A STUDY OF PERCEPTIONS AND PRACTICES ON KNOWLEDGE MANAGEMENT OF MALAYSIAN SMALL AND MEDIUM-SIZED ENTERPRISES

Yang Kang Yi

A dissertation submitted in partial fulfilment of the requirement for the degree of Master of Information Technology at the Faculty of Computer Science and Information Technology University of Malaya, Kuala Lumpur

2002
Sumber pengetahuan merupakan satu-satunya sumber yang tidak tertakluk kepada prinsip 'pulangan berkurangan' dalam istilah ekonomi. Organisasi dibenamkan oleh data dan informasi yang dihasilkan daripada operasi harian. Akan tetapi, pengetahuan yang relevan tidak semestinya sedia ada untuk penyelesaian masalah yang lebih cepat, dan membuat keputusan yang lebih tepat. Justeru itu, mengurus pengetahuan muncul sebagai satu disiplin kritikal bagi mana-mana organisasi untuk berlanjutan dan maju jaya.

Pada umumnya, penyelidikan tentang pengurusan pengetahuan (knowledge management) pada syarikat Malaysia, atau tentang syarikat kecil dan sederhana (SMEs) pada khususnya, masih berada di peringkat permulaan. Pengurusan pengetahuan tentunya telah dibangunkan dan dipelopori oleh organisasi-organisasi besar di mana perniagaan mereka dipelbagaikan di seluruh dunia. SMEs tidak sepatutnya ketinggalan belakang dalam usaha menuil (leverage) modal intelektual, lebih-lebih lagi dalam sekitaran perniagaan yang persaingan keterlaluan dan peraturan yang berubah-ubah dalam ekonomi pengetahuan.

Kertas ilmiah ini bertujuan untuk mengkaji persepsi dan amalan dalam pengurusan pengetahuan. ia berdasarkan satu penyelidikan tentang 26 buah SMEs di Malaysia yang telah menangi anugerah Enterprise 50 dalam tahun 2000 dan 2001.

Di samping itu, kertas ini juga meninjau infrastruktur yang sedia ada di syarikat yang menyertai penyelidikan dalam aktiviti menyimpan, menjamin dan memindah pelbagai pengetahuan. Bagaimanakah mereka dapat menggunakan teknologi maklumat untuk memudahkan penyatuan pengalaman dan pengetahuan, dan juga menggalakkan budaya
korporat yang bekerjasama menjadi satu topic yang mustahak. Walau bagaimanapun, peranan asas informasi maklumat ialah menjaringkan pengetahuan yang nyata (explicit knowledge) dan menjalankan manusia dalam perubahan paradigma ini. Akan tetapi, cuma teknologi maklumat adalah tidak mencukupi. Unsur-unsur seperti manusia, budaya dan proses juga penting untuk menjayakan sesuatu program pengurusan pengetahuan. Selain merumuskan dapatan utama daripada penyelidikan, satu model awalan dicadangkan agar pelaksanaan pengurusan pengetahuan bersesuaian dengan keupayaan dan kewangan SMEs di Malaysia.
ABSTRACT IN ENGLISH

Knowledge nowadays is the only resource that does not subject to ‘diminishing returns’ in economic terms. Organizations are immersed by data and information in daily operations, yet relevant knowledge for faster problem solving and better decision making is not always available as expected. Managing knowledge is therefore emerging as a critical discipline to sustain and prosper for any organization.

Research of knowledge management (KM) on Malaysian companies in general, small and medium-sized enterprises (SMEs) in particular, is still at infant stage. KM of course has been mainly developed and pioneered by large organisations which are business diversified and geographically dispersed. Coupled with the hypercompetitive business environment and changing rules of game in the knowledge economy, SMEs should by no means be lagging behind of leveraging their intellectual capital.

Based on a survey on 26 Malaysian SMEs, that have won the Enterprise 50 award (for 2000 and 2001), this paper aims to study their perceptions and practices on KM. These outstanding Malaysian companies that are not listed in Kuala Lumpur Stock Exchange could be the barometer of general awareness, readiness and current adoption of KM for the same establishments in this country.

