ENVIRONMENTAL SCANNING:
THE NEED FOR AND OVERVIEW OF ENVIRONMENTAL
SCANNING SYSTEMS

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By

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Degree of confidentiality : A
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DECLARATION

I, Neville Hyde, declare this technical report to be my own original work and that all sources have been accurately reported and acknowledged, and that this document has not previously in its entirety or in part been submitted at any university in order to obtain an academic qualification

N.R. Hyde

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ABSTRACT

Historically organisations have had the "luxury" of being able to anticipate future developments and respond to them in good time due to, firstly, the comparatively slow pace of change and, secondly, the past being a relatively good predictor of the future. The second half of the 20th Century bears witness to some of the most dramatic changes and developments experienced by mankind. Most notable of these were globalisation, de-regulation, the emergence of the information/knowledge economy and, perhaps most significant of all, the changes brought about by the Internet.

The underlying assertion of this report is that, given the current, complex, dynamic and sometimes volatile nature of changes in the external environment, in order to ensure a sustainable competitive advantage, organisations will be forced to consider carefully the dynamics of the environment in which they operate and to build their plans around these dynamics.

This report briefly traces the evolution of strategic planning to its current status prior to providing a detailed analysis of the nature of environmental scanning and its applicability to strategic planning. The report provides a theoretical overview of environmental scanning and a discussion of some of the tools and techniques of environmental scanning. Within this context the report provides a brief indication of the extent of the practice of environmental scanning within the financial services sector of South Africa.
The conclusion assesses the findings of the current state of the practice of environmental scanning against the theory, with the view to providing an insight into the extent to which environmental scanning is applied in South Africa. Possible future directions of research and development of the practice are also identified.
OPSOMMING

Histories gesproke, het instansies oor die "luukse" beskik om toekomstige ontwikkelinge vooruit te kon waarneem en betyds op hulle te reageer, eerstens weens die betreklike stadige pas van verandering en tweedens, omdat die verlede 'n betreklike goeie voorspeller van die toekoms was. Die tweede helfte van die 20ste eeu getuig van sommige van die mees dramatiese veranderinge en ontwikkelinge wat deur die mens ondervind is. Die mees uitstaande was globalisering, deregulering, die verskynning van die inligting/kennis-ekonomie en, dalk die mees uitstaande van almal, die veranderinge wat deur die Internet teweeggebring is.

Die onderliggende stelling van hierdie verslag is dat, gegee die huidige, komplekse, dinamiese en soms onbestendige aard van veranderinge in die eksterne omgewing, om 'n mededingende voordeel te verseker, sal instansies geforser worden om die dinamika van die omgewing waarin hulle werk, versigtig te oorweeg en om hulle planne om hierdie dinamika te bou.

Hierdie verslag speur kortlik die ewolusie na van strategiese beplanning tot sy huidige status gevolg deur 'n omvattende analise van die aard van omgewingsondersoek en die toepaslikheid daarvan op strategiese beplanning. Die verslag voorsien 'n teoretiese oorsig tot omgewingsondersoek en 'n bespreking van sommige van die instrumente en tegnieke van omgewingsondersoek. Binne hierdie konteks voorsien die verslag 'n kort aanduiding van die omvang van die uitvoering van omgewingsondersoek binne die finansiële dienstesektor van Suid-Afrika.
Die slot som die bevindings op van die huidige toestand van die praktiek van omgewingsondersoeke volgens die teorie, met die oog op voorsiening van 'n insig in die mate waartoe omgewingsondersoeke in Suid-Afrika toegepas word. Moontlike toekomstige rigtings van navorsing en ontwikkeling van die praktiek word ook geïdentifiseer.
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CHAPTER 1:
INTRODUCTION

1.1 Background

The future is an abstract concept through which human beings bring symbolic order to the present and meaning to past endeavours. Speculative pondering of what “might be”, appears to be a key attribute of what it means to be human. Human coping strategies are often centered on the organisation of present activities in the context of both past experiences and future goals (Wiengand, 1995: 1).

The instinct to look ahead is profoundly human and indeed imperative in the emerging competitive milieu. As noted by Drucker (1997: 20), the nature of the emerging global economy is such that certain distinct trends can be identified. The identification of the trends at a macro and micro level are vital in order to equip both nations and organisations with the intelligence to manage the consequences.

The emergence of large multi-national organisations operating in a global economy characterised by ever-decreasing trade regulation, increasing technological capabilities and competitive complexities has pressurised organisations to assess the nature of the environment they operate in. Patterns of international competition are changing significantly. Homogenisation of product needs between countries, internationalisation of service industries, reduction of transportation and distribution costs, the emergence of global electronic commerce and the increasing mobility of consumers is facilitating a shift in the nature of international, and by extension, domestic competitive operating environments.
As noted by Porter (1986:36), these dynamics are driving a change in both the configuration and co-ordination of global strategy. Concentrating activities in specific geographical locations is becoming less of an economic imperative and is less possible as governments and international trade bodies force more dispersion. Technological progress is facilitating the move towards international co-ordination throughout the value chain and this is being encouraged to offset the increasing dispersion.

As these global trends become more pronounced, organisations will be forced to contemplate their abilities to compete in this diversified, global market place. They will need to assess their ability to co-ordinate dispersed operational units and respond to emerging consumer and competitor trends on a global basis. Wiengand (1995: 3) notes that as a consequence, the way people think about the future has undergone significant change. A new attitude has emerged, the effect of which has been to extend former planning horizons and to replace haphazard intuitive gambles, as a basis for planning, by systematic analysis of the opportunities the future has to offer. She goes on to postulate that there are some basic reasons for this change in approach:

- Pragmatic reasons. There is a growing recognition that it is important to do something about the future. This recognition is derived from the realisation that not only is technology, society and the environment undergoing change, but that the rate at which this change is occurring is accelerating. It has consequently become imperative to anticipate change proactively, rather than to react belatedly to change that is already occurring.

- Methodological reasons. There are new and more effective ways to do something about the future (Wiengand, 1995: 3).
Given the increasingly complex and volatile external environment, organisations have and will continue to have to adopt the view of the future as articulated by Wiengand. Every change or development in the environment will create signals and messages that an organisation may need to heed. Some of the signals would be weak (difficult to detect), many would be confusing (difficult to analyze), and others would be spurious (not indicative of a true change). In order to sustain a competitive advantage, organisations will have to, on an increasing basis, seek information and manage selectively the flood of signals created by a dynamic environment, interpret often confusing messages, and make sense of cues in relation to the organisation's strategic goals and activities.

"The reality is that information has no value, unless it is available immediately before you need it" (Grulke, 2000: 15).

1.2 Objectives of this report

Given the dynamic nature of the changes in the operating environment, the underlying assertion of this paper is based on the premise that, in order to ensure a sustainable competitive advantage, organisations will be forced to consider the dynamics of the environment in which they operate and to build their plans around these dynamics. As such, the primary objective of this report will be to provide a theoretical overview to the practice of environmental scanning.
To this end, this report will assess the extent to which the dynamics outlined in Section 1.1 impact on:

- the strategic planning process in general;
- the organisation's ability to "sense" changes in the competitive environment; and
- environmental scanning as it is applied by companies in the financial services sector.

Chapters 2 to 5 will provide the reader with an overview of the available literature and research applied to the area of investigation. Chapter 6 will provide empirical research into the extent to which environmental scanning is applied by companies in the financial services sector. For the purposes of this report, the financial services sector will be defined as Life Assurance companies, Banks and Asset Management/Investment Houses. Data will be collected relying on personal interviews with individuals charged with the responsibility of directing the organisation's strategic planning process.

1.3 Conceptual design

To these ends, this report will discuss in Chapter 2 the evolution, nature and dynamics of strategic planning as an organisational process and answers the question; "What is the role of strategic planning?"

Chapter 3 will provide a critical overview of the nature of environmental scanning and its applicability to strategic planning and answers the question; "What is the link between strategic planning and environmental scanning?"
In Chapter 4 a detailed analysis of the generic characteristics of an environmental scanning system will be provided. Furthermore, a conceptual typology of various environmental scanning systems will be presented in order to answer the question; "What are the generic characteristics, features and difficulties of environmental scanning systems?"

Chapter 5 will provide an overview of specific environmental scanning techniques and answers the question; "How is environmental scanning applied?"

Chapters 1 - 5 will provide the theoretical basis for the empirical work that will be undertaken in Chapter 6.

Chapter 6 will provide an empirical investigation into the application of environmental scanning techniques of organisations in the financial services sector in order to answer the question; "What is the current state of environmental scanning within the financial services sector?"

Chapter 7 will provide an analysis of the results and a critical comparative commentary/summary of the state of environmental scanning in the financial service sector viz-a-viz the theoretical overview discussed in Chapters 2 - 5 of the report. This will test the underlying assertion underpinning this report, i.e. in order to ensure a sustainable competitive advantage, organisations will be forced to consider the dynamics of the environment in which they operate and to build their plans around these dynamics.
CHAPTER 2:  
THE NATURE AND DYNAMICS OF STRATEGIC PLANNING

2.1 Introduction

The emergence and consequent relationship between strategic planning and environmental scanning can best be understood within a historical context. This section provides a broad discussion on the evolution, nature and current dynamics of strategic planning as an organisational process, with the view to providing a perspective on the role of environmental scanning as part of the strategic planning process.

2.2 Evolution of Strategic Planning

Ansoff (Schendel and Hofer, 1979:30) defines strategy as an attempt to solve the mismatch between products and services offered by organisations and the changing needs and demands of the market. Strategy is a tool to analyse the underlying patterns of managerial activity aimed at managing this mismatch. Ansoff goes on to argue that this mismatch is dynamic in nature and has, over time, evolved into a number of mismatches over and above the mismatch to the external market environment. These now include mismatches with socio-political, ecological and environmental changes.

Implicit in Ansoff's view of strategy is the assumption that:

- growth and expansion are both natural and inevitable courses of action for organisations;
that strategic problems emanate from the market place and end with an adaptation to market needs; and

strategy is a means for organisations to pro-actively select the nature of their interface with the external environment.

Given the changes in both the configuration and co-ordination of global strategy as outlined in Chapter 1 of this report, certain of these assumptions can be challenged. As noted by Newman and Dill (Schendel and Hofer, 1979:25),

- organisations need to ensure strategic preparedness for conditions of slow or no growth;
- in a competitive environment characterised by diminishing resources, the market place is no longer the only driver of strategic adaptation; and
- the ability to accurately select the nature of the organisational interface with the external environment is becoming increasingly difficult in an environment characterised by discontinuity and surprise.

Newman and Dill (Schendel and Hofer, 1979:25) argue that the nature of strategic planning has and must continue to evolve from a uni-dimensional set of management activities aimed at managing a singular mismatch, to a multi-dimensional, integrated set of management activities aimed at managing organisational mismatch on a number of fronts.

Strategic planning while still a relatively new management system, evolved in essence, from two streams of thought.
Firstly programme planning and budgeting that arose during the Second World War and secondly, the Harvard Business School's focus on the value of having an overall corporate strategy that emphasised the functions of business, i.e. production, finance, marketing, logistics and control (Porter, 1987:21). Porter goes on to argue that as organisations grew and became more complex, so the need for a more systematic, structured approach to setting strategy arose. This need resulted in the emergence of strategic planning.

Ansoff and McDonnell (1990:4 - 11) trace the evolution of the nature of challenges facing organisations from the era of mass production to mass marketing and finally to the post-industrial era. They postulate that during these phases, organisations, by and large, remained immune from the influences of society. They go further to argue that from the 1950s, changes became more accelerated, complex and discontinuous from past experience. They note that inherent in the acceleration of changes were aspects of frequency and diffusion. Clearly, with the emergence of technology and globalisation, the rate at which organisations had to confront new challenges increased significantly. The second aspect of diffusion refers specifically to the rapid pace at which new products and services penetrated markets.

The organisational consequences of this acceleration of change were:

- Increasing difficulty in anticipating the change sufficiently in advance in order to prepare an appropriate organisational response.
- The need arose to implement these responses quickly.
- The need also developed for flexible and timeous responses to changes that could not be anticipated (Ansoff and McDonnell, 1990:12).
Organisations have always had planning systems, but by and large these had been based on the concept of extrapolation in which the future was/is expected to be predictable through the extrapolation of historical trends. The essential difference between strategic planning and its predecessors, most notably, long range planning, lies in the fact that in strategic planning the future is not expected to be an improvement on the past, nor is it assumed to be extrapolable. Strategic planning essentially replaces extrapolation by an extensive strategic analysis that balances prospects against objectives, to produce a strategy (Ansoff and McDonnell, 1990:12).

Ansoff and McDonnell (1990:247) postulate that management systems have undergone an evolutionary development process in response to the emergence of new challenges. As the environmental "turbulence" changed, so management systems evolved that were geared towards handling the increased levels of unpredictability, novelty and complexity.

The evolution of management systems as depicted in Figure 2.1 below, suggests that such evolution was in response to decreasing familiarity of events and a decreasing visibility of the future. The consequence of this being that management systems have evolved from a paradigm of control to one of contingency, i.e. a preparedness for a variety of possible futures in an effort to respond to increasing levels of complexity and unpredictability in the business environment.
The evolution of these systems clearly supports the assertion of Newman and Dill (Schendel and Hofer, 1979:25) that strategic planning has and must continue to evolve into a multi-dimensional, integrated set of management activities aimed at managing organisational mismatch on a number of fronts.

Ansoff and McDonnell (1990:12) identify four distinct stages of management systems i.e.

- Management by control in the stage of slow change.
- Management by extrapolation, when change accelerated, but the future could be extrapolated from the past.
- Management by anticipation, when discontinuities started to emerge, but change, while still rapid, was slow enough to anticipate and respond to.
• Management through flexible/rapid response, in which significant challenges emerge so quickly that there is not sufficient time to anticipate and plan the development of an appropriate response.

As noted earlier, Ansoff defines strategy as a tool to analyse the set of management activities designed to address the product/market environment mismatch. If one argues that the nature of management activity is defined by the management systems in place in the organisation, then there is a deductive link between:

• Ansoff’s definition of strategy (Schendel and Hofer, 1979:30);
• Ansoff and McDonnell’s (1990:12) four stages of management systems development; and
• Newman and Dill’s (Schendel and Hofer, 1979:24) assertion regarding the nature of strategies that need to evolve in order to cope with the dynamics of the environment.

With regard to the last point, Newman and Dill (Schendel and Hofer, 1979:24) postulate that there will be an increasing need to develop the following:

• Societal legitimacy strategies that relate the organisation to the emerging socio-political environment.

• Preparedness strategies that replace action strategies and enable organisations to manage flexible resource configurations.

• Resource and capability strategies that will enable organisations to manage scarcities.

Clearly, Ansoff and McDonnell’s four stages of management systems development link management activities to the evolving nature of strategies postulated by Newman and Dill.
2.3 The Nature of Strategic Planning

2.3.1 A definition of the process of strategic planning

Armstrong (Albert, 1983:2-4) defines strategic planning as "...an explicit process for determining the firm's long range objectives, the generation of alternative strategies for achieving these objectives, the evaluation of these strategies, and a systematic procedure for monitoring results." This definition supports the assertion by Newman and Dill (Schendel and Hofer, 1979:25) that a concept of strategy that focuses only on the match between products and markets is both insufficient and inappropriate in ensuring the long-term survival of an organisation.

A review of the literature (McCarthy, Minichiello, Curran, 1983:4; Thompson and Strickland, 1996:20; Glueck, 1980:9; Luehrman, 1998:89) provides evidence that conceptually, at its essence, strategic planning is a process of integrating organisational capability in order to maximise opportunities and minimise threats that are identified in the organisation's operating environment and to take the organisation into the future. As noted by Glueck (1980:9), strategy is a long-term plan to integrate ideas and effectively deploy organisational resources as a result of an objective analysis of strengths, weaknesses and opportunities present in the environment.

2.3.2 A strategic planning model

A plethora of strategic planning systems and models exist. However, at their heart, they all have similar theoretical cornerstones, as depicted in Figure 2.2, i.e. the alignment of prospects
with objectives in an integrated strategy that will match organisational performance and strategic objectives.

![Diagram of the strategic planning process](image)

**Figure 2.2 Strategic Planning Process**  
*Source: Ansoff and McDonnell, 1990:16.*

Thompson and Strickland (1996:3) note that the strategy making, strategy implementation process consists of five interrelated managerial tasks:

- Deciding on what business the organisation will be in and formulating a vision of where the organisation is headed.
- Translating the vision into measurable objectives and performance targets.
- Crafting the strategy to achieve the results.
- Implementing and executing the strategy.
- Monitoring and evaluating performance and reviewing in the light of new developments.
While at face value rather obvious, the decision as to what business the organisation is in lies at the heart of the strategic planning process. As noted by McTavish (1995:49), a business strategy cannot be set until clarity is achieved on the definition of business activity to be undertaken and the competitive arena in which the strategy will be implemented. Quigley (1994: 39) argues that the vision is the fundamental statement of the organisation's value system. It provides an indication of where the organisation is today and provides a roadmap of where the organisation intends to be in the future.

As depicted in Figure 2.2, setting objectives involves the translation of the organisation's strategic intent into measurable targets that meet both operational performance and organisational strategic objectives (Thompson and Strickland, 1996:4). Given the nature and dynamics of the strategic planning process outlined earlier in this Chapter, Ginsberg (1987:125) observes that there is an emerging trend in organisations to adopt a holistic systems approach. The fundamentals of this approach are based on the concept of the whole organisation as a system in which the organisation, customers, suppliers, alternative suppliers and complementary suppliers are in a balanced interdependent relationship.

