



UNIVERSITI PUTRA MALAYSIA

**EFFECTS OF TASK COMPLEXITY, MANAGEMENT SYSTEM AND
INFRASTRUCTURE SUPPORT ON KNOWLEDGE SHARING AND
PERFORMANCE ENHANCEMENT**

MICHELLE PHANG MEE SEONG

GSM 2008 7

**EFFECTS OF TASK COMPLEXITY, MANAGEMENT SYSTEM AND
INFRASTRUCTURE SUPPORT ON KNOWLEDGE SHARING AND
PERFORMANCE ENHANCEMENT**

By

MICHELLE PHANG MEE SEONG

**Thesis Submitted to the Graduate School of Management, Universiti Putra
Malaysia, in Fulfillment of the Requirement for the Degree of Doctor of
Philosophy**

June 2008



DEDICATION

This thesis is dedicated to:

My mother, Madam Loo Yoke Lan - a woman of fine character and whose love and support are immeasurable,

My mentor, Dr. Joe H. Murrey Jr., Professor, University of Mississippi - a man of humanity, who constantly reminds me of the joy of learning and encourages me to do my best and to become all that I can become.

In loving memory of two very important persons in my life:

My beloved sister, Ms. Phang Mee Wah (24th September 1972 - 6th March 1993), who left this world far too soon. I miss you very much,

My good friend, Ms. Woo Chiew Yuen (15th February 1963 - 7th June 2004), whose encouragement and support were vital at the early stage of my doctoral program. I will always remember your friendship and our many nights of burning midnight oil together.

Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfillment
of the requirement for the degree of Doctor of Philosophy

**EFFECTS OF TASK COMPLEXITY, MANAGEMENT SYSTEM AND
INFRASTRUCTURE SUPPORT ON KNOWLEDGE SHARING AND
PERFORMANCE ENHANCEMENT**

By

MICHELLE PHANG MEE SEONG

June 2008

Chairman: Professor Foong Soon Yau, Ph.D.

Faculty: Graduate School of Management

The acceleration of technological change and trade liberalization in the 1990s have significantly intensified market competition and transformed the world economic infrastructure from a resource- and manufacturing-based economy to one in which knowledge and services are the key drivers of economic growth. In order for an organization to capitalize on its knowledge and truly become a learning organization, it must systematically manage and leverage knowledge existing internally and externally to create and sustain its competitive advantage. Numerous empirical studies on knowledge management have examined the relative effectiveness of various enablers, such as organizational structure, technology, culture, managerial system and strategy for knowledge creation and sharing in organizations. While these studies play a critical role in helping us to appreciate the importance of organizational enablers in knowledge management, they have neglected to examine the possible effects of task complexity and management control system (MCS) on the nature and efficacy of knowledge sharing. Similarly, the role of motivation in the domain of knowledge sharing has been overlooked. This study investigates how task complexity, MCS design and infrastructure influence the mode and effectiveness of knowledge sharing

in the accounting profession and the moderating role of an individual's intrinsic motivation on the knowledge sharing process.

One thousand (1,000) copies of structured questionnaires were mailed to the Malaysian Institute of Accountants (MIA)'s members in the Klang Valley in December 2005. Of the 1,000 copies distributed, 120 completed questionnaires were returned to the researcher. After the initial stages of data analysis, follow-up interviews were carried out to obtain further insights to explain the empirical results.

This study reveals that task complexity contributes significantly to knowledge sharing. It also highlights that it is not feasible to limit the professional accountants' duties to repetitive or clearly-defined procedural tasks only. Most of the tasks carried out by professional accountants are unstructured tasks which required professional judgment for task performance. While professional accountants are keen to tap into a knowledge-based system in their quest to seek possible solutions to the tasks performed, they generally hesitate to transform their tacit knowledge into a more comprehensible explicit form. The finding suggests that there may be culture-related factors which inhibit the diffusion of tacit knowledge totally and completely.

The results also confirm that there is a relationship between MCS and knowledge sharing. However, different styles of MCS affect knowledge sharing differently. An interactive control system seems to support and facilitate knowledge sharing among professional accountants. Another finding of this study indicates that infrastructure has a positive effect on knowledge sharing. The results indicate that professional

accountants are more willing to share knowledge within a supportive organizational infrastructure.

