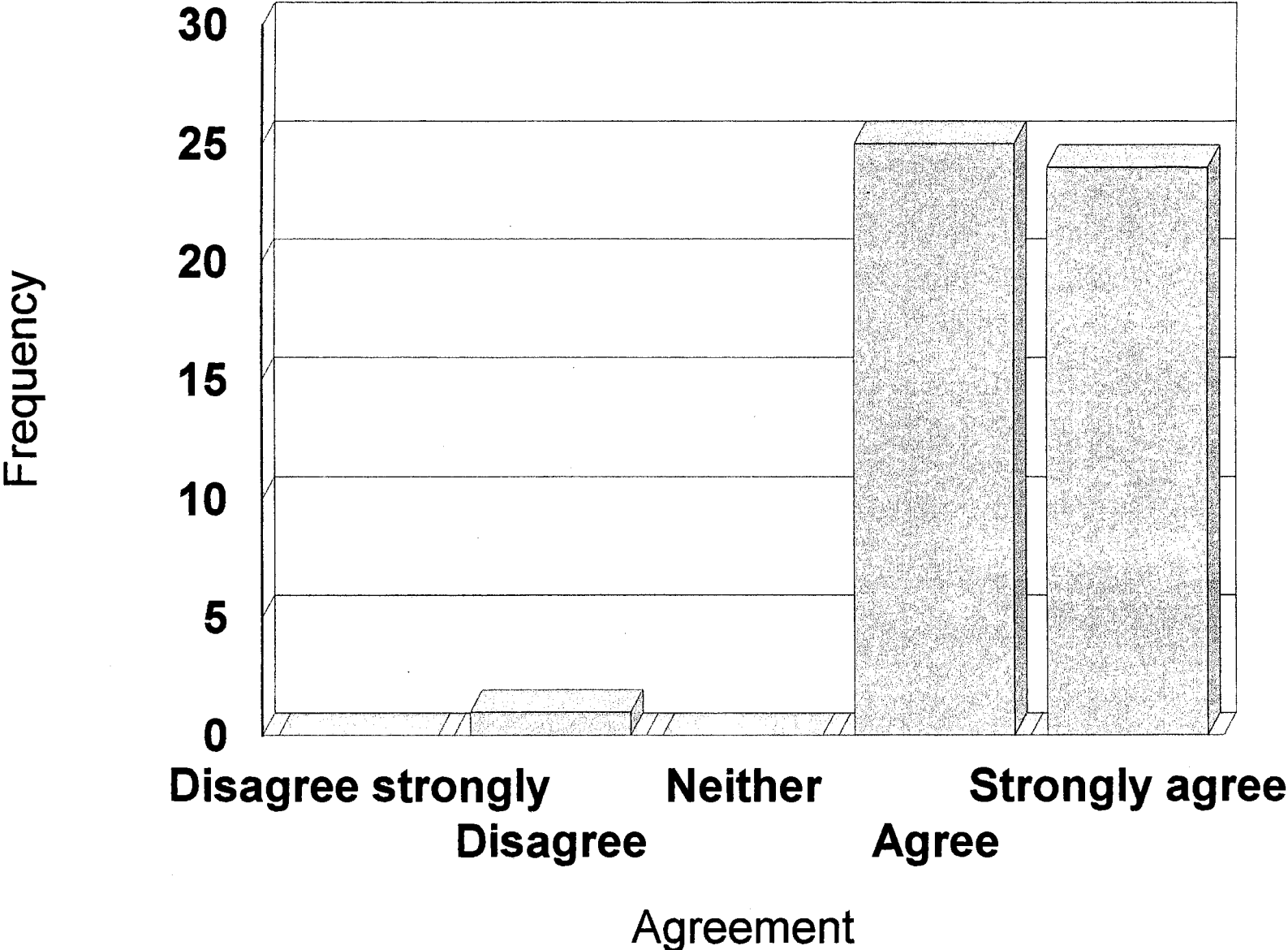
# Focusing on demand side management



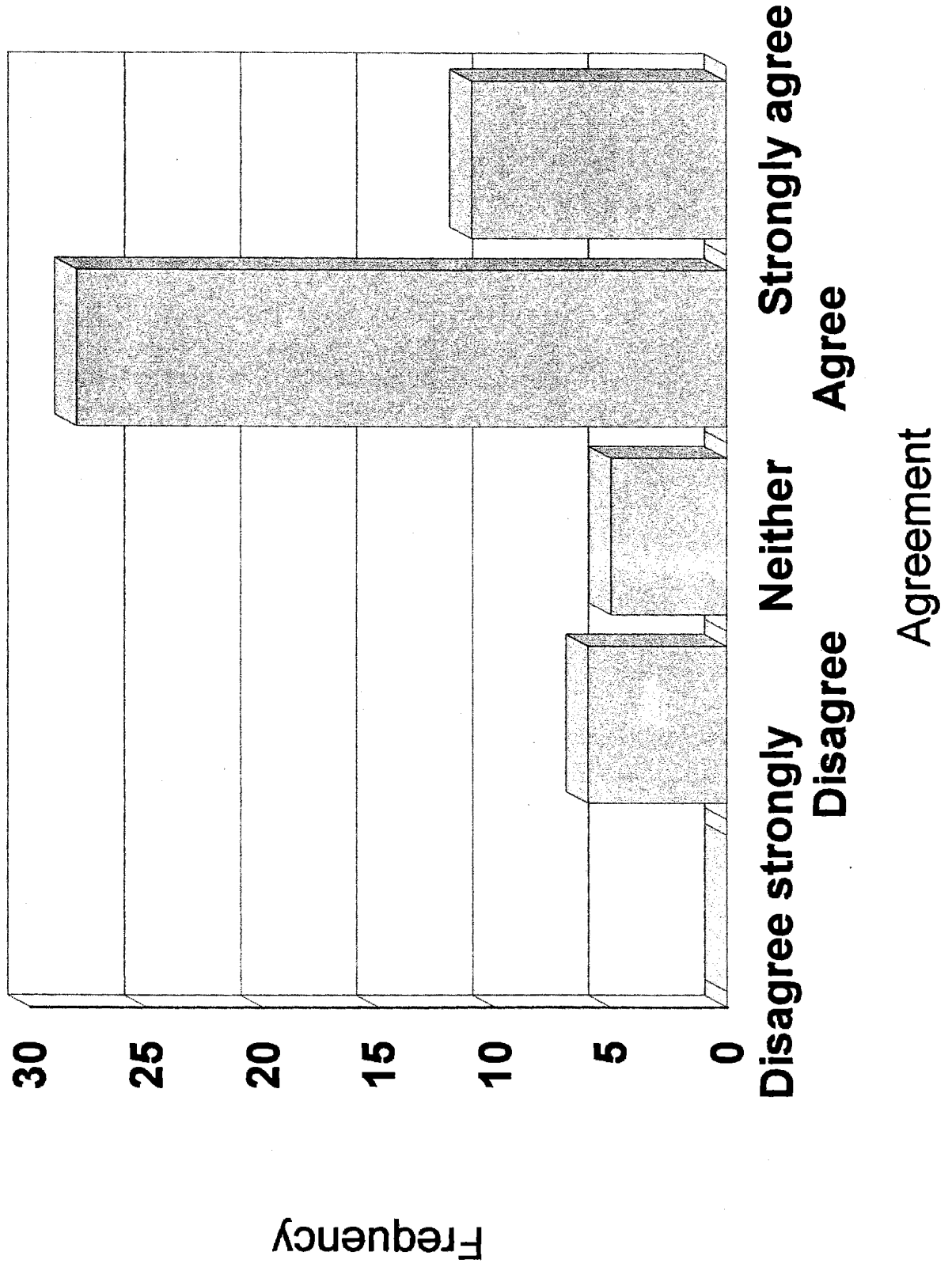
# Partnerships/alliances with other manufacturers



