

University of Wollongong Thesis Collections

University of Wollongong Thesis Collection

University of Wollongong

Year 2006

Standardization and Adaptation of
Knowledge Processes in International
Businesses

Zhiyi Ang
University of Wollongong

Ang, Zhiyi, Standardization and adaptation of knowledge processes in international businesses, MMgmt thesis, School of Management and Marketing, University of Wollongong, 2006. <http://ro.uow.edu.au/theses/573>

This paper is posted at Research Online.
<http://ro.uow.edu.au/theses/573>

NOTE

This online version of the thesis may have different page formatting and pagination from the paper copy held in the University of Wollongong Library.

UNIVERSITY OF WOLLONGONG

COPYRIGHT WARNING

You may print or download ONE copy of this document for the purpose of your own research or study. The University does not authorise you to copy, communicate or otherwise make available electronically to any other person any copyright material contained on this site. You are reminded of the following:

Copyright owners are entitled to take legal action against persons who infringe their copyright. A reproduction of material that is protected by copyright may be a copyright infringement. A court may impose penalties and award damages in relation to offences and infringements relating to copyright material. Higher penalties may apply, and higher damages may be awarded, for offences and infringements involving the conversion of material into digital or electronic form.

Standardization and Adaptation of Knowledge Processes in International Businesses

A thesis submitted in partial fulfillment of the requirements for the award of the degree
Master of Management (Research)

From

University of Wollongong
School of Management and Marketing

By

Zhiyi Ang

Bachelor of Business (Honours)
Master of International Business

Certification

I, Zhiyi Ang, declare that this thesis, submitted in partial fulfillment of the requirements for the award of Master of Management (Research), in the department of Management, University of Wollongong, is wholly my own work unless otherwise referenced or acknowledge. The document has not been submitted for qualifications in any other academic institution

Zhiyi Ang
March 2006

Acknowledgements:

I would like to thank my supervisor Dr Peter Massingham for his supervision and advice. I have certainly learnt a lot of things and have gained a lot of experience from his supervision and guidance. Thank you.

I would like to thank my parents for giving me the financial support to pursue this research degree in the University of Wollongong. Due to various reasons and the lack of opportunities, I am unable to continue and study for my PhD. I would hope to do so in the future.

Zhiyi Ang
vegazhiyi@gmail.com

Abstract

There is an ongoing debate on whether standardization or adaptation is more appropriate in international business. Knowledge Management is a relatively new discipline compared to other disciplines. In other disciplines such as strategy, marketing and human resource management there are well-developed theories on standardization and adaptation. This means that forces for standardization and adaptation were well developed in these disciplines.

In the current literature for knowledge management, most of them had concentrated on factors affecting knowledge management. Most of the current literature appears to ignore the effects of differences in countries. There are arguments on both sides on whether standardization or adaptation is more appropriate for international knowledge management. From the current literature there are four types of outcomes that can occur from international knowledge management which are appropriate standardization, appropriate adaptation, inappropriate standardization and inappropriate adaptation. However there is a lack of research and study on factors affecting the standardization and adaptation of international knowledge management. There is also lack of research on differences between the firms with the four different types of standardization and adaptation outcomes.

Much of the arguments about adaptation in international knowledge management had focused on cross-cultural knowledge management, which focused on the effects of national culture on knowledge management. There is also a substantial amount of research on factors affecting knowledge creation and knowledge transfer. Thus this research is also interested in finding out how differences in national culture could affect the knowledge creation and the knowledge transfer process. It is also interested in finding out how differences in national culture would affect factors that are important for knowledge creation and knowledge transfer.

For methodology this research has chosen to use a case study approach. Although both qualitative and quantitative questions were used in the survey, greater emphasis has been placed on using a qualitative approach. Thirty-one respondents were used in this research and they consist of respondents from various countries. Theoretical

sampling was used and only firms with an overseas subsidiary were selected. The responses were gathered by a variety of means which includes interviews from phones, emails, interview in person.