This study also shows the significant relationship between knowledge sharing and professional competency. The results underscore the distinctive impact that the internalization mode of knowledge sharing has on professional competency. The finding implies that among the four modes of knowledge sharing, internalization is the most prolific mode of knowledge sharing among professional accountants. In addition, the study also finds that professional competency is strongly associated with firm performance. The results reveal that functional competency is the most important predictor of firm performance, particularly in its non-financial performance.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

**KESAN-KESAN KOMPLEKSITI TUGAS, SISTEM PENGURUSAN DAN
SOKONGAN INFRASTRUKTUR KE ATAS PERKONGSIAN
PENGETAHUAN DAN PENABAHAN NILAI PRESTASI**

Oleh

MICHELLE PHANG MEE SEONG

Jun 2008

Pengurus: Profesor Foong Soon Yau, Ph.D.

Fakulti: Sekolah Pengajian Siswazah Pengurusan

Perubahan teknologi yang pesat dan liberasasi perdagangan dalam tahun 1990an telah mempertingkatkan persaingan pasaran and mengubah infrastruktur ekonomi dunia dari sebuah ekonomi yang berasaskan sumber semula jadi dan pengilangan kepada sebuah ekonomi di mana pengetahuan dan perkhidmatan merupakan peneraju utama perkembangan ekonomi. Jika sesebuah organisasi ingin menggunakan pengetahuan dan mewujudkan sebuah organisasi pembelajaran, organisasi tersebut perlu mengurus dan mengguna pengetahuan yang sediada dalaman dan luaran secara sistematik untuk membentuk dan mengekalkan daya persaingan. Terdapat pelbagai kajian empirik mengenai pengurusan maklumat ke arah keberkesanan relatif beberapa pemboleh-ubah pengurusan, misalnya struktur organisasi, teknologi, budaya, sistem pengurusan dan strategi mengenai pembentukan dan perkongsian pengetahuan dalam organisasi. Walaupun kajian berkenaan memainkan peranan kritikal dalam membantu kita menghargai kepentingan pemboleh-ubah organisasi dalam pengurusan maklumat, namun demikian kesan-kesan kompleksiti tugas dan sistem kawalan pengurusan ke atas perkongsian pengetahuan telah diabaikan. Begitu juga dengan implikasi motivasi dalam perkongsian pengetahuan telah terlepas dari pandangan. Kajian ini memberi

penekanan kepada kompleksiti tugas, infrastruktur dan sistem kawalan pengurusan yang mengawal dimensi perkongsian pengetahuan dan proses kognitif yang melaraskan samada seseorang akan menyumbang kepada perkongsian pengetahuan.

Sejumlah 1,000 borang soalselidik telah dihantar melalui pos kepada ahli-ahli Malaysian Institute of Accountants (MIA) disekitar Kuala Lumpur dan Lembah Kelang pada bulan Disember 2005. Dari 1,000 soalselidik yang diedarkan, 120 responden telah mengembalikan borang-borang soalselidik kepada penyelidik. Ini disusuli dengan temuduga selepas tahap awal analisa data untuk memperolehi maklumat lanjut mengenai keputusan empirik berkenaan.

Kajian ini menunjukkan betapa pentingnya sumbangan kompleksiti tugas ke arah perkongsian maklumat. Ia juga menonjolkan kesukaran untuk menghadkan tanggungjawab akauntan-akauntan professional kepada komponen kompleksiti tugas sahaja. Kebanyakan tugas yang dilakukan oleh akauntan-akauntan profesional melibatkan tahap keraguan yang tertentu yang memerlukan pertimbangan persendirian. Dalam usaha mencari jawapan kepada tugas yang dilakukan, akauntan-akauntan profesional berminat semata-mata untuk mendapatkan maklumat daripada sesuatu sistem berasaskan pengetahuan, tetapi mereka keberatan mengubah pengetahuan 'tacit' mereka kepada suatu bentuk yang senang difahami. Kajian ini mengesyorkan bahawa adalah tidak mungkin untuk menyebarkan pengetahuan 'tacit' seseorang itu secara kesemuanya dan keseluruhannya.