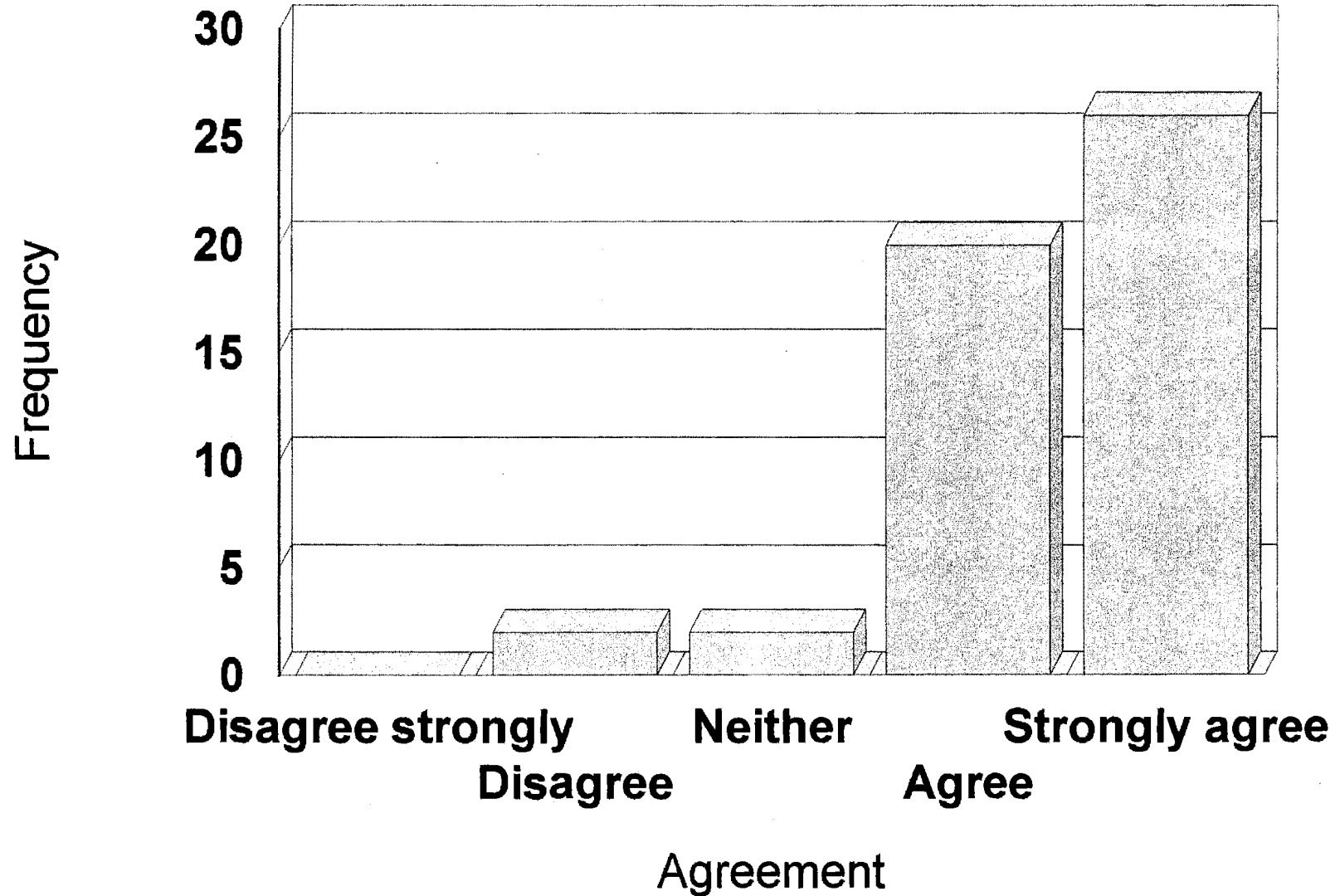
# Product differentiation



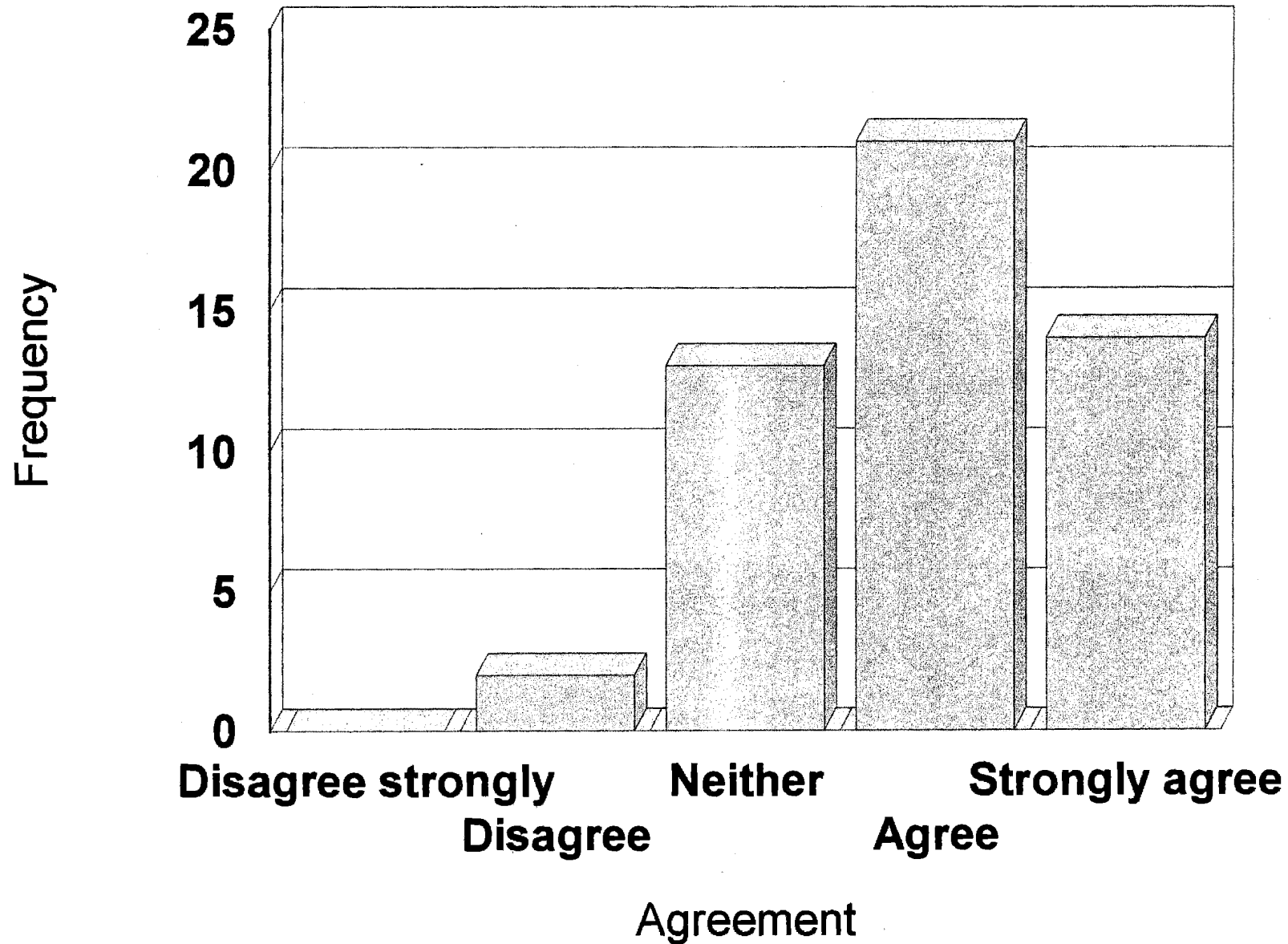
# Investing in IT



# Faster product development/progress products to launch on time

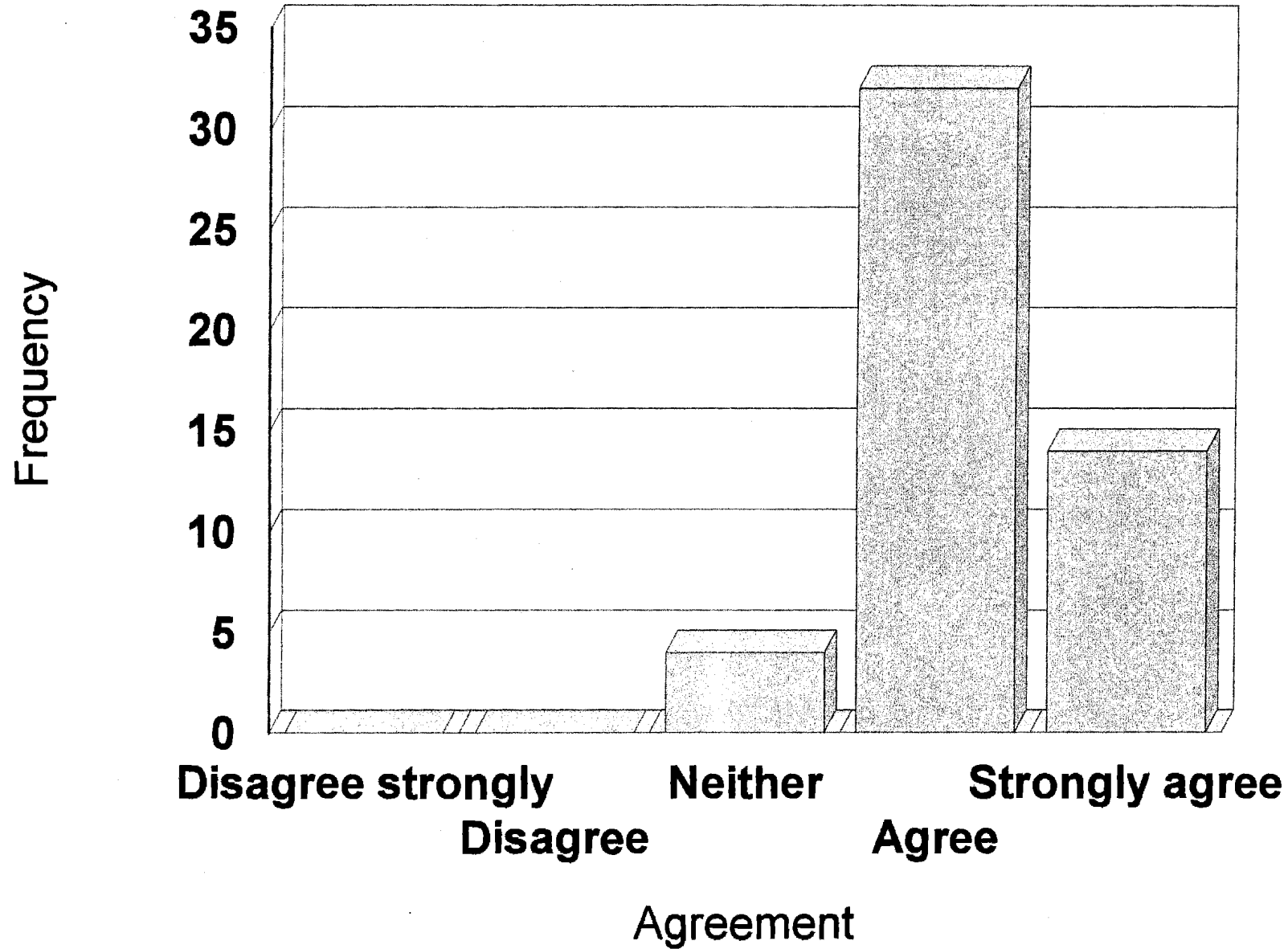


# Controlling the rising cost of R&D

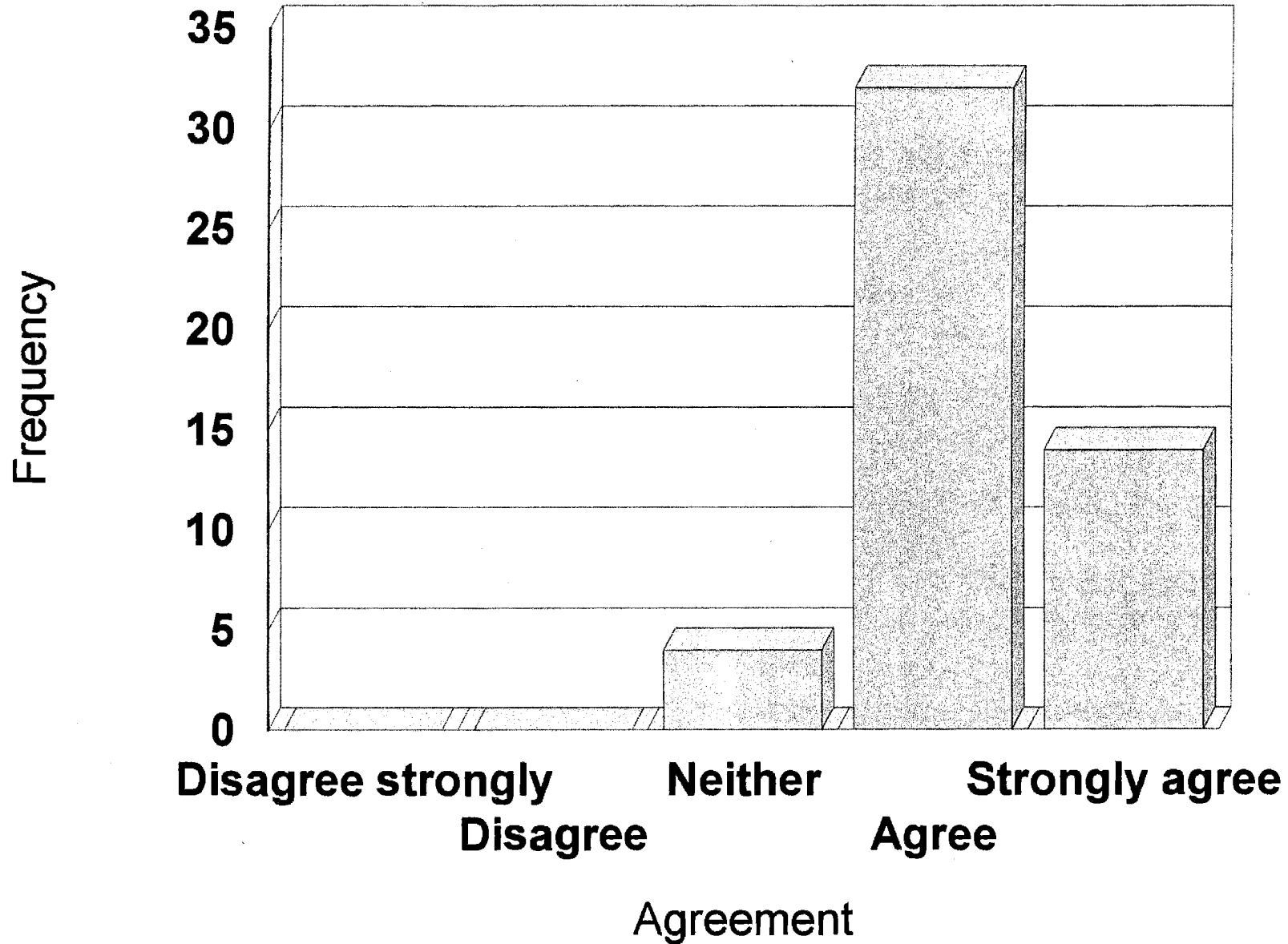




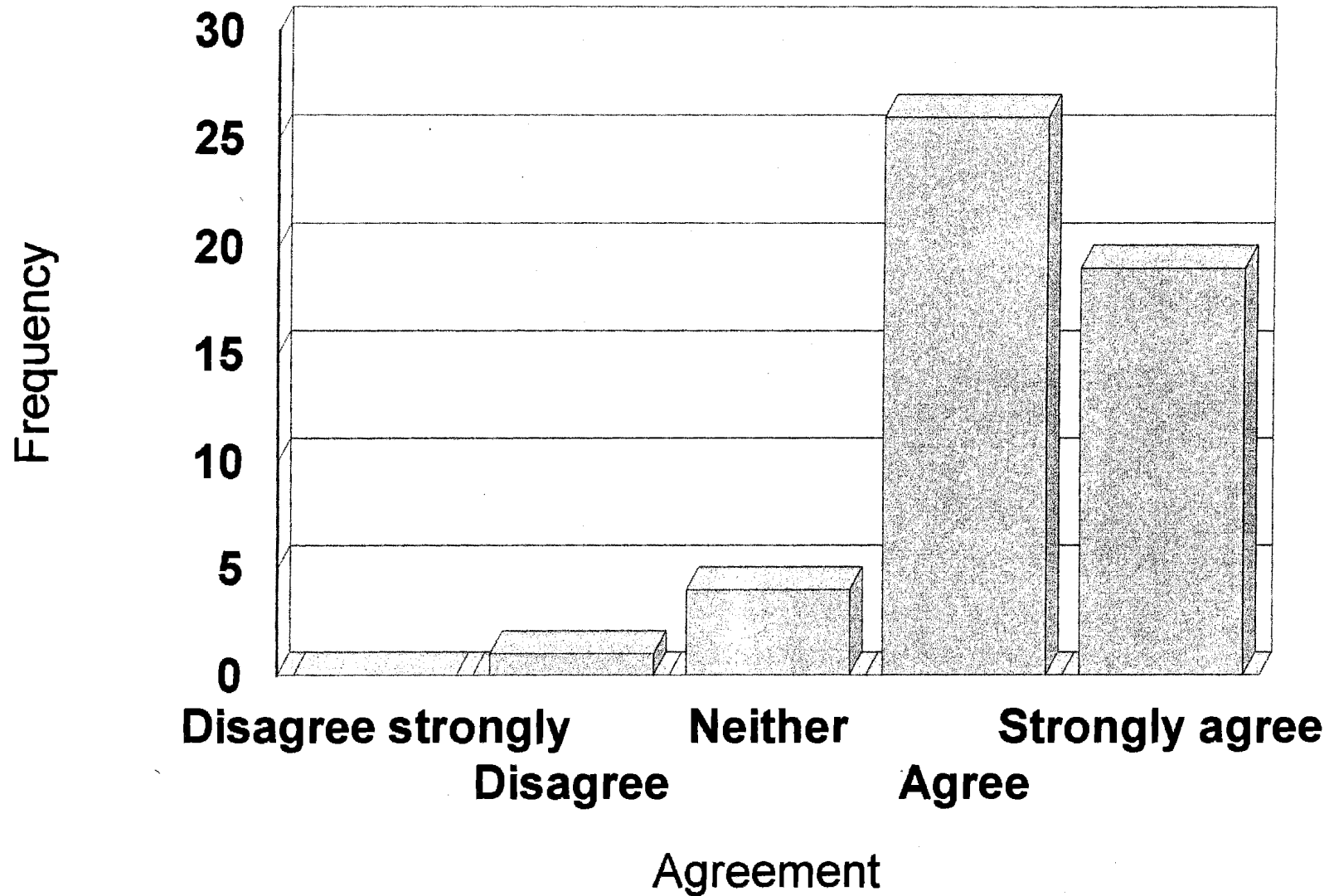
# Pricing policies



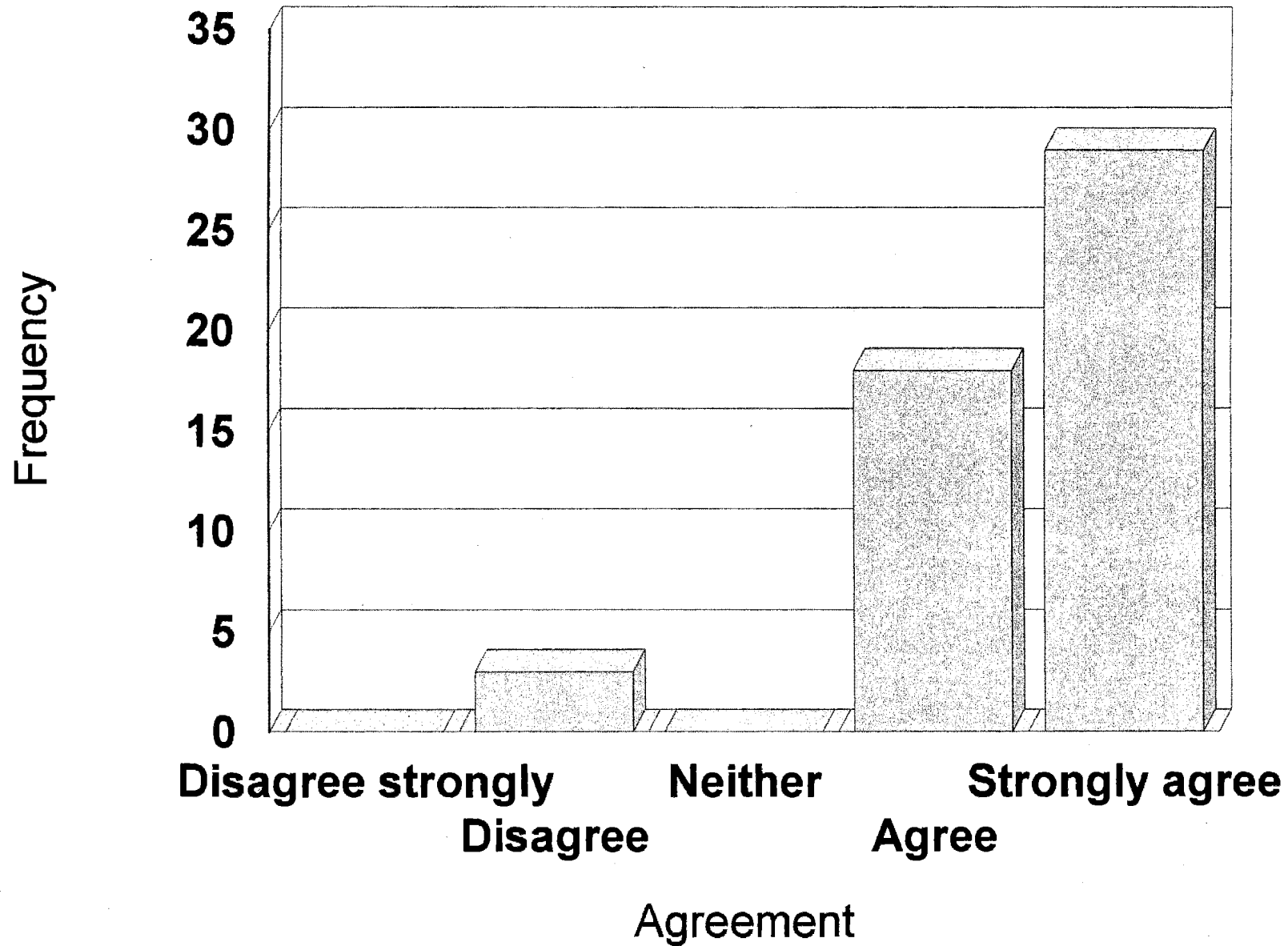
# Product bundling



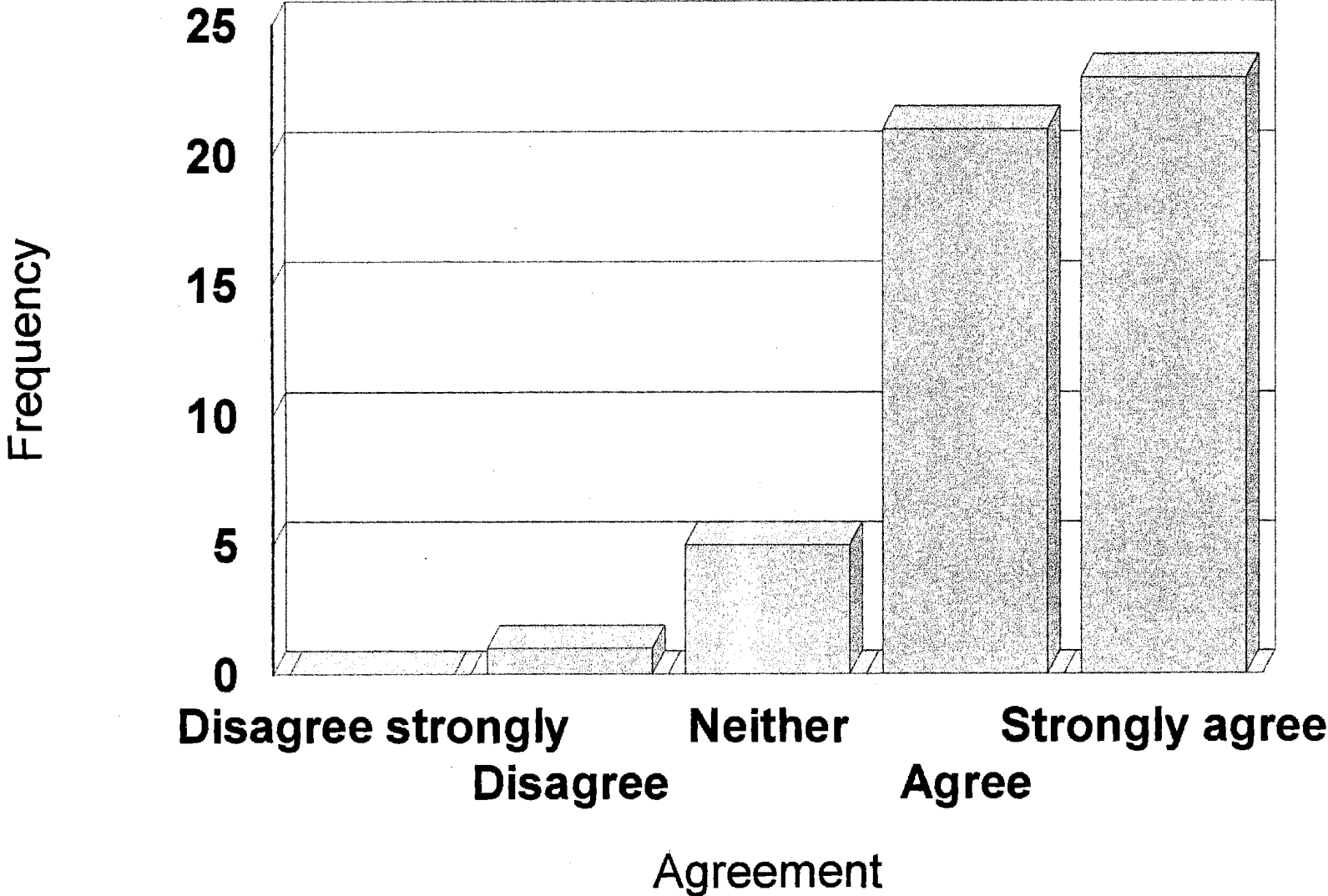
# Controlling rising sales and marketing costs



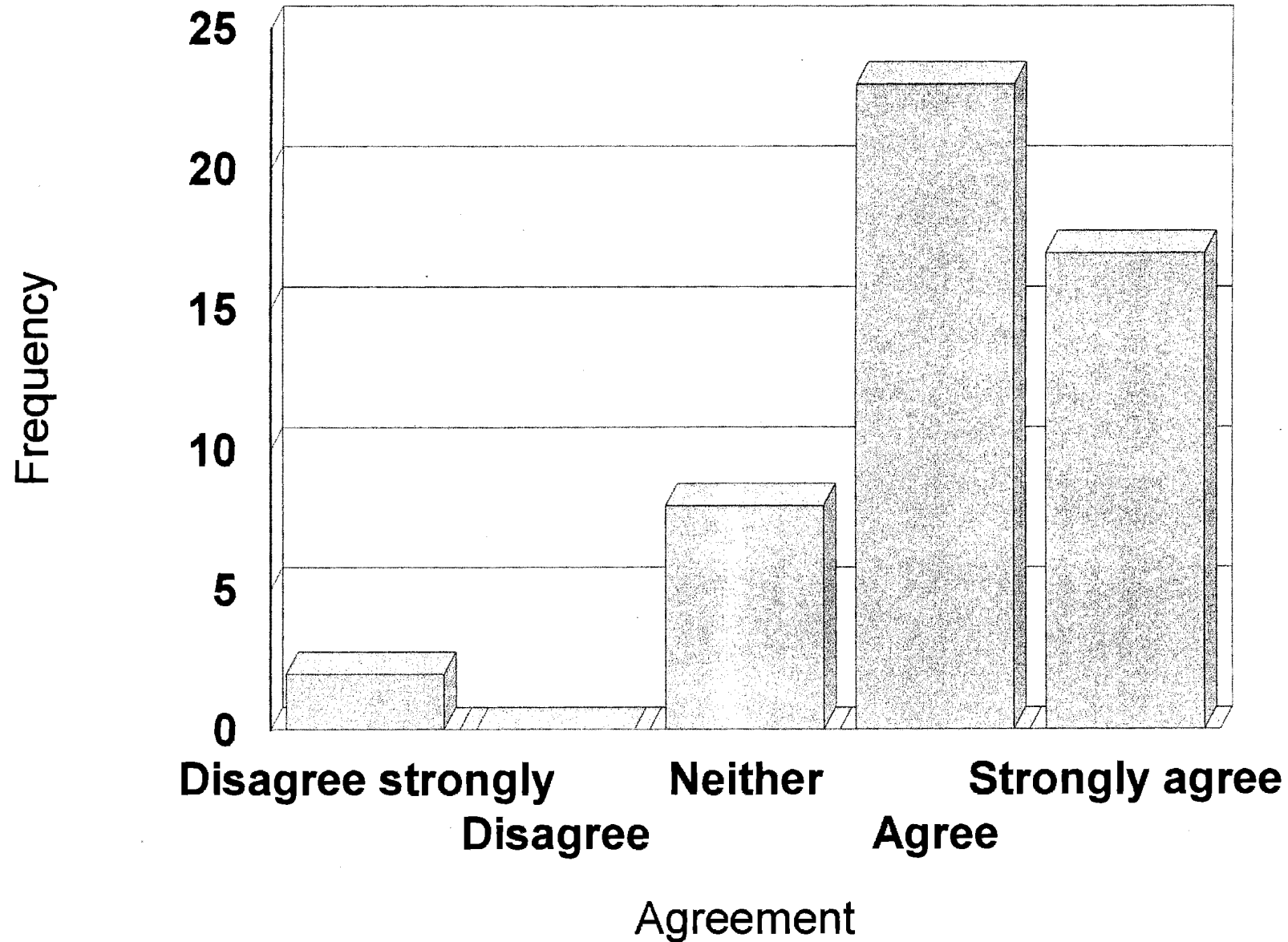
# Quality of new products



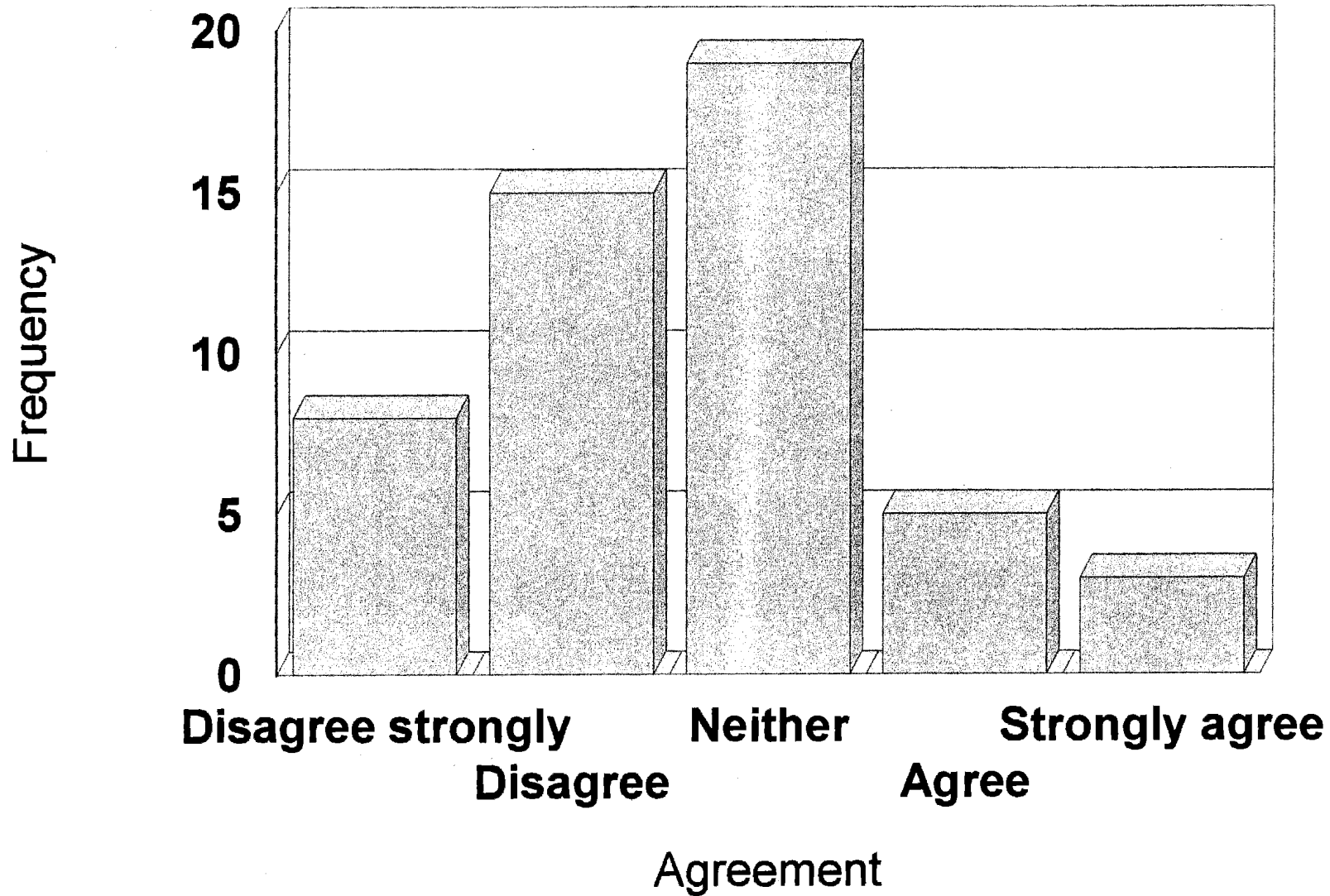
# Use delivery systems and other methods to expand product life