Crafting the strategy relates to how the organisation will achieve the set objectives given its current disposition. Crafting the strategy is the core of the strategic planning process as this is the element of strategic planning that relies on an analytical evaluation of the organisation's internal and external situation (Thompson and Strickland, 1996: 6). Typically there are a number of broad characteristics of a strategic plan. These are depicted in Figure 2.3.
While it is not the intention of this report to provide a detailed exploration of the process of strategic planning per se, suffice to say that, as is evident from Figure 2.3, a significant portion of the characteristic elements of a strategic plan are either to be "found" explicitly in the external environment, or are of such a nature that they are strongly influenced by forces in the external environment.

Central to the process of crafting the strategy is Mintzberg's (1994: 107) distinction between strategic planning and strategic thinking. Mintzberg argues that strategic planning is a systematic, analytical process of breaking down issues in a step by step manner. Strategic thinking in contrast is a process of synthesis, relying on intuition and creativity.
Mintzberg argues that the strategy making process should be the process of capturing what managers learn from both the soft insight of personal observation as well as the hard data of market research, and synthesising the learning into a direction that the organisation should embark upon. By extension, Mintzberg argues that the process of strategic planning must contain both elements of strategic planning and strategic thinking.

It is within the analytical context of strategic planning that systems thinking (Ginsberg, 1997: 126) has a significant role to play. Systems thinking in its simplest form is a framework for analysis that assists in managing complex issues in a holistic manner.

Complex organisational systems are typically composed of a number of elements whose interaction results in the emergence of higher level properties that are not always apparent at the "local" level. Adopting a systems thinking perspective implies seeing the organisation as part of a broader socio-political and economic "ecosystem" and environment that evolves over time.

The comparatively limited cognitive skills of managers in comparison to the complexity that has to be analysed, impacts negatively on traditional strategic management tools. This is particularly true given the emerging nature of the competitive environment (as discussed in Chapter 1) that has to be analysed. A systems thinking approach provides a tool for dealing with and integrating information from this complexity. It could be argued that systems thinking serves as a bridge between the creative strategic thinking and the analytical strategic planning referred to by Mintzberg.
From an integration point of view it is evident that both strategic thinking and strategic planning have a pivotal role to play in the crafting of a strategy, but they must be seen and treated as two distinct approaches.

- **Strategy implementation**, according to Thompson and Strickland (1996:11), is all about identifying the requirements to make the strategy work. Implementation focuses on building capacity and developing supportive policies and infrastructure. There are two key challenges in the implementation of strategy (Christensen, 1997: 144). Firstly, one has to ensure that sufficient resources are allocated so as to mirror the realities of the organisation's operating environment. Secondly, one has to ensure that the strategy does not reflect any inherent biases that could possibly exist as a result of the organisation's past successes.

- Monitoring and evaluating performance is essentially about ensuring that the strategic plan remains relevant to changing circumstances. As environmental conditions change, so too must the strategy be adjusted to reflect these changes (Thompson and Strickland, 1996:12).

### 2.3.3 The process of strategic planning

As much as there are similarities in the theoretical models of strategic planning, so too are there similarities in the processes of implementing strategic planning. Glueck (1980:36), Bowman (1990:7), Byars (1991:14) all discuss a theoretical process that displays similar characteristics to those depicted in Figure 2.4.
The strategic planning process consists of a series of interdependent, interrelated steps that are not mutually exclusive.

As a generic depiction, the process outlined in Figure 2.4 supports both Armstrong's definition of strategic planning, the alignment of prospects with objectives in an integrated strategy that will match organisational performance and strategic objectives and Thompson and Strickland's (1996: 3) five interrelated managerial tasks.
2.4 The Current Dynamics of Strategic Planning

As noted earlier, strategic planning is a relatively new management process that evolved in response to the increasing complexity of the competitive environment and size of organisations. The emergence of strategic planning in the 1960s was viewed by the leaders of organisations as the "one best way" to devise and implement strategies that would enhance organisational competitiveness (Mintzberg. 1994: 107). Such management systems were expected to produce both the best strategies and provide a step by step guide on how to implement them.

Typically based on techniques such as the experience curve (Ghemawat, 1985: 143), product-life cycle theory and portfolio planning (Porter, 1987:22), strategic planning relied on these techniques to produce the proverbial five year plans.

The list of well-publicised organisational strategies that did not quite live up to this expectation of the "one best way", are well known. Ford's mass production of standard vehicles, IBM's insistence on the durability of large mainframe computers, General Motors' vertical integration and tailoring of the manufacture of cars to the preference of customers in each tier of the market and Xerox's strategy of selling lifelike copies and not copier machines, are all well known examples of such strategies (Christensen. 1997: 141).

From the mid 1980s, a growing criticism of strategic planning started to emerge. Bowman (1990: 5) summarises the typical criticisms as:

- Events overtake the plan.
- The process stifles creativity and initiative.
• There are problems in implementing the plan.

• There is a lack of management commitment to the process and the results.

• Short term crises distract management attention.

There was a growing realisation that strategic planning was not strategic thinking (Porter, 1985: 22). The distinction between these two concepts was introduced earlier in this chapter. Suffice to say that strategic planning emphasised the analytical, hard data and that strategic thinking emphasised the creative, soft data sides to the planning process. The essence of the criticism was that form dominated substance as the focus was on the process of planning and the production of a planning document (Porter, 1985:22), and not on the content and practical application of the outputs of the process.

Criticism also emerged relating to the techniques applied to strategic planning. By and large they tended to equate one variable to one path to competitive success. For example, growing market share, becoming a low cost producer by investing heavily so as to move more rapidly down the experience curve and portfolio planning as the "one best way" to manage large multi-nationals. With the benefit of hindsight, it is evident that these techniques do not guarantee the panacea to the competitive dilemma faced by organisations.

As discussed by Newman and Dill (Schendel and Hofer, 1979:25) earlier in this chapter, the nature of strategic planning has and must continue to evolve from a single set of management activities aimed at managing a singular mismatch to a multiple set of management activities aimed at managing organisational mismatch to the environment on a number of fronts.
Despite these very valid criticisms, the intention and objectives of strategic planning, namely to assess the future direction of the organisation, the needs of the customer, the behavior of competitors and how to gain competitive advantage (Porter, 1985:22), will always remain relevant. What has received criticism is not the questions, but rather the techniques used to answer them.

The need to plan formally has changed, and to be effective, strategic planning must be a process that is inclusive of implementation and does not occur once a year according to a rigid routine. Strategic planning should form part of the organisation's daily routine aimed at aligning prospects with organisational objectives in order to ensure a match between shorter term organisational performance and longer term strategic objectives. (See Figure 2.2 Strategic Planning Process.)
CHAPTER 3: 
THE NATURE OF ENVIRONMENTAL SCANNING

3.1 Introduction

In order to establish the link between strategic planning and environmental scanning, this chapter will provide a critical overview of the nature of environmental scanning, a conceptual definition of environmental scanning, and position the applicability of environmental scanning to strategic planning.

3.2 The Context for Environmental Scanning

Narchal, Kittappa and Bhattacharya (1987: 96) and Fahey, William, King, Vadek and Narayana (1981: 32), observe that it is generally accepted that organisations are open systems. Systems can be seen as organised unitary wholes composed of two or more interdependent parts, components or subsystems and delineated by identifiable boundaries from its environment. As open systems, organisations are in continual interaction with their environment which results in a dynamic equilibrium.

As is depicted in Figure 3.1, the very nature of an organisational structure implies that they (organisations) will automatically interact, influence and respond to the environment.
As open systems, organisations are inherently susceptible to changes in the environment through a variety of interfaces between organisational subsystems and the environment. Wei Choo (1998:2) supports this assertion with the observation that the relationship between organisations and the environment is circular and critical: organisations depend on the environment for resources and for the justification of their continued existence. As the environment is growing in complexity and volatility, continuing to be viable requires organisations to learn enough about the current and likely future conditions of the environment, and to apply this knowledge to change their own behaviour and positioning in a timely way.

It is the dynamics of this environment that present organisations with both opportunities and threats in as far as the organisation is reliant on the environment for scarce resources, while at
the same time required to cope with the unpredictability of external events. As noted by Daft, Sormunen and Parks (1988: 123), the environment is possibly the one major factor that affects the internal structure, processes and, significantly for this report, decision-making of an organisation.

As discussed in Chapter 2, strategic planning is a process of integrating organisational capability in order to maximise opportunities and minimise threats that are identified in the organisation's operating environment and to take the organisation into the future. The very nature of planning, by definition, implies the need for one to consider the future. In developing a strategic plan, an organisation intentionally or unintentionally considers the nature and dynamics of the environment in which it operates. It is the identification of the trends at a macro and micro level within this operating environment that are vital in order to equip organisations with the intelligence to manage the consequences of change (Drucker 1997: 20).

Given the systems perspective of organisations, McCarthy, Minichiello and Curren (1983:151) observe that the organisation that intends to develop a viable strategy with which to pursue its future, must engage in a continuing task of evaluating the environment in search of opportunities and threats. Narchal, et al. (1987: 96) developed the concept further by arguing that the extent to which an organisation is able to move in the right direction is a function of two criteria, i.e. the organisational thrust in that direction and the environmental turbulence. These concepts will be discussed in greater detail later in this chapter.
The empirical study undertaken by Daft, Sormunen and Parks (1988: 124) postulated the significance of environmental scanning based on four assumptions:

- Environmental scanning is the first step in the process that allows organisations to adapt to their environment.
- CEOs are responsible for the alignment between the organisation and the environment.
- The scope of coverage of the scanning practices and procedures may have an influence on organisational performance.
- The nature and extent to which scanning practices are formalised in the organisation influences the normative results and consequent strategic direction that an organisation may embark upon.

Clearly, the absence of a robust mechanism to detect, monitor and assess environmental developments and changes creates the potential danger that organisations may miss significant cues in the environment and as such, not adjust or adopt the appropriate strategic thrusts, thus rendering products or services obsolete. The increasing size and complexity of modern organisations as discussed earlier, has compounded the difficulty in adjusting organisational strategic direction and, by extension, heightened the need for reliable forecasting and scanning systems.

The relationship between strategic planning and environmental scanning is integral in as far as environmental scanning is an attempt to develop a “window in time” (Albert, 1983: 9-2). Wilson (Albert, 1983: 9-4) argues that the basic purpose of strategic planning is to ensure the best fit between the organisation and its current and future operating environment.
This assertion is supported by Thompson and Strickland (1996: 59) in their premise that the two biggest "situational considerations" lie in the environmental and competitive conditions (external) and the organisation's internal considerations. As such the relationship between strategic planning and environmental scanning can be depicted as in Figure 3.2 below.

![Diagram](image)

*Figure 3.2 THE RELATIONSHIP BETWEEN ENVIRONMENTAL SCANNING and STRATEGIC PLANNING
Source: Albert, 1983:9-5.*

Within this framework, environmental scanning is an integral, and in fact, the starting point for strategic planning.

### 3.3 A Conceptual Definition of Environmental Scanning

The importance of environmental scanning was first highlighted by Aguilar (1967:1) in his seminal work of 1967, in which he defined environmental scanning as "...scanning for information about events and relationships in the company's outside environment, the
knowledge of which would assist top management in the task of charting the company’s future course of action”.

Glueck (1980:87-88) defines environmental analysis as "... the process by which strategists monitor the economic, government, legal, market, competitive, supplier, technological, geographic and social settings to determine opportunities and threats to their firm”. McCarthy, et al.(1983: 101) note that information about the competitive, social, legal-political and technological environmental sectors is necessary in the formulation of meaningful strategic plans.

Finally, Michman (1989:36) observes that environmental scanning is essentially an early warning system that collects and analyses information from environmental forces and determines their impact on organisational strategies.

The essence of these definitions is that they all imply an interaction between the organisation and its ‘environment’ which complements the systems perspective as discussed by Narchal, et al. (1987: 96) and Fahey, et al.(1981:32).

Daft, et al. (1988: 123) elaborate on the conceptual definition by presenting a definition of the environment, which they view as the relevant physical and social factors outside the boundary of an organisation that are taken into consideration during organisational decision making. Schendel and Hofer (1979:14) complement this elaboration with their contribution that the environment is basically all factors that influence goals, strategy and structure and over which the organisation has no control.
The central issue pertaining to the attempts to define both the process of environmental scanning and the environment itself, is the fact that they address issues over which the organisation has no control and this, by definition, creates uncertainty. As the level of uncertainty rises, there is a corresponding increase in the need for reliable and relevant information in order to manage the rising level of risk exposure. The key issue here is that environmental scanning systems are not intended to reduce uncertainty per se, but rather to enhance the organisation's ability to manage the uncertainty.

3.4 The Applicability of Environmental Scanning to Strategic Planning

As discussed in Chapter 2, the nature of strategic planning implies a focus on the longer-term future with the view to maximising opportunities and minimising threats that are identified in the organisation's operating environment. The changes in the business environment have caused decisions to become more complex, and as such, long term strategic planning and environmental scanning have become essential tools to aid in managerial decision making.

In his discussion on the nature of strategic surprise, Ansoff (1975: 22) observes that organisations are frequently confronted with unfamiliar and often threatening events that may result in significant profit reversals or loss of opportunities. These events show a significant departure from the past, a so-called "strategic discontinuity".

As discussed in Chapter 2, Ansoff and McDonnell (1990:14) argue that in the process of strategic planning, the future is not expected to be an improvement on the past, nor is it assumed to be extrapolable, but rather, strategic planning replaces extrapolation by an
extensive analysis that balances prospects against objectives, to produce a strategy. If one accepts this argument, then given the pace of environmental change and in the absence of any environmental scanning mechanism, it is fair to assume that organisations will experience "strategic discontinuity" on an ever-increasing basis.

Ansoff (1975: 22) postulates that organisations that choose to manage strategic surprise, and thereby manage uncertainty, have two options; namely, either to develop an effective crisis management capability that represents a fast, efficient, after-the-fact response to a discontinuity, or, to develop a before-the-fact preparedness in anticipation of strategic discontinuities. It is essentially the second option that integrates environmental scanning into the strategic planning process.

Michman (1989:37) reinforces this option in his assertion that organisations should view themselves as being in a state of co-evolution with the environment. In the process of strategic long-term planning, organisations should position themselves to respond to changes that involve customer preferences, technology, competition, population, age patterns, income fluctuations and legislation.

Essentially both Ansoff's and Michman's arguments support the assertion by Narchal, et al. (1987: 96) as discussed earlier in this chapter, namely, that the ability of an organisation to move in the right direction is a function of the following factors:

- the organisational thrust in the required direction; and
- the environmental turbulence.
The essence of their argument is that in order to move an organisation in the right direction, environmental turbulence has to be thoroughly understood and the appropriate strategic thrust adopted within the context of this turbulence.

Typically the nature of the environmental information is vague and the consequent level of organisational uncertainty is high. The paradox organisations face is that if they wait for greater clarity and thus certainty to emerge, the probability of significant strategic surprise is greater. Conversely if organisations act on vague information, it will not be possible to develop detailed action plans (Ansoff, 1975: 23).

Ansoff (1975:24) argues that there needs to be a progressive strategic response to the emerging discontinuous information. This progress is characterised by successive states of knowledge, as depicted in Figure 3.3.

<table>
<thead>
<tr>
<th>Info Content</th>
<th>States of Knowledge</th>
<th>Sense of threat/ opportunity</th>
<th>Source of threat/ opportunity</th>
<th>Threat/ opportunity concrete</th>
<th>Response concrete</th>
<th>Outcome concrete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conviction that discontinuities are pending</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Source of discontinuities identifies</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Characteristics; nature, gravity &amp; timing of impact understood</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Response; timing, action, progress, budgets can be identified</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Profit impact &amp; consequences of response are computable</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>

Figure 3.3 STATES OF IGNORANCE UNDER DISCONTINUITY
Source: Ansoff 1975, 24.
Clearly, Ansoff's successive states of knowledge implies an evolving, dynamic strategic planning process. This implication supports Newman and Dill's assertion discussed in Chapter 2 (Schendel and Hofer, 1979:25), i.e. that the nature of strategic planning has and must continue to evolve from a single set of management activities aimed at managing a singular mismatch to a multiple, integrated set of management activities aimed at managing organisational mismatch on a number of fronts.

Through the adoption of a dynamic, evolutionary approach to strategic planning, an organisation will be in a position to set and update strategic plans as environmental changes and uncertainty and the consequent impact on action plans becomes clear.

It is only through having an environmental scanning system that organisations will be in a position to identify, analyse and understand these environmental factors and timeously adapt the organisational thrusts referred to by Narchal, et al. (1987: 96).

This report is based on the premise that, in order to ensure a sustainable competitive advantage, organisations will be forced to consider the dynamics of the environment in which they operate and to build their plans around these dynamics. The presence of an environmental scanning system that continually "feeds" information through to the organisation and results in the continual adaptation of the strategic plan is a pre-requisite for the attainment of such a competitive position. As a consequence of this information the nature of the organisation's interface with the operating environment will adapt accordingly and this will facilitate the attainment of a sustainable competitive advantage.
The pro-active nature of such a scanning system, what Ansoff (1975: 22) refers to as before-the-fact preparedness of strategic discontinuity, will simply enhance this competitive position.