Keputusan yang diperolehi juga mengesahkan bahawa wujudnya hubungan antara sistem kawalan pengurusan dan perkongsian pengetahuan. Pelbagai cara sistem

kawalan pengurusan mempengaruhi perkongsian pengetahuan yang berbeza. Sistem kawalan interaktif seolah-olah menyumbang dan membolehkan perkongsian pengetahuan dikalangan akauntan-akauntan profesional. Keputusan kajian juga mengesyorkan bahawa infrastruktur organisasi mempunyai kesan positif terhadap perkongsian pengetahuan. Keputusan ini mengesahkan bahawa akauntan-akauntan profesional lebih sanggup berkongsi pengetahuan sekiranya terdapat sokongan infrastruktur organisasi yang lebih kukuh.

Kajian ini menandakan bahawa wujudnya hubungan penting antara perkongsian pengetahuan dan kecekapan profesional. Keputusan kajian ini menunjukkan impak yang ketara internalisasi perkongsian pengetahuan ke arah kecekapan profesional. Keputusan ini memberi implikasi bahawa diantara empat kaedah perkongsian pengetahuan, internalisasi merupakan pendekatan yang penting sekali untuk akauntan-akauntan profesional. Tambahan pula, kajian ini juga mengesahkan bahawa kecekapan profesional adalah begitu berkait rapat dengan prestasi sesebuah firma. Keputusan kajian ini juga menunjukkan bahawa kecekapan fungsi adalah ramalan yang paling penting untuk pencapaian firma, terutamanya dari aspek prestasi bukan kewangan.

ACKNOWLEDGEMENTS

This thesis has been made possible by the support provided by many people and institutions. I have learned from those who actively work in the field and benefited greatly from those who have commented on the thesis.

I am deeply grateful to my Supervisory Committee Chairman, Professor Dr. Foong Soon Yau, for her direction of this thesis. I am particularly thankful for her patience. She went way beyond and above the duty of a supervisor in helping me to complete this thesis. I am also greatly enlightened by her invaluable insights, stimulating comments and meticulous approach.

I would also like to thank other Committee Members, Associate Professor Dr. Murali Sambasivan, for demonstrating the startling power of LISREL and renewing my statistical senses, and Professor Dr. Han Chun Kwong, for his constructive criticisms and provoking comments. My special thanks to my academic advisor, Associate Professor Loo Sin Chun, for his invaluable guidance and advice at the early stage of my doctoral program.

Over the past few years, I have had the opportunity to share ideas, experiences and difficulties with many friends and course mates at Universiti Putra Malaysia. They are too many to mention however, I must give thanks especially to Puan Morni Hayati Jaafar Sidik (Universiti Tunku Abdul Rahman), Puan Nahariah Jaffar (Multimedia Universiti), Mr. Nagiah Ramasamy (Sunway University College), Puan Badriyah Minai (Universiti Putra Malaysia), Puan Hashanah Ismail (Universiti Putra Malaysia), Mr. Lau Chee Kwong (Inti University College), Ms. Sia Gioak Faa (Inland Revenue Board), Ms. Grace Lee (HELP University College) and Ms. Lilian Chan (HELP International College of Technology). Thank you for your friendship and exploring this intellectual odyssey together with me. The administrative support of the Graduate School of Management is also gratefully acknowledged.

I would like to thank Dr. Jane Broadbent (University of London) for her encouragement and Dr. Kenneth Merchant (Marshall School of Business), Dr. Jacob Kerry (La Trobe University) and colloquium participants at the 2004 Asia Pacific Interdisciplinary Research in Accounting Conference, Singapore, for their helpful comments and suggestions on an earlier version of this thesis. My gratitude also goes to Dr. Romana Autrey (Harvard Business School) and participants at the 2006 Management Accounting Research Conference, Forth Worth, for many valuable suggestions and discussions. I would also like to thank the participants as well as acknowledge the helpful comments made by two anonymous reviewers on a partial research of this thesis presented at the 2006 International Review of Business Research Conference, Melbourne.