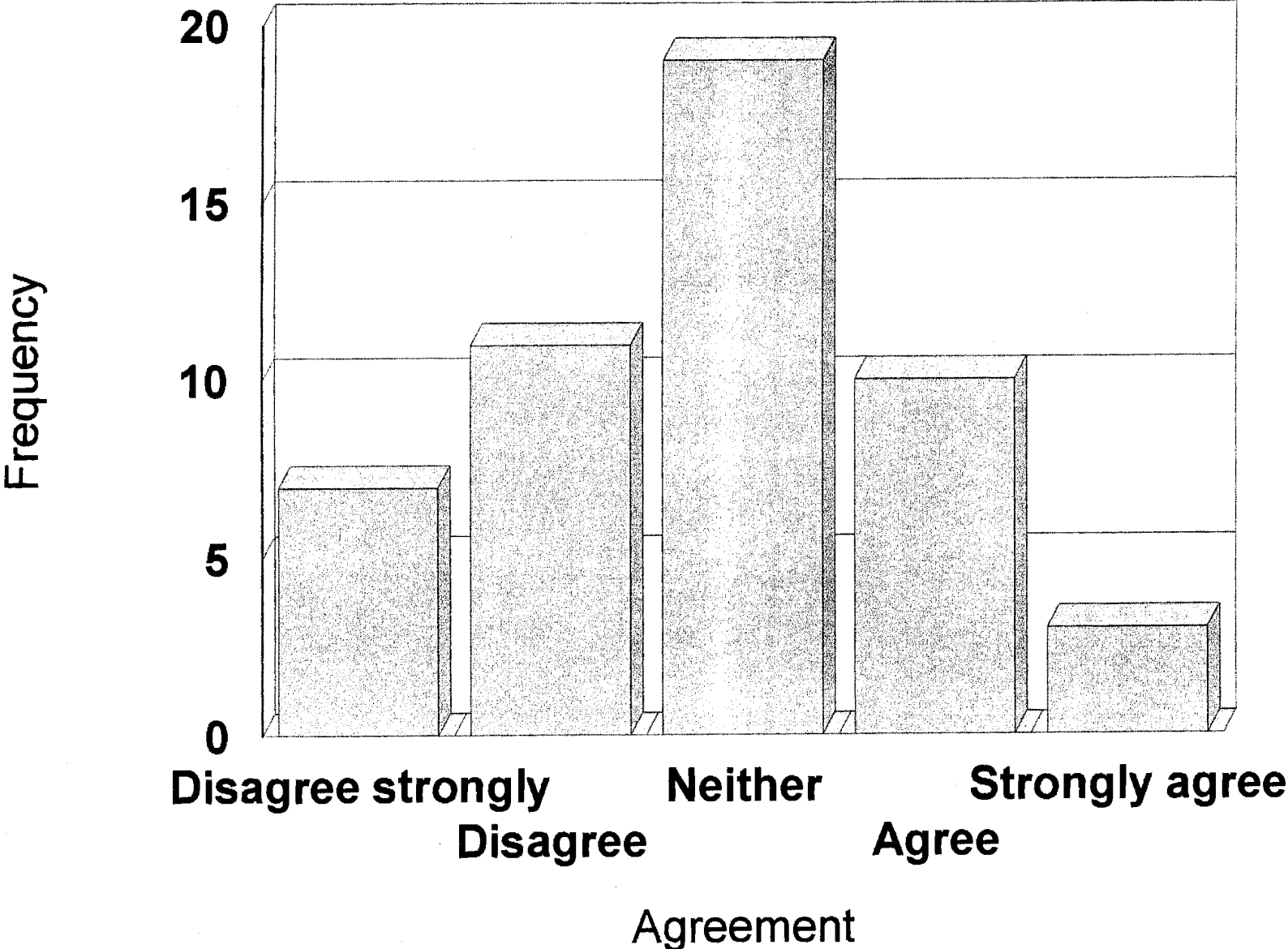
# Education on managed care principles



# Discounting to keep products on formularies

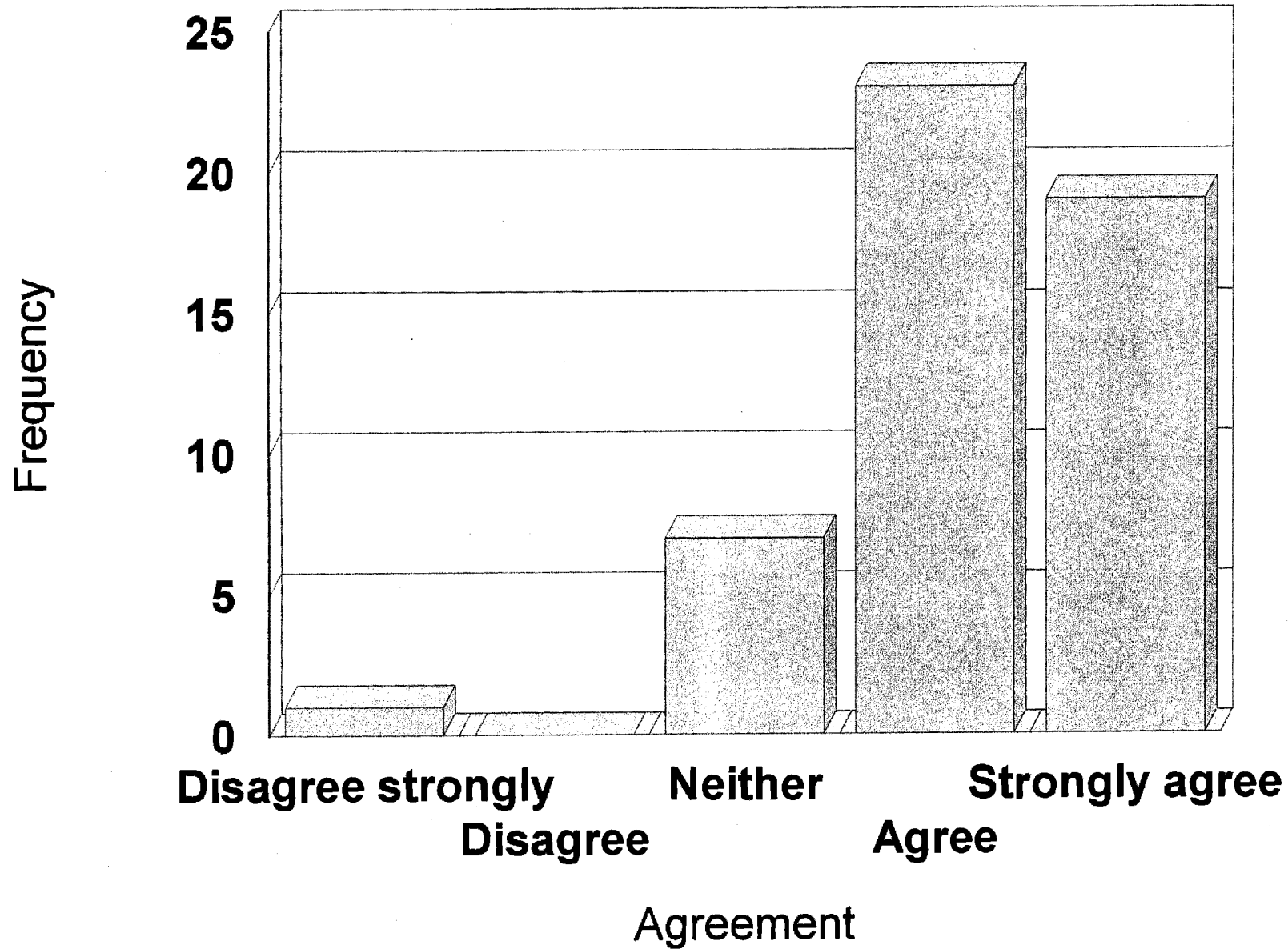


# Rebates to keep products on formularies

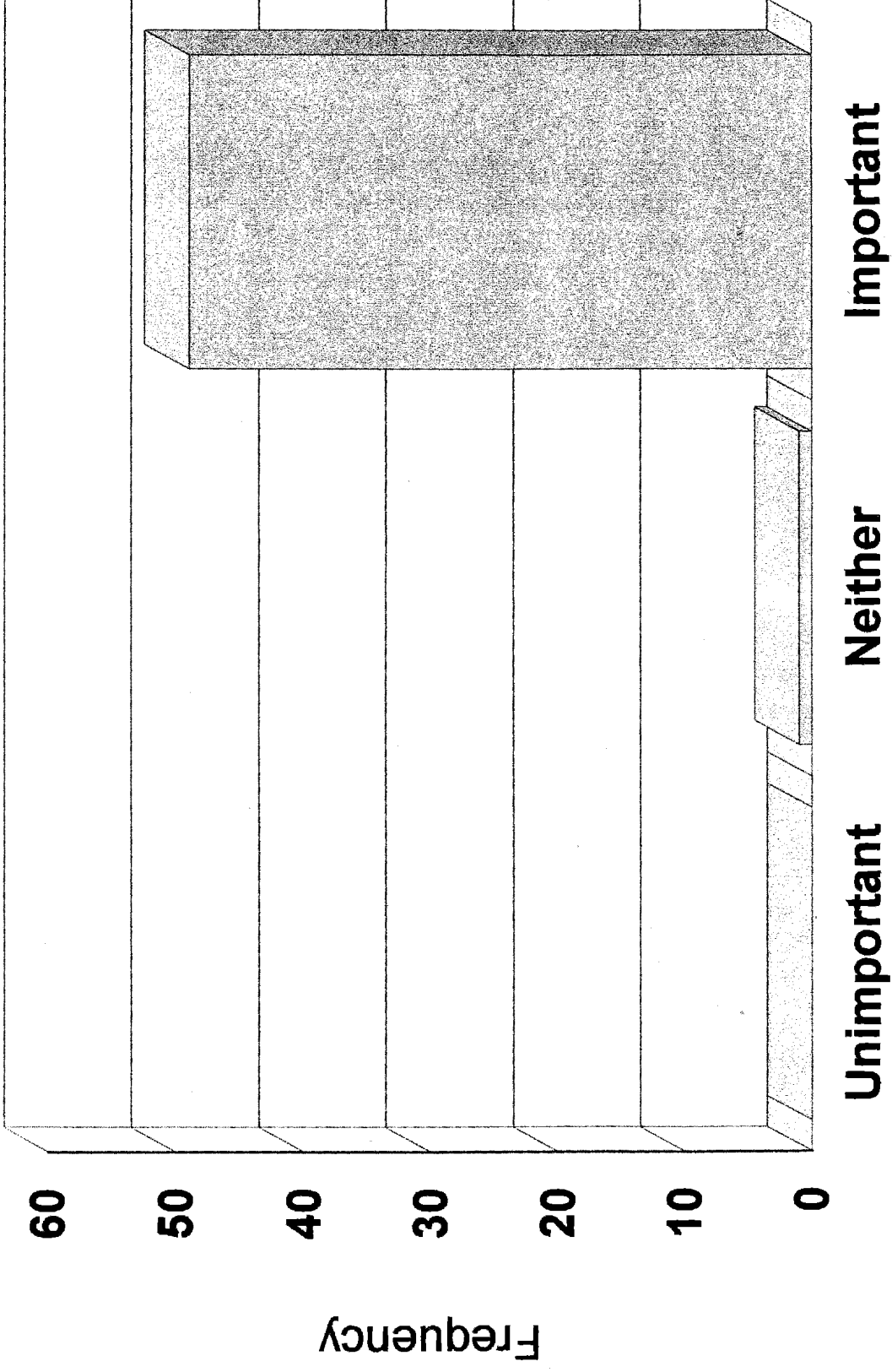




# Integrated healthcare delivery approach

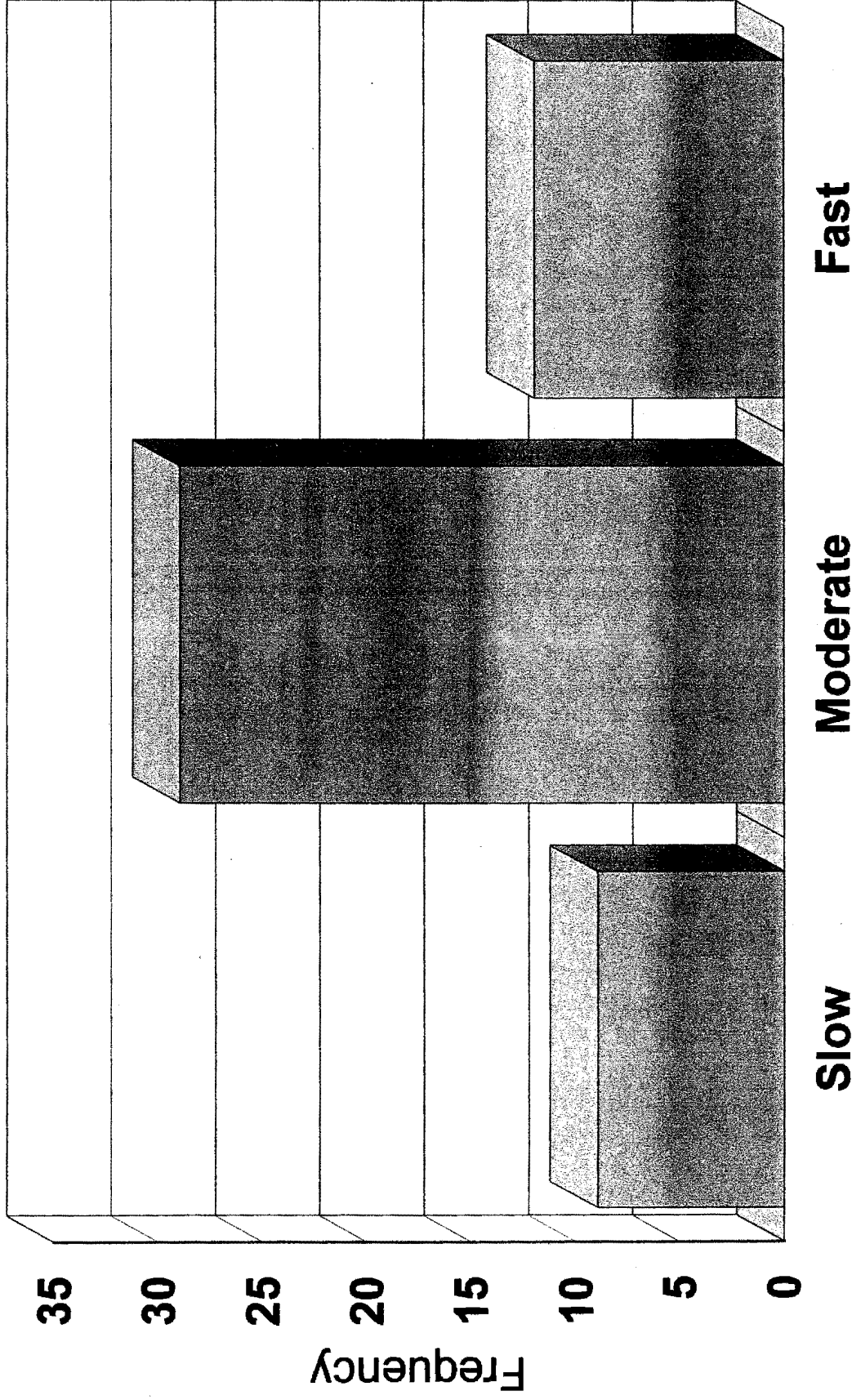


