

**TOWARDS A MANAGEMENT INFORMATION SYSTEM FOR USE IN THE STRATEGIC
MANAGEMENT OF SOUTH AFRICAN CONSULTING ENGINEERING FIRMS**

by

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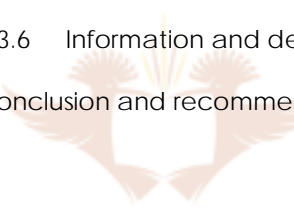
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DEDICATION

To my family who stood by me when the going was tough.

*The consequences of our actions are always so complicated, so diverse,
that predicting the future is a very difficult business indeed...*

Dumbledore in Harry Potter and the Prisoner of Azkaban by JK Rowling
Bloomsbury Publishing, London, 1999.

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My wife Gesie for her support and encouragement

My Lord God who gave me another chance.

T Marshall

ABSTRACT

This study documents the process whereby a practical and relevant industry-wide strategic management information system (SMIS) was developed for the South African consulting engineering industry. The SMIS was designed to provide South African consulting engineers with an improved understanding of the business environment in which they operate and to provide some advance warning of new trends in order to extend the strategic planning horizons of management and owners of consulting engineering firms. This was done against a background of very limited availability of current industry statistics.

A literature survey of available historical or secondary data relating to the South African consulting engineering, building and construction industries was conducted in order to determine the relevance and usefulness of such data for the purposes of developing the SMIS. This survey provided background information on the consulting engineering industry, relevant aspects of the South African business environment and the impact of changes in this environment on the local consulting engineering industry.

The importance and principles of strategic planning and strategic management are discussed, with specific reference to the nature of environmental scanning. The use of management information systems in the business environment is reviewed with specific emphasis on the application of management information systems in consulting engineering enterprises.

The quantitative secondary data collected in the literature survey was used as a benchmark or reference databank to *calibrate* and/ or *evaluate* the accuracy of the information collected through ten regular industry surveys that were conducted to collect statistically representative primary data. The secondary and primary data were used to construct a number of time series for each of three key indicators of the health of the South African

consulting engineering industry, namely employment, salaries and fee income.

The SMIS developed, consists of:

- A system to identify new key issues in the business environment and to decide on issues that no longer require further monitoring,
- a system of industry surveys at fixed intervals, using both quantitative and qualitative survey techniques,
- a system to capture and interpret survey data,
- updating time series for key business indicators with latest survey data, and
- producing reports on the state of the industry, including limited short term forecasts for business conditions.

The SMIS has proved itself useful and provides information to assist strategic management in the South African consulting engineering industry, especially in decision situations regarding large strategic management issues. The system also manages to address the needs of other current and potential users of the system, such as operational managers, industry lobbyists, media liaison and public relations managers, human resources managers, construction contractors etc. The SMIS furthermore complies with all the specific criteria that were set at the commencement of this study, such as confidential handling of source data, affordability and sustainability and, by improving general understanding of the business of consulting engineering in South Africa, contributes to the previously existing knowledge base.