Some of the findings for this research include the following:

- 1) Forces for standardization include Global Strategy, centralized organization structure, organization culture and creative chaos, standardized approach towards international business, pressure for cost reduction, risk reduction, Industry of the organization, knowledge management is a new idea, minimal differences in national culture and national culture of headquarters.
- 2) Forces for adaptation include Transnational or Multidomestic strategy, decentralized organization structure, adapted approach towards international business and differences in national culture.
- 3) Differences in national culture have different effects on the knowledge creation process and the knowledge transfer process. Differences in national culture have the greatest effect on the knowledge creation process, Step 1: Sharing Tacit Knowledge. For the knowledge transfer process, differences in national culture had the greatest effect on Step 2: Implementation.
- 4) Some of the differences between the four different outcomes from standardization and adaptation are likely to be caused by differences in national culture and the firm's level of adaptation for the knowledge creation and knowledge transfer process.
- 5) Differences in national culture had an effect on factors affecting knowledge creation which are Care, managing conversations and job rotation. Job Rotation and the management of expatriates had an effect on the factors that are important for knowledge transfer. Some of the factors affecting knowledge transfer that are affected by differences in national culture include leadership, human resource management practices, absorptive capacity, source transfer capacity and desirability of Knowledge.

Publication from the Research

The following papers and publications have been produced from the research reported in this thesis.

Ang, Z.Y. and Massingham, P. (2005). Factors affecting the Standardisation and Adaptation of Knowledge Management Practices, *9th Annual Waikato Management School, Student Research Conference*.

Ang, Z.Y. and Massingham, P. (2005), The Impact of National Culture on the Standardisation versus Adaptation of Knowledge Management, *Australia and New Zealand Academy of Management Conference*.

Ang, Z.Y. and Massingham, P. (2005). National Culture and the Standardisation versus adaptation of Knowledge Management, *Journal of Knowledge Management*, (Accepted for publication, date to be decided).

TABLE OF CONTENTS

Certification	ii
Acknowledgements	iii
Abstract	iv
Publications from the research	vi
1 Introduction	1
2 Literature Review	6
2.1 Introduction	6
2.2 Knowledge Management	7
2.2.1 Definition of key terms	7
2.2.2 Knowledge Management Process	9
2.2.3 Knowledge Creation	12
2.2.3.1 Summary of key factors that would influence knowledge Creation	17
2.2.4 Knowledge Transfer	26
2.2.4.1 Summary of factors affecting knowledge Transfer	28
2.3 Literature on adaptation and standardization in other areas	38
2.3.1 Adaptation versus Standardization in International Business	38
2.3.2 Frameworks and dimensions of National Culture	41
2.3.3 Cross-cultural Management	44
2.3.4 Effects of national culture on other areas	46
2.4 Knowledge Management and National Culture	51
2.4.1 Knowledge Management and Expatriation	51
2.4.2 Conceptual frameworks and models related to Cross-Cultural Knowledge Management	52
2.4.3 Knowledge Transfer to specific national cultures	56
2.4.4 Comparison of Knowledge Management practices between national cultures	57
2.5 Gap in the Knowledge Management Literature	59
2.5.1 Arguments for Standardization of Knowledge Management in an International Context	59
2.5.2 Arguments for Adaptation of Knowledge Management in an International Context	61
2.5.3 Outcomes of knowledge Management from standardization and Adaptation	62
3 Conceptual Framework for International Knowledge Management	65
3.1 Conceptual Model	68
3.2 Formulation of research questions	71
4 Research Methodologies	74
4.1 Introduction	74
4.2 Research Objectives	75
4.3 Steps in the choice of paradigm, design, strategy and collection methods	76
4.4 Research Paradigm	78
4.5 Research Design	80
4.6 Research Strategy	83