# Leadership and vision



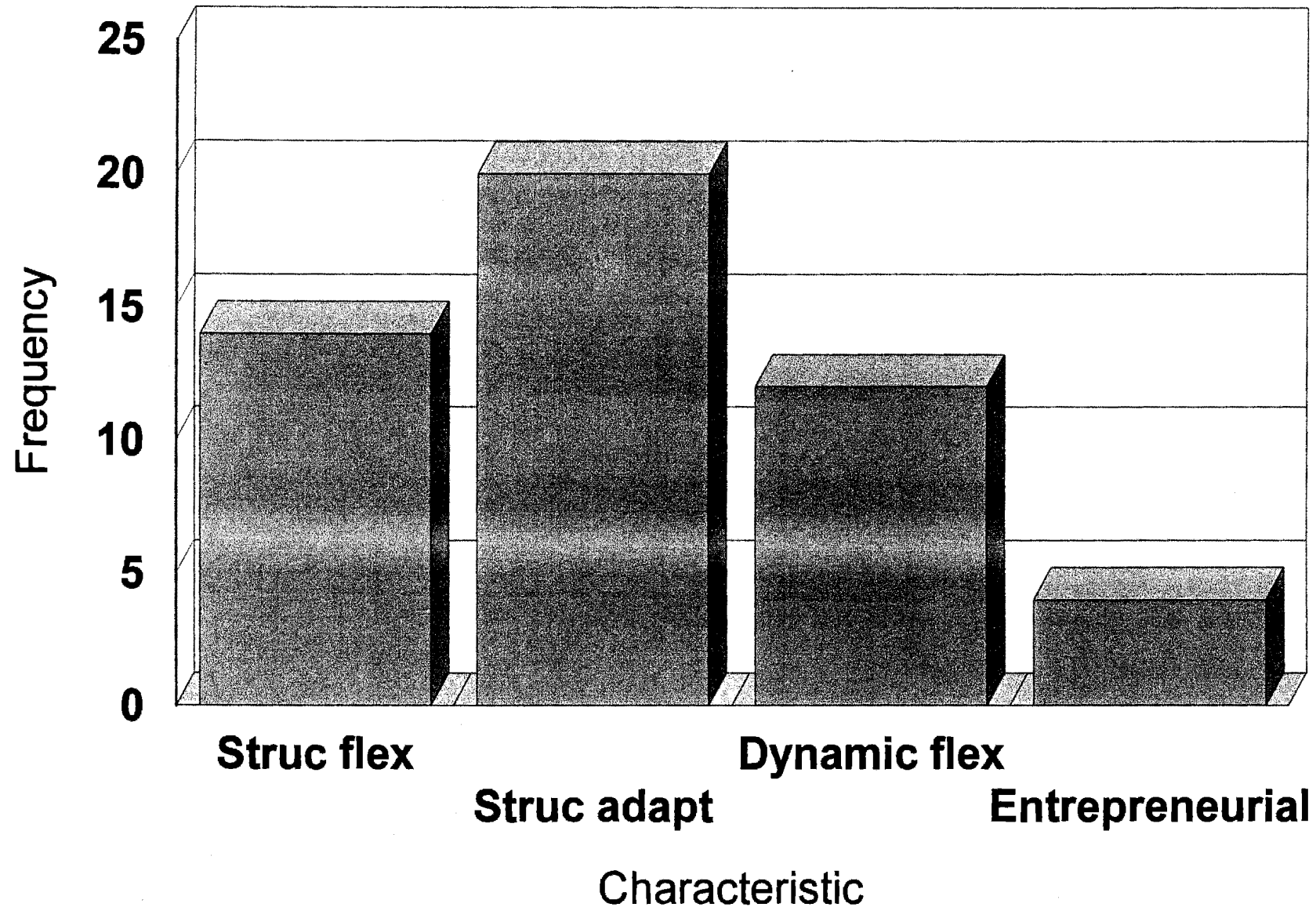
Contribution to future competitiveness

# Speed in response to change

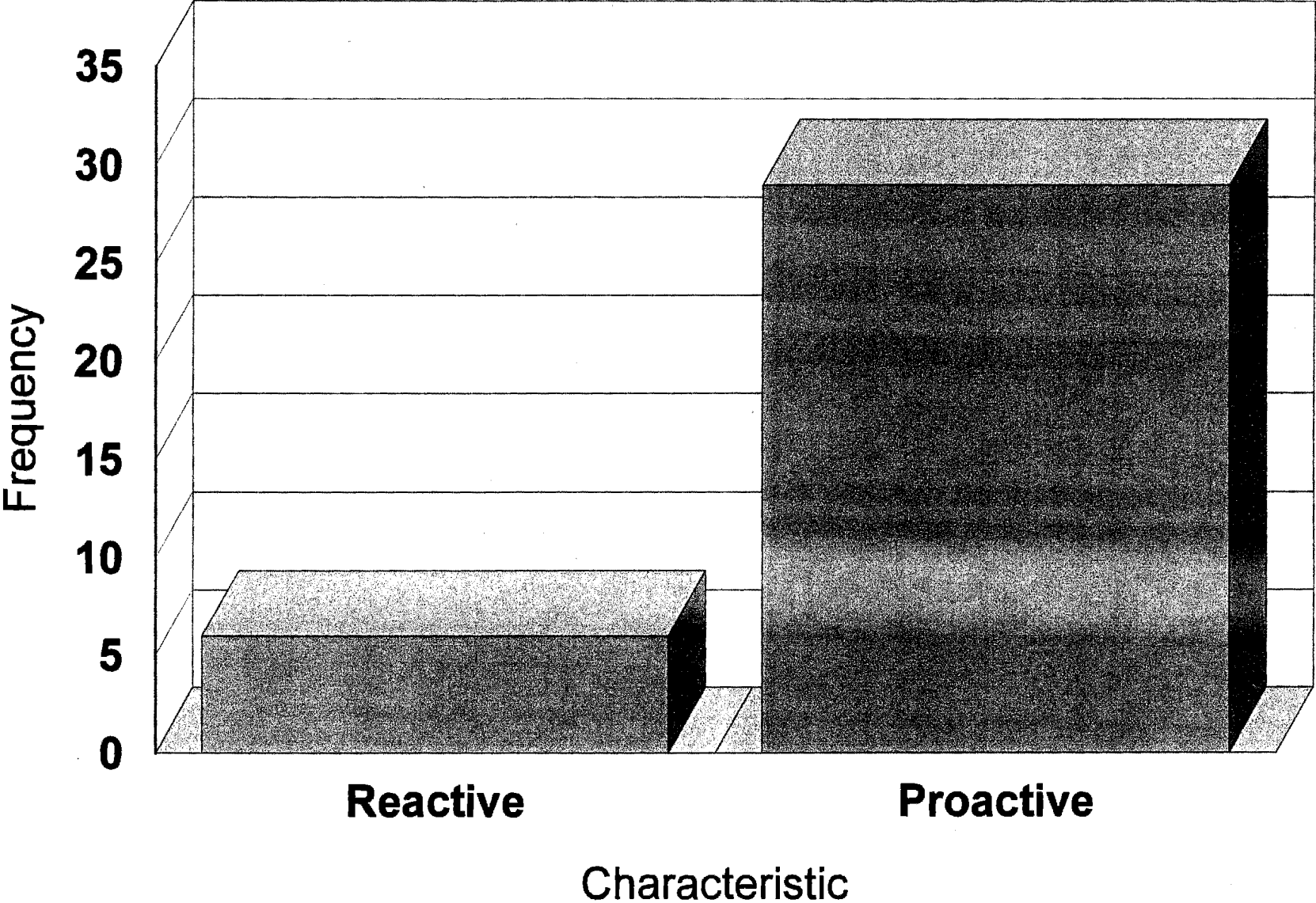


Characteristic

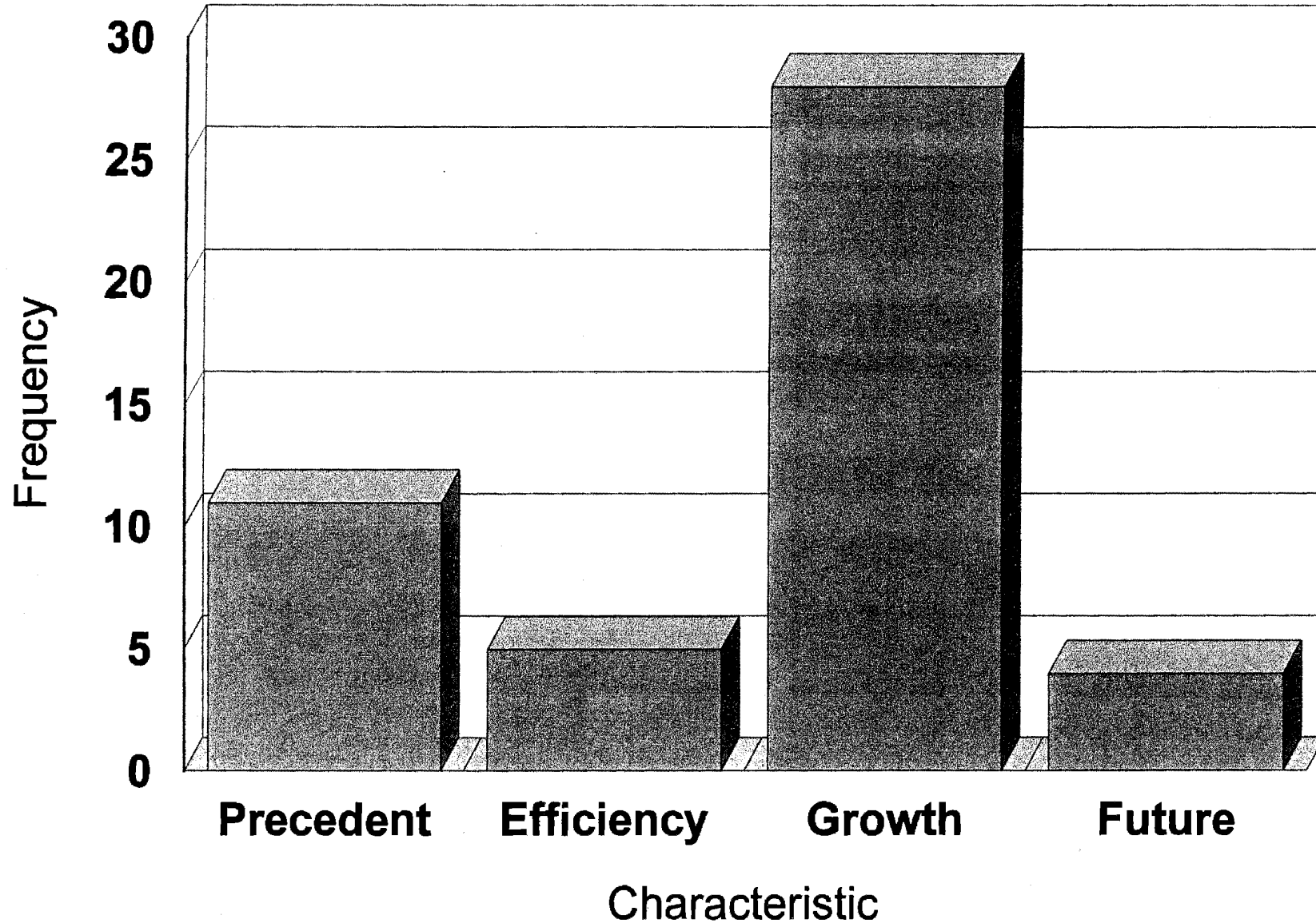
# Management systems



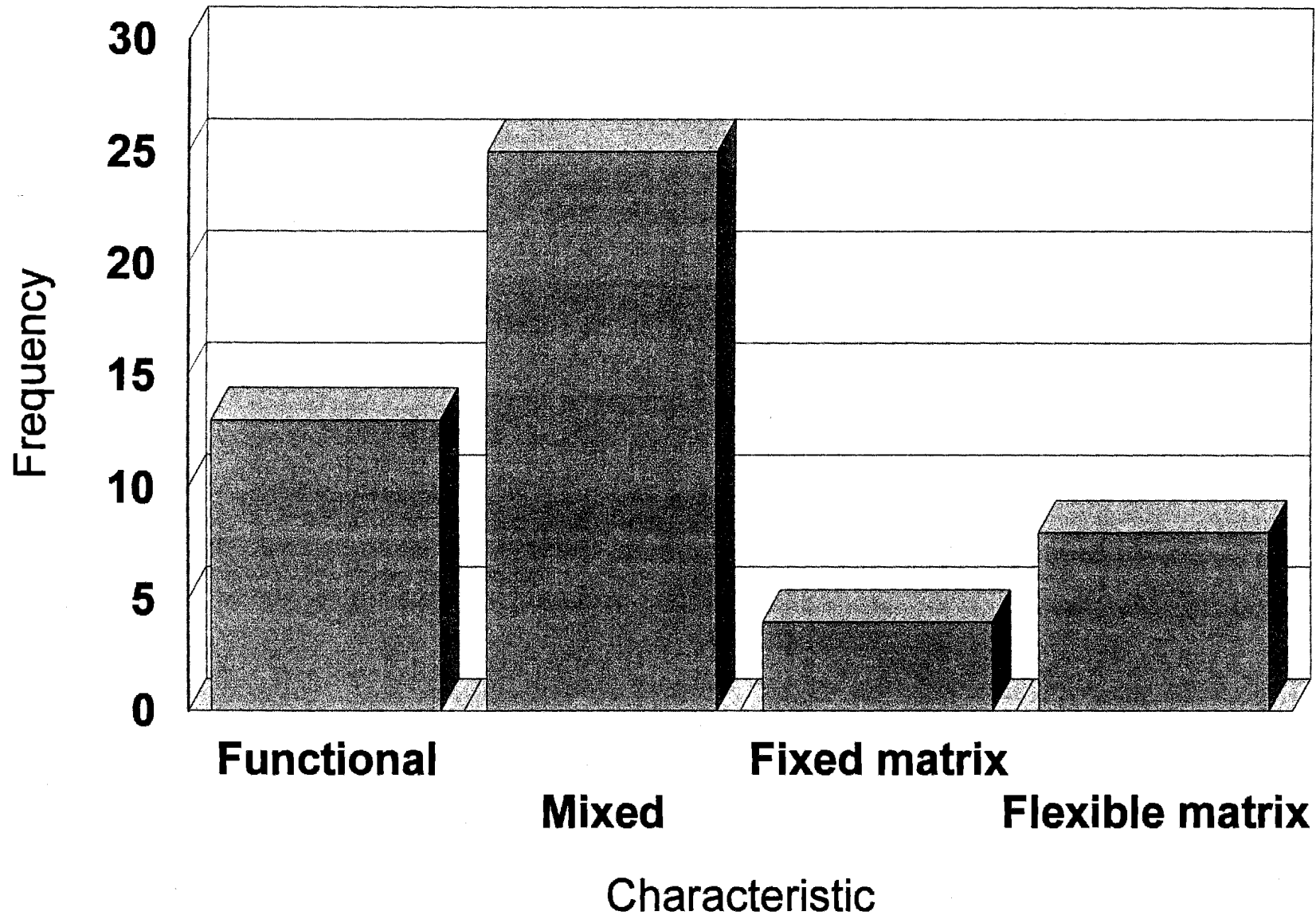
# Transformation



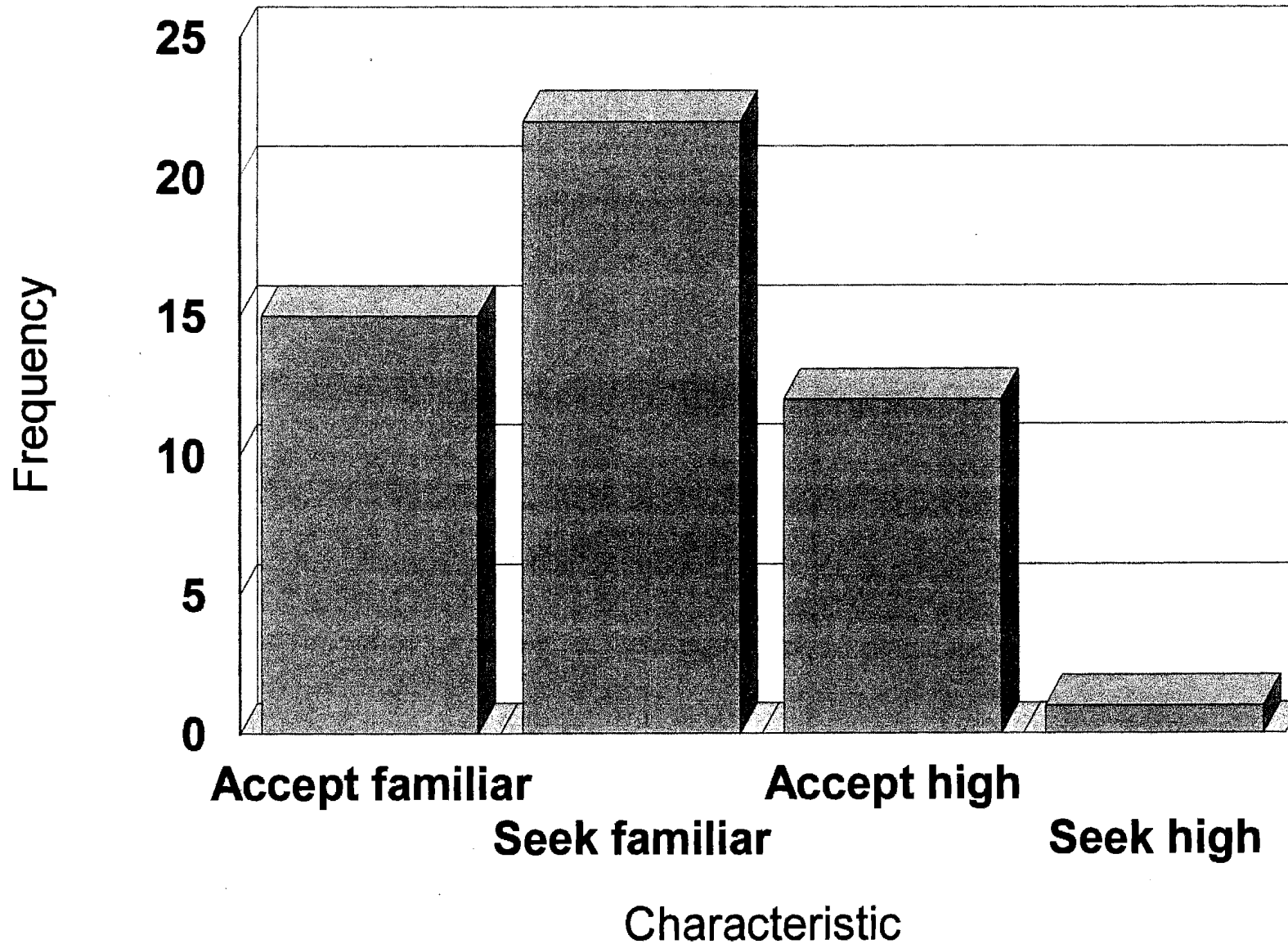
# Organisational "success model"