I take great pleasure here and wish to express my sincere appreciation to the contribution of many people at HELP University College who have helped me along this journey. It is not possible to mention them all here, but special thanks go to Mr. Yap Fu Chu (Senior Lecturer in Statistics) for his compassion and encouragement when I almost quit this thesis during hospitalizations, Mr. Soong Mun Wai (Head Librarian) for storming me with many books and related articles, Puan Norzan

Abdullah (Lecturer in Management), Ms. Shenbagakulalvoymozhi Kanagasabapathy (Senior Lecturer in Accounting), Ms. Valerie Loh (Lecturer in Economics) and Mrs. Fang Tan Su Lan (Customer Service) for helping with the mailing of the questionnaires, Mr. Steven Toh Choon Yoong (Lecturer in Accounting) for facilitating the pilot test, as well as my “teh tarik kaki” for delighting me with endless shaggy dog stories and tales. I would also like to thank the management of HELP University College for supporting me throughout this academic journey, in particular Dr. Paul Chan (President) for his encouragement and kindness, Dr. Khong Kim Hoong (Academic Director), Mr. Stephen Wu (Head, Department of Business Studies) and Ms. Khung Ming Yuan (Manager, Department of Business Studies) for being flexible with my teaching schedule, and Dr. Yap Kim Len (Dean, HELP Graduate School) for her friendship and encouragement.

I am thankful to my business associates and professional acquaintances that continually influence my life and work. In particular, I am grateful to Emeritus Professor Dr. Vic Fatseas (Charles Sturt University) and Professor Dr. Joe H. Murrey Jr. (University of Mississippi), who have helped me more than they know. I am also thankful to Professor Dr. Ho Foo Nin (San Francisco State University) for his friendship and invaluable inputs, and Dr. William W. K. Lee (University of Texas, Austin) for his encouragement and support at the early stage of my academic life.

I would like to acknowledge the invaluable cooperation of the respondents and organizations investigated in this thesis, my heartfelt thanks for your time and effort in completing the questionnaires. Ms. Estee Tan (IGB Corporation) and Ms. Ong Wan Chee (RHB Investment) deserve a special mention, for their support and help in the collection of the empirical evidence. The assistance of Ms. Thane Meyyappan and Malaysia Institute of Accountants in providing the mailing list for the survey is also greatly appreciated.

I owe much to Mr. Tan Ai Kok and Mrs. Tan Chan Lai Leng (Universiti Tunku Abdul Rahman) for their spiritual guidance and showing me the true meaning of God’s faithfulness. I am particularly grateful for their affection and watching over me as one of their own children. I also like to thank them for their editorial support for an earlier version of this thesis. Their eyes for detail and their suggestions are invaluable to me.

I am indebted to my parents and my family for their patience and support during the completion of this thesis. It would not be possible without them. In particular, my mother, Madam Loo Yoke Lan, reminds me daily of the great sacrifice, dedication and love of a mother.

Finally, I wish to thank the one dearest to me, my husband C.K. Chan, who continues to astonish me with his patience, resilience and love. I am deeply grateful for the great shoulder and head massages he gave me after I sat in front of the laptop for many hours. I would like to thank him for being very flexible to my time and putting up with the eccentricities of one who aspires to be a researcher. Thank you for inspiring and encouraging me to get to the end of the road of writing this thesis. I could not have done this without you.

I certify that an Examination Committee has met on 9th April 2008 to conduct the final examination of Michelle Phang Mee Seong on her Doctor of Philosophy thesis entitled "Effects of Task Complexity, Management System and Infrastructure Support on Knowledge Sharing and Performance Enhancement" in accordance with Universiti Pertanian Malaysia (Higher Degree) Act 1980 and Universiti Pertanian Malaysia (Higher Degree) Regulations 1981. The Committee recommends that the student be awarded the Doctor of Philosophy.

Members of the Examination Committee were as follows:

Sazali Zainal Abidin, Ph.D.

Associate Professor
Graduate School of Management
Universiti Putra Malaysia
(Chairman)

Marcus O'Connor, Ph.D.

Professor/Pro-Dean
Faculty of Economics and Business
University of Sydney
(External Examiner)

Dato' Daing Nasir Ibrahim, Ph.D.

Director
Advanced Management Centre
Universiti Sains Malaysia
(Internal Examiner)

A. Seetharaman, Ph.D.

Dean
Faculty of Management
Multimedia University
(Internal Examiner)

Foong Soon Yau, Ph.D.

Professor
Graduate School of Management
Universiti Putra Malaysia
(Representative of Supervisory Committee/Observer)



SHAMSHER MOHAMED RAMADILI, Ph.D.

Professor/Deputy Dean
Graduate School of Management
Universiti Putra Malaysia

Date: 26/6/08

This thesis was submitted to the Senate of Universiti Putra Malaysia and has been accepted as fulfillment of the requirement for the degree of Doctor of Philosophy. The members of the Supervisory Committee were as follows:

Foong Soon Yau, Ph.D.