This paper also focuses the existing infrastructure of information technology (IT) in storing, securing and transferring various knowledge types in the participating companies. How effectively are they deploying IT to facilitate the fusion of experience and knowledge,
and promote a collaborative corporate culture is imperative. After all, capturing (explicit knowledge) and communicating (people) are the prime roles for IT to play in this paradigm shift. IT alone is not enough. Other elements such as people, culture and process are equally important to deliver promising KM programme. Besides concluding major findings of the survey, a rudimentary model which is believed suitable to Malaysian SMEs’ financial capacity and organizational setting, is proposed for local KM initiatives.
ACKNOWLEDGEMENTS

This study would never have been possible without the guidance, assistance and moral support of many people. First I would like to thank Encik Ali Fauzi Ahmad Khan, supervisor of this study, for his challenging benchmarks and demanding standard on quality of works. Only with these high expectations, one has to stretch his capability to the limits. His attention to details also has fine-tune the final look of this paper. In addition, I would like to thank the valuable collection of UM Library that has provided many insightful reading materials for literature review.

I am also grateful to the assistance rendered by Small and Medium Industries Development Corporation (SMIDEC) that has helped me to further understand the significance and contributions of SMEs. And I am indebted to many intellectual predecessors who have shared their research findings, insights and experience on knowledge management or related areas.

Finally, I would like to thank my parents for their supports. Their voiceless encouragements in action can make me speechless in appreciation.
# TABLE OF CONTENTS

Abstract in Malay ................................................................. ii  
Abstract in English .............................................................. iv  
Acknowledgements ........................................................................ vi  
Table of Contents ................................................................. vii  
List of Tables ............................................................................. x  
List of Figures ........................................................................... xi  

CHAPTER 1 ...................................................................................... 1  
INTRODUCTION ............................................................................ 1  
1.1 BACKGROUND ........................................................................ 1  
1.2 CONTEXT OF STUDY .......................................................... 4  
1.3 NEED AND IMPORTANCE OF THE STUDY ........................... 5  
1.4 OBJECTIVES OF THE STUDY ............................................. 5  
1.5 RESEARCH PROBLEMS ...................................................... 6  
1.6 SURVEY QUESTIONNAIRE AND HYPOTHESES ............... 6  
1.7 ASSUMPTIONS ....................................................................... 7  
1.8 METHODOLOGY ..................................................................... 8  
1.9 LIMITATIONS ....................................................................... 8  

CHAPTER 2 .................................................................................... 10  
LITERATURE REVIEW ............................................................ 10  
2.1 INTRODUCTION ................................................................. 10  
2.2 KNOWLEDGE ECONOMY: GLOBAL PERSPECTIVE AND LOCAL REALITY .................................................. 10  
2.3 KNOWLEDGE SOCIETY: RECOGNIZING AND APPRECIATING KNOWLEDGE ......................................................... 12  
2.4 KNOWLEDGE WORKERS: THE POWERFUL WORKFORCE ................................................................. 13  
2.5 KNOWLEDGE-CREATING COMPANY ................................ 14  
2.6 KNOWLEDGE HIERARCHY: DATA, INFORMATION AND KNOWLEDGE ......................................................... 15  
2.7 INTELLECTUAL CAPITAL: TYPES OF HIDDEN BRAINPOWER .................................................................................................................. 18  
2.8 INTELLECTUAL CAPITAL MANAGEMENT ........................... 22  
2.9 KNOWLEDGE MANAGEMENT: ITS ELEMENTS AND COMPOSITION ................................................................. 25  

CHAPTER 3 .................................................................................... 27  
MALAYSIAN SMALL AND MEDIUM ENTERPRISES (SMES) .............. 27  
3.1 DEFINITION .......................................................................... 27  
3.2 AN OVERVIEW OF SMES IN MALAYSIA ............................ 28  
3.3 THE SIGNIFICANCE OF THE COMPANIES OF ENTERPRISE 50 ................................................................. 30  