# Organisational structure

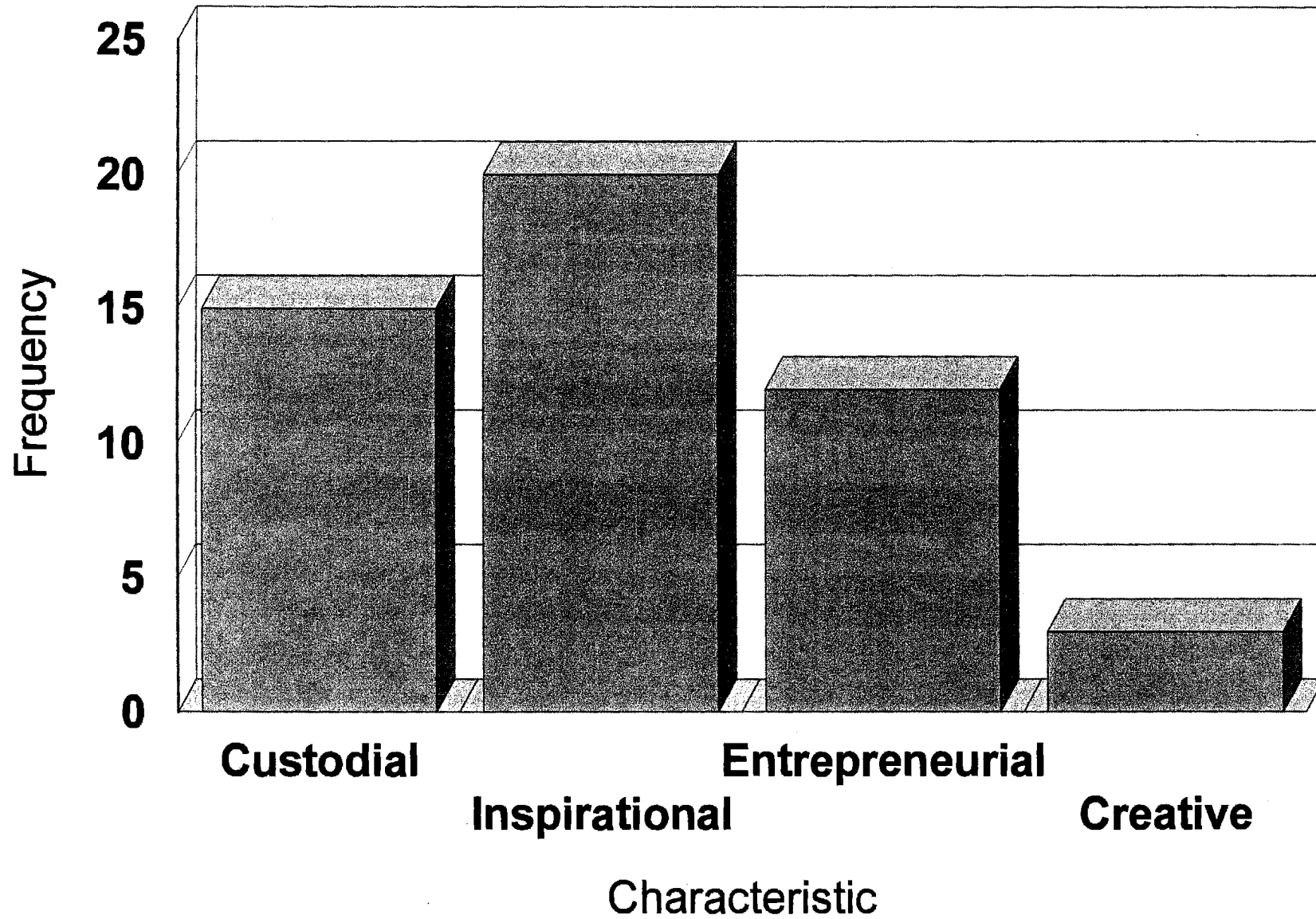


# Propensity to risk

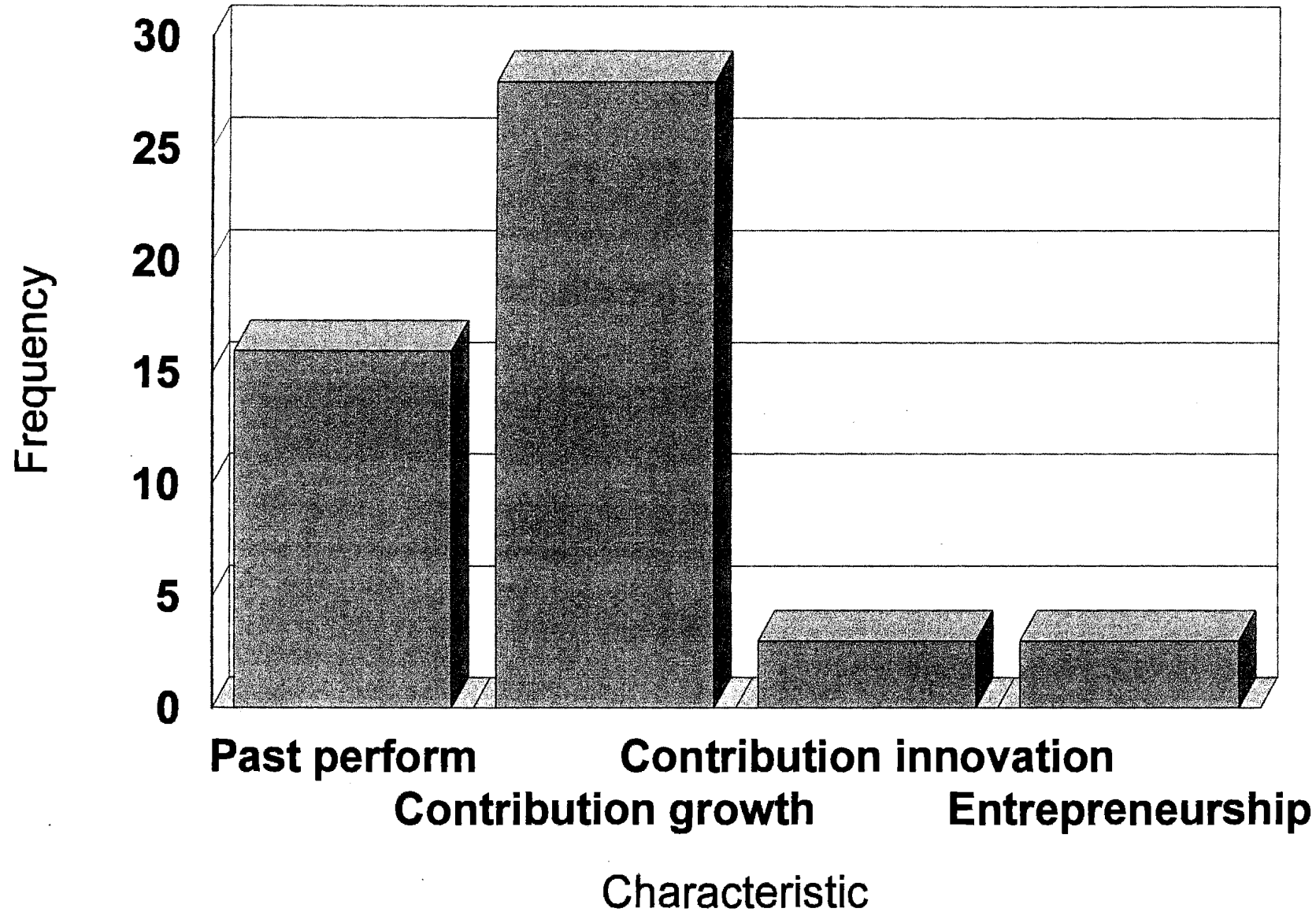




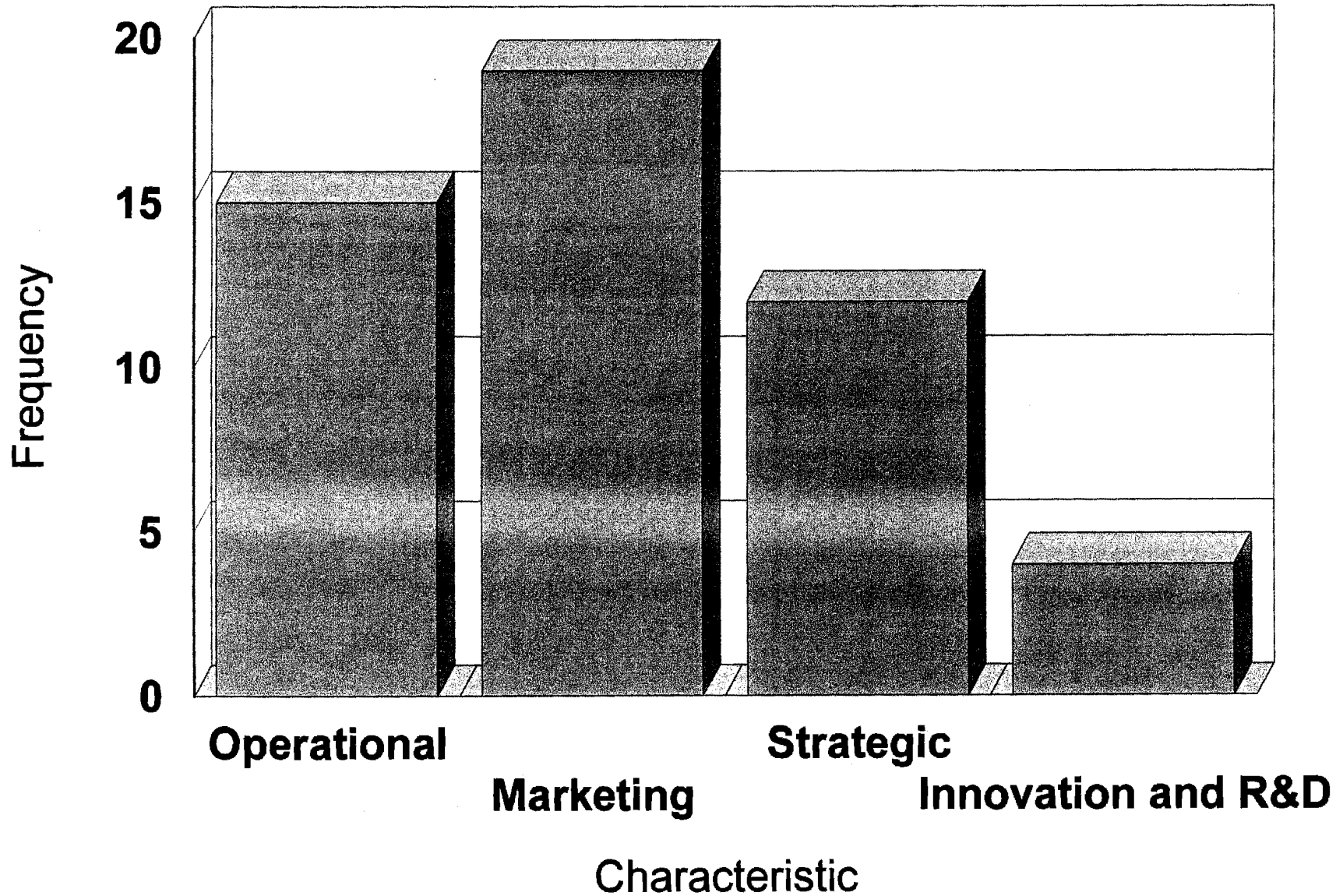
# Management style



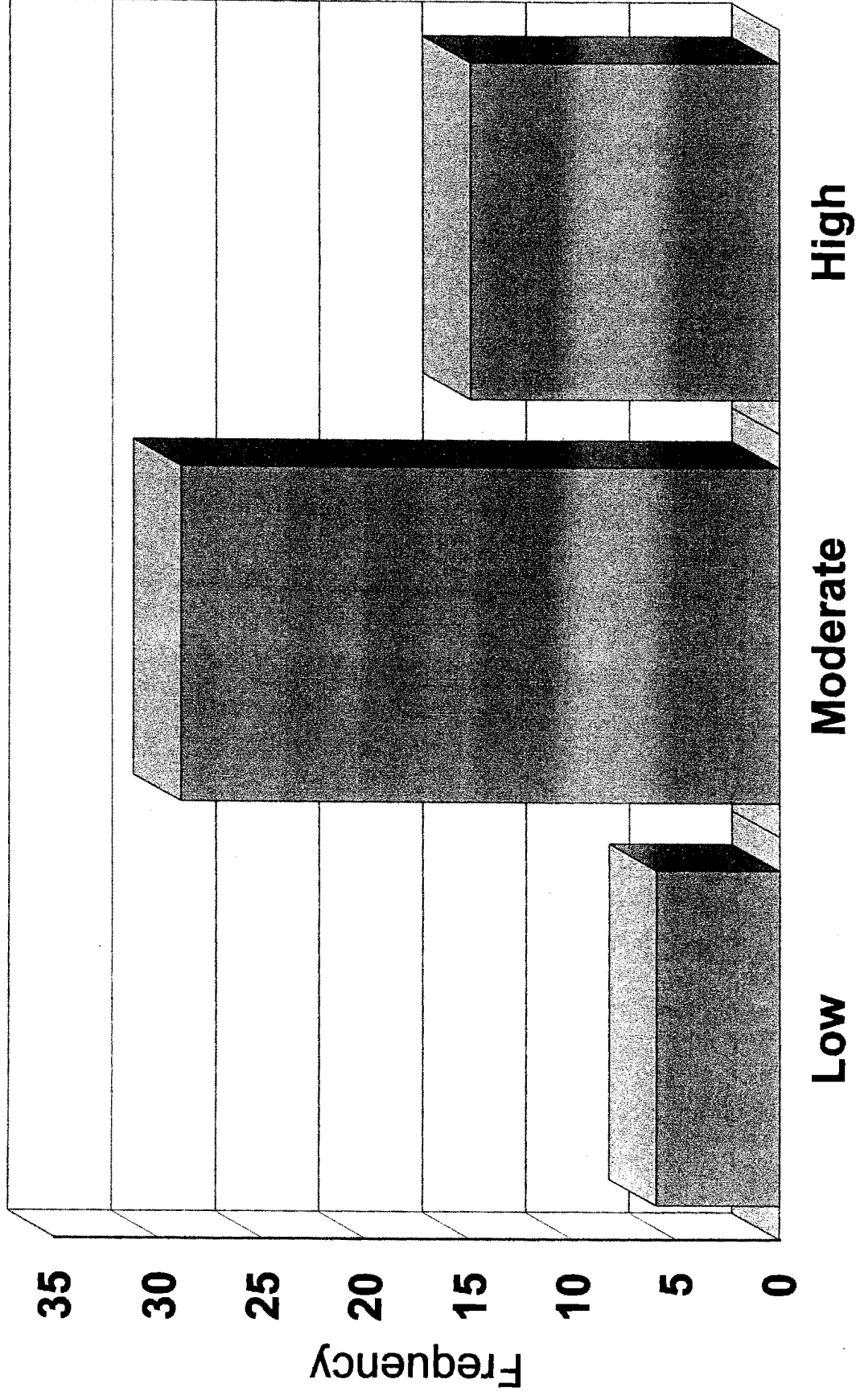
# Measurement systems



# Organisation's functional culture

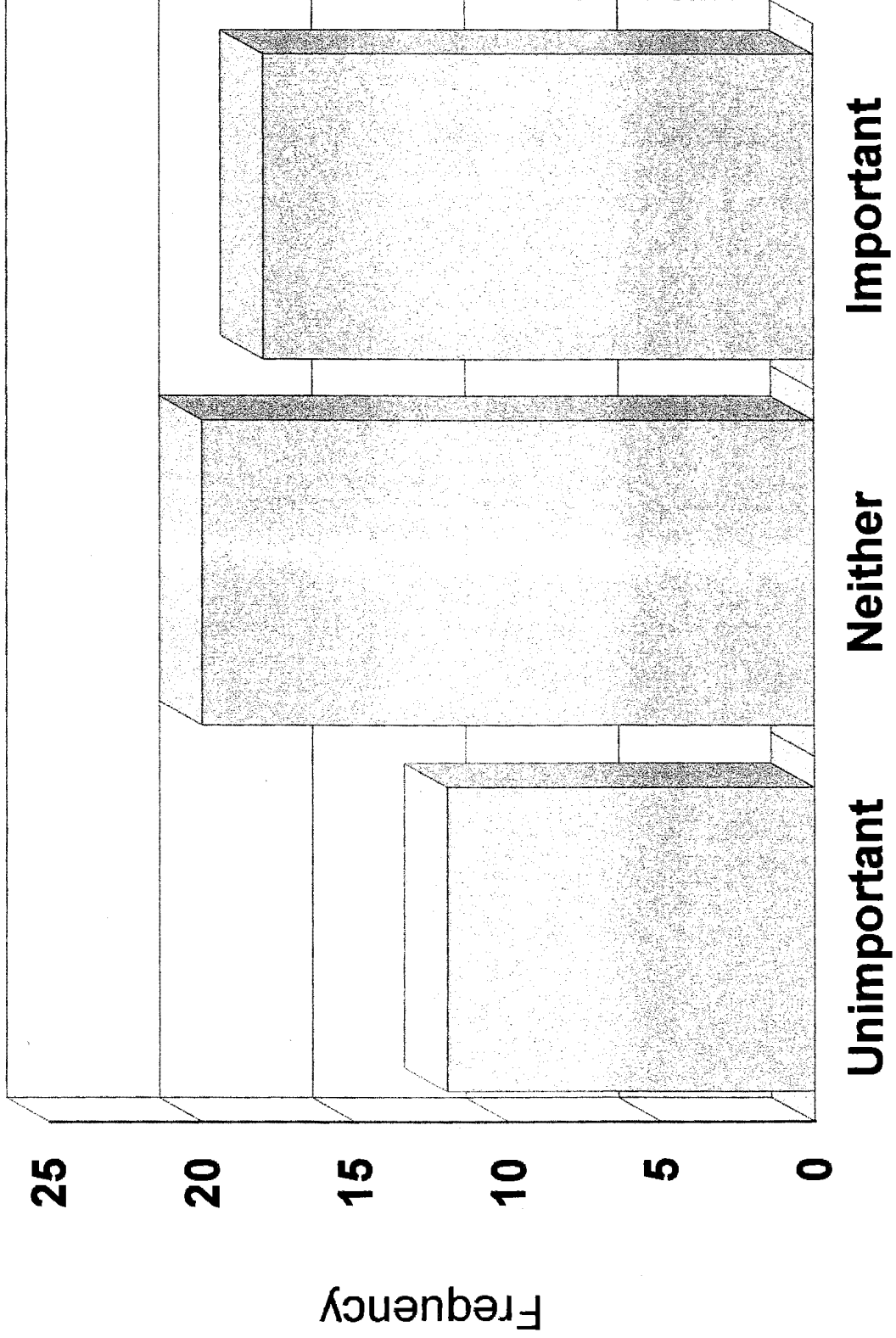


# Level of pro-activeness



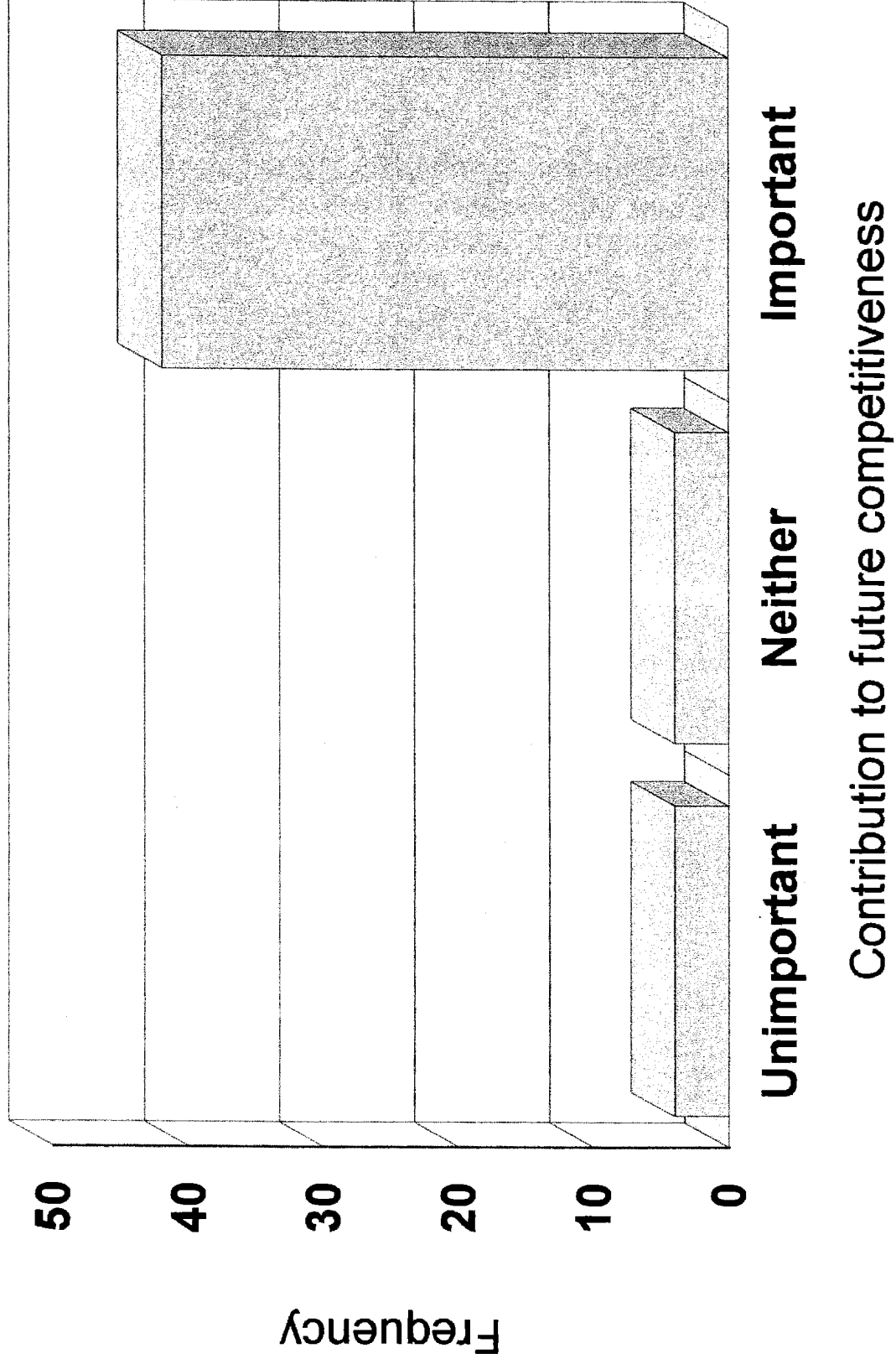
Characteristic