Professor
Graduate School of Management
Universiti Putra Malaysia
(Chairman)

Murali Sambasivan, Ph.D.

Associate Professor
Graduate School of Management
Universiti Putra Malaysia
(Member)

Han Chun Kwong, Ph.D.

Professor
Faculty of Economics and Management
Universiti Putra Malaysia
(Member)



SAMSINAR MD. SIDIN, Ph.D.
Professor/Dean
Graduate School of Management
Universiti Putra Malaysia

Date: 10/7/08

DECLARATION

I declare that the thesis is my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously, and is not concurrently, submitted for any other degree at Universiti Putra Malaysia or at any other institution.



MICHELLE PHANG MEE SEONG

Date: 9-9-2008

TABLE OF CONTENTS

	Page
DEDICATION	ii
ABSTRACT	iii
ABSTRAK	vi
ACKNOWLEDGEMENTS	ix
APPROVAL	xi
DECLARATION	xiii
LIST OF TABLES	xviii
LIST OF FIGURES	xx
LIST OF ABBREVIATIONS	xxi
 CHAPTER	
 1 INTRODUCTION	
1.1 Overview	1
1.2 Knowledge-Intensive Organizations	2
1.3 What Does This Mean to the Accounting Profession	4
1.4 Problem Statements	7
1.5 Objectives of Study	11
1.6 Significance of Study	12
 2 LITERATURE REVIEW	
2.1 Knowledge Management	15
2.1.1 What is Knowledge	16
2.1.2 The Nature of Knowledge	18
2.1.3 Knowledge as a Strategic Asset	21
2.1.4 The Management of Knowledge	23
2.1.5 Knowledge Management Frameworks	26
2.1.5.1 Framework of Knowledge Management Pillars	27
2.1.5.2 Framework of Core Capabilities and Knowledge Building Activities	28
2.1.5.3 Framework of American Productivity and Quality Center	29
2.1.5.4 Framework of Knowing Organization	30
2.1.5.5 Framework of Knowledge Management Stages	31
2.1.5.6 Framework of Knowledge Conversions	32
2.1.5.7 Framework of Intellectual Capital	34
2.1.5.8 Framework of Knowledge Transfer	35
2.1.5.9 KPMG's Framework of Knowledge Management Process	36
2.1.5.10 Framework of Intangible Assets	37

	2.1.6	Comparative Analyses of Knowledge Management Frameworks	38
	2.1.7	Other Related Work	44
2.2		Knowledge Management: The Challenge for Accounting Profession and Knowledge-Intensive Organizations	49
2.3		The Contingency Theory	51
2.4		Knowledge Management: The Contingency Approach	54
2.5		Task Complexity	57
2.6		Management Control System	63
2.7		Infrastructure Support	67
	2.7.1	Information and Communication Technology	68
	2.7.2	Reward and Incentive	72
	2.7.3	Management Support	76
2.8		Individual Differences	79
	2.8.1	The Cognitive Perspective	81
	2.8.2	The Perceptual Process	82
	2.8.3	What is Intrinsic Motivation	84
	2.8.4	Self-Determination Theory of Motivation	86
	2.8.5	Locus of Causality	88
	2.8.6	Learning Goal Orientation	91
	2.8.7	Self Efficacy	95
	2.8.8	The Missing Link in Knowledge Sharing`	96
2.9		Professional Competency and Firm Performance	99
2.10		Chapter Summary	106
3		CONCEPTUAL FRAMEWORK AND HYPOTHESES	
	3.1	Development of the Conceptual Framework	108
	3.2	Relationship between Task Complexity and Mode of Knowledge Sharing	115
	3.3	Relationship between Management Control System and Mode of Knowledge Sharing	117
	3.4	Relationship between Infrastructure and Mode of Knowledge Sharing	119
	3.5	Moderating Effect of Intrinsic Motivation	120
	3.6	Effects of Knowledge Sharing	123
	3.7	Chapter Summary	124
4		RESEARCH METHODOLOGY	
	4.1	Sample and Data Collection	127
	4.2	Design of Questionnaire	129
	4.3	Distribution of Questionnaire	131
	4.4	The Questionnaire	131
	4.4.1	Measures for Task Complexity	133
	4.4.2	Measures for Management Control System	135
	4.4.3	Measures for Infrastructure Support	135
	4.4.4	Measures for Intrinsic Motivation	137
	4.4.5	Measures for Knowledge Sharing	138