4.7 Selection of a Qualitative Approach	86
4.8 Operationalisation	89
4.9 Extraneous Variables	90
4.10 Types of Cross-cultural Management Research	91
4.11 Sampling	93
4.12 Data-Collection Methods	94
4.13 Analysis of Evidence	97
4.14 Validity and Reliability	100
4.15 Time Frame for Research	101
4.16 Ethical Issues in Research	102
4.17 Limitations and possible problems from the research	102
4.18 Formation of the Questionnaire	103
5 Findings and Results	105
5.1 Exploratory and Descriptive Limitations	105
5.2 Survey Response	105
5.3 Comparison of the three approaches towards International Knowledge Management	108
5.4 Factors Influencing International Knowledge Management	111
5.4.1 Response based on Question 3.3	111
5.4.2 Response based on Analysis of Qualitative responses	112
5.4.2.1 Responses related to Standardization	113
5.4.2.1 Responses related to Adaptation	116
5.5 Mixture of Standardization and Adaptation	117
5.6 The Five outcomes of Knowledge Management	118
5.7 Comparison for International Knowledge Creation	120
5.7.1 Effects of National Culture on the five outcomes for International Knowledge Creation	120
5.7.2 Comparison for Standardization and Adaptation for the five outcomes of Knowledge Creation	122
5.7.3. Comparison for Satisfaction with decision to standardize or adapt International Knowledge Creation	123
5.7.4 Effects of Culture on the five steps in the Knowledge Creation process	124
5.7.5 Effects of National culture on factors affecting Knowledge creation	127
5.8 Comparison for International Knowledge Transfer	129
5.8.1 Effects of National Culture on the five outcomes for International Knowledge Transfer	129
5.8.2 Comparison for Standardization and Adaptation for the five outcomes of Knowledge Transfer	130
5.8.3. Comparison for Satisfaction with decision to standardize or adapt International Knowledge Transfer	131
5.8.4 Effects of Culture on the five steps in the Knowledge Transfer process	131
5.8.5 Effects of National culture on factors affecting Knowledge Transfer	134
5.9 Comparison for Indicators of a Learning Organization and satisfaction for the five outcomes of Knowledge Creation and Knowledge Transfer	137

6 Findings and Conclusions	140
6.1 Factors affecting a firm's decision to standardize or adapt their Knowledge Management practices	140
6.1.1 Forces for Standardization	140
6.1.2 Forces for Adaptation	147
6.2 Effects of differences in national culture on the standardization and adaptation of the knowledge creation and knowledge transfer process	148
6.3 Differences in characteristics between the firms with five different outcomes of appropriate standardization, appropriate adaptation, Inappropriate standardization, Inappropriate adaptation and some parts are appropriate	150
6.4 Effects of differences in national culture on factors that is important for Knowledge Creation and Knowledge Transfer	152
6.5 Brief Summary of Findings and Conclusions	155
6.6 Model to explain International Knowledge Management	157
6.7 Recommendations and Implications	160
6.8 Limitations of this research	163
6.9 Future Research Opportunities	163
6.10 Final Thoughts	164

List of Tables and Figures:

Table 2.1: Summary of the Literature Review	6
Figure 2.1: Processes of Knowledge Management	9
Figure 2.2: Four types of Knowledge Conversion	14
Figure 2.3: Four types of Ba	15
Figure 2.4: Four categories of Knowledge Assets	16
Figure 2.5: Leading the Knowledge-creating Process	17
Figure 2.6: The effect of Care on process of knowledge Creation	22
Figure 2.7: An integrative framework: factors influencing effective knowledge transfer	27
Figure 2.8: Factors affecting the MNC's decision to standardize or adapt its strategy	40
Table 2.2: Strategies for managing cultural differences	46
Figure 2.9: Global Strategic Options	46
Figure 2.10: Model of Knowledge Transfer in a Cross-Border Context	53
Figure 2.11: Cross-Border Transfer of Organizational Knowledge Among Four Cultural Patterns	54
Figure 2.12: Extended model of knowledge transfer as translation	55
Table 2.3: Comparison of Japanese-style vs. Western-style organizational Knowledge Creation	58
Figure 2.13: Adaptation and outcomes for Cross-Cultural Knowledge Management	64
Table 3.1: Summary of factors affecting Knowledge Creation and Knowledge Transfer	66
Figure 3.1: Most of the literature on factors affecting Knowledge Creation and Knowledge Transfer	66
Figure 3.2: Theoretical models that believe that national culture has an effect on Knowledge Management	67
Figure 3.3: Flow Chart of research on Adaptation and Standardization of Knowledge Management practices according to Difference in National Culture	68
Figure 3.4: Decision Process map for Standardization and Adaptation of Knowledge Management	69
Figure 3.5: Method for identifying the location of cultural impact (and need for Scale economies) and isolating the adaptation process and sub-process	70
Figure 3.6: National cultural differences and the Standardization and Adaptation decision in International Knowledge Management	71
Table 4.1: Summary of research methodology used for this research	75
Table 4.2: A comparison of the terms used by different authors with regards to research methodology	78
Table 4.3: Main Paradigms in the Social Science	79
Table 4.4: A comparison of Basic Research Designs	81
Figure 4.1: Relationships among Research Designs	83
Table 4.5: Relevant situations for Different Research Strategies	84
Table 4.6: Types of Cross-Cultural Management Studies	92
Table 5.1: Approach towards International Knowledge Management	108
Table 5.2: Main approach towards Strategy (Comparison of Approaches)	109
Table 5.3: Organization's structure	110
Table 5.4: Communication with subsidiaries	110
Table 5.5: Approach towards International Business	111

