

Copyright is owned by the Author of the thesis. Permission is given for a copy to be downloaded by an individual for the purpose of research and private study only. The thesis may not be reproduced elsewhere without the permission of the Author.

DEVELOPMENT OF A CONCEPTUAL OVERVIEW OF THE
STRATEGIC MANAGEMENT OF INFORMATION TECHNOLOGY AND AN
ENQUIRY INTO
INFORMATION TECHNOLOGY STRATEGY FORMULATION IN PRACTICE

A Research Study
submitted to the Department of Information Systems
in partial fulfilment of the requirements
for the degree of

MASTER OF BUSINESS STUDIES

by

Mike Olson

Research paper numbers 57.499 and 57.498

Massey University, New Zealand

1991

DEVELOPMENT OF A CONCEPTUAL OVERVIEW OF THE
STRATEGIC MANAGEMENT OF INFORMATION TECHNOLOGY AND AN
ENQUIRY INTO
INFORMATION TECHNOLOGY STRATEGY FORMULATION IN PRACTICE

by

Mike Olson, *Dip.Bus.Stud.,Dip.Bus.Admin.,ANZCS*
Massey University, New Zealand - 1991

Research supervised by Mr D John Monin,
and advised by Dr Peter J Mellalieu.

ABSTRACT

Strategy is not a new term, the word has been in use as far back in the history of man to whenever conflict between man has been evident. Today, the battleground is the business environment and the conflict has arisen through the desire to prosper (for some the need to survive) in a highly competitive and increasingly dynamic situation.

Business leaders, academic theorists and researchers in general are now directing a large proportion of their skills and resources

toward the topic of strategic management. Their efforts over just a short period (20 or so years), have produced a wide range and variety of approaches, concepts and practical conclusions rapidly increasing in both quantity and scope.

This research study tackles the entire subject of strategic management, but in particular it goes beyond traditional boundaries to investigate the equally dynamic and high profile topic of strategic information technology (IT) management and presents both fields within the "strategic management" umbrella.

There can be no conclusive result or definitive statement when dealing with an outlook as broad as this. The real benefit and intention for the study is one of education and enlightenment on the history and evolution of strategic management and its effect and influence upon IT management, to its current state of the art. This is presented as a conceptual overview as the result of a review of the literature concerning both corporate and information technology management issues.

As a balancing element the study investigates from the New Zealand perspective, the impact and level of penetration that strategic management has achieved within large and successful organisations, which again focuses upon the management of information as a strategic resource.

Results from 55 respondents to the study's survey questionnaire show that only eight companies (15%) do not have either an IT or a corporate strategic plan, and that conversely 26 (just under half) do have strategic plans within both corporate and IT realms. This reveals that 47, or an overwhelming majority of 85% of those that responded to the questionnaire, are currently involved in the preparation of strategic plans whether IT or corporate.

The high level of interest and involvement in strategic management as indicated by the survey is reflected in the multitude of literary works on the subject and the increased attention to the topic evident in the content of new courses offered by tertiary education institutions.

This report will be useful to academics, theorists and practitioners alike and can be utilised as (1) a general annotated bibliography of readily available past literature, (2) a tool for rapidly reviewing how strategic management has evolved, (3) a source of quick reference for trends and significant findings within N.Z. businesses, or (4) where an individual has not yet encroached the subject, a starting point for their appreciation of the topic.

It is my desire that this work contribute in some small way to the consideration by all who read it that information and communication are the essence of our everyday lives, and that therefore the adoption of an holistic approach to each and every means for making information more communicable, more valuable, more accurate, more relevant and appropriate, and more easily and effectively communicated whether through the use of technology or not, is both a logical and a most desirable proposition.

A handwritten signature in black ink, consisting of stylized, overlapping letters that appear to be 'J. H. Q.' followed by a horizontal line extending to the right.

To my partner Roseann and my parents Jeanette and Doug

ACKNOWLEDGEMENTS

First, I would like to express my gratitude to John Monin for the guidance and support he provided throughout my undergraduate and graduate career at Massey University. For this study in particular, he has allowed me to pursue my own path and direction often providing me with more than enough rope with which to hang myself and repeatedly bringing me back on track whenever I have deviated off on my own tangent. For this I am most grateful.

I would also like to express my gratitude to Doctor Peter Mellalieu who, through two courses on strategic management provided me with copious material and insight with which to balance the information technology focus of this work.

I have a special word of appreciation for both my partner Roseann and for my mother. Their combined encouragement and coercion enabled me to persevere whenever hurdles or distractions threatened this work.

Finally, I would like to thank Karen Rusbridge and my brothers Trent and Gerald, for their time-saving assistance with data input.

