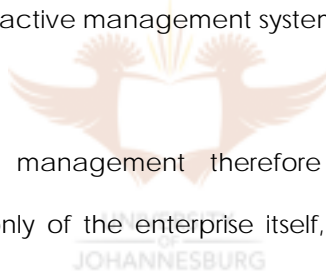


CHAPTER 1 – PROBLEM STATEMENT

1.1 Introduction

Strategic management can be defined as the set of decisions and actions that result in the formulation and implementation of plans designed to achieve an organisation's objectives. The strategic management of an enterprise is the ongoing process of analysis, planning, and action that attempts to keep the enterprise aligned with its environment while capitalising on organisational strengths and environmental opportunities and minimising or avoiding organisational weaknesses and external threats. Strategic management is also a future-oriented, proactive management system [167].



Successful strategic management therefore presupposes a thorough understanding, not only of the enterprise itself, but also of the enterprise's external business environment. In the modern business environment characterized by accelerating, largely unpredictable and continuous change it has been recognized that business management practices, and in particular strategic management practices, furthermore require continuous review and adaptation to remain relevant and appropriate [17]. Strategic managers must therefore understand their current external business environment, but must also understand trends in order to anticipate changes in this environment.

Environmental turbulence has become a permanent feature of the world of the late twentieth and early twenty-first centuries [77, 67]. Grulke [76] wrote that "The last few years of the 20th century were the most volatile years in economic history. It's as if we were being buffeted by larger and larger waves of change,

arriving ever faster and with greater force". The growing awareness of the need to "embrace change" was largely a result of the writings of Toffler [209], Peters [130] and others. Today, successful businesses all over the world have learnt how to cope with, and even embrace, these continuous and unpredictable changes in their environment.

The dramatic and generally peaceful transformation of South African society which started in the early 1990's, together with the first truly democratic national election, which took place in April 1994, set new and unprecedented socio-economic forces in motion in South Africa. The political transition in post-apartheid South Africa has introduced a number of unique facets of external environmental change into the local business environment. Some of the uniquely South African change factors in the South African business environment have a major impact on the management and continued viability of local professional consulting engineering firms. In many cases these, largely uncontrollable, change factors complicate or even nullify efforts to do medium and longer term strategic planning for South African consulting engineering enterprises. This vulnerability is mainly due to certain of the unique characteristics of both professional consulting engineering firms and the broader South African society.

1.2 Consulting engineering in South Africa

Consulting engineers play an important role in the private and public sectors of the economies of nearly all countries. The consulting engineer furnishes valuable technology-based professional services to municipal, state and national governments, as well as to industrial and commercial organizations,

and other clients [206, 104].

For nearly a century South African consulting engineers have been and still are responsible for many key aspects of the planning, design, creation, operation and maintenance of all types of physical infrastructure, or capital works projects, in Southern Africa. It is an acknowledged fact that the quality of its physical infrastructure is currently one of the key economic factors differentiating South Africa from most other African and many other developing countries. The continued development and maintenance of South Africa's physical infrastructure is therefore of great national importance as infrastructure will remain a basic requirement for enabling the South African economy to participate meaningfully in a competitive global economy. The African Renaissance vision of the South African President, Mr. Thabo Mbeki, will require substantial improvements to physical infrastructure all over Africa, but especially in the sub-Saharan region, and South African consulting engineers will be a vital resource for realising the envisaged Renaissance [49].

In spite of South Africa's status as a developing third world country, the local consulting engineering profession is well developed and has the proven ability to be globally competitive. This is well illustrated by the fact that the South African Association of Consulting Engineers (SAACE) is one of the ten largest of the 67 member associations of FIDIC, the International Federation of Consulting Engineers [60].

South African consulting engineers have a vital role to play in local and regional development and every effort should therefore be made to ensure that this highly skilled and scarce national resource is nurtured and developed to its full potential.