Table 5.6: Factors influencing International Knowledge Management_____	112
Table 5.7: Approach towards International Knowledge Creation_____	117
Table 5.8: Approach towards International Knowledge Transfer_____	117
Table 5.9: Appropriate and Inappropriate International Knowledge Creation outcomes_____	119
Table 5.10: Appropriate and Inappropriate International Knowledge Transfer outcomes_____	120
Table 5.11: Comparison of the effects of National Culture between the Five Knowledge Creation outcomes_____	120
Table 5.12: Comparison for differences in National Culture in Knowledge Creation _____	165
Table 5.13: Comparison of Knowledge Creation process using Bhaghat et al (2002)'s model_____	121
Table 5.14: Comparison of the degree of standardization and adaptation for The five Knowledge Creation outcomes _____	123
Table 5.15: Comparison for Satisfaction with decision to standardize or Adapt International Knowledge Creation _____	124
Table 5.16: Comparison of the effects of National Culture between the Five Knowledge Transfer outcomes_____	129
Table 5.17: Comparison for differences in National Culture in Knowledge Transfer_____	166
Table 5.18: Comparison of Knowledge Transfer process using Bhaghat et al (2002)'s model_____	129
Table 5.19: Comparison of the degree of standardization and adaptation for The five Knowledge Transfer outcomes_____	130
Table 5.20: Comparison for Satisfaction with decision to standardize or Adapt International Knowledge Transfer_____	131
Table 5.21: Comparison for Indicators of a Learning Organization and Satisfaction for the five outcomes of Knowledge Creation_____	138
Table 5.22: Comparison for Indicators of a Learning Organization and Satisfaction for the five outcomes of Knowledge Transfer_____	138
Figure 6.1: The Environment of MNCs: Classification of Businesses_____	144
Table 6.1: Brief summary of Findings and Conclusions_____	156
Figure 6.2: Model to explain Standardization and Adaptation in International Knowledge Management_____	160

1 Introduction

Background to the research

Knowledge Management is made up of various processes such as creation, modification, use, transfer and disposal (Bergeron 2003, Tiwana 2002, Kikawada and Holthouse 2001). Most of the literature on knowledge management had concentrated on knowledge transfer and knowledge creation. According to Nonaka and Takeuchi (1995), the knowledge creation process is made up of five phases which are the following:

- 1) Sharing tacit knowledge
- 2) Creating concepts
- 3) Justifying concepts
- 4) Building an archetype
- 5) Cross-leveling of knowledge

According to Szulanski (1996), knowledge transfer is a process made up of four steps which are the following:

- 1) Initiation
- 2) Implementation
- 3) Ramp up
- 4) Integration

The current literature in knowledge management suggest that there are factors and barriers that affect knowledge creation and knowledge transfer. If managers are able to obtain these factors or overcome these barriers, they would be able to obtain appropriate knowledge management outcomes. Examples of factors affecting knowledge creation include care (Von Krogh 1998), managing conversations (Von Krogh, Ichijo and Nonaka 2000), “Ba” and Shared Context (Nonaka, Toyama and Konno 2000) and redundancy (Nonaka and Takeuchi 1995). Examples of factors affecting knowledge transfer include source transfer capacity (Martin and Salomon 2003), human resource management practices (Minbaeva 2005) and organizational culture (O’Dell and Grayson Jackson 1999).

One of the requirements for competing in international business is the need to

develop and transfer worldwide innovations internationally. To compete against competitors in the global market, multinational companies (MNC) need to develop the ability to link and leverage knowledge (Barlett and Ghoshal 1997). Knowledge and its transfer can be seen as a basis of competitive advantage (Argote 2000). However, there is a lack of studies on knowledge management in its cross-cultural dimensions. Most of the current literature on knowledge management do not address or consider the effects of differences in national culture with regards to knowledge management and the transfer of knowledge across borders (Holden 2001).