	4.4.6	Measures for Professional Competency and Firm Performance	139
	4.5	Data Analysis	141
	4.6	Chapter Summary	142
5		RESULTS AND DISCUSSION	
	5.1	Response Rate and Non-Response Bias	144
	5.2	Data Examination	149
	5.2.1	Missing Data	149
	5.2.2	Tests of Normality	149
	5.2.3	Multicollinearity Analysis	151
	5.2.4	Tests of Reliability and Validity	151
	5.3	Descriptive Statistics	159
	5.3.1	Demographic Profile of Respondents	159
	5.3.2	Task Complexity	161
	5.3.3	Management Control System	162
	5.3.4	Infrastructure Support	163
	5.3.5	Intrinsic Motivation	164
	5.3.6	Knowledge Sharing	165
	5.3.7	Professional Competency	166
	5.3.8	Firm Performance	167
	5.4	Regression Analysis	168
	5.4.1	Task Complexity and Mode of Knowledge Sharing	168
	5.4.2	Management Control System and Mode of Knowledge Sharing	173
	5.4.3	Infrastructure and Mode of Knowledge Sharing	175
	5.4.4	Interaction Effect of Intrinsic Motivation	179
	5.4.5	Mode of Knowledge Sharing and Professional Competency	187
	5.4.6	Professional Competency and Firm Performance	191
	5.4.7	Summary of Regression Analyses	195
	5.5	Structural Equation Modeling	202
	5.5.1	Measurement Models	202
	5.5.2	Structural Models	207
	5.5.3	Summary of Structural Equation Modeling	211
	5.6	Discussion	213
	5.6.1	Task Complexity and Mode of Knowledge Sharing	213
	5.6.2	Management Control System and Mode of Knowledge Sharing	219
	5.6.3	Infrastructure and Mode of Knowledge Sharing	222
	5.6.4	Interaction Effect of Intrinsic Motivation	224
	5.6.5	Knowledge Sharing and Performance	227
	5.6.6	Overall Model Assessment	229
	5.6.7	Additional Analyses	234
	5.7	Chapter Summary	240

6	CONCLUSION AND IMPLICATIONS	
6.1	Limitations of the Study	246
6.2	Implications for Practice	248
6.3	Directions for Future Research	250
6.4	Conclusion	251
	REFERENCES	252
	APPENDICES	295
	BIODATA OF STUDENT	313
	LIST OF PUBLICATIONS	314

LIST OF TABLES

	Page
Table 2.1	17
Table 2.2	19
Table 2.3	20
Table 2.4	26
Table 2.5	39
Table 2.6	40
Table 2.7	43
Table 2.8	44
Table 2.9	72
Table 2.10	89
Table 2.11	91
Table 2.12	102
Table 4.1	132
Table 5.1	147
Table 5.2	148
Table 5.3	150
Table 5.4	152
Table 5.5	154
Table 5.6	157
Table 5.7	160
Table 5.8	162
Table 5.9	163
Table 5.10	163
Table 5.11	165
Table 5.12	166
Table 5.13	167
Table 5.14	167
Table 5.15	169
Table 5.16	170
Table 5.17	172
Table 5.18	173
Table 5.19	174
Table 5.20	175
Table 5.21	176
Table 5.22	178