1.3 Strategic management

Strategic management involves the identification and implementation of plans of action in order to keep abreast of a rapidly changing environment and the demands of the modern world [34]. It is an ongoing process whereby managers from all parts of an organization are involved in the formulation and implementation of strategic goals and strategies for the organisation. Strategic management furthermore integrates the principles of strategic planning and management into a single process by which managers are encouraged to think strategically and to focus on long-term externally orientated issues and short-term tactical and operational issues [72, 120].

In the past the application, administration and fulfilment of rules and procedures were sufficient to ensure at least reasonable management performance. The business world however now demands an unprecedented level of adaptability and creativity from its managers. Managers consequently have to understand the environment in which their organisations operate and, more importantly, have the ability to identify and creatively exploit the opportunities and to foresee and effectively counter the threats, which environmental changes may hold in store for their organisations [120].

It should be obvious that strategic planning can no longer be an isolated activity, which is periodically carried out by a small number of senior executives at a retreat, imbizo or bosberaad. To be of any use, strategic plans must be under constant review [42] as the environment in which a company operates will change and so may its vision of where it wants to be. Formulating a

strategic plan is relatively easy when changes in the business environment are evolutionary and predictable. One can then extrapolate from the past and the present to determine what the future is likely to be and then set one's strategic plans for the expected best and worst cases. Unfortunately, environmental changes are now normally unpredictable and they mostly occur as step functions [115]. The past and even the present will therefore often not give sufficient, if any, advance indication of changes that may present a company with major opportunities or threats.

Rapidly changing conditions will, to an ever-greater extent, require managers to be increasingly adaptable. The winners in tomorrow's business world are those who move ahead of their environment and a continued devotion to fixed patterns and customs will cause an industry to lag behind while the world is changing [137].

In the next decade South African society, and the business environment in particular, will continue experiencing dynamic change. Uncertainty in respect of how and when the local social, political, technological and economic environment will change, poses new challenges for South African managers. The local societal transformation dynamic should furthermore be seen in the context of the ever-increasing rate of change in the global business environment. South African managers must develop their ability to do effective strategic management in such a rapidly changing environment to ensure the survival and continued growth of their businesses. The development of tools to improve their ability to identify, interpret and even forecast environmental changes that may impact on their organisations, should therefore be a priority to any South African manager who wants to be a top performer in tomorrow's business world.

1.4 Managing the professional service firm

The principal characteristics of professional work result in certain definite lines of differentiation between the management challenges in a professional service firm and those in a company operating in the industrial and mass-consumer economic sectors.

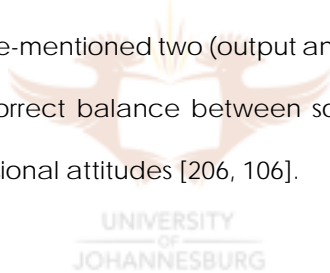
Managers in professional service firms must manage customized activities where very little can be reliably made routine. Management principles and approaches from other economic sectors, which are based on standardisation, supervision and the marketing of repetitive tasks and products, are not only inapplicable, but may be dangerously wrong if applied in the professional services sector [105].

Most professional services have a strong component of face-to-face client interaction. Success in the professional services sector therefore requires the development of a psychological or experiential component to the service as described by Toffler [209]. This implies that definitions of quality and service take on special meanings and that these aspects must be managed with great finesse, requiring top performing managers to have very special interpersonal, intra-personal and other skills [106, 32].

The characteristics of customisation and client contact demand that the firm attract and retain highly skilled individuals. A primary consequence of this is that the professional service firm must compete actively in two markets simultaneously: the "output" (product) market for its services, and the "input" market for its productive resources, the professional workforce. It is the need to

balance the often-conflicting demands and constraints imposed by these two markets that creates the special challenge of managing the professional service firm [105].

Consulting engineering, more than most other professional services, furthermore combines elements of professional practice and business. For example, giving engineering assistance and advice to a client, designing a project, and performing a wide range of other services for clients are professional acts. It is, however, equally true that an organisation that seeks a profit as it handles millions of Rands a year and employs hundreds or thousands of people is a business. Success in the management of consulting engineering firms therefore does not only require the ability to balance the demands and constraints imposed by the above-mentioned two (output and input) markets, but also the ability to strike the correct balance between sound business management principles and professional attitudes [206, 106].