In international business there is an ongoing debate on standardization versus adaptation. Supporters of standardization argue that there are forces for standardization due to a need for economies of scale and that human needs are the same in every country (Levitt 1983, Lemak 1997). Supporters of adaptation argued that based on the Contingency theory there is no one best way to manage and that an organization needs to adapt according to its environment (Lawrence and Lorsch 1967, Thompson 1967, Lemak 1997, Burns and Stalker 1961). The idea of standardization and adaptation has been well developed in other disciplines such as marketing, strategy and human resource management (Beamish, Morrison and Rosenzweig 1997, Dowling, Schuler and Decieri 1999, Yip 1995). However, knowledge management is a relatively new discipline compared to these disciplines.

In most disciplines, national culture is often one of the arguments for adaptation. One common argument posed by supporters of cross-cultural management is that the world is not converging (Adler 2002, Trompenaars 1998, Thomas 2002, Hofstede 1997, Schneider 1998). In addition, theories may not be universal and they may not be applicable in every country or culture (Trompenaars and Hampden-turner 1998, Hofstede 1997, Hofstede 1993, Schneider and Barsoux 1998). National culture was found to have an effect on discipline and studies that are related to knowledge management. This includes innovation (Shane 1992, Shane 1993 and Shane 1995), research and development and technological transfer (Kedia, Keller and Julian 1992, Kedia and Bhagat 1988) and teaching and learning (Hofstede 1986, 1987).

There is limited research on how national culture affects knowledge management. One area of research had been on how firms can use expatriates to transfer knowledge

across borders (Bender 2000, Downes and Aniswe 2000, and Massingham 2004, a). Some authors have tried to develop theoretical frameworks or models for cross-cultural knowledge management. These models consider problems and factors affecting the transfer and management of knowledge across cultures. These studies argued that differences in national culture can have an impact on knowledge management across cultures (Holden 2003, Holden 2004, Bhagat et al 2002, Moller and Svahn 2004, Iles 2004). There are also studies that try to study knowledge transfer into specific countries such as Russia (Husted and Michailova 2002, b, Michailova and Husted 2003) and China (Hutchings 2005, Hutchings and Michailova 2004, Voel and Han 2005).

There are arguments on both sides for standardization and adaptation of international knowledge management. One of the arguments for standardization of international knowledge management include Takeuchi (2001)'s argument that knowledge management might evolve into a universal theory. Research that have tried to prove the effects of national culture on knowledge management have failed to do so (Gupta 2000, Simonin 1999, Jensen and Szulanski 2004, Dana, Korot and Tovstiga 2005). On the other hand, many authors were against the idea of standardization and argued for an adapted approach towards international knowledge management. Most of them cite differences in national culture as one of the arguments for an adapted approach towards international knowledge management (Pauleen 2005, Zhu 2004 and Holden 2001, Glisby and Holden 2003).

From the current literature, it is possible to obtain both appropriate and inappropriate outcomes with a standardized or adapted approach towards international knowledge management. There are four outcomes in international knowledge management which are appropriate standardization, inappropriate standardization, and appropriate adaptation, inappropriate adaptation (Szulanski and Jensen 2004, Holden 2001, Paik and Choi 2005, Javidan et al 2005, Hutchings and Michailova 2004, Hutchings 2005, Michailova and Husted 2003).

Most of the literature had concentrate on factors affecting knowledge management, knowledge creation and knowledge transfer. It is still a relatively new field and discipline compared to other disciplines. In other disciplines such as strategy, marketing and human resource management, there are factors explaining why firms

should standardize or adapt. However, there is a lack of factors in the current literature on how firms should standardize or adapt international knowledge management. Instead of taking a stance on whether standardization or adaptation is superior, the researcher believe that it is possible to obtain appropriate outcomes for both standardization and adaptation, and that understanding factors affecting standardization and adaptation is more important. Thus, based on the literature review the following research questions were formulated:

- 1) What are the factors affecting a firm's decision to standardize or adapt their knowledge management practices?
- 2) How does difference in national culture affect the standardization and adaptation of the knowledge creation and knowledge transfer process?
- 3) What are the differences in characteristics between the firms with the four different outcomes of appropriate standardization, appropriate adaptation, inappropriate standardization and inappropriate adaptation?
- 4) How do differences in national culture affect factors that are important for knowledge creation and knowledge transfer?