Examples of such advantages include, amongst others,

- S.C Johnson and Sons' elimination of fluorocarbons from aerosols three years before being forced to do so by US Government legislation (Michman, 1989:37).

- Sear's curtailment of its financial brokerage operations and catalogue trading to focus on retailing (McTavish, 1995:49), enabled the company to effect the necessary changes in thrust at a far lower cost than some of their competitors and they avoided the public criticism of consumer groups and bodies.

- Daimler-Chrysler Aerospace's environmental scanning system allowed the organisation to, in 1997, forecast the merger of its two biggest competitors, thereby allowing time to develop an appropriate strategic response (Strategic Intelligence, 2000,16).
CHAPTER 4:
ENVIRONMENTAL SCANNING SYSTEMS

4.1 Introduction

Having ascertained the nature of the relationship between strategic planning and environmental scanning, this chapter addresses the following:

- The definition of the business environment.
- The identification of the generic characteristics of environmental scanning,
- The development of a typology of approaches by:
  - exploring the relationship between the nature of the environment and the modes of environmental scanning in terms of:
    - a continuum of simple to complex environments; and
    - a continuum of irregular to continuous scanning systems.
  - discussing some of the typical problems associated with the process of environmental scanning.

4.2 Defining the Business Environment

The previous chapter has shown that in order to develop a reliable strategic plan, organisations need to consider the nature of the environment in which they operate.

In his research into industrial dynamics, Schumpeter (Calori, 1989:69) identified new arrangements of production, namely new products, processes, markets, raw materials and organisational forms as being at the heart of industrial dynamics.
Daft, Sormunen and Parks (1988: 124) elaborate on Schumpeter's concept of industrial dynamics in their conceptualization of environments consisting of several sectors that exist in two layers, i.e.

- the task environment that includes sectors that are involved in direct transactions with organisations such as competitors, suppliers and customers; and
- the general environment that includes sectors that interact indirectly with organisations such as social, demographic and economic sectors.

This conceptualisation is reinforced by Narchal, Kittappa and Bhattacharya (1987:98) and is discussed later in this chapter. The emphasis of this conceptualisation is on the need for an analysis of the nature of the relationship between these layers and sectors of a system over time.

As discussed in Chapter 2, McTavish (1995:49) argues that a business strategy cannot be set until clarity is achieved on the definition of the business activity to be undertaken and the competitive arena in which the strategy will be implemented. He goes on to argue that such clarity facilitates a focused product and positioning strategy, clarity on the nature of the target markets, a specific focused direction for R & D and an improved ability to identify exploitable opportunities in new market developments.

Typically an organisation's competitive arena is defined on two dimensions: the markets the organisations serve (who is being served?), and the products and services the organisation offers (what customer functions do the products satisfy?).
McTavish (1995:52) integrates these dimensions and introduces a third, namely how are customer functions satisfied (*what technologies are used*?).

Essentially, McTavish's proposition is an expansion on the concept of industry competition introduced by Michael Porter (Thompson *et al.*, 1996:116). Porter developed a model that postulated that the nature of industry level competition is a function of five factors, i.e.

- Rivalry amongst competing sellers.
- The market attempts of organisations in other industries to win customers.
- The potential entry of new competitors into the industry.
- The bargaining power and leverage exerted by customers.
- The bargaining power and leverage exerted by suppliers.

The nature of this relationship is depicted in Figure 4.1.

Based upon the competitive nature of a specific industry, an organisation's competitive strategy consists of a set of initiatives it takes in order to attract customers, resist competitive pressure and consolidate and strengthen market position (Thompson and Strickland, 1996:116).
Thompson and Strickland (1996:116) refer to Porter's five categories of competitive strategy as being dependent on the nature of the dynamics within the business environment. These generic strategies are:

- Low cost leadership: providing the lowest cost service or product to a broad range of customers.
- Broad differentiation: differentiating services or products so as to attract a broad range of customers.
- Best cost provider: provision of services or products that are at the best price for quality on a comparable basis to other such products.
- Market niche based on lower cost: focusing on a particular, narrow target and outperforming competitors based on price.
• Market niche based differentiation: focusing on a particular, narrow target and customising the service or product offering.

The question remains, given this model, as to what causes the competitive structure of industries and business environments to change?

4.3 The Dynamics of the Business Environment

Calori (1989:70) defines an industry as a relatively homogenous group of technologies and applications, of economic and political players, of organisations which produce and distribute goods and services and organisations, families and individuals who consume the goods and services.

Calori (1989:71) hypothesises that industries change by virtue of the interaction between actors, strategies and moves, the context of the industry, its structure and its values. This hypothesis is supported by Thompson and Strickland (1996: 74) who observe that; "...industries and competitive conditions change because forces are in motion that create incentives or pressures for change." They refer to the most dominant of these forces as driving forces.

Twis (Burgelman, Maidique and Wheelwright, 1996:141) supports and simplifies Calori's definition to include political, social, economic, technological and industrial driving forces. He postulates that a combination of a number of these environmental trends gives rise to pressures resulting in new needs or capabilities.
In order to assume a before-the-fact preparedness posture in anticipation of strategic discontinuities (Ansoff, 1975: 22), organisations need to identify these driving forces, analyse the nature of their relationship over time, and determine the impact and potential consequences for the organisation.

The nature and dynamics of change in the competitive structure and business environment are depicted in Figure 4.2.

![Figure 4.2 INDUSTRY DYNAMICS](source: Calori, 1989:72)

Calori's (1989:72) model defines the context as including macro economic and political variables such as technological, economic and social forces that influence the industry. Structure includes variables such as concentration level of buyers and sellers, homogeneity of technologies, applications served etc., geographic boundaries, the degree of vertical integration, barriers to entry and cost structure. Value is from both the buyers' and sellers' perspective and includes the value of total demand, rate of variation in total demand, ratio of
production capacity to demand, unit costs and prices, profits, product innovations and buyers' cost.

Within this model, it is the actors, strategies and moves that are the driving forces for change. Porter's five forces model and the five categories of competitive strategy identified by Thompson and Strickland (1996:116) support this assertion.

Porter's five forces model (Figure 4.1) identifies the influence exerted by the actors and their actions (moves) within a particular industry, on the level of competition within that industry. Thompson and Strickland's five categories of competitive strategy identifies the particular strategy organisations may adopt in response to the actors and their actions.

Calori (1989:72) identifies nine dimensions for assessing the impact of change of actors, strategies and moves. These are entries/exits, investments, competitive advantage, positioning alliances, vertical moves, degree of diversification of sellers and buyers, state and lobby group interventions.

Narchal, et al. (1987:97) provide a complementary summation of the works of Calori (1989:72), Burgelman, et al. (1996:141) and McTavish (1995:52) that is depicted in Figure 4.3.

As was discussed in Chapter 3, Narchal, et al. (1987: 96) argue that the extent to which an organisation is able to move in the right direction is a function of two criteria, i.e. the organisational thrust in that direction and the environmental turbulence.
The ability to change organisational direction is subject to the degree to which the environmental turbulence has been thoroughly understood.

4.4 Elements of the Business Environment

Figure 4.3 ENVIRONMENTAL WHEEL
Source: Narahal, Kittappa and Bhattacharya, 1987: 98

Figure 4.3 depicts the environmental areas which are in interaction with and affect the business system. Changes are taking place in each of these environmental areas and it is the function of an environmental scanning system to detect these signals and make information available for analysis.

Finally, Morrison (1992:2) defines the business environment in terms of three levels:

- The task environment is the institution's set of customers and relates to a particular institution.
• The industry environment comprises all enterprises associated with an organisation in society. For example, factors such as public confidence and legislation are industry factors affecting all organisations.

• At the broadest level is the macro environment where changes in the social, technological, economic, environmental, and political (STEEP) sectors affect organisations directly and indirectly.


• **The task environment** made up of three key sectors i.e. customers, competitors, technology.

• **The general environment** made up of three key sector i.e. economic, regulatory, socio-cultural factors.

In conclusion, it is only through a thorough understanding of an organisation's operating environment that one can identify the environmental areas that impact on the organisation. It is this identification that then permits the development of a system to monitor these areas, assess information that they provide regarding the changing nature of the competitive structure and environment and, develop appropriate strategic thrusts in anticipation of these changes. This then raises the question of what are the generic characteristics of such a system?
4.5 Generic Characteristics of Environmental Scanning Systems

In their research into the state of the art of environmental scanning, Fahey, (1981: 32) observed that a number of environmental scanning and forecasting techniques have been developed that vary widely in concept, scope and operational detail.

As was discussed earlier in this chapter, environmental scanning systems facilitate organisational survival and growth through the pro-active identification of changes in the competitive structure of an industry. Such systems serve as an early warning of impending changes that allow organisations to prepare appropriate responses and develop strategic thrusts timeously.

Wilson (Albert, 1983: 9 - 6 to 9 - 11) defines six common characteristics of environmental scanning systems.

- **Integrative:** The system is required to integrate data depicting the present environment with "speculation" of the future nature of this environment. As such, strategic planning must commence with the input from the environmental scanning system and the system must be an imbedded element of the entire strategic planning process.

- **Relevant:** The environmental scanning system must be issue-orientated towards current socio-economic, technological and political trends and developments that may impact upon the organisation. This reiterates the earlier discussion which emphasised the importance of correctly defining the business environment.
At the same time, these current issues need to be emphasised and stressed in terms of a historical, current and future perspective.

- **Holistic:** The system is required to identify, analyse and assess these events as a part of a systemic whole. This characteristic reiterates the open system perspective discussed in Chapter 3. As noted by Schlange and Juttner (1997:778), the tendency to break problems down into the smaller component parts does not necessarily reduce uncertainty and may in fact increase it due to the increased analytical sophistication required. The systems perspective contributes towards minimising the "tunnel perspective" a reductionist approach to problem resolution tends to elicit.

- **Iterative or Continuous:** The system needs to be flexible, continuous, receptive and adaptive to the changes in the environment. The scanning system, and by definition the strategic plan, needs to be adaptive to a changing competitive, operating environment. Given the nature of the emerging competitive environment discussed in Chapter 1, it is essential that the environmental scanning system identifies emerging trends on a continuous basis and feeds these back into the organisation in order to develop appropriate strategic responses to manage the emerging strategic discontinuities on an on-going basis (Schlange and Juttner, 1997: 777).

It is only through this continuity that organisations will be in a position to ensure that the strategic plan evolves into Newman and Dill's integrated set of management activities aimed at managing organisational mismatch on a number of fronts (Schendel and Hofer, 1979: 25).
While further discussion on the typology of scanning systems will be provided later in this Chapter, suffice to note that Fahey, et al. (1981: 32) argue that continuous scanning systems are ideal in so far as, "...they attempt to enhance the organisation's ability to handle environmental uncertainty rather than reduce perceived uncertainty".

- **Heuristic or Exploratory**: While environmental scanning systems certainly need to emphasise the analysis of current developments, they must also, by and large, focus on clarifying assumptions about the future and develop alternative futures. The focus on current developments relates to what Wilson (Albert, 1983: 9 - 6 to 9 - 11) calls environmental monitoring, the tracking of trends that have already been identified in the environment. The focus on the future relates to the identification of new trends and the analytical assessment of their potential impact on the organisation. Wilson uses the analogy of radar to explain this distinction, where scanning involves broad sweeps of the early warning radar; monitoring, on the other hand, involves a telescopic examination of what has been spotted on radar.

Preble (1978:14) expands on this concept with the argument that the purpose of environmental scanning is not to predict accurately the future, but to plot the issues which are likely to have an impact on the company and be prepared to cope with them when they arise. This preparation and the distinction between the current and future orientation is supported by Fergusson (1999), who defines scanning as the process of the picking up of new signals from the environment, identifying emerging issues and trends, and monitoring as the process of tracking previously identified issues and trends.
Scanning techniques attempt only to mark the issue as a subject of potential interest to the organisation, one worth monitoring. Monitoring involves tracking an issue over time.

This distinction between tracking and monitoring is a central concept to any environmental scanning system. Identifying environmental trends per se does not guarantee a competitive advantage. Scanning systems must, by definition, have internal analysis capabilities that guide the organisation in terms of how to act on the information obtained (Schlange and Juttner, 1997: 777).

- **Qualitative**: The system needs to, due to the uncertainty and unpredictability of the future, rely on qualitative analysis of the ‘soft data’ surrounding the structure, process and dynamics of the operating system. While discussed in detail in Chapter 2, it must be highlighted that this characteristic reiterates the distinction made by Mintzberg (1997: 107) between strategic planning and strategic thinking.

The above discussion represents a broad categorisation of the generic characteristics of an environmental scanning system. Clearly the precise nature of such systems is dependent on the nature of the competitive structure and business environment organisations find themselves in. In addition to this, the nature of such systems is dependent on the option organisations choose to adopt with regards to managing discontinuity, i.e. an after-the-fact response, or, a before-the-fact preparedness (Ansoff, 1975: 22).
4.6 A Typology of Environmental Scanning Systems

Having briefly defined the nature of the business environment, the dynamics driving changes in this environment, the typical elements found in such an environment and the generic characteristic of environmental scanning systems, this section will develop a typology that attempts to link/map the approach and frequency of environmental scanning to the nature of the environment in which it would best be applied.

4.6.1 The Relationship between the Nature of the Environment and the Modes of Scanning

Just as an organisation's strategic plan is, at least in part, a function of the competitive structure of the industry in which it operates, so too is the nature of the environmental scanning techniques employed. The collection of environmental scanning techniques ranges from the irregular to the continuous and from the simple to the complex. Their relevance and specific applicability to a particular organisation is clearly dependent on the nature and turbulence of the environment in which the organisation operates.

4.6.1.1 Simple to complex environments

The focus of this part of the discussion will be on the continuum of simple to complex business environments as depicted in Figure 4.5 below. As was noted previously, environmental scanning systems are geared towards enhancing an organisation's ability to handle uncertainty (Fahey, et al., 1981: 33). Environmental uncertainty is the absence of information pertaining to the task and general environmental sectors and is essentially the difference between derived and available information (Daft, et al., 1988:125).
Daft, et al. (1988:125) go on to postulate that this uncertainty is influenced by two environmental characteristics, i.e.

- Complexity, which they define as the heterogeneity of external events perceived by organisations as relevant to them; and

- Rate of change, which refers to the frequency of changes in the environment.

A contingency approach to organisational theory focuses upon the effect of this rate of change in creating perceptions of uncertainty for executives in formulating organisational strategy. Duncan (Morrison & Mecca, 1989:2) identifies three factors that contribute to this sense of uncertainty:

- a lack of information about environmental factors that would influence a given decision-making situation;

- a lack of knowledge about the effects of an incorrect decision; and

- the inability of the decision maker to assess the probability that a given environmental factor will affect the success (or failure) of the organisation or one of its subsystems in fulfilling its mission.

James Utterback (Schendel and Hofer, 1979: 139) views simple-static environments as being characterised by a few standardised products with slow rates of change. He postulates that organisations in such environments would in all probability not make use of formal environmental scanning techniques, or if they do, it would be of the simpler forms such as expert opinion.
<table>
<thead>
<tr>
<th>Complexity</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Static</td>
</tr>
<tr>
<td>Simple</td>
<td>No formal methods, or expert opinion</td>
</tr>
<tr>
<td>Complex</td>
<td>Expert opinion and monitoring</td>
</tr>
</tbody>
</table>

Figure 4.4 TYPES OF ENVIRONMENTS RELATED to FORECASTING METHODS
Source: Schendel and Hofer, 1979, 139

Organisations in complex-static environments would be expected to apply scanning in a slightly more formal, monitoring manner. This approach is based on the premise that change will increase gradually with the signals becoming more overt over time. Utterback goes on to postulate that organisations in simple-dynamic environments would generally make use of techniques suited to a limited but rapidly changing environment.

Finally, Utterback defines complex-dynamic environments as being characterised by diverse products and rapid product change. He postulates that organisations in such environments would make use of sophisticated scanning techniques designed for application on a large and rapidly changing set of variables. Furthermore it is assumed that the planning process is more complex than in the other environments and is iterative in nature.

Research conducted by Thomas (1980:28) and Fahey, et al.(1981:38), together with complementary research undertaken by Jain and Subramanian (Wasilewski, 1998:2), support Utterback's assertion of a tendency toward increased systemisation as the environment becomes more complex and dynamic. This tendency supports the intuitive reasoning that organisations that have formalised, systematic and continuous environmental scanning systems are more likely to identify and alert management to potentially relevant environmental challenges.

This will enable the organisation to develop and implement successful adaptive and manipulative responses to attain and/or maintain congruency between the organisation and its external environment(s). In turn, this congruency will promote future viability and success (Wasilewski, 1998:2).

In contrast, research undertaken by Linneman and Klein (1985:67), Wasilewski (1998:4) and supported by complementary research by Specht and Trussell (1987) and Kefalas (1975) (in Wasilewski, 1998:4), provide results that indicate a contra-intuitive tendency. In support of this contra-intuitive reasoning, Specht and Trussell (Wasilewski, 1998:4) argue that, in more dynamic environments, organisations tend to prefer to scan the environment using less systemised approaches that are more user-based. This preference is driven out of the need for a rapid organisational response which is facilitated by less systemised, user-based systems.
which tend to be more "informal" and direct, facilitating faster processing of information gathered from the environment. In contrast, in a static environment, a more systemised search orientation (i.e. more staff-based) tends to be preferred. Typically this is driven out of the fact that under such conditions, organisations tend to have more time to gather information from the environment, assess its potential impact and develop a thoroughly analysed and reasoned response.