CHAPTER 4 THE SAMPLE: WINNERS OF THE ENTERPRISE 50 AWARD ................................................................. 32  
4.1 PURPOSEFUL SAMPLING ..................................................... 32  
4.2 DATA ANALYSIS AND PRESENTATION .............................. 34  

vii
CHAPTER 5
RESULTS AND DISCUSSION OF DATA ANALYSIS

5.1 INTRODUCTION .................................................................................................................. 36
5.2 DESCRIPTIVE STATISTICS ............................................................................................... 36
5.2.1 Perception on Knowledge Management ........................................................................ 36
5.2.1.1 General Perception on Knowledge Management .................................................. 36
5.2.1.2 Elements of Knowledge ......................................................................................... 38
5.2.1.3 Focus of Knowledge Management ......................................................................... 39
5.2.1.4 Organizational Perception on Knowledge Management ....................................... 41
5.2.1.5 Sources of Costly Errors or Reasons for Missed Opportunities ......................... 43
5.2.1.6 Benefits of Implementing Knowledge Management ........................................... 44
5.2.2 IT Infrastructure .......................................................................................................... 46
5.2.2.1 Existing Infrastructure of Information Technology .................................................. 46
5.2.2.2 Technology Facilitates Learning Transfer and Dialogue ...................................... 50
5.2.2.3 Driver for the Technology ..................................................................................... 51
5.2.3 People and knowledge worker ..................................................................................... 52
5.2.3.1 Effects of A Key Employee Leaving the Organization ......................................... 53
5.2.3.2 Employees are Becoming Knowledge Workers ..................................................... 54
5.2.3.3 Knowledge Workers and Position Levels ............................................................. 55
5.2.3.4 Managing Knowledge Working ............................................................................. 56
5.2.4 Knowledge sharing ....................................................................................................... 57
5.2.4.1 Regular Knowledge Sharing .................................................................................. 58
5.2.4.2 Dialogue is Encouraged ......................................................................................... 59
5.2.4.3 Knowledge Sharing Facilitation ........................................................................... 60
5.2.4.4 Levels of Practice of Knowledge Sharing .............................................................. 61
5.2.4.5 Obstacles of Knowledge Sharing .......................................................................... 64
5.2.5 Storage of Knowledge Component ............................................................................. 66
5.2.5.1 Storage of Knowledge Component ...................................................................... 66
5.2.5.2 Prime Responsibility for Capturing Knowledge ..................................................... 67
5.2.5.3 Knowledge Storing ............................................................................................... 68
5.2.6 Formal Initiative of Knowledge Management ............................................................... 70
5.2.6.1 Existing Knowledge Management Initiative .......................................................... 70
5.2.6.2 Barriers for Implementing Knowledge Management ............................................ 71
5.2.6.3 Pioneer of Knowledge Management Initiative ...................................................... 72
5.2.6.4 Source of Knowledge Management Initiative ...................................................... 73
5.2.6.5 Current Phases of KM Initiative ......................................................................... 74
5.2.6.6 Existing and Planned Initiatives ............................................................................. 75
5.3 CORRELATION ANALYSIS ............................................................................................... 77
5.3.1 Perceived Benefits of Knowledge Management ............................................................. 77
5.3.2 Costly Error and Turnover of Key Employees .............................................................. 78

CHAPTER 6
CONCLUSIONS AND RECOMMENDATIONS ........................................................................... 80

6.1 INTRODUCTION .................................................................................................................. 80
6.2 MAJOR FINDINGS ............................................................................................................ 80
6.2.1 On Perceptions of Knowledge Management ................................................................. 80
6.2.1.1 Knowledge Management is well recognized ....................................................... 81
6.2.1.2 People are the Prime Mover ................................................................................. 81
6.2.1.3 The Need for a Knowledge-oriented Company .................................................... 82
6.2.2 On Practices of Knowledge Management ................................................................. 84
6.2.2.1 Readiness of Information Technology ................................................................. 82
6.2.2.2 Practice of Knowledge Sharing ........................................................................... 83
6.2.2.3 Common Characteristics in KM Programme ....................................................... 83
**LIST OF TABLES**