Table 5.23	Results of Regression Analyses of Task Complexity, MCS and Infrastructure on Four Modes of Knowledge Sharing	180
Table 5.24	Results of Regression Analyses for Interaction Effect of Intrinsic Motivation	182
Table 5.25	Between-Subjects Factors for Infrastructure Support and Intrinsic Motivation	185
Table 5.26	Tests of Between-Subject Effects for Infrastructure Support and Intrinsic Motivation	185
Table 5.27	Results of Regression Analyses of Infrastructure Support on Externalization Mode of Knowledge Sharing	187
Table 5.28	Correlations between Four Modes of Knowledge Sharing and Professional Competency	188
Table 5.29	Results of Regression Analyses of Four Modes of Knowledge Sharing on Professional Competency	189
Table 5.30	Summary of Regression Results of Four Modes of Knowledge Sharing on Dimensions of Professional Competency	190
Table 5.31	Correlations between Professional Competency and Firm Performance	192
Table 5.32	Results of Regression Analyses of Professional Competency on Firm Performance	193
Table 5.33	Results of Regression Analyses of Dimensions of Professional Competency on Dimensions of Firm Performance	194
Table 5.34	Summary of Regression Results of Task Complexity, MCS and Infrastructure Support on Four Modes of Knowledge Sharing	196
Table 5.35	Summary of Regression Results for Interaction Effect of Intrinsic Motivation	199
Table 5.36	Summary of Regression Results of Four Modes of Knowledge Sharing on Professional Competency	200
Table 5.37	Summary of Regression Results of Professional Competency on Firm Performance	201
Table 5.38	Confirmatory Factor Analysis	203
Table 5.39	Statistical Results for Structural Model	208
Table 5.40	Summary Results for Structural Models	211
Table 5.41	Significance of Individual Path	212
Table 5.42	Regression Results of Infrastructure Support, Knowledge Sharing and Professional Competency on Firm Performance	231
Table 5.43	Regression Results of Management Control System, Knowledge Sharing and Professional Competency on Firm Performance	232
Table 5.44	Regression Results of Task Competency and Knowledge Sharing on Professional Competency	233
Table 5.45	Mean Scores of Four Modes of Knowledge Sharing and Intrinsic Motivation	236
Table 5.46	ANOVA Analysis for Intrinsic Motivation and Job Position	237
Table 5.47	ANOVA Analysis for Intrinsic Motivation and Monthly Income	237
Table 5.48	Tukey HSD for Intrinsic Motivation and Job Position	238
Table 5.49	Tukey HSD for Intrinsic Motivation and Monthly Income	239

LIST OF FIGURES

	Page
Figure 1.1 Information Processing Cycle	8
Figure 2.1 Framework of Knowledge Management Pillars	27
Figure 2.2 Framework of Core Capabilities and Knowledge Building Activities	28
Figure 2.3 Framework of APQC	29
Figure 2.4 Framework of Knowing Organization	30
Figure 2.5 Framework of Knowledge Management Stages	31
Figure 2.6 Framework of Knowledge Conversions	32
Figure 2.7 Framework of Intellectual Capital	34
Figure 2.8 Framework of Knowledge Transfer	35
Figure 2.9 KPMG's Framework of Knowledge Management Process	36
Figure 2.10 Framework of Intangible Assets	37
Figure 2.11 Knowledge Management Model	45
Figure 2.12 Modified Knowledge Management Model	45
Figure 2.13 The Skandia Model	46
Figure 2.14 GWU Knowledge Management Model	47
Figure 2.15 The Building Blocks of Knowledge Management	48
Figure 2.16 The HP CI Japan's SECI Model	49
Figure 2.17 Relationship between Contextual Factors, Knowledge Management and Performance	55
Figure 2.18 The Knowledge Sharing Model	56
Figure 2.19 Perceptions as Information Processing	83
Figure 2.20 Factors Affecting An Individual's Perceptual Set	84
Figure 3.1 Conceptual Framework	109
Figure 5.1 Interaction Effect between Infrastructure Support and Intrinsic Motivation	186
Figure 5.2 Measurement Model of Task Complexity	203
Figure 5.3 Measurement Model of Management Control System	204
Figure 5.4 Measurement Model of Infrastructure Support	204
Figure 5.5 Measurement Model of Intrinsic Motivation	205
Figure 5.6 Measurement Model of Knowledge Sharing	205
Figure 5.7 Measurement Model of Professional Competency	206
Figure 5.8 Measurement Model of Firm Performance	206
Figure 5.9 Theoretical Model	208
Figure 5.10 1 st Revised Model	209
Figure 5.11 2 nd Revised Model	209
Figure 5.12 3 rd Revised Model (The Emergent Model)	210
Figure 5.13 Model with Interaction Effect	210

LIST OF ABBREVIATIONS

AICPA	American Institute of Certified Public Accountants
APQC	American Productivity and Quality Center
CIMA	Chartered Institute of Management Accountants
GWU	George Washington University
HP CI	Hewlett Packard Consulting Integration
ICT	Information and Communication Technology
IFAC	International Federation of Accountants
LISREL	Linear Structural Relations
MCS	Management Control System
MIA	Malaysian Institute of Accountants
PAAB	Public Accountants' and Auditors' Board
ROA	Return on Assets
ROI	Return on Investment
ROS	Return on Sales
SDT	Self-Determination Theory
SECI	Socialization, Externalization, Combination, Internalization
SOP	Standard Operating Procedure
SPSS	Statistical Package for the Social Sciences