One possible explanation for this apparent contradiction in research results can be attributed to the relationship between the degree of scanning systemisation and its perceived effectiveness by managers. Further detailed discussion on this issue will be provided later in this chapter.

The literature (Thomas, 1980, Wasiilwski, 1998, Fahey, et al., 1981 and Linneman, et al., 1985) reveals agreement with Utterback's assertion that there is a link between the approach to environmental scanning and the dynamics of the environment. The divergence of opinion lies not in the existence of this link, but rather in the nature of such a link.

Research findings suggest that a causal relationship between the varying dynamic states of the environment and the approach to scanning is indeed inappropriate and that the said approach must be contingent upon the context within which the organisation operates.

4.6.1.2 The modes of environmental scanning

The discussion on the nature of the link between the dynamics of an organisation's operating environment and its approach to scanning leads naturally to the introduction of what Aguilar
(1967: 19) refers to as the modes of scanning. Aguilar identified four broad modes of scanning.

- **Undirected viewing**: scanning which has no specific purpose other than possibly exploration. The purpose of such scanning is generally of an informative nature. Ferguson (1999:3) notes that organisations commit relatively few resources to the environmental surveillance activity and as a result of these informal observation activities, emerging issues that warrant closer observation may be identified.

At the next stage, the individual researcher narrows the focus, using what Aguilar calls conditioned viewing.

- **Conditional viewing**: scanning passively in search of specific information in clearly defined areas. The purpose of such scanning is generally to serve as an early warning of impending changes. The difference between undirected and conditional viewing lies in the fact that conditional viewing implies an awareness of the need for specific types of information. Ferguson (1999:3) observes that organisations begin to recognise the sources from which the information on the issue is likely to come and the types of data that appear relevant. There is however, no active seeking of additional information. If conditioned observation provides sufficient signals to make an issue or opportunity "real", organisations may choose to make an incremental commitment of resources to an informal scan.
• **Informal search**: relatively limited, unstructured scanning with the view to obtaining specific information for a specific purpose. The key difference to conditional viewing is that there is an active search for information. Ferguson (1999:3) notes that organisations seek information sufficiently specific to formulate a strategy for dealing with the issue in a proactive way. The pursuit remains relatively unstructured. Sometimes informal search procedures are applied to track known issues and trends in order to assess the potential need to change strategies or tactics.

At this stage, there is a shift from what typically would be regarded as scanning activities to monitoring activities.

• **Formal search**: a deliberate effort to scan the environment for specific information pertaining to a specific issue. Such scanning typically is more structured and programmed in nature. Finally, Ferguson (1999:3) observes that sometimes a formal search becomes necessary with issues of emerging priority. At this stage, additional resources will be required. Should organisations fail to make the necessary investment at this stage, the issue may reach crisis dimensions later. The high stakes or potential payback justifies the investment of these resources.

Ferguson's (1999:3) contribution clearly suggests a "developmental/sequential path" in the approach to scanning.
Aguilar (1967:22) emphasises the benefit of the theoretical concept of "modes" of environmental scanning as it facilitates a conceptual understanding of both what is happening and why scanning takes the various forms that it does.

This discussion on the relation between the mode of scanning and nature of the business environment reinforces McTavish's argument discussed in Chapter 2, namely, that business strategy cannot be set until clarity is achieved on the definition of business activity and the competitive arena (McTavish, 1995:49).

As noted by Thompson and Strickland (1996:116) and discussed in Chapter 3, an organisation's competitive strategy is directly influenced by the competitive nature of the industry in which it operates, and consists of a set of initiatives it takes in order to attract customers, resist competitive pressure and consolidate and strengthen market position.

Thomas (1980:28), Wasiwinski (1998:5) and Utterback (Schendel and Hofer, 1979:139), support Thompson and Strickland's position, which concurs with the suggestion by Ralph Ayres (Schendel and Hofer, 1979: 139) that competitive strategy has as much impact on the nature of the adaptations organisations will make in response to environmental changes, as that opportunities have on the development of the strategy.

Earlier in this chapter, reference was made to Porter's generic strategies. Utterback, in Schendel and Hofer (1979: 140) uses an adaptation of this general classification to portray the
relationship between strategy, the nature of the operating environment and types of scanning methods employed. The essence of their argument is reflected in Figure 4.5 below.

<table>
<thead>
<tr>
<th>ENVIRONMENTAL CHANGE</th>
<th>ENVIRONMENTAL COMPLEXITY</th>
<th>TYPES OF STRATEGY</th>
<th>FORECASTING METHODS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Static</td>
<td>Simple</td>
<td>Cost minimisation</td>
<td>No formal methods, or expert opinion</td>
</tr>
<tr>
<td>Static</td>
<td>Complex</td>
<td>Mixed and sales maximising</td>
<td>Expert opinion, monitoring and trend extrapolation</td>
</tr>
<tr>
<td>Dynamic</td>
<td>Simple</td>
<td>Mixed and sales maximising</td>
<td>Expert opinion, monitoring and trend extrapolation</td>
</tr>
<tr>
<td>Dynamic</td>
<td>Complex</td>
<td>Performance maximising</td>
<td>The above and simulation, quantitative and probabilistic models.</td>
</tr>
</tbody>
</table>

Figure 4.5 ENVIRONMENTAL CHARACTERISTICS and STRATEGY RELATED to FORECASTING METHODS
Source: Schendel and Hofer, 1979, 140

As previously noted, complex-dynamic environments are characterised by diverse products and rapid product change.

Utterback hypothesises that one would expect organisations in such environments to adopt a performance maximising strategy that emphasises product performance. Such a strategy could be equated to Porter's (Thompson and Strickland, 1996: 116) market niche strategy based on lower cost differentiation. As such one would assume that such organisations would employ a more formalised, sophisticated approach to environmental scanning, as significant shifts or changes in such an environment would impact on the organisation's ability to compete on a product performance basis (Schendel and Hofer, 1979: 139).
Previously, simple-static environments were characterised as having a few standardised products with slow rates of change. Given this type of environment, Utterback hypothesises that one would expect organisations operating in such an environment to adopt a cost minimising strategy with the emphasis on profit through volume. Such a strategy relates to Porter’s low cost leadership strategy (Thompson and Strickland, 1996: 116). This strategy would imply highly automated, mass production type environments in which they would achieve financial leverage through economies of scale. Both the simplicity of the environment and the gradual pace of change, together with the cost minimisation posture would not require and, in some cases, preclude organisations operating in such environments from making extensive use of formalised scanning technologies.

The focus of scanning, if any, in such organisations would typically be on the need to determine changes in a few variables that may lead to significant cost reductions (Schendel and Hofer, 1979: 139), thus relying on a combination of undirected and conditional viewing.

The complex-dynamic and simple-static environments represent the two extremes. Within these two extremes one finds environments with moderate levels of complexity and change. Utterback hypothesises that organisations operating in such environments may tend to follow sales maximising or mixed strategies that emphasise product differentiation and varying degrees of automation and outsourcing (Schendel and Hofer, 1979: 139). Such strategies relate to Porter’s broad differentiation or best-cost provider (Thompson and Strickland, 1996: 116).
4.6.1.3 The influence of change in the business environment on strategy selection, the organisation's informational needs to support the strategy and the approaches to gathering this information

From the above discussion, it is evident that there appears to be some natural relationship between strategy, the organisation's informational needs to support the strategy, and approaches to environmental scanning.

This position is supported by Aguilar (1967: 22) who argues that the various modes of scanning are associated with certain organisational informational requirements and that typically organisations will tend to rely more on one mode than on others in support of this position. While in agreement with Aguilar's position, the author is of the opinion that the preferred mode an organisation applies may well vary over time. The reasons for this tend toward the pragmatic and include the following:

- Some approaches/modes are more resource intensive than others.
- Organisations cannot define all their strategic informational requirements.
- Such informational requirements typically exceed an organisation's capacity to satisfy them.
- Organisational informational requirements change as greater clarity is obtained and as conditions change.
- The economics of information gathering often dictate the mode.

As a result of these and other factors, organisations continually reassess both the informational need and the mode of obtaining it. By definition, the information requirements are changeable and, as such, so too are the modes associated with these requirements.
This changeability relates back to the developmental/sequential path introduced by Ferguson (1999:3) earlier in this section.

In addition, the relationship between information need and modes are not mutually exclusive and in practice organisations often apply a combination.

While Utterback's work provides a useful continuum for the positioning of the modes of scanning, given the dynamic nature of the competitive structure of industries and the forces driving change in the business environment, it is unrealistic to expect industries to remain in a constant state.

In support of the assertion that organisations adopt a combination of modes in recognition of both the practical considerations mentioned above, as well as due to the natural dynamics of industries, Wei Choo (1999:2) argues that to be truly effective, organisations need to employ all four modes of environmental scanning. It is through the application of a combination of the modes of scanning that organisations can minimise the cost/return ratio and at the same time adjust their informational needs as the industry changes and clarity emerges around specific issues. The nature of this combination is portrayed in Figure 4.6 below.
Wei Choo (1999:2) argues that:

- Undirected viewing helps organisations to scan broadly and develop insights in order for them to see and think "outside the box."

- Conditioned viewing tracks trends and provides organisations with early warning about emerging issues.

- Informal search draws a profile of an issue or development, allowing organisations to identify the key issues and assess their potential impact.

- Formal search systematically allows organisations to gather all relevant information about an issue so as to enable intelligent decision making.
The discussion has clearly highlighted the nature of the relationship between strategy, the organisation's informational needs to support the strategy, and approaches to gathering this information.

From the preceding discussion it is clear that the dynamic states of the environment, ranging from the static and simple to the dynamic and complex, affect both the nature of information required by organisations and the means (mode) of obtaining such information. As a result of the dynamics of business environments, the discussion to this point has highlighted the existence of a range of modes for obtaining such information. The works of Wilson (Albert, 1983: 9-11), Ferguson (1999:3) and Aguilar (1967:19) suggest a sequential path with regards to obtaining such environmental information. Aguilar's contribution of the four modes of scanning provides the basis from which Wilson and Ferguson developed the proposition of "scanning" and "monitoring", spanning these modes.

Finally, the work of Wei Choo (1999:2) integrates Aguilar's modes and Wilson and Ferguson's conceptual distinction between scanning and monitoring, with the nature of the business environments and organisational strategy. The author concurs with Wei Choo's assertion that to be effective, organisations need to employ a combination of modes of environmental scanning. Through employing such a combination, as the business environment of organisations change, so organisations will be able to adapt to and recognise the changing informational needs.
The sequential move from a "scanning" orientated undirected viewing, to a "monitoring" orientated approach that may culminate in a formal search, would typically facilitate both organisational cost efficiency in the scanning activity and a before-the-fact preparedness in anticipation of strategic discontinuity (Ansoff, 1975: 22). As a consequence, organisations would typically be in a position to develop an appropriate strategic thrust to accommodate the dynamic developments in their operational business environment.

Having explored the continuum of simple, static to complex, dynamic environments, the remainder of this section will focus on the discussion on the time horizon of the scanning systems.

### 4.6.2 Environmental Scanning Time Frames

Fahey, *et.al.* (1987: 32) note that over the passage of time, a number of environmental scanning tools have been developed that range from short term forecasting to long term futuristic planning. The central question is, firstly, how far into the future should such scanning techniques search for relevant information or clues and, secondly, how frequently should this search be conducted? The answer to the first part of the question lies in the time horizon of the strategic plan.

Typically, environmental scanning should advance at least as far as the time horizon of the strategic plan and preferably beyond. Linneman and Klein (1985: 71) observed that, generally, the majority of organisations they researched tended to have five year formal planning horizons and that the environmental scanning techniques employed tended to coincide with these horizons. These findings were supported by similar research conducted by
Weil and Cangemi (1983: 33), who found that organisations typically had long range planning horizons of 6.5 years. Significantly, they also found that time horizons for long range research tended to span some 9 years on average. The consequences of this apparent mismatch will be elaborated on later in this chapter.

The second part of the question alludes to the dilemma of, at what point in time should organisations search beyond the strategic planning horizon for information and how frequently should this search be conducted?

To a certain extent this dilemma is firstly dependent on the required organisational responsiveness to environmental turbulence (Linneman and Klein, 1985: 71) and pertains to the "philosophical" orientation organisations choose to adopt viz-a-viz an "after-the-fact" crisis management capability" or a "before-the-fact" anticipatory posture" (Ansoff, 1975: 22). Secondly, the dilemma is contingent upon the level of environmental turbulence. As discussed previously, the need for a rapid organisational response in dynamic environments may be facilitated by less systemised, user-based systems as opposed to a more systemised search orientation in static environments (Wasilewski, 1998:5).

In response to the dilemma of frequency, Fahey, et al. (1987: 33) distinguished among three environmental scanning methods labeled irregular, regular, and continuous. Based on these three methods, they developed a typology of environmental scanning and forecasting systems that represented increasingly systematic (i.e., structured, comprehensive, proactive, continuous, long-term) approaches to scanning. See Figure 4.7 below.
Fahey, *et al.* (1987: 33) note that **irregular systems** are associated with reactive planning in response to environmental crises. Such systems tend to focus on specific short term problems utilising simple techniques that, primarily, rely on historical data. Such systems focus on reducing current and near term uncertainty by making use of ad-hoc project teams and often fail to detect significant opportunities. Typically such systems are independent of mainstream organisational activity.

Fahey, *et al.* (1987: 33) go on to argue that **periodic systems** tend to be more sophisticated and complex, with a focus on more of a pro-active approach to problem solving. While looking more towards the future, such systems emphasise near term environmental changes. Typically such systems are partially integrated into mainstream organisational activity and have specific continuous resources allocated to them.

Finally, Fahey, *et al.* (1987: 33) postulate that **continuous systems** shift the focus from problem solving to opportunity finding. Such systems rely on a variety of information sources in proactively seeking opportunities within an extended time horizon.

As noted previously in Chapter 3, such systems seek to enhance an organisation's capability to manage environmental uncertainty rather than reduce perceived uncertainty. Typically, such systems are fully integrated into mainstream organisational activity.

The typology as discussed above, once again clearly introduces progressively systematic (i.e., structured, comprehensive, proactive, continuous, long-term) approaches to environmental
scanning; approaches considered to be increasingly effective in recognizing weak environmental signals and helping organisations avoid strategic surprises.

<table>
<thead>
<tr>
<th></th>
<th>IRREGULAR</th>
<th>PERIODIC</th>
<th>CONTINUOUS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Impetus for Scanning</strong></td>
<td>Crisis initiated</td>
<td>Problem solving/issue orientated</td>
<td>Opportunity finding &amp; problem avoidance</td>
</tr>
<tr>
<td><strong>Scope of Scanning</strong></td>
<td>Specific events</td>
<td>Selected events</td>
<td>Broad band of environmental systems</td>
</tr>
<tr>
<td><strong>Temporal Nature</strong></td>
<td>Reactive</td>
<td>Proactive</td>
<td>Proactive</td>
</tr>
<tr>
<td>* Time frame for data</td>
<td>Retrospective</td>
<td>Current &amp; Retrospective</td>
<td>Current &amp; prospective</td>
</tr>
<tr>
<td>* Time frame for</td>
<td>Current/near term</td>
<td>Near term</td>
<td>Long term</td>
</tr>
<tr>
<td>decision impact</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Types of Forecasts</strong></td>
<td>Budget orientated</td>
<td>Economic &amp; sales orientated</td>
<td>Market, social, regulatory etc.</td>
</tr>
<tr>
<td><strong>Media for Scanning</strong></td>
<td>Ad hoc studies</td>
<td>Periodically updated studies</td>
<td>Structured data collection and processing systems</td>
</tr>
<tr>
<td><strong>Organisation Structure</strong></td>
<td>Ad hoc teams focus on reducing perceived uncertainty</td>
<td>Various staff functions</td>
<td>Scanning unit, focus on enhancing uncertainty handling capability</td>
</tr>
<tr>
<td><strong>Resource Allocations</strong></td>
<td>Non specific</td>
<td>Specific/continuous</td>
<td>Specific/continuous &amp; substantial</td>
</tr>
<tr>
<td><strong>Methodological complexity</strong></td>
<td>Simplistic data analysis</td>
<td>Statistical forecasting orientation</td>
<td>Many futuristic forecasting methodologies</td>
</tr>
<tr>
<td><strong>Cultural Orientation</strong></td>
<td>Not integrated into mainstream activity</td>
<td>Partially integrated</td>
<td>Fully integrated as crucial to long term survival</td>
</tr>
</tbody>
</table>

Figure 4.7 A TYPOLOGY of ENVIRONMENTAL SCANNING and FORECASTING SYSTEMS
Source: Fahey, William, King, Vadek, Narayana, 1981:33

While an exact correlation between the works of Aguilar (1967:10) and Fahey, et.al. (1987:33) appears unlikely, it is the author's (untested) assertion that:

- Irregular systems can be associated with a combination of undirected viewing and conditioned viewing;
- Periodic systems, broadly speaking, can be associated with a combination of conditioned viewing and informal search; and
- Continuous systems can be associated within the range of Aguilar's informal to formal search.
The nature of this relationship is depicted in Figure 4.8 below, as adapted by the author from the work of Wei Choo (1999:2) and Fahey et al (1981:33).