# Less functional integration

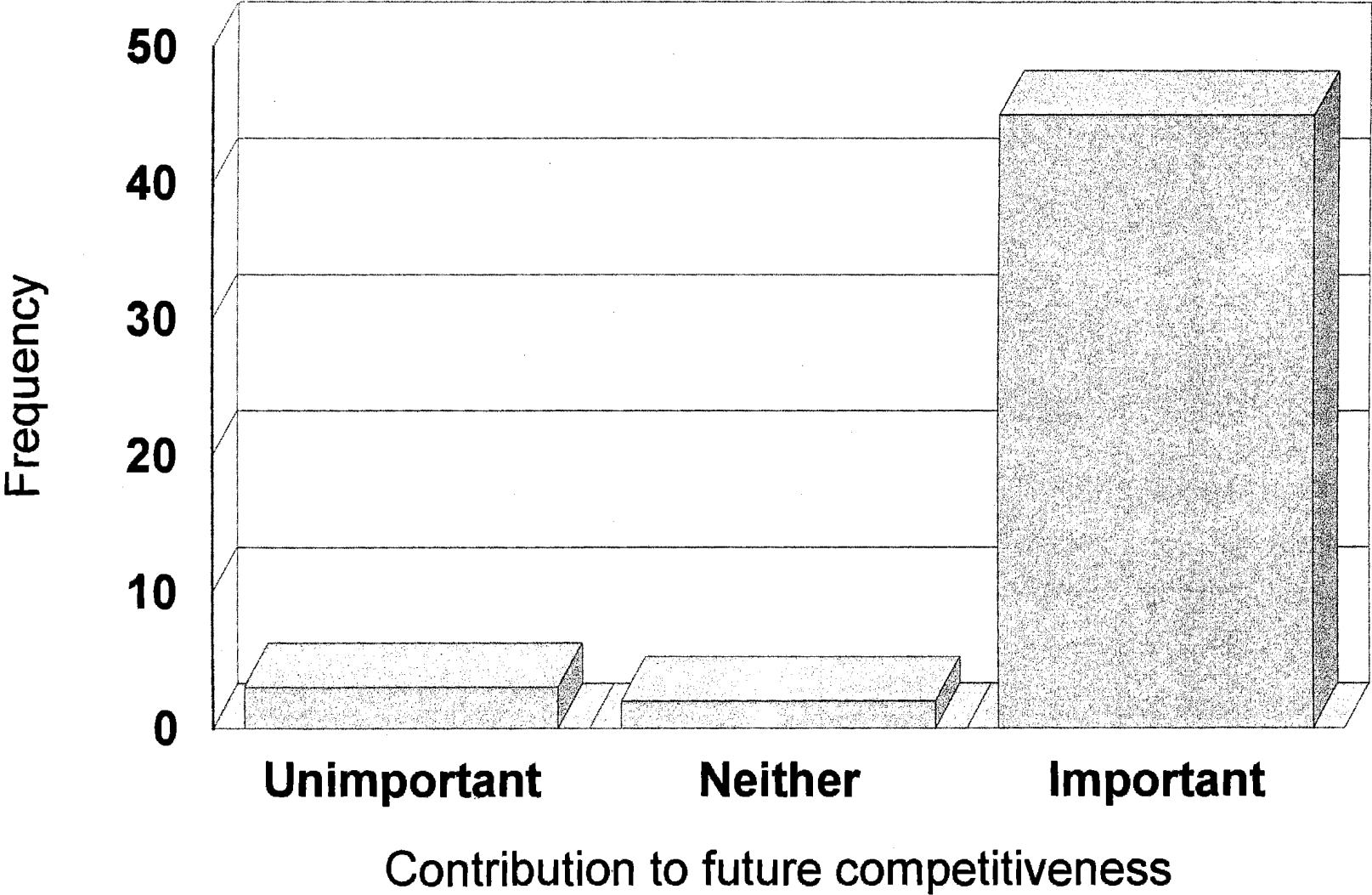


Contribution to future competitiveness

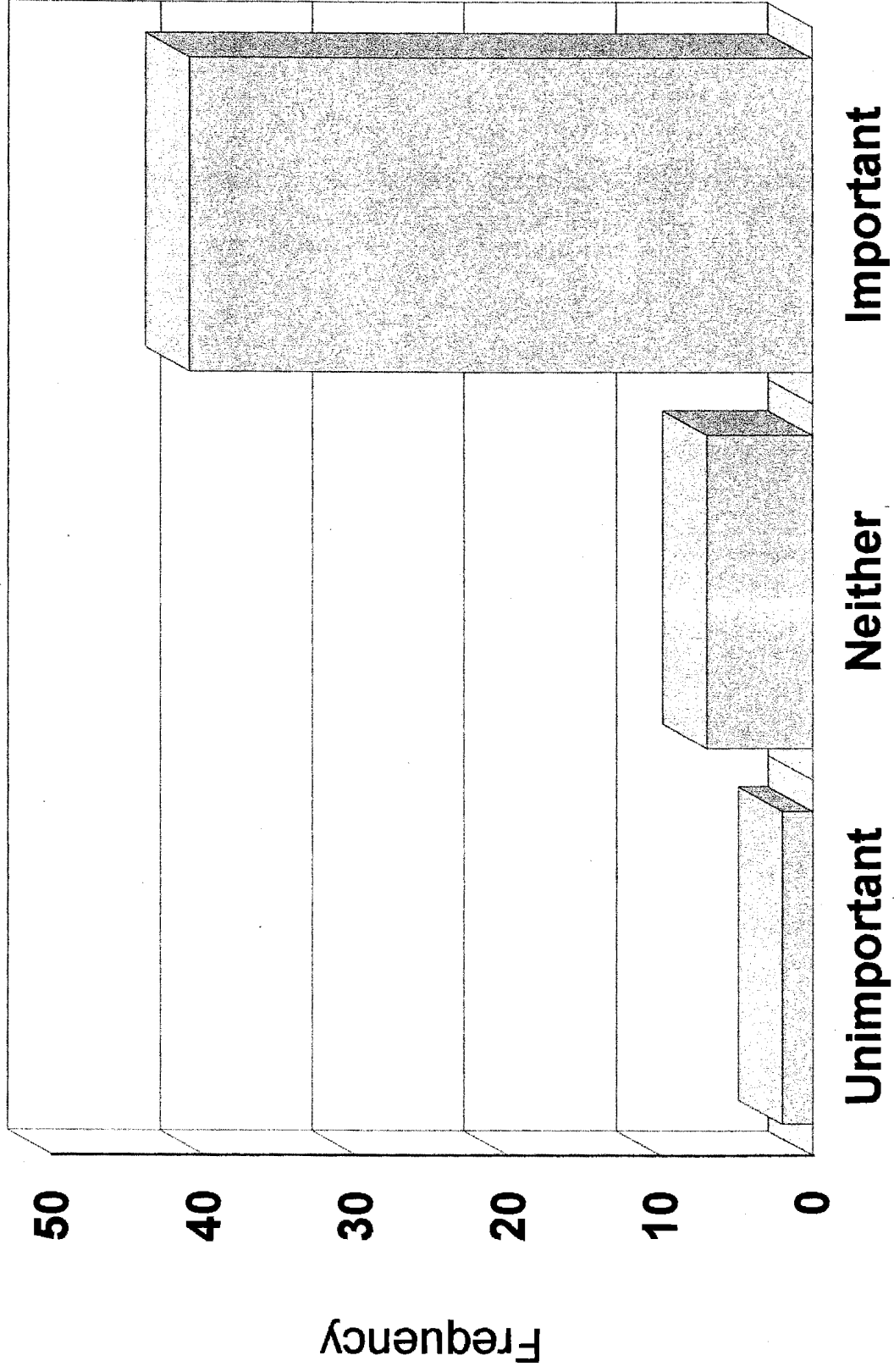
# Modernise organisational cultures and values



# Foster new behaviour patterns and attitudes



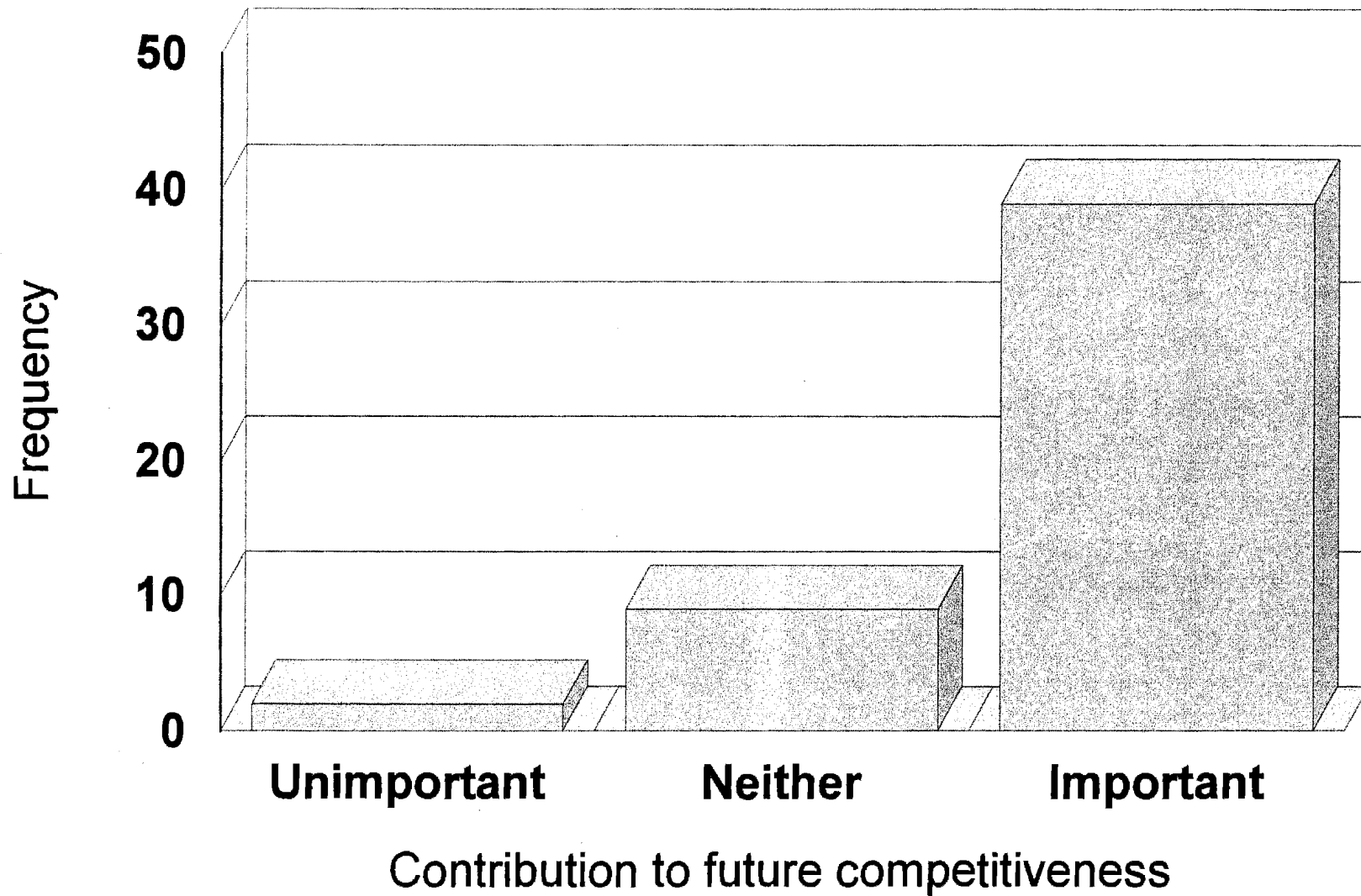
# Change management



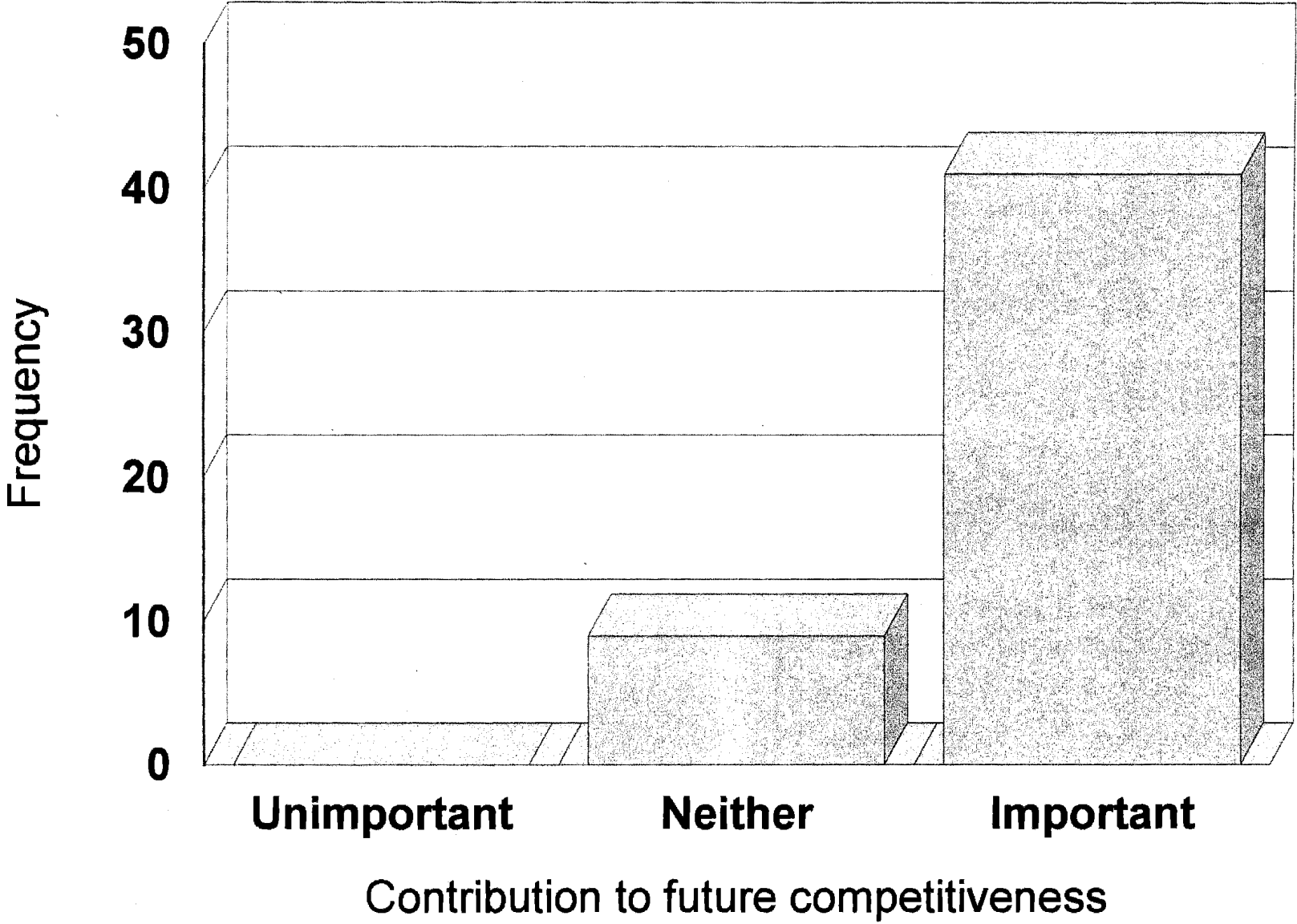
Contribution to future competitiveness



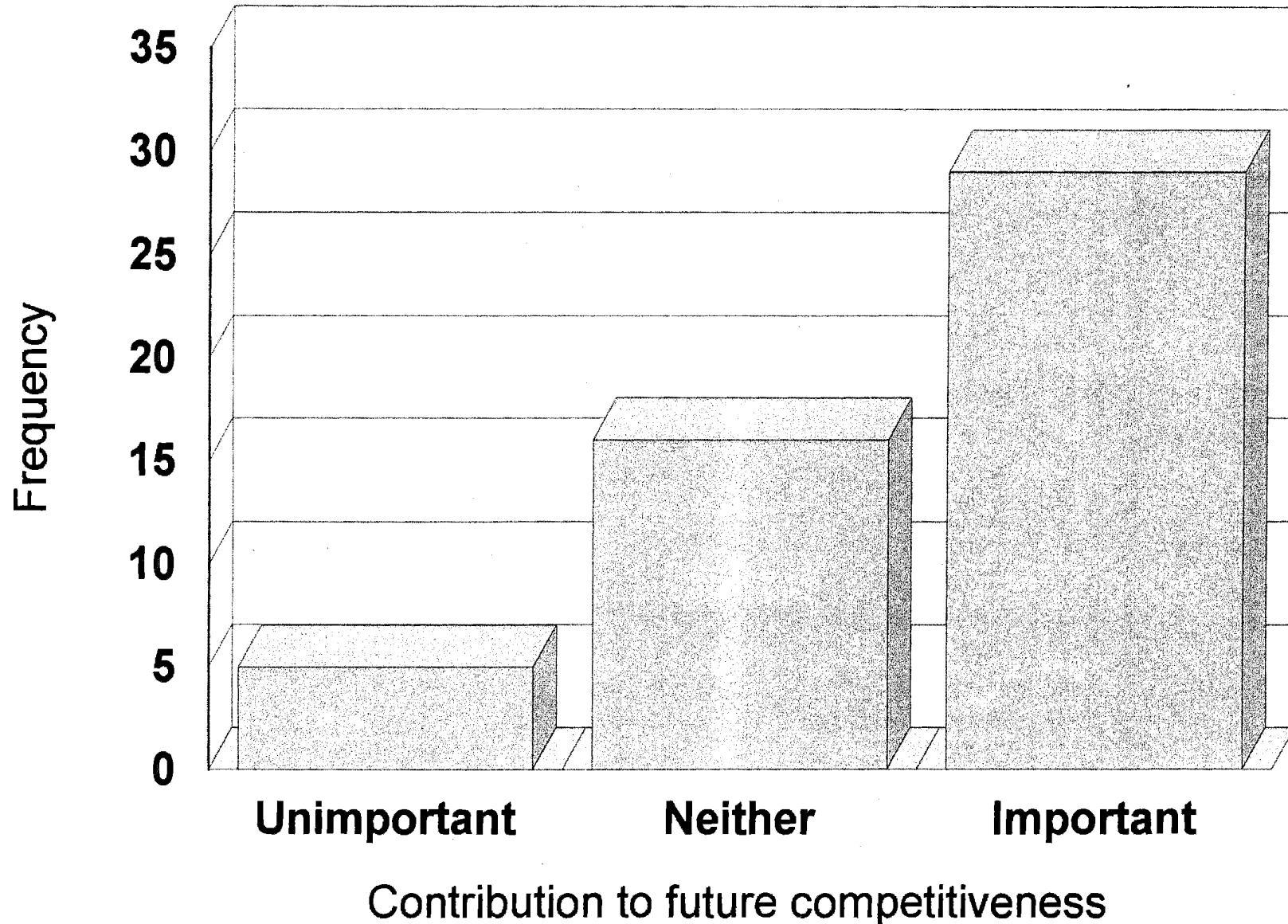
# Positioning in new healthcare value chain