There are two groups of audiences for this research. Managers of multinational companies (MNC) who are in charge of knowledge management and the transfer of knowledge across national cultures would be able to use the information to improve their performance. By understanding the factors affecting the standardization and adaptation of international knowledge management, management would be able to make and implement better decisions related to international knowledge management. Researchers in the field of cross-cultural knowledge management would also be interested in the information, since the research questions were formulated based on the gap in the current literature.

Structure of the thesis

This chapter provides some background information on the research. It also provides an overview and summary of some important key points. Chapter two is the literature review. It provides information about knowledge management with a focus on knowledge creation and knowledge transfer. By studying the literature on

standardization and adaptation in other disciplines, it can be seen that knowledge management is a relatively new discipline. The literature review also summarizes and presents information on research that is related to the effects of national culture on knowledge management.

Chapter Three of this thesis is mainly about a conceptual framework. Part of the information in this chapter had been presented in two conferences and in one journal article. This section also attempts to formulate the research questions based on the literature review. Chapter Four of this thesis is about the research methodology that is used in this research. This research uses a qualitative approach, an exploratory approach and a case study. Reasons for using this methodology and the limitations for using such an approach are also presented in this chapter. Chapter Five presents the findings and conclusions. It also presents a model that explains international knowledge management.

2Literature Review

2.1 Introduction

There are four parts in this literature review. The first part is about knowledge management. This includes the knowledge management definitions and the knowledge management processes. In addition, factors affecting the success of knowledge creation and knowledge transfer are also provided. The second part of the literature review is about standardization and adaptation in other areas. This is something which is present in other disciplines, but is absent in the knowledge management literature. There will be information on standardization and adaptation in international business and frameworks of national culture. Due to cultural differences, cross-cultural management is included as well. There is also literature on standardization and adaptation in areas like innovation and teaching which are similar to knowledge management. The third part of the literature review will be on knowledge management and national culture. This section covers the main models by authors who believed that differences in national culture would lead to the development of cross-cultural knowledge management. The fourth section covers the gap in the knowledge management literature. Argument for standardization and arguments for adaptation are presented in this section.

Main Area	Specific areas
2.2 Knowledge Management	-Knowledge Management Processes -Knowledge Creation -Knowledge Transfer
2.3 Literature on Adaptation and Standardization	-Adaptation and standardization in international business -Frameworks and dimensions of national culture -Cross-cultural Management -Effects of national culture on other areas
2.4 Knowledge Management and National culture	-Knowledge Management and Expatriation -Conceptual frameworks and models related to Cross-cultural Knowledge Management -Knowledge transfer to specific national cultures -Comparison of Knowledge Management practices between national cultures
2.5 Gaps in the Knowledge Management Literature	-Arguments for Standardization -Arguments for Adaptation -Outcomes of knowledge Management from Standardization or Adaptation

2.2 Knowledge Management

It is necessary to begin the literature review on knowledge management with a definition of various key terms in the knowledge management literature.

2.2.1 Definitions of key terms

There are several definitions of knowledge management. One definition by Bergeron (2002, p. 8-9) is included here. “Knowledge Management is deliberate systematic business optimization strategy that selects, distills stores, organizes, packages and communicates information essential to the business of a company in a manner that improves employee performance and corporate competitiveness.”

There are also several definitions of knowledge. Davenport and Prusak’s (1998, p.4-5) definition are used for this research proposal. “Knowledge is a fluid mix of framed experiences, values, contextual information, and expert insights that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knowers. In organizations it often becomes embedded not only in documents or repositories but also in organizational routines, processes, practices and norms. “

Knowledge is also a sustainable advantage. It is sustainable because it generates increasing returns and continuing advantages. Unlike material assets, which decrease as they are used, knowledge assets increase with use. It was suggested that ideas breed new ideas and shared knowledge stays with the giver while it enriches the receiver (Davenport and Prusak 1998).

According to Nonaka and Takeuchi (1995), knowledge can be divided into explicit knowledge or tacit knowledge. Explicit knowledge refers to knowledge that can be expressed in words and numbers. It is easily communicated and shared in the form of hard data, scientific formulas or universal principles. Tacit knowledge refers to knowledge that is not easily visible and expressible. It is hard to formalize and is highly personal. Thus, it is difficult to transfer tacit knowledge. Subjective insights, intuitions and hunches are considered tacit knowledge (Nonaka and Takeuchi 1995).