<table>
<thead>
<tr>
<th>SCANNING MODES</th>
<th>INFORMATION NEED</th>
<th>INFORMATION USE</th>
<th>AMOUNT of TARGETED EFFORT</th>
<th>NUMBER of SOURCES</th>
<th>TACTICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNDIRECTED VIEWING</td>
<td>General areas of interest; specific need to be revealed.</td>
<td>Serendipitous discovery, “Sensing”</td>
<td>Minimal</td>
<td>Many</td>
<td>Scan broadly a diversity of sources, taking advantage of what’s easily accessible. “Toaring”</td>
</tr>
<tr>
<td>CONDITIONED VIEWING</td>
<td>Able to recognise topics of interest.</td>
<td>Increase understanding, “Sensemaking”</td>
<td>Low</td>
<td>Few</td>
<td>Browse in pre-selected sources on pre-specified topics of interest. “Tracking”</td>
</tr>
<tr>
<td>INFORMAL SEARCH</td>
<td>Able to formulate queries.</td>
<td>Increase knowledge within narrow limits, “Learning”</td>
<td>Medium</td>
<td>Few</td>
<td>Search is focused on an issue or event, but a “good enough” search is satisfactory. “Satisficing”</td>
</tr>
<tr>
<td>FORMAL SEARCH</td>
<td>Able to specify targets.</td>
<td>Formal use of information for planning, acting, “Deciding”</td>
<td>High</td>
<td>Many</td>
<td>Systematic gathering of information on a target, following some method or procedure. “Retrieving”</td>
</tr>
</tbody>
</table>

Figure 4.8 COMBINED MODES of SCANNING & FREQUENCY
Source: Adapted from the work of Wei Choo, 1999:2 and Fahey, William, Vadak, Narayana, 1981:33

Given the discussion above, one can deduce that the typology of irregular to continuous scanning systems by Fahey et al. (1981:33) represents an increasing degree of systemisation, spanning a continuum of options ranging from what Aguilar (1975:22) refers to as an after-the-fact crisis management capability (irregular) to a before-the-fact anticipatory posture (continuous).

Just as the changing information requirements of organisations impact on the modes associated with these requirements, so too do these changing needs impact on the frequency or rate at which this information is obtained.
The pre-eminent assumption is that systemised scanning provides the environmental information needed to promote organisational survival and success. Research evidence suggests a challenge to this assumption and this will be discussed further in the following section. Suffice to say that given the changeability of organisational information needs arising from changes in the business environment, there is reason to suggest that not only do organisations adapt the mode of scanning, but they would also adapt the frequency by which this information is obtained.

The author concurs with the assertion of Wei Choo (1999:2) that to be truly effective, organisations need to employ a combination of Aguilar's four modes of environmental scanning. In addition, it is the author's assertion that adopting such a combination of approaches necessitates adopting a combination of irregular, periodic and continuous time frames.

Figure 4.8 attempts to depict this assertion. Organisations scan the environment on an irregular basis and in an undirected mode for potential developments that may impact on the strategic directions. As potential issues are identified, so organisations shift from a "scanning" to a "monitoring" mode. As clarity around specific issues emerges, it is the author's assertion that organisations begin to monitor and track the issues on an increasingly frequent basis moving from the undirected viewing to the more specific formal search.

In conclusion, this paper does not necessarily support the assertion that increasing systematisation is the only effective means of conducting environmental scanning.
Rather, this report assumes the position that an iterative combination and application of the modes and timing of environmental scanning interventions will ensure congruency between the dynamics of an organisation's business environment, its consequent changing informational needs and the practical constraints of environmental scanning, such as cost and resource allocation.

With reference to this last point, in practice often it is these practical considerations that undermine the impact and contribution environmental scanning makes to the strategic planning process. The following discussion will provide a brief discussion on some of these problems.

4.7 Typical Problems Associated with the Process of Environmental Scanning

Chapter 4 has provided a detailed discussion of the nature and components of the "business environment" and a typology of approaches to environmental scanning given these environments. Clearly each of these elements has unique challenges and problems associated with them.

One of the key challenges facing environmental scanning systems is knowing what layers and sectors are relevant to the particular organisation and hence requiring some form of scanning or monitoring. As noted by Schendel and Hofer (1979: 15) "...it may be a more serious error to overlook a factor than to forecast it inaccurately". They go on to argue that this problem is compounded by the increasing rate of environmental change.
The concepts of complexity and rate of change introduced earlier in this chapter, imply that business environments become more complex as the number and diversity of external events increase. In addition, when the rate of change is high, events shift so rapidly that decision makers do not have accurate information about them. Consequently, as the level of complexity and rate of change increases, so too does the level of perceived uncertainty (Daft, et al., 1988: 25).

In order to minimise strategic discontinuity and manage this uncertainty effectively, as a first step, it is imperative that organisations accurately define the levels and sectors that they need to scan. Regardless of the philosophical orientation, i.e. an "after-the-fact" crisis management capability" or a "before-the-fact" anticipatory posture (Ansoff, 1975: 22), that organisations choose to adopt, it is only through such an accurate definition that organisations will be in a position to track the appropriate environmental developments and anticipate potential strategic discontinuity. As noted by Narchal, et al. (1987: 96), the ability to change organisational direction is subject to the degree to which the environmental turbulence has been thoroughly understood.

As custodians of the strategic direction of organisations, it is incumbent upon senior management to ensure the accurate definition of the business environment and to identify and deploy scanning mechanisms that will provide adequate information of events in this environment.
The accurate definition of the business environment and adoption of appropriate scanning mechanisms becomes even more critical if one considers the following assumptions:

- Scanning is the first link in the chain of perceptions and actions that allow organisations to adapt to the environment.
- Senior executives are responsible for organisation/environmental alignment.
- Senior executives must, given limited time and capacity, make choices between the various modes of scanning (undirected viewing to formal search) (Daft, et al., 1988:124).

These assumptions introduce the second key problem facing environmental scanning, i.e. the extent to which it is formalised, both with regards to frequency and mode.

Amram and Kulatilaka (1999: 95) postulate that the goal of strategy is to ensure that investment decisions result in greater shareholder value. They argue that senior executives devote substantial time and effort to structuring decisions, identifying potential implications, assigning probabilities and assessing risks in an effort to predict how specific courses of action will influence an organisation's value. The problem resides in the fact that different executives rely on different experiences and have different perspectives that lead them to different conclusions.

The pre-eminent assumption is that systemized scanning provides the environmental information needed to promote a firm’s survival and success. The research findings of Fleming (1981), Snyder (1981), and Newgren and Carroll (1979) (Wasilewski, 1998:4) suggest that there is not necessarily a correlation between a systemized approach to environmental scanning and an organisation's improved financial performance.
The 1986 research conducted by Lenz and Engledow (Wasilewski, 1998:4) goes some way to providing insight into the mixed results in the relationship between environmental scanning intensity and a firm's financial performance.

From their evaluation of the literature on environmental scanning, Lenz and Engledow concluded, "academicians and consultants urge the development of formalised and sophisticated environmental scanning as a vehicle for improving the strategic management practices". Their implicit assumption seems to be that current organisation structures and processes are partly to blame for some recent failures of corporations to sense and respond to pertinent environmental information (Wasilewski, 1998:4).

Lenz and Engledow's findings offer, in part, an explanation given the assumptions upon which traditional planning models are based, i.e. organisational environments remain essentially static over time and the environment is composed of only a few variables that impact on the organisation (Morrison and Mecca, 1989:2).

The underlying assumption of most current planning is that environmental change will be a continuation of the rate and direction of present (and past) trends. These trends are manifested in the "planning assumptions" typically placed in an organisation's strategic plan. The result is that many organisations implicitly expect a "surprise-free" future. As this report has emphasised, change, not continuation, will be the trend and, as noted by Linneman and Klein
(1985: 64), such rapid change has to a certain extent rendered traditional statistically based forecasting techniques obsolete. The further organisations "search" into the future, the truer this will be.

Apart from these assumptions, Lenz and Engledow refer specifically to the difficulties in "...designing environmental scanning units, positioning them in the context of an organisation, and linking them with strategic decision processes".

By implication, highly systemised environmental scanning may not necessarily be compatible with the varying decision-making structures, processes and needs of an organisation. Hence, greater systemisation of environmental scanning may not necessarily mean greater environmental scanning effectiveness for an organisation irrespective of the context within which the system functions. Rather, evidence suggests that the environmental scanning approach employed by and perceived as effective by executives may be contingent upon the context (Wasilewski, 1998:4).

As was discussed previously, uncertainty is influenced by both the complexity and rate of change within business environments (Daft, et al., 1988:125). Executive perceptions of this uncertainty are influenced by a lack of information about environmental factors, a lack of knowledge about the effects of an incorrect decision, and the inability to assess the probability that specific environmental factors will affect the success (or failure) of an organisation in fulfilling its mission, the so called contingency approach (Morrison & Mecca, 1989:2).
As was alluded to earlier, Wasilewski (1998:4) conducted research to test the hypothesis that in dynamic environments less systematised scanning systems will be perceived as more effective, and in less dynamic environments, more systematised systems will be perceived as more effective.

Empirical research by Duncan, Lindsay, Rue, Lorenzi, Sims and Slocum (Wasilewski, 1998:4) indicated that more variance in perceived environmental uncertainty is explained by dynamism than by complexity. Hence the focus on dynamism (rate of change).

The results of the study support the view that there is unlikely to be one approach to environmental scanning that different executives in different organisations will consider equally useful and effective under different situations. Rather, executives are likely to consider different scanning methods to possess different levels of utility and effectiveness under different conditions. In addition, the study suggests that the continuous approach to environmental scanning is one of many that may be employed, and there is no single approach to environmental scanning that is universally superior irrespective of the environmental and/or organisational context. Rather, the environmental scanning approach that is likely to be deemed most effective by executive decision-makers is one that fits the environmental and organisational contexts within which it is used (Wasilewski, 1998:5).

Wasilewski's research findings were mirror reflections of previous research into scanning activities in new manufacturing ventures undertaken by Brush (1992: 50). Brush found that executives in start-up ventures applied a combination of informal and systemised mechanisms to gather information from their immediate environment.
Finally, the research findings suggest executives should not indiscriminately pursue greater systemisation as a means of improving environmental scanning effectiveness, nor adopt a standardised approach to environmental scanning. Rather, they need to adopt a flexible approach tailoring the environmental scanning systemisation to the contexts of individual business units (Wasilewski, 1998:5).

Such a flexible, tailored approach is supported by the assertion by Wei Choo (1999:2) that to be effective, organisations need to employ a combination of modes of environmental scanning that range from the irregular (low level of systemisation), to continuous (high level of systemisation), contingent upon the environmental and organisational contexts.
CHAPTER 5:
ENVIRONMENTAL SCANNING TECHNIQUES: AN OVERVIEW OF SPECIFIC METHODOLOGIES

5.1 Introduction

Having provided a broad description of the factors that make up the business environment and the generic characteristics of environmental scanning systems as they are applied within these environments, this report developed a typology of approaches to environmental scanning. This typology was discussed through the exploration of the nature of the relationship that exists between environmental scanning systems on a continuum of simple to complex environments and irregular to continuous systems.

Within the context of this typology, this report will now focus on providing an overview to specific environmental scanning techniques. It is not the intention of this report to provide an exhaustive overview to all forms of environmental scanning systems, but rather to discuss those systems most commonly used. At the outset of this discussion it is important to emphasise the caveats and assumptions underpinning environmental scanning as identified by Weingand (1995:5) and Morrison and Mecca (1989:3).

- The future is probabilistic, it is not deterministic. While the future cannot be predicted, it can be forecasted probabilistically taking explicit account of uncertainty. The difference lies in the argument (Morrison and Mecca, 1989:5) that a prediction is an assertion about
how some element of the future will materialise. A forecast is a probabilistic statement about some element of a possible future.

- Methods are judgmental and rely greatly on assumption and not exclusively on empirical or scientific fact. Results and consequences are swayed by executive perceptions.
- Important events will always be omitted. In order to minimise these omissions, forecasts must sweep widely across possible future developments in such areas as demography, values and lifestyles, technology, economics, law and regulation, and institutional change.
- Accuracy measurements are paradoxical as forecasts often lead to policies intended to change the forecasts, i.e. inhibit undesirable consequences. The aim of scanning and defining future events is to try to determine how to create a better future than the one that would materialise if organisations merely kept doing essentially what is presently being done.
- Alternative futures, including the "most likely" future, are defined primarily by human judgment, creativity, and imagination. Value judgments, leading to policies, are based upon present value standards, and values change.

5.1.1 Characteristics of environmental scanning systems

Given this set of caveats and assumptions, Morrison and Mecca (1989: 5) developed a set of criteria that can be used as filters to assess the quality of forecasts:

- **Clarity**: Are the objects of the forecast and the forecast itself intelligible, practical and clear?
- **Intrinsic credibility**: Do the results "make sense", do they have face validity?
• **Plausibility**: To what extent are the results consistent with what the organisation knows about the world and how it may work in the future?

• **Policy relevance**: If the forecasts are plausible, to what extent will they affect the achievement of the organisation's mission?

• **Urgency**: To what extent do the forecasts indicate the time that must be spent on initiating action, if required, and implement the necessary changes?

• **Comparative advantage**: To what extent do the forecasts provide an improved basis, currently, for exploring policy options than other sources currently available?

• **Technical quality**: Was the process employed in producing the forecasts technically sound?

Broadly speaking, scanning/forecasting techniques can be classified into two categories, i.e. exploratory and normative.

The exploratory category includes techniques based on an extension of the past through the present to the future. Such techniques tend to look to the future from the present taking into account the progressive developments that gave rise to the present (Burgelman, *et al.*, 1996:142). As noted by Morrison and Mecca (1989: 5), exploratory techniques tend to define expectations as opposed to preferences.

Normative techniques, by contrast, tend to start from the future, postulating a desired or possible end state of events and then traces backwards in order to determine the actions necessary to achieve the postulated end state, and to determine the probability of achieving this end state (Burgelman, *et al.*, 1996:142).
5.2. Specific techniques for environmental scanning

5.2.1 QUEST (Quick Environmental Scanning Technique)

Developed by Professor Burt Nanus, Director of the Center for Futures Research at the University of Southern California, the objective of the QUEST technique is, as the name implies, to develop a quick, inexpensive analysis of the possible futures an organisation may face, based on the perceptions, experience, knowledge and observations of the senior executive team.

Binedell (1981: 40) notes that this technique:

- requires the direct active participation of senior executives of the organisation;
- does not attempt to develop a singular view, but rather emphasises the need to understand the causal relationship between forces shaping the environmental dynamic, identifying and assessing possible futures and identifying where trends can be influenced by the organisation; and
- is no more than an initial scan and does not replace the need for a more comprehensive analysis of the environment required for the development of strategic plans.

5.2.1.1 The QUEST Process

Reflecting a normative approach to forecasting, this technique consists of four phases.

Phase I Preparation: Selection of participants should be guided by their decision making responsibilities in the organisation, their knowledge of environmental forces and their ability
to think logically and creatively. The group should be restricted to no more than 12 - 15 participants (Nanus, 1982: 42). The second part of the preparation phase is the compilation of an "intelligence file" (Binedell, 1981: 41), containing readily available information on past trends and future prospects in the particular industry (Nanus, 1982: 42).

Phase II Divergent Planning: At a full day session, items are developed and posted on flip charts around the venue. Typically, specific steps are followed in developing these items, i.e.:

- Definition of the business a specific organisation is in.

- Development of stakeholder specific measures.

- Identification of the occurrence of likely critical events that would have a significant impact on the organisation.

- Participants are then asked to identify the most important events, the results of which are aggregated for the group. These are then assessed in order to eliminate duplication and/or ambiguity in order to determine the top ten most significant events. Probabilities are allocated using a variation of the Delphi technique (see section 5.2.3).

- Participants are required to complete a two dimensional matrix in which each event is related to another in terms of the cross impact. By using a simple coding system (++ = greatly increase probability of occurrence to -- = greatly reduce probability of occurrence), the cross impact analysis identifies the impact the occurrence of one event will have on the probability of the other occurring.

Phase III Scenario Development: The data collected in the divergent planning phases is collated and a report is produced which structures and analyses the organisation's business
environment and associated performance measures and develops alternative future scenarios using the identified critical events.

**Phase IV Strategic Option Identification:** At a follow-up session the report is reviewed by the senior executives involved in the initial session. Following this, they are asked to develop a strengths and weaknesses profile of the organisation. This profile is then used to identify strategic options open to the organisation given the context of the scenarios presented in the report (Nanus, 1982: 42 - 44).

### 5.2.1.2 Evaluation of the QUEST process

Clearly one of the main advantages of the QUEST technique is the fact that at a relatively low cost, organisations can rapidly develop a view of the potential futures an organisation may encounter (Binedell, 1981: 40). The direct involvement of senior executives ensures the implementation/conversion of results into strategic and tactical organisational thrusts.

The direct involvement of senior executives may, given Wasilewski's (1998:4) research, potentially indicate the appropriateness of the QUEST technique in either dynamic environments or as a preliminary scanning tool (Ferguson, 1999:3) in the early stages of issue identification.

A key disadvantage of the QUEST technique is the almost exclusive reliance on the perceptions, experience, knowledge and observations of the senior executive team. The potential exists for group think and bias to "contaminate" the results. In addition, any external
information not in the possession of the executive team will not be factored into the QUEST process.