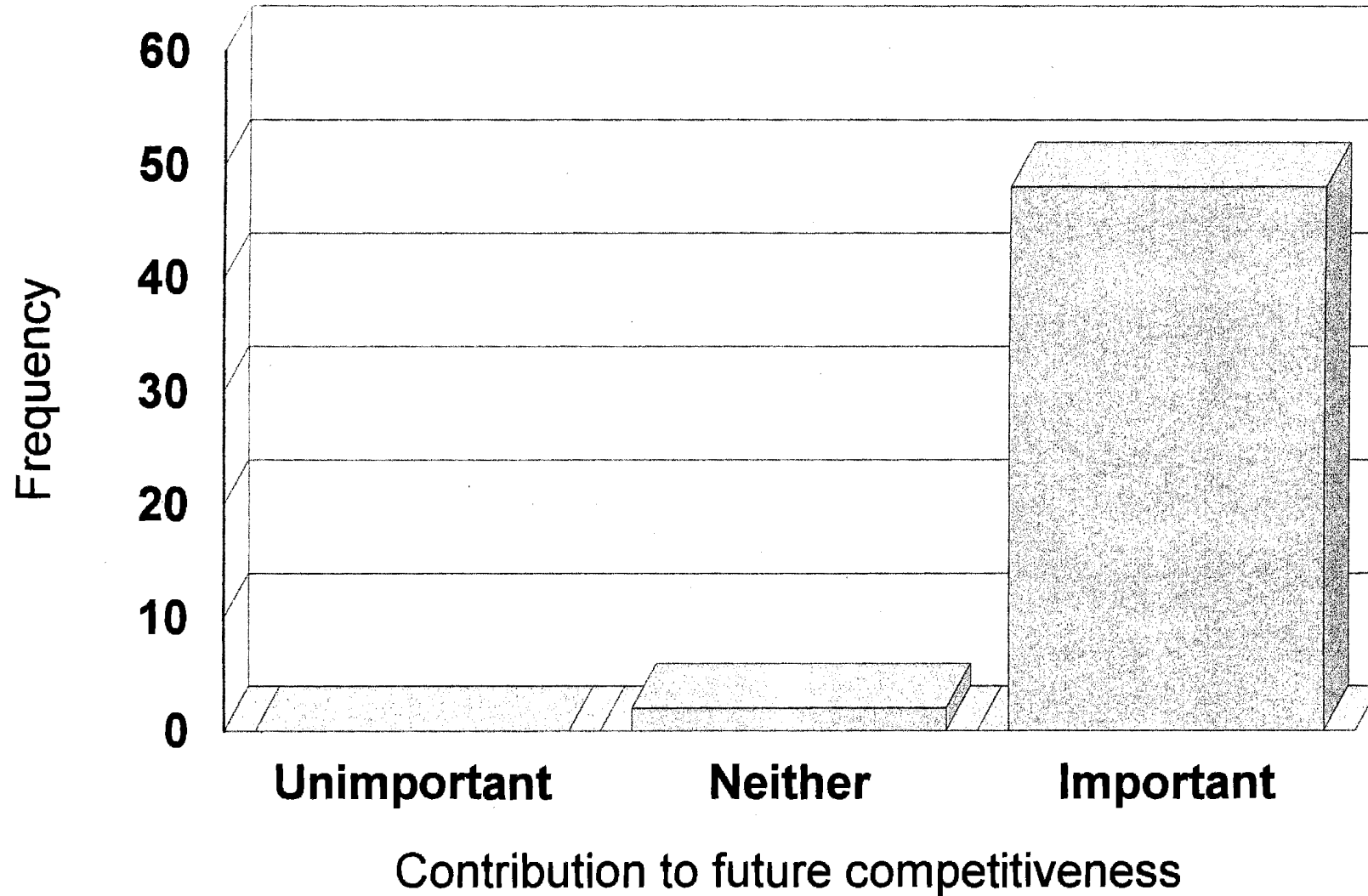
# Creating new value propositions



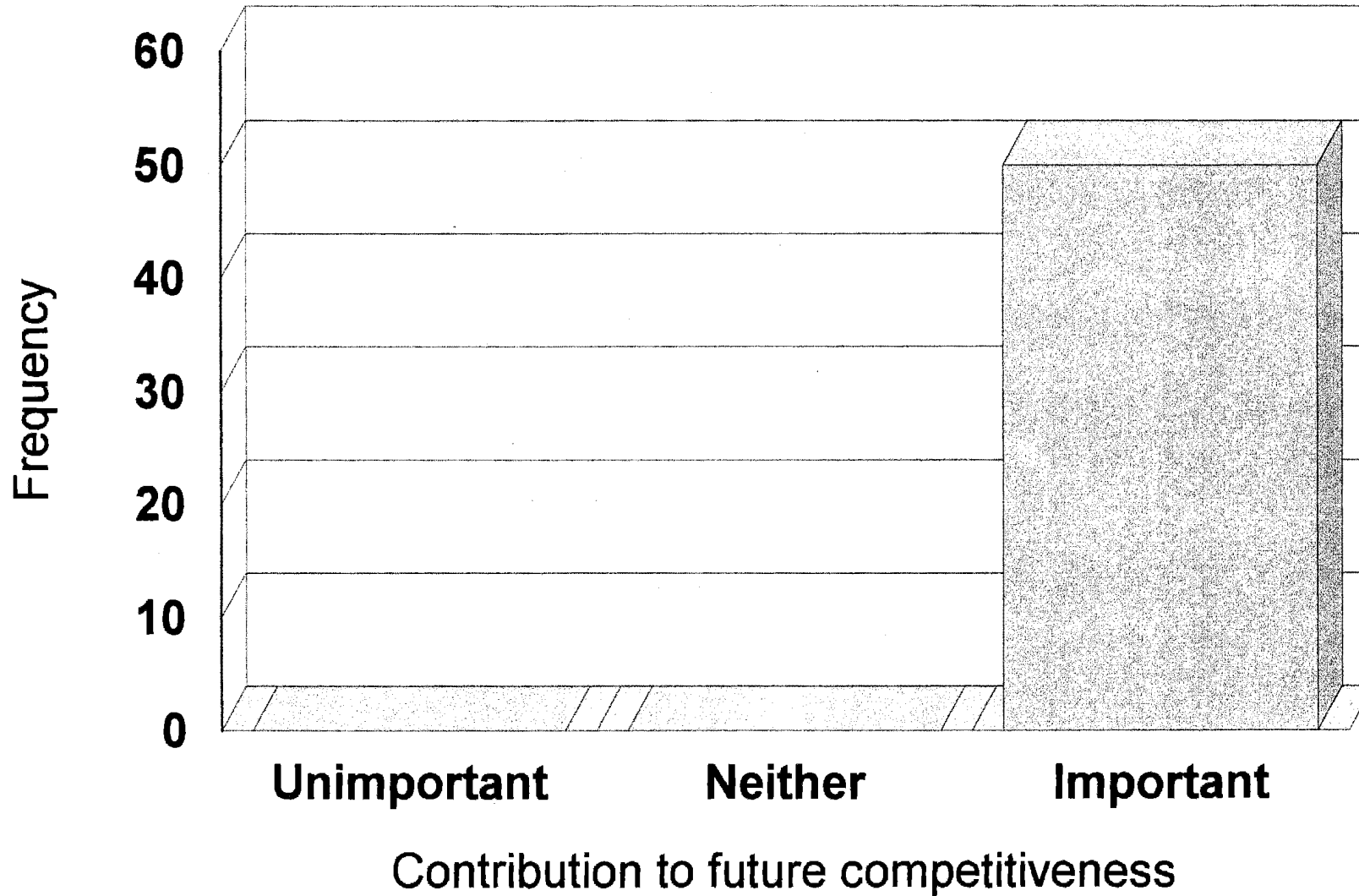
# Out sourcing of skills and functions



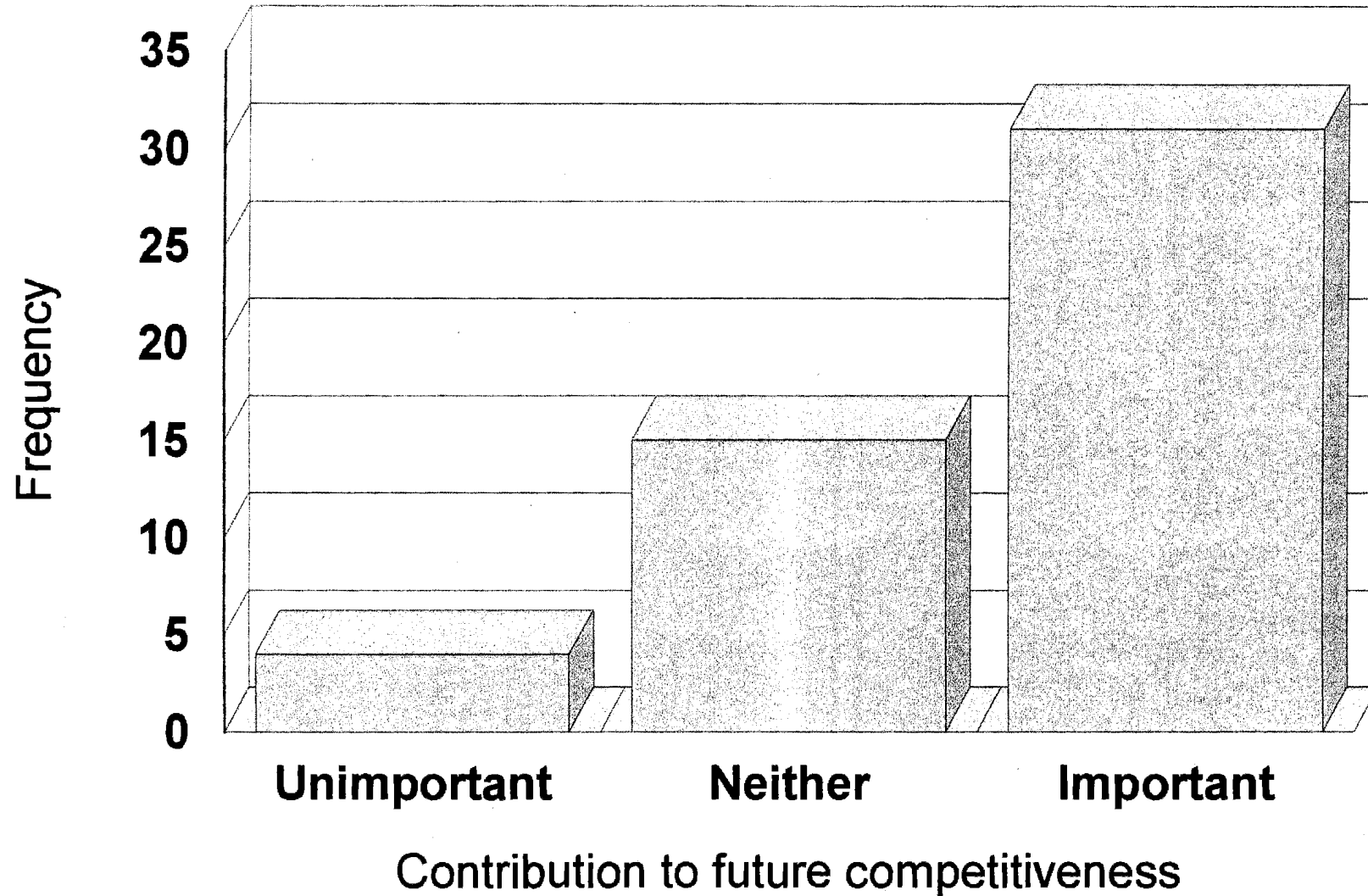
# Suppling solutions percieved by customers to be valuable



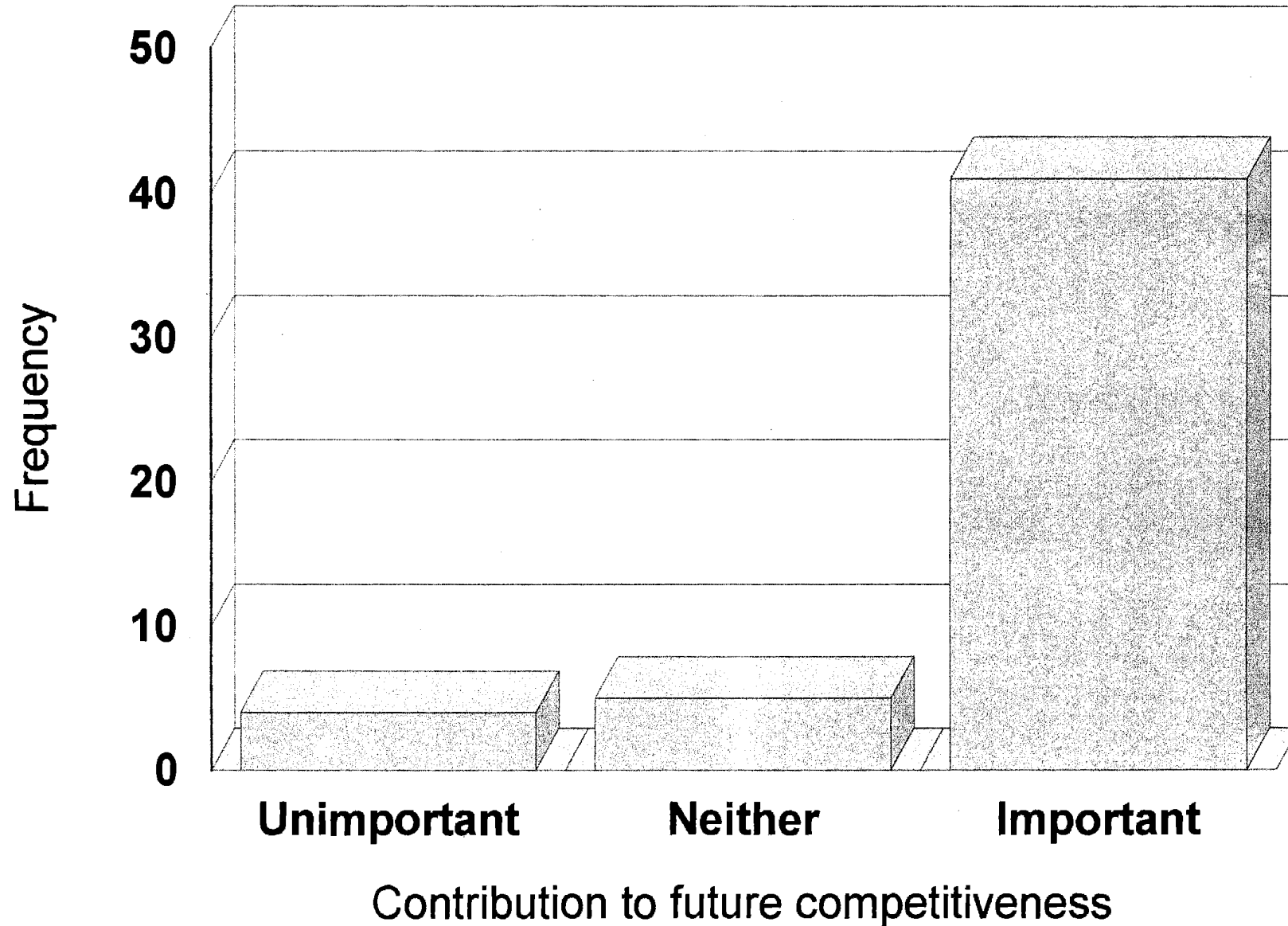
# Ability to create lasting relationships with customers



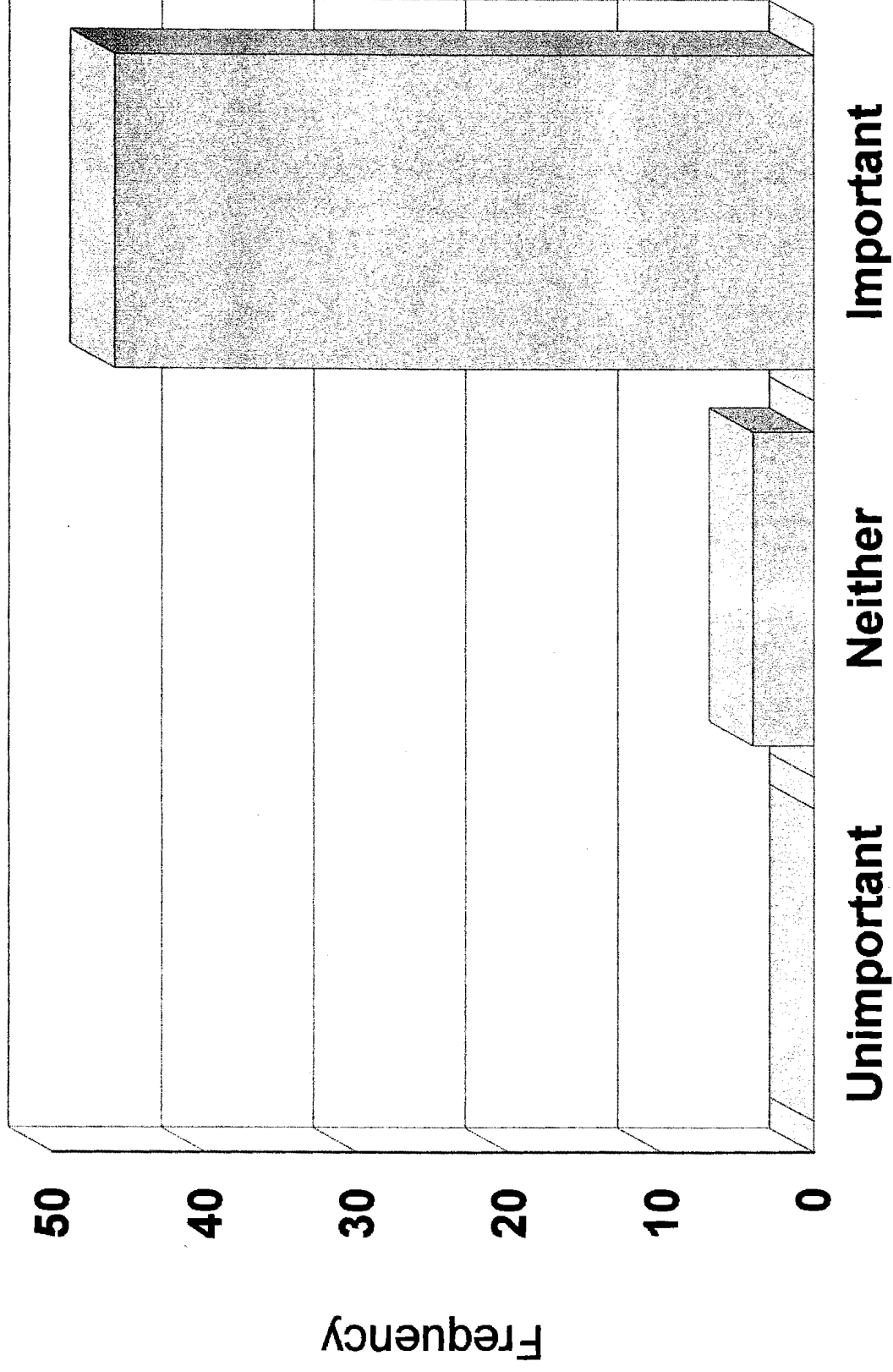
# Becoming a high-value, low-cost supplier