Table 3-1  Distribution of SMEs by Sector 1996 ...........................................-28  
Table 3-2  Distribution of SMEs by State and Industry 1996 .........................-29  
Table 3-3  Principal Statistics of Manufacturing Sector, 1996 .....................-30  
Table 4-1  Locations of Respondents ..........................................................-33  
Table 4-2  Size of Employees of Respondents ..............................................-33  
Table 4-3  Position of Respondents ...............................................................-34  
Table 5-1  What are the benefits for implementing Knowledge Management? ...-45  
Table 5-2  Technological Infrastructure in Your Organization ...................-49  
Table 5-3  Frictions and Possible Solutions of Knowledge Transfer ..............-65  
Table 5-4  What is the method used to store the following type of data in your organization? .................................................................-69  
Table 5-5  Four Phases and Ten Steps in Knowledge Management ...............-74  
Table 5-6  Existing and planned initiatives ..................................................-76  
Table 5-7  Correlations of Benefits of Knowledge Management ..................-77  
Table 5-8  Costly Error and Turnover of Key Employees ............................-79  
Table 6-1  Summary of Major Findings .........................................................-85  
Table 6-2  KM Dream Teams ........................................................................-94  
Table 6-3  Distinctions Between Communities of Practice and other Structures-99
LIST OF FIGURES

Figure 2-1 Knowledge Spiral and Knowledge Creation-------------------------------14
Figure 2-2 Transition of Data, Information and Knowledge-----------------------15
Figure 2-3 Knowledge Hierarchy or Knowledge Pyramid and Meta
   Knowledge-------------------------------------------------------------------17
Figure 2-4 Skandia Market-Value Scheme-----------------------------------------20
Figure 2-5 Value Platform-----------------------------------------------------20
Figure 2-6 Elements of Intellectual Capital-------------------------------------21
Figure 2-7 Skandia IC Navigator------------------------------------------------22
Figure 2-8 Intellectual Capital Management: Model and Matrix-------------------24
Figure 2-9 Elements in Knowledge Management-----------------------------------29
Figure 4-1 Data Analysis-------------------------------------------------------35
Figure 5-1 Which of the following phrases represent your perception of Knowledge
   Management?------------------------------------------------------------------37
Figure 5-2 What are the elements of knowledge within your organization?--------39
Figure 5-3 What do you think should knowledge management focus on?-------------40
Figure 5-4 What is your organization’s perception towards knowledge management?---42
Figure 5-5 What are the sources of costly errors or reasons for missed opportunities?---43
Figure 5-6 Technology Facilitates Learning Transfer and Dialogue---------------51
Figure 5-7 Drivers of Technology------------------------------------------------52
Figure 5-8 Effects of the Leaving of a Key Employee-----------------------------53
Figure 5-9 Employees in your organization are becoming ‘knowledge workers’-----54
Figure 5-10 In your organization, knowledge workers are those who hold the particular
   positions------------------------------------------------------------------55
Figure 5-11 How to manage knowledge workers effectively?----------------------56
Figure 5-12 Your organization facilitates knowledge sharing regularly----------58
Figure 5-13 Dialogue is encouraged and facilitated in your organization-------------59
Figure 5-14 How is Knowledge Sharing Facilitated?-------------------------------61
Figure 5-15 What are the levels of practice of the following knowledge sharing in your
   organization?----------------------------------------------------------------63
Figure 5-16 What are the obstacles of sharing knowledge in your organization?-----64
Figure 5-17 Where is the knowledge captured that for organizational competitiveness?—66
Figure 5-18 Who has prime responsibility for capturing knowledge?—67
Figure 5-19 Is there a formal knowledge management initiative in your organization?—70
Figure 5-20 What are the barriers for implementing knowledge management in your
organization—71
Figure 5-21 The personnel pioneer the knowledge management initiative in your
organisation—72
Figure 5-22 Source of knowledge management initiative—73
Figure 5-23 What is the current phases of knowledge management initiatives?—75
Figure 6-1 Major Findings of Perceptions and Practices on knowledge management—84
Figure 6-2 Practice of Competitive Intelligent—88
Figure 6-3 An Integrative Framework: Factors Influencing Effective Knowledge
Transfer—89
Figure 6-4 Soft and Hard Skills in KM Programme—90
Figure 6-5 A Four-Stage Evolving Puzzle Model: A Knowledge Management Framework
for Malaysian SMEs—95
Figure 6-6 Knowledge Attitude—100
Figure 6-7 Evolving Technology and Knowledge Management over time—102
Figure 6-8 Balanced Scorecard of Knowledge Management with Skandia’s
Measurement—105