5.2.2 Trend Analysis

Trend analysis is not a new technique and has been employed for a number of years in the field of economic forecasting. As noted by Weingand (1995: 5), trend analysis is based on the repeated empirical observation of phenomena over a period of time, and reflects the underlying assumption that present conditions will not change substantially and that it is reasonable to project the recent past into the near future.

It is appropriate at this stage to introduce a distinction between a trend and an event.

Morrison and Mecca (1989:5) argue in favor of structuring issues around trends and events, where they define a trend as a series of social, technological, economic or political phenomenon that may be estimated and/or measured over time. In contrast, an event is a discrete, conformable phenomenon that makes the future different from the past.

The task of forecasting would be to measure (1) changing trends in individual categories and (2) possible future events that, were they to occur, would have a significant impact on trends and other events (Michman, 1989: 38).
5.2.2.1 The Trend Analysis Process

Essentially an exploratory technique, the basic trend analysis approach involves applying mathematical curve fitting techniques to past data and extrapolating them into the future. A key aspect of trend analysis is the selection of appropriate attributes or parameters to plot over time. Clearly the selection of appropriate parameters requires a sound insight and understanding of the interrelationships that may exist between the parameters. The selection of the wrong or inappropriate parameters will lead to the wrong conclusions (Burgelman, et al., 1996:147).

There are a number of variations to the basic trend analysis approach.

- Substitution or S - curves are trend analysis techniques appropriate for representing future technological progress functions (Burgelman, et al., 1996:7). Similar to a product life cycle, S - curves reflect a slow initial growth phase, followed by a more rapid approximate exponential growth period that culminates in a slowing down of growth as it approaches asymptotically an upper limit. This upper limit is determined by a physical element or market force (Burgelman, et al., 1996:7). An example of such S - curve trend analysis would be Sony's research into minaturisation of radios which gave rise to the development of the Walkman music system.

- Envelope curves are appropriate for representing broad trends from smaller, contributory trends (Weingand, 1995: 5). Typically such curves reflect emerging trends that arise as a result of an upper limit being attained and new technologies or capabilities supplanting older ones (Burgelman, et al., 1996:7).
An example of such envelope curve trend analysis would be progress from music videos and cassettes to compact discs and finally to digital video displays (DVD's).

- Precursor trends are trends particularly suited to tracking the time lag between research and development and the commercialisation of a specific capability. The focus of such analysis is on the identification of a precursor application which follows a predictable trend behind which an organisation's own specific application can be applied (Burgelman, et al., 1996:7) An example of such envelope curve trend analysis would be the enhancement of motor vehicle features arising out of the research and development conducted into enhancing the performance of motor racing/rallying cars.

5.2.2.2 Evaluation of Trend Analysis

The trend analysis technique is such that it acknowledges the impact of a variety of factors, such as fast growth and leveling off periods and imposed limits, upon the natural development of a capability (Burgelman, et al., 1996:7).

As previously stated, trend analysis has as its underlying assumption the idea that present conditions will not change substantially and that it is reasonable to project the behaviour of the recent past into the near future. The key disadvantage of trend analysis, given this assumption, is that the technique makes no provisions for changes or reversals in the trend or for major shifts in the environment affecting the trend.
Frigstad (1994: 5) identifies some additional drawbacks, namely:

- relationships between dependent and independent variables may be complex and difficult to forecast;
- data must be available over a long period of time; trend projection cannot be applied to new markets or technologies;
- only quantifiable variables are suitable for extrapolation and non-quantifiable parameters are excluded; and
- it is difficult to acquire accurate baseline data.

5.2.3 Delphi Technique

Named after the Greek oracle at Delphi, whom the Greeks visited for information about their future, the Delphi technique is one of the best known qualitative, structured and indirect interaction futures methods in use today (Lang 1995: 1).

Essentially, the Delphi technique is the name given to a series of procedures for eliciting and refining a solution based on the confidential opinions of a group of experts (Lussier, 1999: 93). As noted by Lang (1995: 1), the collective subjective judgment of experts is considered to be more reliable than individual statements and is thus more objective in its outcomes. Linstone and Turoff (1975: 3) describe the technique as "... a method for structuring a group communication process, so that the process is effective in allowing a group of individuals, as a whole, to deal with a complex problem."
5.2.3.1 The Delphi Technique Process

As Lang (1995: 2) notes, there is a range of applications that can all be broadly classified as the Delphi technique. Despite this range of applications, it is possible to identify a broad procedural approach.

Firstly, the subject of the study is circulated to the participants in an unstructured manner to enable them to comment on the issues in question. This material is then synthesised by the monitoring team and distributed to the participants in a questionnaire format. Secondly, a questionnaire is drawn up to ascertain the opinions of the experts and to try and begin to elicit points of convergence and divergence. Thirdly, the questionnaires are distributed repeatedly each time with the information from previous questionnaires that has been interpreted and reformulated by the coordinating team. The feedback often provides textual and statistical material to participants with the group's response as well as their own, and asks them to reconsider their response, or if their response is radically different from that of the group, to justify it. This process is repeated until a level of consensus or stability is reached. Finally a report is produced, integrating the responses of the experts.

5.2.3.2 Evaluation of the Delphi Technique

The flexibility of the Delphi technique suggests that it is best suited to the exploration of issues that involve a mixture of scientific evidence and social values. As noted by Lang (1995 4), the Delphi technique is of value not in the search for individual knowledge and data, but in the search for deliberative judgment. The technique is more about the gathering of opinion than explanations of causality.
As noted by Burgelman, et al. (1996: 148), the Delphi technique reduces the distorting impact that dominant personalities may exert in a group decision-making context. As a consequence, the technique does not necessarily produce a definitive answer, but rather provides a range of opinions that enables decision-makers to better understand the uncertainties surrounding a particular issue.

Some drawbacks of the techniques (Lang, 1995: 5) are:

- It is very difficult to evaluate accuracy and reliability because the technique is based on determining the opinion of panel members and the findings thus become person and situation specific.

- It has not been shown consistently that the results are any better than those achieved through other structured judgmental techniques.

- The nature of the techniques subjects it to the biases and world views of the coordinating team, who choose the respondents, interpret the returned information and structure the questions.

- A key weakness in using the Delphi technique is that certain questions do not get asked, as they do not seem important when the study begins. However, once it is underway, new questions cannot be added, which in turn can weaken the study considerably.

- The process of choosing the panelists is often not considered seriously enough, yet, it is the caliber of the panelists that determines the quality of the outcomes of the study.

- In the process of achieving consensus, extreme points of view run the risk of being suppressed, when in fact they may provide important new information or insights.
5.2.4 Issues Management and Emerging Issues Analysis

Developed in response to the increasing level of influence the public sector exerts over organisational activity (Renfro, 1993: 23), Issue Management emerged as an organisational attempt to participate in and influence the public policy process.

Issues management can be defined as the capacity to understand, influence and direct all strategic planning functions and public relations skills towards the meaningful participation in public policy that affects an organisation's future (Lang 1995: 9). As an extension of this technique, Lang (1995: 9) goes on to note that Emerging Issues Analysis (EIA) is an attempt to identify issues that are likely to emerge at some more distant point in the future.

The differentiating feature between Issues Management and Emerging Issues Analysis is in their time frames or their point on the S-curve. Issues Management is a technique that focuses on the near term with reasonably established issues, and is thus by definition further "down" the S-curve. In contrast, Emerging Issues Analysis attempts to identify issues much earlier in the "gestation" period (Lang, 1995: 9).

5.2.4.1 Issues Management and Emerging Issues Analysis Process

Lang (1995: 9) notes that Issues Management consists of six distinct components:

- Monitoring of the public policy arena to identify issues that are likely to impact on the organisation.
- Identifying which of these issues are of importance to the organisation.
- Assessing the operational and financial impact of these issues.
- Developing an organisational response and/or position on these issues.
- Formulating such a response.
- Implementing the response.

Emerging Issues Analysis essentially takes the same components and breaks them down into three stages of development i.e.
- Framing of the issues through the generation of ideas by experts, which in turn lead to innovations that have potential social consequences.
- Advancement of the issues via issue advocates that result in such issues featuring in the mainstream media. This in turn leads to the creation of lobby and pressure groups that shape public debate and attempt to influence opinion.
- Resolution of the issue ranging from informal agreements to legislative changes (Lang 1995: 10).

The key "measure" as to whether an emerging issue will develop into a significant social force for change, is the assessment whether the issue will develop a constituency of support. Typically such indicators include:

- **Leading ideas.** Unstructured, mutually exclusive thoughts that over time emerge as ideas that stimulate hypothesis, research and testing. Supportive research results emerge that lead to the challenging of the accepted norms and ideas, and the consequent integration of these initial mutually exclusive thoughts into mainstream society.

- **Leading events.** Unusual events that in isolation are not significant, but that cluster over time into "data walls" that lead to a critical mass that culminates in a need for action.
• **Leading advocates.** Issues or ideas are propagated by experts, who over time, develop a
  body of support that culminates in pressure for change.

• **Leading literature.** Issues or ideas initially appear in the fringe media and over time
  begin to appear in more technical publications, and then in mainstream media, which in
  turn leads to pressure for change.

• **Leading organisations.** Individually propagated issues and ideas are, over time, taken up
  by interest groups who in turn facilitate the institutionalisation of the idea or issues
  through the participation of professional advocates.

• **Leading political jurisdictions.** Issues raised in other countries are adopted as the model
  approach to similar issues in the home country.

• **Economic activity of society.** Different countries are at different stages in their economic
  development, ranging from the agricultural stage to the information based economy. Each
  stage shapes people's world view and consequently the ideas and issues that are important
  to that particular society (Lang, 1995: 11).

Martino (1972: 216) refers to these as precursor events, i.e. events that give an indication of a
long-term change that is emerging.

### 5.2.4.2 Evaluation of Issues Management and Emerging Issues Analysis

Clearly one of the key benefits of Issues Management is that it facilitates the integration of the
social context within which the organisation works with the internal dynamics of the
organisation.

Issues Management clearly focuses on the short term developments and this may not provide
a sufficient "lead" time for an organisation to develop an appropriate response.
Emerging Issues Analysis negates the short lead time disadvantage of Issues Management but, conversely, has the difficulty of determining exactly what issues will develop (Lang, 1995: 13). Clearly EIA lends itself to the sequential development of an environmental scanning system that moves from scanning to monitoring as introduced in Chapter 4 of this report.

5.2.5 TEAM

Similar to the Trend Analysis Program (TAP), TEAM is an internal information network designed to scan the environment in which an organisation operates. Designed initially for application in the insurance industry, TEAM is a hierarchical process designed to analyse, primarily, the print media with the view to identifying significant trends and developments (Ferguson, 1999: 2).

5.2.5.1 The TEAM Process

The TEAM technique is designed around a hierarchical system of scanners who assume responsibility for reading one or more publications in predefined areas, searching for articles that meet certain predefined criteria. Typically publications are drawn from the fields of science and technology, social sciences, business and economics and politics and government (Ferguson, 1999: 2).

As a hierarchical system, TEAM commonly has three levels of participation within the organisation (Binedell, 1981: 56). The first level involves the "scanners" who are responsible for the actual reading and identification of relevant issues and ideas in the various print media.
sources. The scanners are required to prepare an abstract of the articles, conference papers, books or other sources analysed. These abstracts are then submitted to an "abstracts analysis committee" (Ferguson, 1999: 2).

The second level entails the analysis of the abstracts by an analysis committee. Such a committee consists, typically, of middle managers who meet on a monthly basis with the view to analysing the information supplied by the scanners, within the context of future decisions the organisation will need to make. As such the abstracts analysis committee is involved in the periodic review of the abstracts with the view to integrating them into a coherent whole (Ferguson, 1999: 2). This integrated report is distributed to the scanners, selected functions within the organisation and to a steering committee.

The third and final level of the TEAM scanning hierarchy is the steering committee made up of senior executives. The main function of the steering committee is to determine the appropriate organisational responses, if any, the organisation should make in light of the contents of the integrated reports supplied by the abstracts analysis committee (Binedell, 1981: 56). The composition of the steering committee facilitates decision making with regards to the tracking of specific issues, the in-depth analysis of others and the decision to put some issues on hold (Ferguson, 1999: 2).
5.2.5.2 Evaluation of the TEAM Technique

Clearly one of the main advantages of the TEAM technique is its inherent participatory style. TEAM makes use of the collective inputs of junior and middle management in the organisation (Binedell, 1981: 57), and this involvement facilitates buy-in and support for any strategic or tactical initiative the organisation may choose to embark on in response to the information supplied via the process. In addition to and as a consequence of participation, TEAM facilitates an outward looking posture throughout the organisation. This is particularly significant in large organisations that tend toward a hierarchical structure in which, typically, only senior executives focus on the impact of the external environment on the organisation.

The most significant drawback of the TEAM technique is to be found in the fact that it tends towards the bureaucratic and procedural (Binedell, 1981: 57). This is particularly disadvantageous in dynamic, fast changing environments.

5.2.6 Cross Impact Analysis

Cross impact analysis, initiated in the 1960s by Gordon and Helmer, is an attempt to interrelate intuitive forecasts (Huss and Honton, 1987: 24). As such, cross impact analysis is a tool designed to analyse one trend or event in the light of the occurrence or non-occurrence of a series of related events (Weingand, 1995: 6). Cross impact analysis is based on the assumption that an understanding of the nature of the interaction between phenomena is more important than the phenomena themselves (Schlange and Juttner, 1997: 781).
As Binedell (1981: 49) notes, the objective of cross impact analysis is to refine the probabilities of specific events and their interactions with other events to the level where the assigned probabilities can be used as a reliable basis for generating alternative scenarios and planning.

5.2.6.1 The Cross Impact Analysis Process

At its simplest level, cross impact analysis consists of a matrix that describes all the potential forms of interactions between a given set of variables and an assessment of the strength of these interactions.

The first step is for participants to brainstorm or collate all aspects that they regard as having an impact on the organisation from relevant sources. This results in the development of a cognitive map of relevant indicators. The second step involves the development, through a process of aggregation of the indicators identified in the cognitive map, of a set of variables that are grouped into internal and external factors. This grouping allows for the definition of the system boundaries and is usually an iterative process. Step three involves the examination and assessment of the intensity of the impact one variable has on another using a simple low to high impact scale applied to a matrix of entries. Step four involves the summation of the rows of the matrix in order to assess the impact of individual variables on the entire system (active sum). The summation of the column entries in the matrix provides an indication of how that particular variable is affected by all the other variables (passive sum) (Schlange and Juttner, 1997: 780).
5.2.6.2 Evaluation of the Cross Impact Analysis Technique

The key advantages of Cross-impact analysis are that it facilitates the systematic examination of the interactions among variables, it organizes the data descriptively, it uses only a small number of input events, and it tests the outcomes against a variety of occurrences (Weingand, 1995: 6).

The limitations of the technique include the argument that the cross-impact model is able to consider only pairs of events, that it does not consider the effects of non-occurrence within the model and cannot directly assess the likelihood of specific events (Weingand, 1995: 6).

In mitigation, Weingand goes on to note that when cross-impact analysis is used in conjunction with another methodology [such as the Delphi Method], the power of the forecast is considerably enhanced.

5.2.7 Scenario Planning

Leemhuis (1985: 30) notes that scenarios should provide descriptions of possible future worlds against which alternative strategic choices made today are evaluated. As such, scenario planning is clearly a normative technique that postulates a desired or possible end state of events. It then traces backwards in order to determine the actions necessary to achieve the postulated end state and to determine the probability of achieving this end state (Burgelman, et al., 1996:142). As a description of possible futures, scenarios are by definition not forecasts but rather an attempt to integrate macro views of social, technological, economic, environmental and political dimensions.
Marsh (Fahey and Randal, 1998: 38) argues that the use of scenarios necessitates that management apply themselves to strategic thinking before embarking on the process strategic decisions. This argument is compatible with the distinction between strategic planning and strategic thinking (Mintzberg, 1994: 107) introduced earlier in this report.

5.2.7.1 The Scenario Planning Process

Schwartz and Ogilvy (Fahey and Randal, 1998: 57) postulate that to be most effective as a planning tool, four to five unique scenarios need to be written as absorbing convincing stories describing a range of alternative futures most relevant to the future of an organisation. Schwartz and Ogilvy (Fahey and Randal, 1998: 58) propose a two staged approach to developing scenarios.

Stage one: Selecting the plots

A scenario team needs to be assembled, participation in which is based on the individual's knowledge of the organisation, the competitive environment and the key issues that need to be addressed.

Once assembled, the team initially spends time identifying and developing a thorough understanding of the key decisions facing the organisation, the key trends and driving forces in the social, technological, economic, environmental and political dimensions. This insight should lead to the identification of the "focal question".
Stage two: Creating the stories

Agreement on what constitutes the most critical uncertainties facing an organization can be derived from either an inductive or a deductive approach.

Schwartz and Ogilvy (Fahey and Randal, 1998: 61) note that the inductive approach is less structured and involves identifying the different events likely to occur under the different future scenarios. This identification can be by means of brainstorming in the planning session or via interviews conducted prior to the session. Based on these key events, a narrative is produced for each scenario.

The deductive approach is more structured and relies on what Schwartz and Ogilvy (Fahey and Randal, 1998: 64) refer to as a scenario matrix. The objective of the matrix is to identify the two key driving forces on a "x and y" axis grid.