1.5 The South African business environment in the year 2001

As part of the global economy, the owners and managers of South African consulting engineering firms have to deal with the characteristic unpredictable environmental turbulence of the modern business world. Over and above this, however, they are also exposed to environmental change factors that are unique to the South African business environment. These unique local factors have their origin in the combination of environmental characteristics resulting from the transitional nature of South African society and the vulnerability of an emerging market economy.

The South African political transition of the early nineties has naturally resulted in major national policy shifts. The resultant re-engineering of government functions and priorities has been an ongoing, often unpredictable, and sometimes poorly managed process. The process sometimes impacts negatively on private sector businesses, particularly those with a high level of dependency on government expenditure and those that are very vulnerable to the steadily mounting impact of new legislation, regulations, taxes and levies. It is therefore not surprising that the Civil Engineering Advisory Council (CEAC) reported in its Annual Report 2000 that "the construction industry had experienced the worst economic conditions in its history" and that (civil) consulting engineers "are in a crisis" [26]. It should however be stated that the South African government is dealing with macro economic fundamentals in an extremely responsible way and is taking tough decisions, which will lay a foundation for long-term prosperity for all of South Africa's citizens.

The challenge for privately-owned firms, such as consulting engineering practices, is to improve their understanding of the environmental characteristics and the effects of the short term economic storms on their industry and businesses and thereby to improve management's ability to do effective and efficient strategic management. It is in the national interest to ensure that a major national asset, the South African technological knowledge manpower resource, is kept intact to play its key role in the future growth and development of the Southern African region.

1.6 Objectives and format of this thesis

The primary objectives of this thesis were:

- to investigate the impact on the South African consulting engineering industry of recent business environmental changes in order to improve understanding of their external business environment
- and
- to develop a practical and relevant industry-wide strategic management information system (SMIS) for the South African consulting engineering industry.

This SMIS had to be able to provide South African consulting engineers with:

- an improved understanding of the business environment in which they operate
- and
- some advance warning of new trends, thereby extending strategic planning horizons of management and owners of firms.

The format of this thesis is as follows:

- Chapter 2 is a review of the history and nature of consulting engineering in South Africa with the specific objective of providing the reader with an understanding of the nature of the business of consulting engineering in this country.
- Chapter 3 evaluates the impact of changes in the macro external business environment on the strategic and operational management of consulting engineering firms.

- Chapter 4 continues with an evaluation of the impact of changes in the external operating environment on the strategic and operational management of consulting engineering firms, but with special emphasis on the task and industry environments.
- Various applications of management information systems (MIS's) in the management of professional service firms are discussed in Chapter 5.
- Chapter 6 details some of the advantages that an industry-specific strategic management information system will have for South African consulting engineering firms, thereby motivating the need for such a system. The chapter ends with a discussion on the most desired characteristics that a suitable system should have.
- Chapter 7 is an overview of the research methodology followed in developing a suitable industry-wide strategic management information system for South African consulting engineers.
- Chapter 8 discusses the collection of secondary data, which includes the identification and evaluation of readily available relevant economic and other indicators as well as other available statistical information. Specific reference is made to existing comparable industry-wide strategic management information systems (SMIS's).
- The first phase of primary data collection, involving a pilot survey and the first full scale survey, is described in Chapter 9.

- Chapter 10 describes how a number of time series were developed for specific business indicators of activity in and health of the South African consulting engineering industry.
- The primary data collection process, by way of a series of industry-wide surveys, is described in Chapter 11.
- Chapter 12 describes how primary and secondary data was combined to create the industry-wide strategic management information system for South African consulting engineers and presents SMIS output data.
- In Chapter 13 the SMIS is evaluated against the goals and specific criteria set in Chapter 6.
- The closing Chapter, number 14, contains the conclusions of this thesis and recommendations for further research and investigation.