# Ability to manage diverse set of alliances



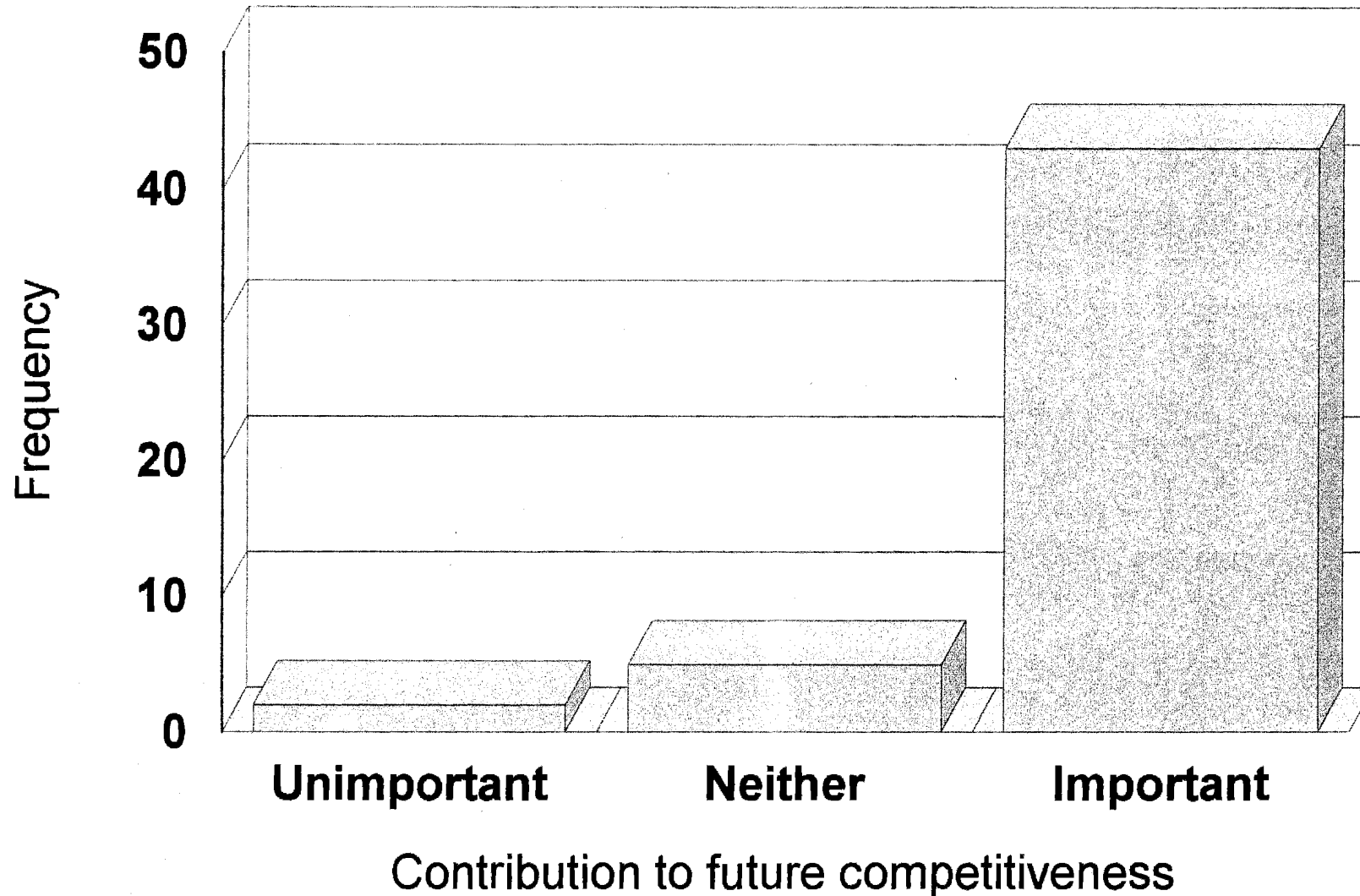
# Development of new core competencies



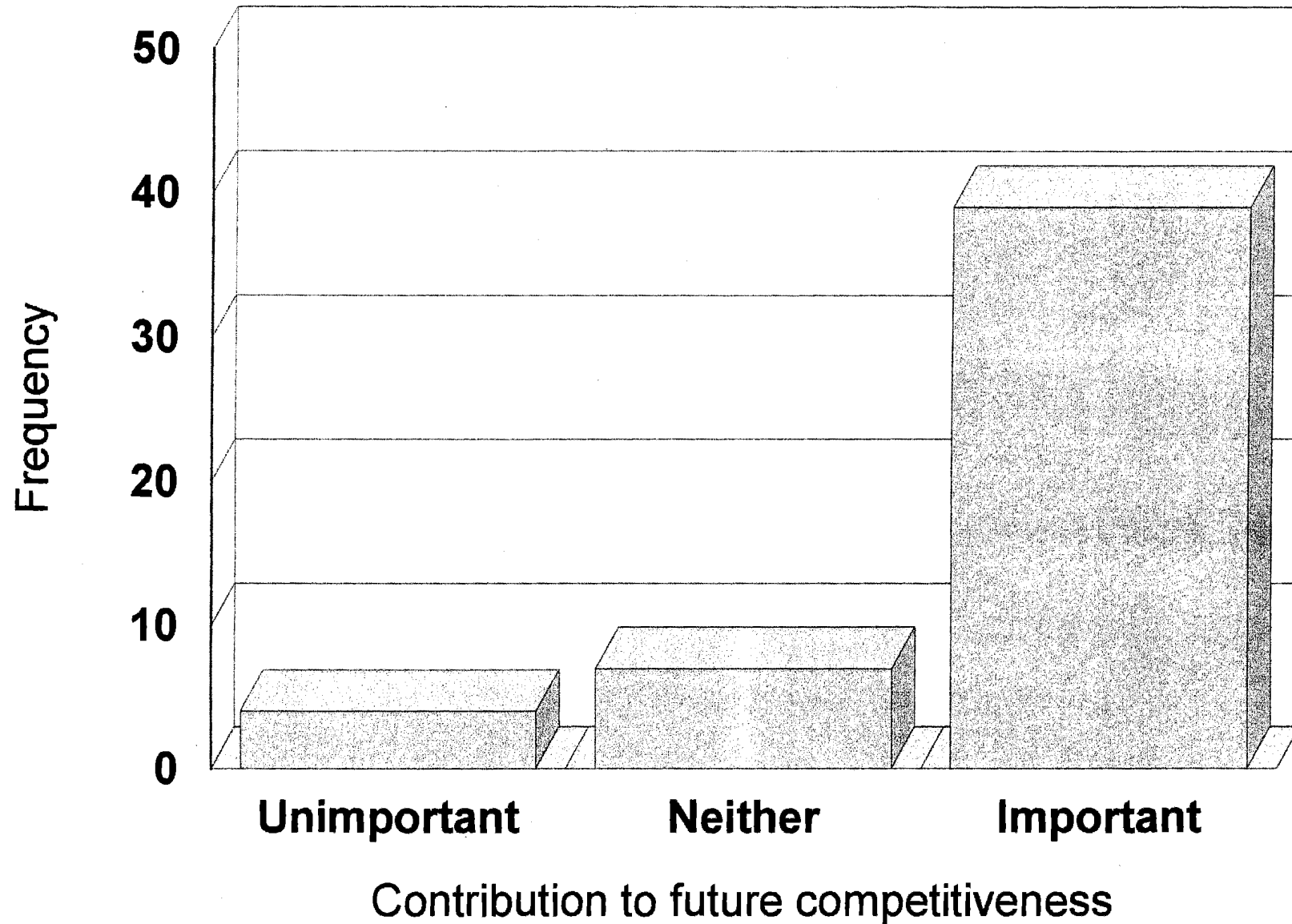
Contribution to future competitiveness



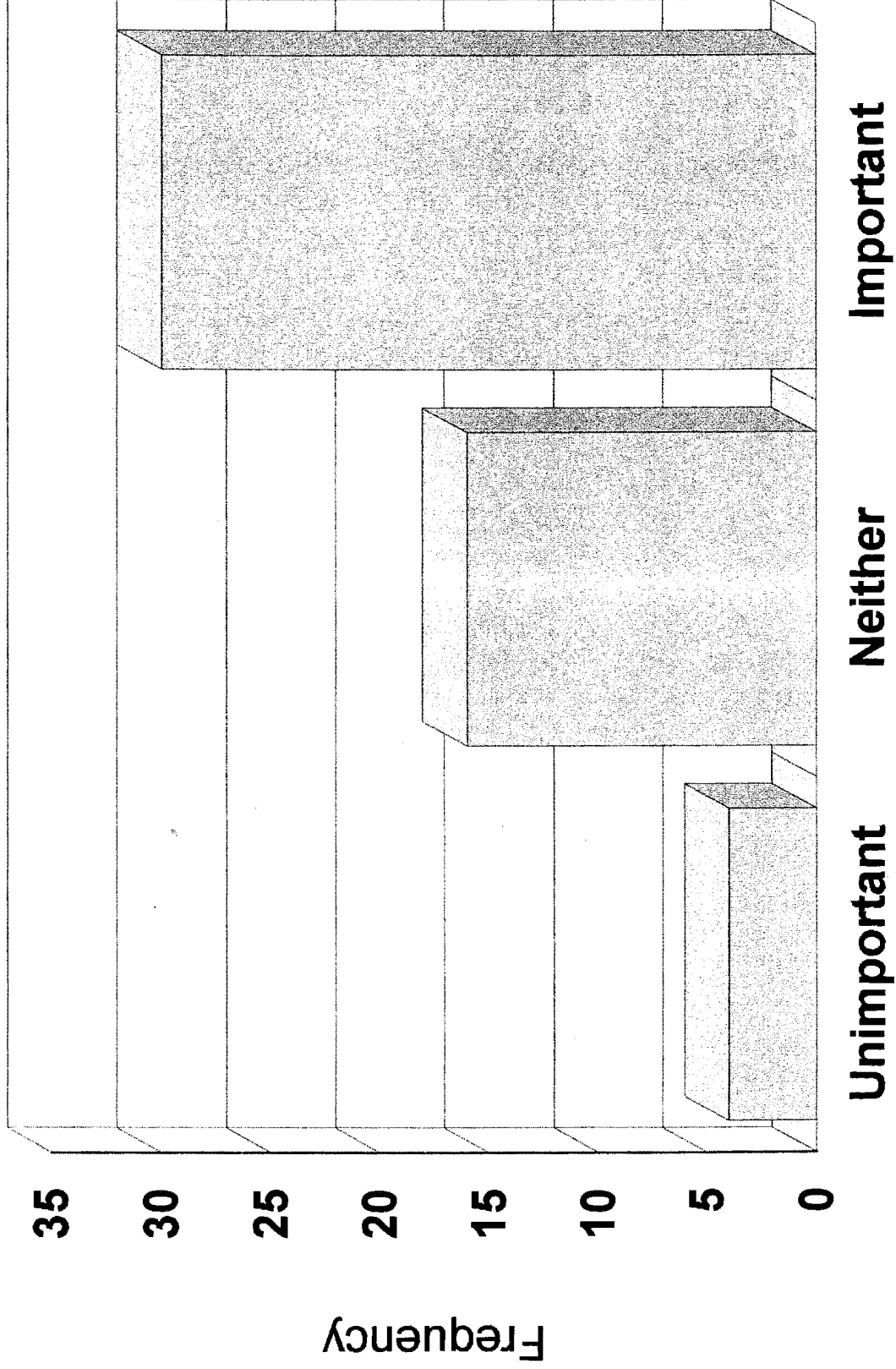
# Integrated programmes of top-down and bottom-up business transformation



# Reframing visions and cultures

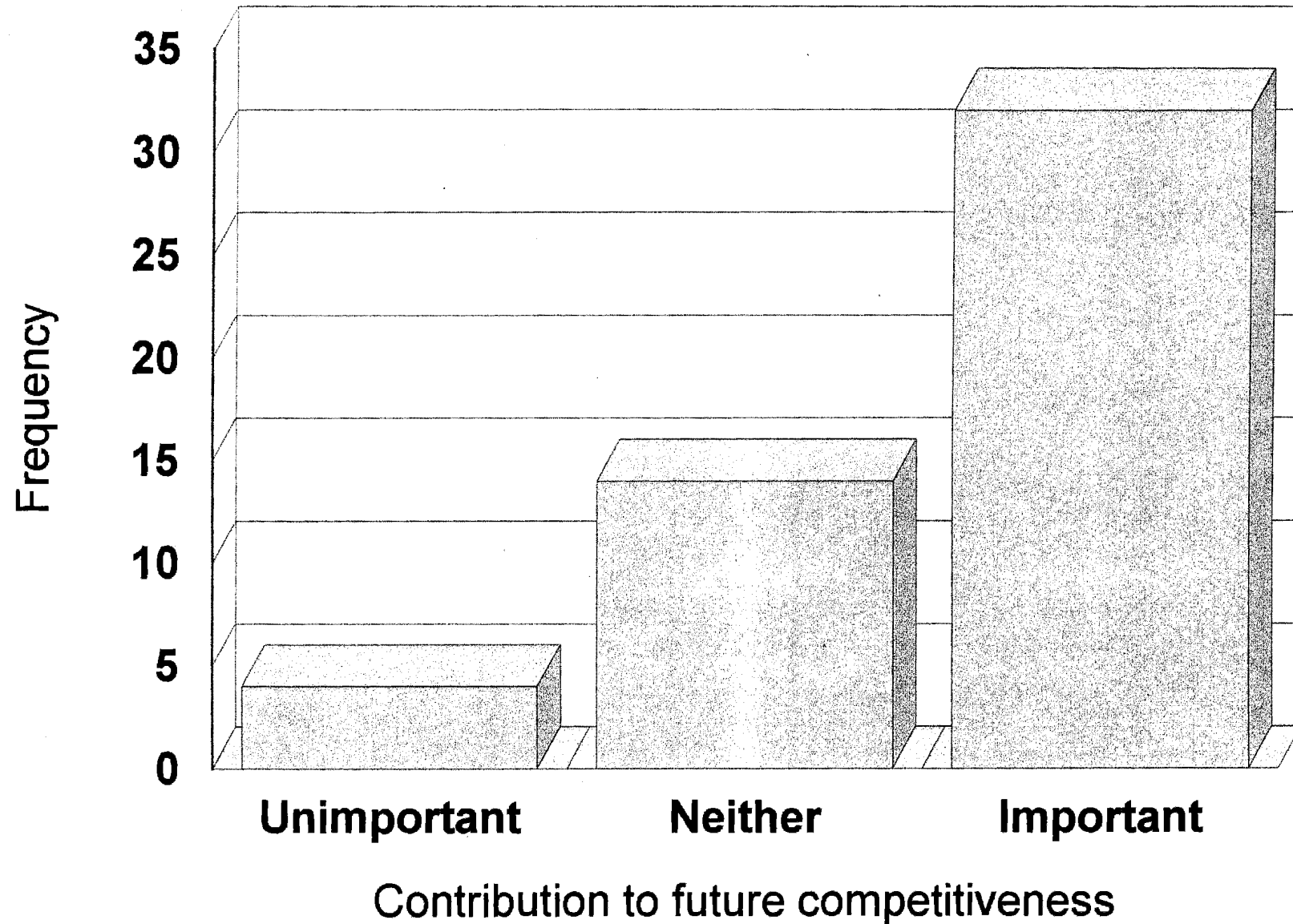


# Demand side management

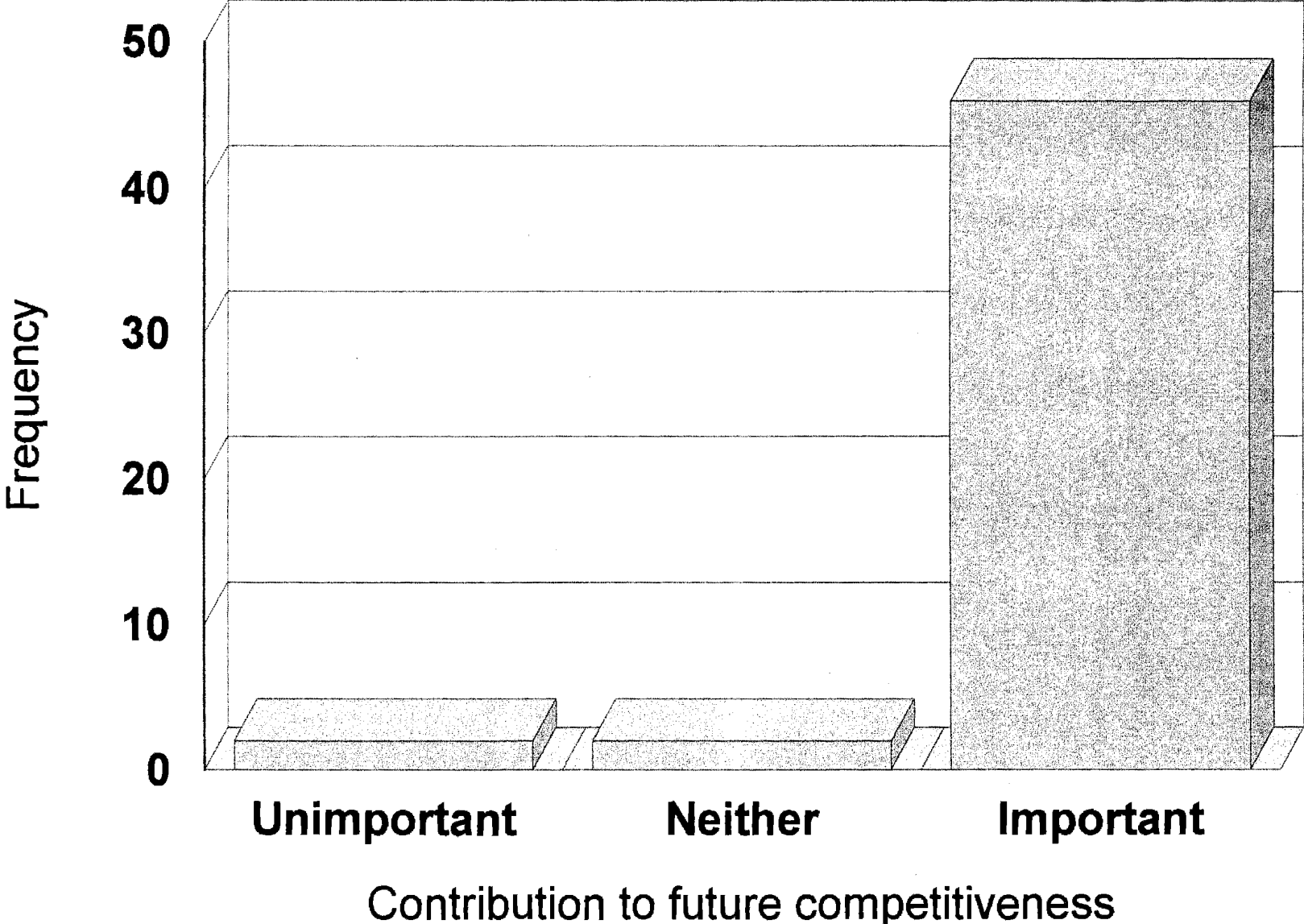


Contribution to future competitiveness

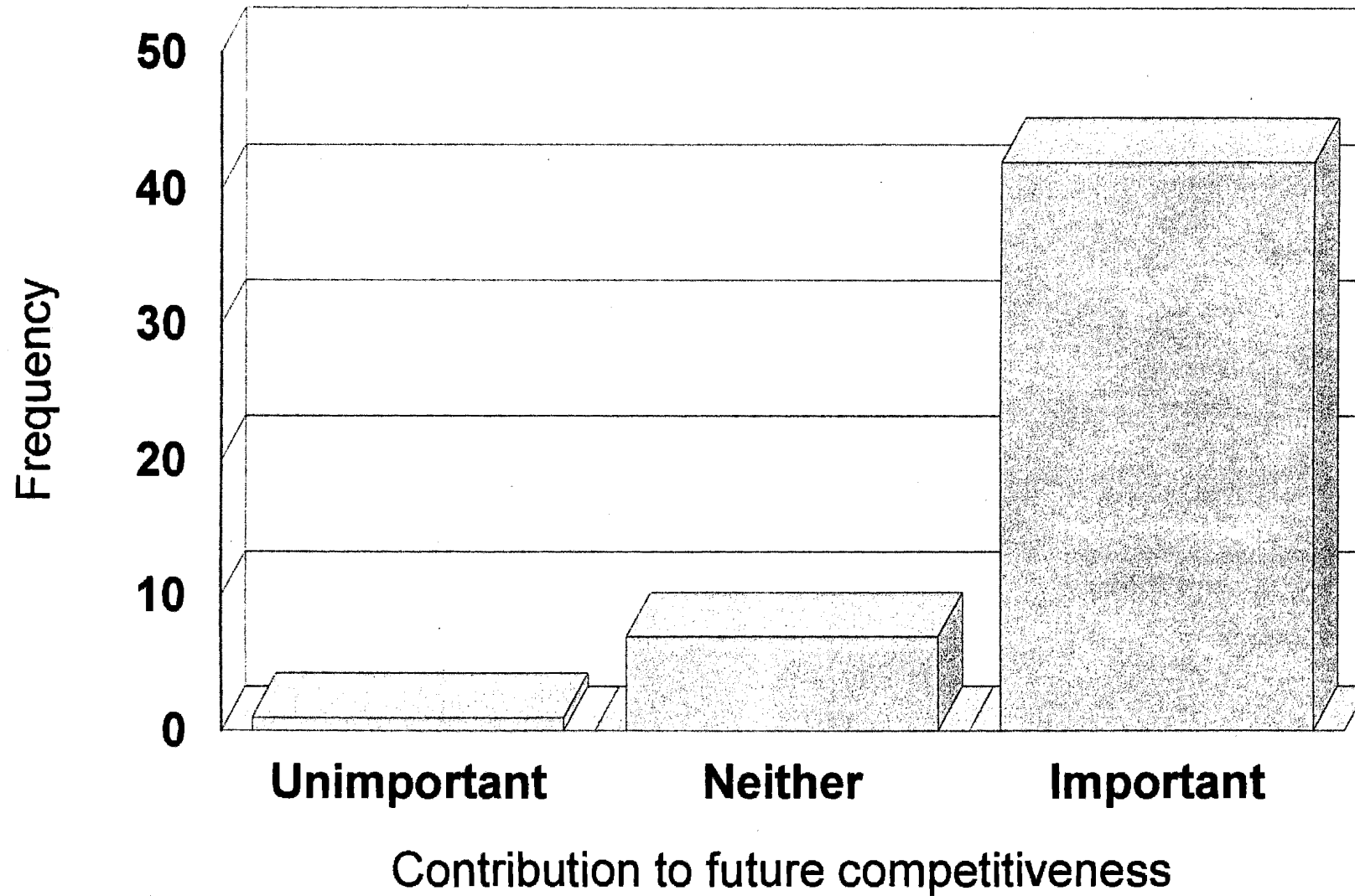
# Managing up



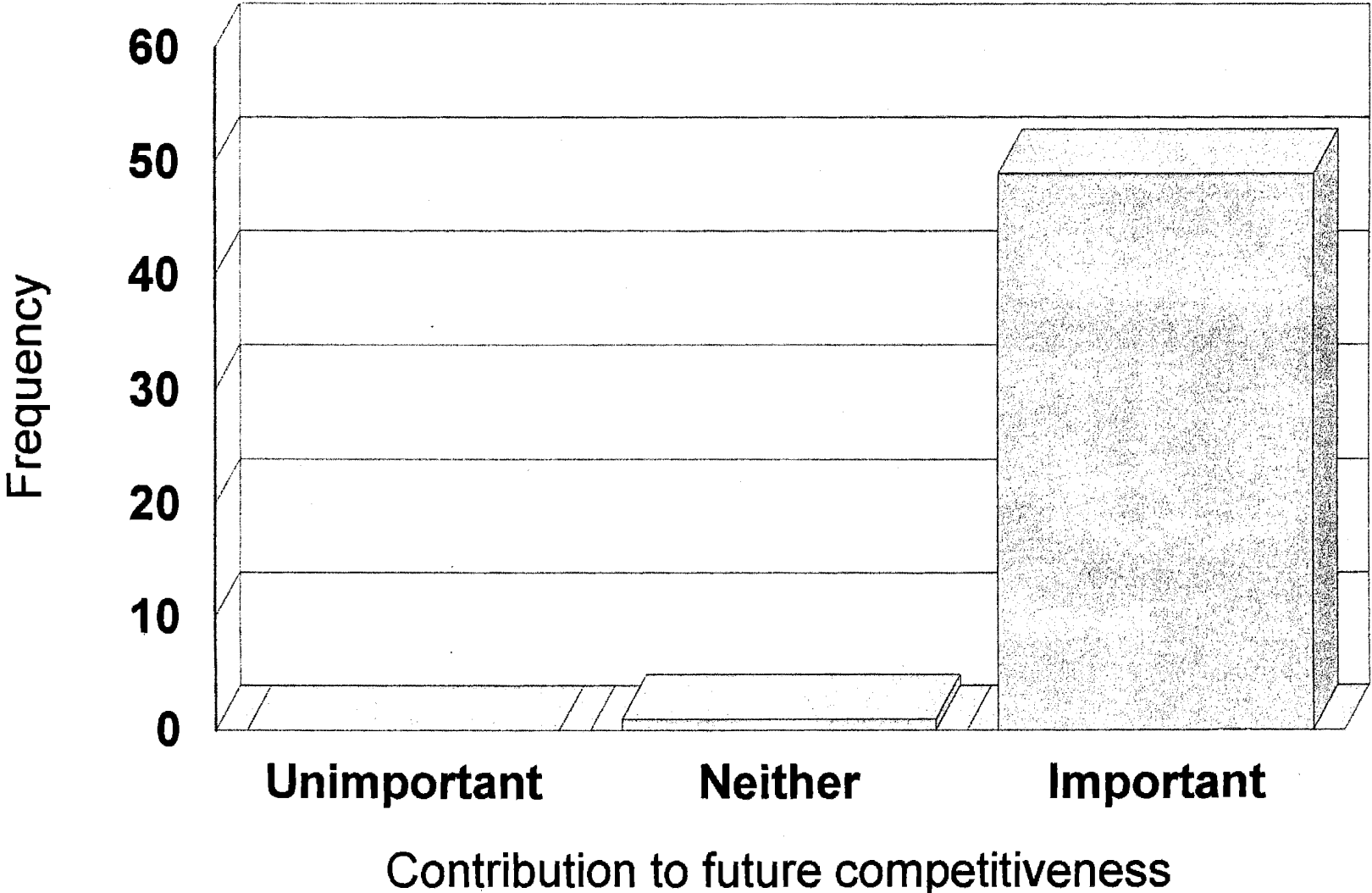
# Adaptability



# Customer's perception of cost of new products



# Customer's perception of value of new products



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