Once the two key driving forces have been isolated, the team then, through a facilitated process and using the other driving forces as input points, begins to develop the basic "plots" for each scenario. From this point the team needs to weave the plots together to form a narrative with a beginning, middle and end.

To be effective, each scenario should be different but relevant to the focal question and should make people challenge their fundamental assumptions about the future.
5.2.7.2 Evaluation of Scenario Planning

The key contribution of scenario planning is to be found in the fact that the technique provides multiple scenarios, which help management visualise the extent of possible uncertainty.

In addition to this contribution, given the increasing rate of complexity and change in the business environment, scenarios provide a means of environmental assessment of prospective futures. The process is relatively simple to implement and can include soft, qualitative variables and the outputs of other forecasting techniques (Linneman and Kelin, 1985: 66).

Binedell (1981: 49) notes that a criticism of scenario planning is to be found in the fact that the technique distinguishes between alternative futures and in doing so reduces the acknowledgment of the interdependency of conflicting trends. The bi-polar view supports the notion that the train of events is within a particular scenario as opposed to between scenarios.

5.2.8 INTERAX

INTERAX (Interactive Cross Impact Simulation), developed by the Center for Futures Research at the University of Southern California Graduate School of Business, is a computer-based model that aims to integrate the techniques of scenario planning with cross impact analysis.
The USC Center for Futures Research defines INTERAX as "... a forecasting procedure that uses both the analytical models and human analysis to develop a better understanding of alternative future environments" (Huss and Honton, 1987: 24).

5.2.8.1 The INTERAX Process

Huss and Honton (1987: 24) note that essentially INTERAX consists of eight basic steps:

Step 1: Defining the issue. As is common with scenario planning, step one entails defining the issue in measurable terms, the geographical scope and the time horizon of the analysis.

Step 2: Identifying the key indicators involves the identification of key indicators, which are characteristics of the system that can be counted, measured or estimated at any point in time.

Step 3: Projecting the key indicators through the development of models that independently forecast the key indicators based on current and past data.

Step 4: Identifying impacting events involves attempting to identify potential future events that may have a significant impact on one or more of the key indicators.

Step 5: Develop event probability distributions by dividing the forecast horizon into shorter time periods and estimating the cumulative probability that each event will occur prior to the end of the period.

Step 6: Estimation of the impact of events on the trends involves estimating the impacts of each event on each indicator variable.

Step 7: Complete cross impact analysis involves assessing the impact of events on events and events on trends.
Step 8: Running the simulation model involves running a simulation, using a Monte Carlo base, for each of the time intervals.

5.2.8.2 Evaluation of INTERAX

The INTERAX computerised technique provides an opportunity to integrate the advantages of trend analysis and cross impact analysis by producing scenarios that emerge over a period of time frames. These scenarios can be modified at the end of each time period, allowing for comparisons of forecasts to actuals.

Huss and Honton (1987: 25) note, some of the disadvantages of INTERAX include:

- The selection of events in the first time interval is random and there is no indication as to the likelihood of such events actually occurring.
- INTERAX provides no indication as to the likelihood of one scenario or another occurring.
- INTERAX has a high start-up cost.

5.2.9 The Institutional Vulnerability Audit

Developed by James Morrison and George Keller in an attempt to provide a less labour intensive and expensive technique for environmental scanning, the Institutional Vulnerability Audit is an organisation specific scanning technique that offers the potential for focused results that can facilitate fast decision making and constructive changes (Morrison and Keller, 1993: 27).
Essentially the technique is based on the premise that organisations should, on an ongoing basis, assess those customer bases, cost structures, technologies, competitive conditions, political climates and social values that they regard as vital to their continued success. The focus would be on monitoring these elements for signs of change that would undermine these elements and expose the organisation to threat.

As such, the Institutional Vulnerability Audit provides an organisation with the opportunity to scan only those social changes that impact upon the organisation, thus effectively placing a border on the scanning process. The technique forces organisations to identify those "underpinnings" that are vital to its success and to examine them in order to determine how they are changing and what the impact of this change would be on the organisation (Morrison and Keller, 1993: 28).

5.2.9.1 The Institutional Vulnerability Audit Process

Morrison and Keller (1993: 28) note that the audit consists of 5 basic steps:

Step 1: Identify the environmental footings of the organisation. Using brainstorming and other group techniques, a team of senior executives identify as many of the tangible (predictable revenue stream) and intangible (public perceptions) underpinnings of the organisation as possible.

Step 2: Identify the forces and trends that may have a negative impact on the health and quality of the organisation. Essentially this step involves the creative identification of potential threats to the underpinning identified in step 1. It is important that each threat is stated in terms of an event that could occur within a specific time frame.
Step 3: Individually team members assess the probability and likely impact of each threat on a two dimensional axis. These assessments are then pooled to obtain group based consensus opinion.

Step 4: Assess the overall pattern of threats to the organisation and its vulnerability and categorise them according to the most pressing, those requiring further investigation and monitoring, moderate threats that can be countered through preventative action, and mild threats that can be countered through normal contingency planning.

Step 5: Involves the design of strategies to neutralise the vulnerabilities.

5.2.9.2 Evaluation of the Institutional Vulnerability Audit

One of the key advantages of the Institutional Vulnerability Audit is that it requires the involvement of the organisation's senior executive team in the formulation of appropriate counter strategies in sufficient time to prevent any negative impact on the organisation. The process facilitates collaboration between functional units, and most significantly, is comparatively speaking inexpensive and does not consume inordinate amounts of senior executive time.

One of the more significant draw-backs of the Institutional Vulnerability Audit is to be found in the fact that the technique focuses almost exclusively on external factors. The consequence of this focus is that it tends to ignore internal factors that may be impeding on the long term viability of an organisation. In addition the Institutional Vulnerability Audit does not specifically include a competitor analysis.
A wide range of specific techniques exist, the selection of which is largely dependent on the organisation's orientation towards environmental scanning and application of the modes of scanning as discussed in section 4 of this report.

5.3 OVERVIEW AND SUMMARY

Against the background of the arguments and discussion presented in Chapters 2 through to 4, Chapter 5 introduced a conceptual background to some of the environmental scanning techniques, prior to introducing some specific examples of techniques that can be deployed.

As is evident from the range of techniques available, there is no one best method and as was argued in Chapter 4, depending on the nature of the environment in which an organisation operates, it may be appropriate to employ a number of these techniques.

Chapters 2 through 5 have provided an overview of the literature and a conceptual discussion of the nature of environmental scanning. Chapter 6 will, in the context of the preceding discussions, attempt to investigate the current state of scanning practices of companies in the financial services sector.
CHAPTER 6:  
ENVIRONMENTAL SCANNING WITHIN THE SOUTH AFRICAN FINANCIAL SERVICES SECTOR

6.1 Introduction and objectives

Having covered the theoretical concepts and practices underpinning the process of environmental scanning, Chapter 6 will focus on providing an insight into the current state of the practice of environmental scanning as it is applied by companies in the financial services sector. The objective of Chapter 6 is to equip the reader with an indication of the extent to which environmental scanning is practiced and applied by selected organisations. It is not intended to provide in-depth research into the application of environmental scanning systems in practice. As was indicated in Chapter 1, for the purposes of this report the financial services sector will be defined as comprising companies in the Life Assurance, Banks and Asset Management/Investment Houses sectors.

Prior to conducting the interviews, the following objectives were identified;

- To obtain information pertaining to the state and approach to strategic planning in selected organisations within the financial services sector.
- To identify the extent to which environmental influences on organisational strategy are "formally" incorporated into the strategic plan and the rationale behind this inclusion.
- To identify the elements of the business environment selected organisations tended to focus on.
• To identify the approach to and the nature/methods employed in conducting environmental scanning.

6.2 Interview Methodology

The interview is perhaps the most commonly used and well documented approach to gathering information. The focused interview was selected as an approach to data gathering as, given the primary objective of this report, interviews were cost effective. As noted in Chapter 1, the primary objective of this report is to provide a theoretical overview to the practice of environmental scanning.

As noted by Kerliner (1981:479), there are both advantages and disadvantages to interviews as a means of gathering data. Amongst others, these include the following:

• interviews can yield a greater depth of data, but, conversely,

• depending on the nature of the topic being investigated, interviewers may find respondents reluctant to divulge information of a personal or competitive nature.

• interviews are flexible and adaptable but are,

• equally subject to interviewer bias.

In an effort to maximise the advantages and minimise the potential disadvantages, the author selected a semi-structured interview approach, posing a standard set of questions to all respondents. The questions were designed to elicit descriptive information pertaining to selected organisations' approaches to environmental scanning and the procedures used in the
process (see Appendix 1). Finally, a semi-structured approach was selected to ensure sufficient flexibility, thereby eliminating the danger of ambiguity.

6.2.1 Interview schedule validation process

The questions contained in the interview schedule were evaluated against the following criteria;

- Is the question related to the research problem?
- Is the type of question appropriate?
- Is the item clear and unambiguous?
- Is the question a leading question?
- Does the question demand knowledge and information the respondent does not have?
- Does the question demand personal or sensitive information the respondent may be reluctant to divulge?
- Is the question loaded with social desirability? (Kerliner, 1981:485)

The interview questions were piloted on two separate occasions and amended in an effort to meet these criteria.
6.2.2 Interview procedure

As previously noted, the objective of the interviews was to assess the extent to which selected companies in the financial services sector take cognisance of the influence of environmental factors in their strategic planning process and to investigate the nature and form that environmental scanning takes in these companies. Within this context, companies were selected on the basis of discussions with academics and practitioners. Clearly this selection is not representative of the South African economy, financial services sector or a statistically reliable representation of the state of the practice. Rather, as previously noted, the intention of this chapter is to equip the reader with an indication of the extent to which environmental scanning is practised and applied by selected organisations and it is not intended to provide in-depth research into the application of environmental scanning systems in practice.

Interviews were conducted in an informal manner spanning a period of, on average, one hour. Typically the interviews consisted of the following stages:

- introduction, briefly outlining the purpose of the interview;
- an overview of the theory of and the specific companies' approach to strategic planning;
- the methods and approaches used to integrate environmental information into the strategic decision making process.
6.3 Interview Results

In order to provide some indication of the extent to which environmental scanning is practiced and applied by selected organisations in the financial services sector, a short summary of the responses to each of the questions posed in the interviews follows.

6.3.1 The strategic planning process

1.1 Does the organisation engage in a formal strategic planning process?

All the organisations that participated in the interviews indicated that they engage in strategic planning as a management tool to assist in organisational decision making. While not a statistical valid base to draw any conclusions from, these findings are consistent with the findings of research conducted by Bain & Company (Bennett, 2000: 1), in which they found 89% of organisations surveyed from 1996 relied on strategic planning as an aid to executive decision making.

While all organisations indicated the application of strategic planning, the form and content of this planning tended to vary from organisation to organisation.

1.2 How frequently is this exercise conducted?

All the organisations interviewed indicated that they engage in an annual planning cycle. It is interesting to note that some of the organisations interviewed differentiate between what they call strategic planning, which has a slightly longer time horizon (3 - 5 years), and business planning, which has more of a short term focus (1 - 3 years).
By and large, the organisations interviewed appeared to engage in an annual business planning exercise. This finding supports Mintzberg, (1994: 107) assertion that "... strategic planning, as it has been practised, has really been strategic programming, the articulation and elaboration of strategies, or visions that already exist".

1.3 Who participates in the planning process?

The strategic/business planning process as applied by the organisations interviewed is, without exception, driven by senior management. Typically the process appears to be driven on a team basis involving the CEO, Managing/Financial Directors, executive management teams and marketing divisions. These findings are consistent with the results of research conducted by Binedell (1981: 88 - 105), where some 32% of organisations surveyed had a corporate planning function, and in the absence of such a function, some 72% of respondents indicated that the CEO, Chief Financial Officer or executive committees assumed responsibility for the planning process.

1.4 How is the plan developed? Is it a formal planning session spread over a number of days involving senior management or an iterative process from the bottom up?

All the organisations interviewed indicated that, as a base, they rely on the outputs of an annual formal planning process that's tends to be driven from the "top down".
1.5 *Typically what area does the plan cover?*

Generally the planning process of the organisations interviewed tended to focus on:

- Financial targets and performances
- Customers
- Competitors
- Economic and general market conditions
- Brand positioning, market sector penetration and market share
- Internal business processes to determine organisational capacity and capability

The areas covered by the planning process tend to correlate quite strongly with the elements of a strategic plan identified by Thompson and Strickland (1996:107).

1.6 *What is the time horizon of the planning cycle?*

As noted previously, the organisations interviewed tend to distinguish between strategic planning which tends to span a 3 - 5 year time horizon, and business planning which tends to cover a 1 year time horizon. Again these results are similar to the results of Binedell (1981: 93) in which he found that the mean time horizon for organisations with a planning department was 4.4 years and for those without some 3.9 years.

1.7 *Who is ultimately responsible for the final production of the strategic plan?*

Typically, responsibility for the development of the strategic plan lies with the "development team" and specifically the CEO, Managing/Financial Directors, executive management teams and marketing divisions. It would appear that in general, the tactical implementation of the strategic plan is then divided up into key delivery areas and line of business or functional business unit leaders assume responsibility for the implementation of allocated areas.
1.8 How often/frequently is the plan reviewed and why?

It would appear from the interviews, that in practice, the process of strategic planning tends to emphasise the shorter-term (1 to 3 year) tactical requirements necessary for organisations to establish and sustain a competitive advantage. All the organisations interviewed indicated that they review the plan on an annual basis with the view to adjusting strategic focus areas to accommodate changes that may have taken place in the business environment.

One of the organisations interviewed indicated that they are starting to move away from the annual "bos beraad" approach to planning towards a more iterative approach to reviewing and adapting the plan. The intention is to supplement the ongoing monthly focus on "strategic highlights" with a quarterly review of changes and developments.

The opinion was expressed by a number of the representatives interviewed that the strategic plan provides the organisation with the broad goals and intentions necessary to remain competitive, but that in certain areas (e.g. technology), the pace of change is so rapid that a 3 - 5 year view is often too long. This necessitates the shorter-term focus afforded by the business planning process.
6.3.2 The environmental scanning process

2.1 How does the organisation regard the nature of the financial services sector in South Africa in terms of complexity and change?

As discussed earlier, Fahey, et al. (1981: 32) argues that environmental scanning systems are geared towards enhancing an organisation's ability to handle environmental uncertainty rather than reduce perceived uncertainty. Daft, et al. (1988:125) postulates that uncertainty is influenced by two environmental characteristics, i.e.:

- Complexity, which they define as the heterogeneity of external events perceived by organisations as relevant to them; and
- Rate of change, which refers to the frequency of changes in the environment.

All the organisations interviewed defined the financial services sector as defined in this report as being characterised by a high degree of complexity and a rapid rate of change. All respondents indicated that there are an increasing number of external events that previously had no bearing on the financial services, but now due to changes to the industry's context, structure and value system, are beginning to exert an influence. Amongst others, these include the globalisation of the financial services sector, increased competition, information technology, players in the fast moving consumer good sector moving into the financial services sector, changing patterns of distribution, consumerism and a general increase in awareness and sophistication of the client base. There was unanimity of opinion in the fact that not only is there increased complexity of change, but the rate at which this change is occurring has increased dramatically as well.
2.2 How does the organisation choose to respond to changes in the external environment?

Ansoff (1975: 22) asserts that organisations can choose to manage strategic surprise, and thereby manage uncertainty, via two options, namely either to develop an effective crisis management capability, that represents a fast, efficient, after-the-fact response to a discontinuity, or, to develop a before-the-fact preparedness in anticipation of strategic discontinuities.

Responses to this question indicated a divergence in approach with some organisations adopting an effective crisis management capability, others adopting a before-the-fact preparedness, and some attempting to do both depending on the issue. In part, it is the author's assertion that this divergence in approach is due to a combination of (a) the traditional conservatism that was and to a certain extent still is a characteristic of the financial services sector, and (b) the increased complexity and rate of change that is forcing traditional players in this sector to adopt new/innovative approaches to servicing a rapidly changing market.

2.3 What areas of the external environment are of specific relevance to organisations in the financial services sector?

All interview respondents concur with Narchal, Kittappa and Bhattacharya (1987: 96) and Fahey, William, King, Vadek and Narayana's (1981: 32) observation that organisations are open systems organised as unitary wholes composed of interdependent subsystems, delineated by identifiable boundaries from their environment, but that are in continual interaction with their environment.
As was discussed earlier, this report has adopted Daft, et al's. (1988:137) definition of the business environment as consisting of two layers:

- **The task environment** made up of three key sectors, i.e. customers, competitors, technology.

- **The general environment** made up of three key sectors, i.e. economic, regulatory, socio-cultural factors.

Responses in the interviews indicated that generally organisations tend to focus on the following environmental issues:

- Task environment
  - Clients/customers
  - Competitors in the financial services sector
  - Staffing and skills
  - Technology

- General environment
  - Legislation, corporate governance and government policy
  - Macro economic environment (including global and domestic investment trends)
  - Social issues (particularly AIDS/health care)

2.4 How, if at all, does the organisation go about monitoring these areas?

Aguilar (1967: 19) identified four broad modes of scanning i.e. undirected viewing, conditional viewing, informal search and formal search.