CHAPTER 1

INTRODUCTION

1.1 Overview

Researchers in the field of strategic management have long been preoccupied with the phenomenon of sustainable competitive advantage (Barney, 1991, 2001; Porter, 1985; Rumelt et al., 1994). Various theoretical frameworks and perspectives have been developed to explain the nature and causes of sustainable competitive advantage. The traditional industry analysis approach emphasizes industry structure and market position as being essential to the strategic success of organizations (Porter, 1980, 1985). The resource-based view points to unique resource, core competence and dynamic capability as fundamental sources of sustainable competitive advantage (Barney, 1991, 2001; Prahalad and Hamel, 1990; Teece et al., 1997; Wernerfelt, 1984). On the other hand, the knowledge-based view articulates that a knowledge-based organization with a dynamic process of creating, acquiring and transferring knowledge is the key to sustainable competitive advantage (Nonaka, 1991, 1994; Nonaka and Konno, 1998; Senge, 1990).

Many studies echo the importance of knowledge as a source of sustainable competitive advantage (Grant, 1996b; Hitt et al., 2000; Kogut and Zander, 1992; Nonaka, 1994; Nonaka and Takeuchi, 2004). According to these studies, knowledge is 'the' resource of the future. It is considered to be the most prominent resource of an organization in terms of its contribution to value creation and innovation. In order for an organization to capitalize on its knowledge, it must begin to systematically manage and leverage knowledge existing internally and externally to create and sustain its

competitive advantage. Consequently, the new challenge for organizations is to continuously improve the processes by which knowledge is generated, accumulated, communicated and used (Jordan and Jones, 1997; Quintas et al., 1997; Steinmueller, 2002). So therefore, in the knowledge paradigm, what are the implications for those who provide information or knowledge services?

1.2 Knowledge-Intensive Organizations

Over the decades, many organizations go on the blink due to their inability to adapt and to respond quickly enough to an environment of accelerating change. To survive, many organizations begin to search for new ways of creating profit and market share. It is strongly believed that knowledge management is one of the most appropriate strategies for surviving this hostile environment. This new perspective has led to the development of knowledge-intensive organizations.

In the literature of knowledge management, knowledge-intensive organizations have been defined as:

“... firms that provide intangible solutions to customer problems by using mainly the knowledge of their individuals...” (Ditillo, 2004, p.401)

“...firms where most work is said to be of an intellectual nature and where well educated, qualified employees form the major part of the work force...” (Alvensson, 2001, p.863)

“..... those with formal education and experience equivalent to a doctoral degree... are at least one-third of the personnel...” (Starbuck, 1992, p.719)

“... have only the expertise of their staff as assets with which to trade... for they sell a capacity to produce, rather than a product...” (Winch and Schneider, 1993, p.923)

Based on the above statements, what makes knowledge-intensive organizations so different from other organizations is their complete reliance on the expertise, insight and experience of their employees. In addition, these organizations put considerable emphasis on customer relations, employee network architectures, and creativity for problem solutions.

Another aspect that differentiates knowledge-intensive organizations from other organizations is the nature of their products or services. In organizations that actually produce products (e.g. pharmaceutical, software programming, system designing), the production processes are non-standardized, highly team based and mainly project-focused. Alternatively, in organizations that deliver professional services (e.g. accounting, management consulting, and legal advice), they are selling the know-how or expertise of their employees. The focus is on providing differentiated solutions to their customers. They are less capital-intensive than organizations in the manufacturing industries and more learning intensive than organizations in other service industries (Nurmi, 1998). Not surprisingly, in organizations that are highly knowledge-intensive, the only meaningful asset is their highly talented employees.

Thus, many studies on knowledge-intensive organizations have focused on building organizational culture and structure within organizations to attract and motivate their experts. For example, Winch and Schneider (1993) scrutinize the strategic management issues and Starbuck (1993) examines the elements of exceptional success. Other studies also address the processes of learning and knowledge renewal (Bernandi and Warglien, 1989; Ekstedt, 1989; Startbuck, 1992) and social identity