TABLE OF CONTENTS

| | PAGE NO |
|--|---------|
| ABSTRACT | i |
| ACKNOWLEDGEMENTS | vi |
| TABLE OF CONTENTS | vii |
| LIST OF ILLUSTRATIONS | ix |
| Chapter | |
| I. INTRODUCTION | 1 |
| 1 Statement of the problem | 4 |
| 2 Definitions | 6 |
| 2.1 The 1950's to the early 1970's | 11 |
| 2.2 The middle 1970's to the early 1980's | 13 |
| 2.3 The middle 1980's through present day | 15 |
| 3 Research purpose | 18 |
| 4 Methodology, boundaries and limitations | 20 |
| 4.1 Literature research | 22 |
| 4.2 Survey questionnaire | 24 |
| 5 Organisation of the research study | 26 |
| 6 Concluding introductory comments | 27 |
| II. SURVEY OF THE LITERATURE | 30 |
| 1 The 1950's to the early 1970's | 31 |
| 1.1 Corporate management | 33 |
| 1.2 Information systems management | 41 |
| 2 The middle 1970's to the early 1980's | 55 |
| 2.1 Corporate management | 59 |
| 2.2 Information systems management | 78 |
| 3 The middle 1980's through present day | 102 |
| 3.1 Corporate strategic management | 104 |
| 3.2 Strategic management of information technology | 137 |

| | PAGE NO |
|---|---------|
| III. RESEARCH DESIGN | 153 |
| 1 Questionnaire development | 154 |
| 1.1 Selection of firms | 156 |
| 1.2 Question construction, measurement and statistics | 158 |
| 1.2.1 PART 1 - CEO questionnaire | 159 |
| 1.2.2 PART 2 - IT Director questionnaire | 169 |
| 2 Data collection | 183 |
| 2.1 dBase IV computer system development | 186 |
| IV. RESULTS OF THE SURVEY | 191 |
| 1 Analysis of response and respondents' comments | 192 |
| 2 Data analysis | 195 |
| 2.1 PART 1 - CEO questionnaire | 200 |
| 2.2 PART 2 - IT Director questionnaire | 216 |
| 3 Validity and reliability considerations | 238 |
| V. SUMMARY AND CONCLUSION | 240 |
| 1 The survey of the literature | 241 |
| 2 The questionnaire survey | 243 |
| 3 Implications and findings | 244 |
| 3.1 For academics and educational institutions | 245 |
| 3.2 For practitioners and consultants | 248 |
| 4 Recommendations for future research | 248 |
| APPENDIX A Mailout - Letters & Top 200 N.Z. companies list | 251 |
| APPENDIX B Questionnaire - PART 1 & PART 2 | 258 |
| APPENDIX C Database system - Overview and limited documentation | 270 |
| REFERENCES | 291 |

LIST OF ILLUSTRATIONS

| | PAGE NO |
|--|---------|
| [1] Anthony's model: The hierarchy of management decision | 36 |
| [2] Management functions at the various managerial levels | 37 |
| [3] Data processing tasks | 45 |
| [4] Basic model of an information system | 51 |
| [5] Sources of change that affect your market | 63 |
| [6] Five competitive forces driving industry competition | 67 |
| [7] Functions of a competitor intelligence system | 71 |
| [8] The strategic planning process | 74 |
| [9] Resources management environment | 79 |
| [10] Map of CSF procedure at a financial services firm | 81 |
| [11] The information processing mix | 83 |
| [12] Decision-making and uncertainty | 83 |
| [13] How high-level plans can be propagated throughout the organisation | 86 |
| [14] MIS planning matrix | 90 |
| [15] Data has a cost, information a value | 92 |
| [16] The evolution of ideas in systems development | 93 |
| [17] The process of strategy formulation | 94 |
| [18] Steps in a BSP study | 97 |
| [19] Three levels of strategic IT impact | 100 |
| [20] The value system | 107 |
| [21] The generic value chain (showing subdivision) | 109 |
| [22] The process of strategy formulation | 111 |
| [23] Four phases in the evolution of strategic planning | 113 |
| [24] A new logic for production | 118 |
| [25] Paradigmatic complexity | 122 |
| [26] A model of strategic management | 123 |
| [27] A summary model of the elements of strategic management | 125 |
| [28] Steps in environmental analysis | 126 |
| [29] Development strategies | 128 |
| [30] Alternatives open to a manufacturer to develop by related diversification | 129 |
| [31] Strategy implementation: The influence of organisational systems | 130 |
| [32] Patterns of Japanese strategy | 137 |

| | PAGE NO |
|--|---------|
| [33] Strategic opportunities framework | 142 |
| [34] Technology planning environments | 145 |
| [35] Frameworks for analysis | 146 |
| [36] IT strategic planning: A multiple methodology | 147 |
| [37] Information technology permeates the value chain | 148 |
| [38] Database system main menu | 188 |
| [39] Screen layout - Part 1, subsection (B) | 189 |
| [40] Screen layout - Part 1, B) question 7 | 190 |
| [41] Screen layout - Part 2, subsection (A) | 190 |
| [42] Changing perspectives on environmental predictability | 204 |
| [43] The change in attitudes toward IT | 210 |
| [44] The perceived changing requirement for weekly IT services | 218 |
| [45] Trends in methods of control and co-ordination | 224 |