As with Question 2.2, responses to this question indicated a divergence in approach ranging from a mode of an undirected viewing through to a mode of formal search.
What is significant is that all the organisations interviewed adopted some approach to monitoring the environment for significant trends or changes. This clearly indicates an acknowledgement of the need to factor in environmental changes into the planning process.

As was discussed earlier in this report, there is a natural relationship between strategy, the organisation's informational needs to support the strategy, and approaches to environmental scanning. Aguilar (1967: 22) argues that the various modes of scanning are associated with certain organisational informational requirements and that typically organisations will tend to rely more on one mode than on others in support of this position. While in agreement with Aguilar's position, the author is of the opinion, and this is borne out by the interview responses, that the preferred mode an organisation applies may well vary over time for purely pragmatic reasons. These reasons may include, amongst others, resource intensiveness, knowledge of strategic informational requirements, organisational capacity to satisfy informational needs, changing degrees of "granularity" as greater clarity is obtained and the economics of information gathering.

As a result of these and other factors, organisations continually reassess both the informational need and mode of obtaining it. By definition, the information requirements are changeable and, as such, so too are the modes associated with these requirements.

2.5 Given the organisation's approach to monitoring environmental changes, how often does this monitoring occur?

As with Question 2.2 and 2.4, responses to this question indicated a divergence in approach ranging from irregular to continuous. This is not surprising given the comparatively short term time horizons, the divergence in approach to responding to changes in the environment and the divergence in the modes of scanning adopted by the organisation's interviewed.

2.6 Does the organisation make use of specific techniques to gathering this environmental information?

None of the organisations interviewed deployed any of the specific techniques discussed in this report. However, all indicated that, to varying degrees of intensity and detail, they all do employ specific approaches to gathering information from the environment.

Given the distinction between strategic planning and business planning discussed earlier, some of these approaches include:

- Lines of business scans of their specific economic environment.
- Economic research unit analysis of macro economic trends.
- Reliance on the "informal" network of senior executives.
- Reliance on the "informal" network of front line staff.
- Commissioned market research.
- Media scanning.
- External institutions such as the Central Statistical Services

2.7 Who provides this information?

Again there is divergence between the organisations interviewed as to who supplies this information. A common thread amongst all organisations interviewed was the reliance on the
CEO and other senior executives for the provision of environmental information through the informal networks they have established in the course of conducting their work.

Other providers include:

- business units feeding information back to the corporate center or parent company;
- front office consultants and sales staff;
- economic research units that most financial institutions have established,
- market research houses
- marketing departments

2.8 How is it presented for inclusion into the strategic planning process?

The very nature of this question lends itself to a long explanation. To avoid this, a broad overview of the process followed amongst the organisations interviewed follows.

Some organisations have specialist functions, typically resident in the marketing department, that are tasked with the function of gathering specific data over the course of a year and specific environmental information just prior to the annual planning process. This information tends to focus on the macro economic and legislative areas of the general environment. In addition to this information, special projects are commissioned to conduct market and customer surveys on a variety of topics from market share to client perceptions of service quality. Two of the organisations interviewed have regular "dumping" sessions where feedback on client requirements and competitor activity is obtained from front line staff.
Typically, this information is collated, analysed and packaged for inclusion as an information package to the participants in the annual planning exercise. The balance of any pertinent environmental information is factored into the planning process on an informal basis via the senior executives who participate in the planning process.

Without exception, all the organisations interviewed made reference to the difficulty in "sifting" available information into cost effective, meaningful summaries and that given the complexity and rate of change in the financial services sector, it is difficult to obtain relevant, timeous information. As previously mentioned, one of the organisations interviewed is attempting to develop a more dynamic, iterative approach to reviewing and adjusting the strategic/business plan on a quarterly basis to reflect environmental dynamics. One of their approaches is to scan the environment much like a radar and then focus in on specific issues that they regard as relevant to their business. This reiterates the distinction between scanning and monitoring discussed earlier in this report, where Fergusson (1999) defines scanning as the process of the picking up of new signals from the environment, identifying emerging issues and trends, and monitoring as the process of tracking previously identified issues and trends. Scanning techniques attempt only to mark the issue as a subject of potential interest to the organisation, one worth monitoring; monitoring involves tracking an issue over time.
6.3.3 Summary

In summary the results of the interviews conducted appear to suggest that annual strategic planning exercises conducted by senior executives remains the primary tool to assist in executive decision making and direction setting in the financial service sector. It would appear as though organisations in this sector adopt a two-phase approach. Strategic planning appears to be the longer term (3 - 5 year time horizon) that provides the context and framework for the shorter term business planning (1 year time horizon).

Based on the interviews conducted, it would appear as though there is a general acceptance of the systems perspective as articulated by Narchal, Kittappa and Bhattacharya (1987: 96) and Fahey, William, King, Vadek and Narayana’s (1981: 32), namely that organisations are part of a greater system and the consequent impact of developments in the external environment on the organisation.

At face value it would appear as though the strategic planning and environmental analysis processes followed by organisations in the financial services sector, cover what Mintzberg (1994: 107) refers to as strategic thinking and strategic planning. Mintzberg argues that strategic planning is a systematic, analytical process of breaking down issues in a step by step manner, while strategic thinking is a process of synthesis, relying on intuition and creativity. Both should be integrated into the strategy making process. It would appear that the general reliance on the "informal" network of senior executives and front line staff would facilitate this.
Given the interview results, it would appear as though organisations in the financial services sector contradict James Utterback (Schendel and Hofer, 1979: 139) assertion that organisations in complex-dynamic environments would make use of sophisticated scanning techniques designed for application on a large and rapidly changing set of variables. Rather, at face value there appears to be evidence that support the findings of Specht and Trussell (Wasilewski, 1998:4) that, in more dynamic environments, organisations tend to prefer to scan the environment using less systemised approaches that are more user-based. This preference is driven out of the need for a rapid organisational response which is facilitated by less systemised, user-based systems which tend to be more "informal" and direct, facilitating faster processing of information gathered from the environment.

While all interview respondents indicated a degree of environmental scanning was practised in their respective organisations, it appeared to be based on more of an informal, ad-hoc approach. There was little evidence to suggest that robust, repetitive efforts at scanning and monitoring were utilised.

All respondents in the interview process defined the industry as being characterised by high degrees of complexity and rate of change. As noted previously, Calori (1989:71) hypothesises that industries change by virtue of the interaction between actors, strategies and moves, the context of the industry, its structure and its values. As was discussed in Chapter 3, archal, et al. (1987: 96) argue that the extent to which an organisation is able to move in the right direction is a function of two criteria, i.e. the organisational thrust in that direction, and the environmental turbulence. The ability to change organisational direction is subject to the
degree to which the environmental turbulence has been thoroughly understood. Given the divergent approaches of organisations interviewed to:

- the strategic posture with regard to changes in the environment (some organisations adopting an effective crisis management capability, others adopting a before-the-fact preparedness and some attempting to do both, depending on the issue);
- the modes of gathering environmental information (ranging from undirected viewing through to formal search);
- the frequency of information gathering (ranging from irregular to continuous); and
- the relatively limited task and general environment elements scanned and monitored,

it appears reasonable to suggest that, given the pace of environmental change and in the absence of any robust, repetitive environmental scanning mechanisms, organisations in the financial services sector may well face potential "strategic discontinuity" on an ever-increasing basis.

This report is based on the premise that, in order to ensure a sustainable competitive advantage, organisations will be forced to consider the dynamics of the environment in which they operate and to build their plans around these dynamics. The presence of an environmental scanning system that continually "feeds" information through to the organisation, resulting in the continual adaptation of the strategic plan, is a pre-requisite in order for organisations to adapt the nature of the organisation's interface with the operating environment. This in turn will facilitate the attainment of a sustainable competitive advantage.
Central to the concept of environmental scanning is the distinction between scanning and monitoring. It is the author’s assertion that the absence of a robust mechanism to scan, detect, monitor and assess environmental developments and changes, creates the potential danger that organisations may miss significant cues in the environment. The consequence of this is they may not adjust or adopt the appropriate strategic thrusts, thus rendering products or services obsolete. There was in general little evidence to indicate that organisations scan and monitor identified issues on a repetitive basis, further supporting the suggestion that organisations in this sector may well face potential "strategic discontinuity".

The evidence presented in the course of the interviews would suggest that, generally speaking, organisations in the financial services sector tend to focus their environmental scanning efforts on what Gillad (2000: 3) refers to as "competition data collection and industry and competitive analysis". The essence of his argument is that in order to derive the greatest potential, organisations need to focus their intelligence gathering efforts on assisting decision makers in understanding and acting on events and trends of strategic significance. To do this, these efforts need to be focussed on the highest degree of strategic emphasis and broadest width of focus. See Figure 6.1 below.
It must be reiterated that the objective of Chapter 6 was to equip the reader with an indication of the extent to which environmental scanning is practiced and applied by selected organisations. It was not intended to provide in-depth research into the application of environmental scanning systems in practice.

The observations and suggestions made in this chapter are indicative of a possible outcome or trend that would require further in-depth research before any statistically valid and reliable inferences can be made.
CHAPTER 7:
SUMMARY, CONCLUSIONS and RECOMMENDATIONS

7.1 Summary of the report findings

Having tracked and explored the evolution and nature of strategic planning and discussed the current dynamics of strategic planning in Chapter 2, this report has established that the planning process has changed as a result of changes in the organisational operating environment. These changes have necessitated a far more robust deductive analyses of the environment. Quality strategic decisions have and are always dependent on good information. As the business environment becomes fast moving and less predictable, organisations are and will be forced on an ever increasing basis, to search for information that impacts on their strategic priorities (Corporate Executive Board, 2000: VI). It is the author's opinion that such an analysis will enable organisations to position themselves appropriately for these changes and in so doing, establish a competitive advantage.

In Chapter 3 the concept of organisations as open systems was identified as being a significant driver of the need to analyse operating environments. Based on this concept, Chapter 3 went on to develop a conceptual definition that emphasised the key element as being the focus on issues over which organisations have no or very little control. Given the nature of strategic planning, Chapter 3 concluded with the argument that the only way that strategic plans can contribute towards organisations achieving a sustainable competitive advantage, is by linking/integrating environmental scanning to the strategic planning process. It is through this link/integration that organisations can ensure a dynamic planning process.
As noted by the Corporate Executive Board (2000: 2), "...the success of incumbent corporations increasingly depends on aggressive and systematic business intelligence efforts to support strategic decision making."

Chapter 4 continued the linking/integration theme with the proposition that only through understanding the nature of the business environment in which an organisation operates, can organisations attempt to scan the environment appropriately. This proposition was viewed from a variety of perspectives that, in general, concluded that an organisation's business environment is typically made up of the task and general environment. It was argued that through the identification of the components within these two elements, organisations can develop systems to monitor these areas, assess information that they provide regarding the changing nature of the competitive structure and environment and, finally, develop appropriate strategic thrusts in anticipation of these changes.

From this assertion, Chapter 4 went on to identify the generic characteristics of such environmental scanning systems and, from these characteristics, developed a typology that examined the relationship between the nature of the environment and the modes of scanning. Based upon this typology, Chapter 4 postulated that to be truly effective, scanning systems needed to be designed in such a manner that they provide a range of scanning modes from irregular to continuous.
Finally, some of the typical problems associated with environmental scanning systems were identified. In support of the prior assertion, Chapter 4 concluded with the argument that some of the more significant problems could be overcome by organisations deploying a combination of modes of environmental scanning.

Chapter 5 introduced the reader to a sample of the environmental scanning tools and techniques available, prior to providing a brief overview of the current state of the practice as applied to the financial services sector within South Africa.

7.2 Conclusion and Recommendations

The underlying assertion of this report was based on the premise that, in order to ensure a sustainable competitive advantage, organisations will be forced to consider the dynamics of the environment in which they operate and to build their plans around these dynamics. As such, the primary objective of this report was to provide a theoretical overview to the practice of environmental scanning.

This report has explored both the nature of the relationship between environmental scanning and the strategic planning process as well as the components of environmental scanning systems.
Based on the literature reviewed, it appears that in order to establish a sustainable competitive advantage, organisations will need to adopt systems and procedures that will facilitate a rigorous analyses of the external environment in which they operate. To this end, organisations will need to focus on integrating environmental scanning with the strategic planning process as this will equip them with the capability of pro-actively responding and developing positions in advance of significant environmental changes. The results articulated in Chapter 6 provide some suggestion that environmental scanning is seen as part of the strategic planning process of organisations competing in the financial services sector. Based on this preliminary evidence, there is a clear need to explore the extent to which such organisations deploy scanning systems as well as the extent to which the results are factored into the strategic plan.

Given the dynamic nature of the environment and the ever increasing pace of change, it is the author’s opinion that in order to be cost effective and provide practical value, scanning systems need to be designed in such a manner that they adopt scanning modes that range from the irregular (low level of systemisation), to continuous (high level of systemisation), contingent upon the environmental and organisational context. It is this combination that will equip organisations with the ability to shift from environmental scanning to the monitoring of specific shifts and emerging trends. This will facilitate the cost-effective deployment of resources and, at the same time ensure that the organisation is well positioned to take advantage should the shift/trend emerge as an opportunity or threat to the organisation.
At face value there is some evidence to suggest that organisations in the financial services sector do indeed deploy a range of scanning activities, but this assertion needs to be substantiated by empirical, statistically reliable research.

Clearly, environmental scanning is not intended to reduce uncertainty but rather to equip organisations with appropriate, timeous information to manage the situation. From this, the author is of the opinion that scenario planning tools and techniques provide organisations with a range of possible futures that in turn equips them with the ability to respond to any of these eventualities should they arise. As has been indicated by this report, the outcome of such responses must be to secure and enhance the competitive position of any organisation. One of the measures of success of this outcome will be the financial performance of the organisation. It is the author's opinion that a significant area of future research in this field will be the extent to which listed organisations that employ environmental scanning as part of their strategic planning process have performed successfully from a financial point of view.

This report opened with the observation that speculative pondering of what “might be”, appears to be a key attribute of what it means to be human. Human coping strategies are often centered on the organisation of present activities in the context of both past experiences and future goals (Wiengand, 1995: 1). This report has demonstrated that environmental scanning is not intended to remove speculation, it is however, intended to attach a sense of probability to such speculation in order for organisations to best prepare and take advantage of emerging trends and opportunities.
As noted by Grulke (2000: 203) "...you can no longer just learn from experience! The faster things change, the less relevant experience becomes. You must learn from the future."
LIST OF REFERENCES


APPENDIX 1

STRUCTURED QUESTIONS POSED IN THE INTERVIEWS

1. STRATEGIC PLANNING

1.1 Does the organisation engage in a formal strategic planning process?

1.3 How frequently is this exercise conducted?

1.4 Who participates in the planning process?

1.5 How is the plan developed? Is it a formal planning session spread over a number of days involving senior management or an iterative process from the bottom up?

1.6 Typically what area does the plan cover?

1.7 What is the time horizon of the planning cycle?

1.8 Who is ultimately responsible for the final production of the strategic plan?

1.9 How often/frequently is the plan reviewed and why?
2. ENVIRONMENTAL SCANNING

2.1 How does the organisation regard the nature of the financial services sector in South Africa in terms of:

2.1.1 The degree of complexity (where simple implies a relatively small number of external events that are regarded as relevant to the organisation and complex a relatively large number of relevant events)?

2.1.2 The rate of change which refers to the frequency of change in the external environment?

2.2 How does the organisation choose to respond to changes in the external environment. Is it through:

2.2.1 an effective crisis management capability, that represents a fast, efficient, after-the-fact response to change,

2.2.2 a before-the-fact preparedness in anticipation of strategic environmental changes?

2.3 What areas of the external environment are of specific relevance to organisations in the financial services sector?
2.4 How, if at all, does the organisation go about monitoring these areas? Is it by any one or a combination of the following?

<table>
<thead>
<tr>
<th>Undirected viewing</th>
<th>Scanning which has no specific purpose other than possibly exploration. The purpose of such scanning is generally of an informative nature.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conditional viewing</td>
<td>Scanning passively in search of specific information in clearly defined areas. The purpose of such scanning is generally to serve as an early warning of impending changes and implies an awareness of the need for specific types of information.</td>
</tr>
<tr>
<td>Informal search</td>
<td>Relatively limited, unstructured scanning with the view to obtaining specific information for a specific purpose. The key difference to conditional viewing is that there is an active search for information.</td>
</tr>
<tr>
<td>Formal search</td>
<td>A deliberate effort to scan the environment for specific information pertaining to a specific issue. Such scanning typically is more structured and programmed in nature.</td>
</tr>
</tbody>
</table>

2.5 Given the organisation's approach to monitoring environmental changes, how often does this monitoring occur? Is it based on:

2.5.1 An **irregular** focus on specific short-term problems aimed at reducing current and near term uncertainty by making use of ad-hoc project teams?

2.5.2 A **periodic** focus and more of a pro-active approach to problem solving. While looking more towards the future, such systems emphasise near term environmental changes?

2.5.3 A **continuous** focus on finding opportunities. Such systems rely on a variety of information sources in proactively seeking opportunities within an extended time horizon?

2.5.4 A combination of these?
2.6 Does the organisation make use of specific techniques in gathering this environmental information?

- QUEST (Quick Environmental Scanning Technique), Trend Analysis,
- Delphi Technique, Issues Management and Emerging Issues Analysis,
- Cross Impact Analysis or Scenario Planning

2.7 Who provides this information?

2.8 How is it presented for inclusion into the strategic planning process?