With an understanding of knowledge, it is necessary to introduce the concept of knowledge workers and knowledge organizations. Bergeron (2003, p.58) defines knowledge workers as “employees and managers who contribute significantly to the intellectual capital of the company “. Knowledge organizations are corporations that take a systematic approach to capturing the knowledge of knowledge workers and transforming employees and managers into knowledge workers (Bergeron 2003). Nonaka and Takeuchi (1995) use a different term which is knowledge crew. It is different from knowledge workers. According to Drucker (1993, cited in Nonaka and Takeuchi 1995) knowledge workers possess ownership of the knowledge and knowledge is considered a resource. Drucker (1993)’s focus is on the knowledge worker and their productivity of knowledge. However, Nonaka and Takeuchi views knowledge as a resource and an output. Their focus is on the creation of knowledge.

One of the requirements for competing in international business is the need to develop and transfer worldwide innovations internationally. To compete against competitors in the global market, MNCs need to develop the ability to link and leverage knowledge (Barlett and Ghoshal 1997). Knowledge and its transfer can be seen as a basis of competitive advantage (Argote 2000). According to Kogut and Zander (1992, pp.383), “What firms do better than markets is the sharing and transfer of the knowledge of the individuals and groups within an organization”. Gupta and Govindarajan (2000) state that one of the major reasons for an MNC’s existence is its ability to transfer and exploit knowledge in the intra-corporate context than the market.

According to the resource-based view of the firm, some researchers have identified knowledge as one the firm’s most valuable strategic resource (Grant, 1996; Zack, 1999). However, some researchers have begun to look at how the knowledge management process, as opposed to knowledge resources, may be seen as a source of competitive advantage in its own right (Argote and Ingram 2000; Minbaeva, *et al*, 2003; Martin and Salomon, 2003). There are various definitions of what constitutes a knowledge management process (Kikawada and Holthouse, 2001; Tiwana, 2002; Bergeron, 2003). They are useful because they identify how knowledge management occurs, although the majority of the literature focuses on two areas only: knowledge creation and transfer.

2.2.2 Knowledge Management Process

Knowledge Management can be divided into processes or steps. Some examples of such processes are provided in the following sections. According to Bergeron (2003), knowledge management is made up of eight interrelated processes. The eight processes are:

- 1) Creation/Acquisition
- 2) Modification
- 3) Use
- 4) Archiving
- 5) Transfer
- 6) Translation/repurposing
- 7) Access
- 8) Disposal

Figure 2.1: Processes of knowledge Management (Source: Bergeron, p.4)

Nonaka, Toyama and Konno (2000, p. 8) defined knowledge creation as “a continuous, self-transcending process through which one transcends the boundary of the old self into a new self by acquiring a new context, a new view of the world and new knowledge. “New knowledge can also be acquired through outsourcing or purchased from outside sources (Bergeron 2003). Modification means that the

information is modified to suit the immediate and future needs of the organization. Use means that the information is employed for some purpose. Archiving means that information is stored but it is still accessible to knowledge workers. Transfer of knowledge is a prerequisite for an efficient knowledge management. Translation/repurposing means that information is translated from its original form into a form more suitable for a new purpose. The difference between modification and translation is that modification is for immediate use and translation is for a new purpose. Access means that some information was not available for every knowledge worker in the organization. Lastly, disposal means the destruction of information with limited future value (Bergeron 2003).

Tiwana (2002) suggested 10 steps divided into four phases for knowledge management road Map. The 10 steps are briefly explained in the following section:

Step 1 is to identify critical gaps in the existing infrastructure.

Step 2 is to make a connection between the knowledge management platforms with the business strategy.

Step 3 is to select the infrastructural components that constitute the knowledge management system architecture. It includes components like data warehouse, neural networks and expert reasoning systems.

Step 4 requires the development of an audit team to audit and analyse knowledge and includes an assessment of the knowledge assets in an organization.

Step 5 involves the identification of key stakeholders in an organization and the sources of expertise that are needed.

Step 6 involves the creation of a blue print which is basically a plan for building and incrementally improving a knowledge management system.

Step 7 involves putting together a system based on the blueprint.

Step 8 can be used to determine the needs of a project.

Step 9 explains how leadership and reward structures are used to motivate employees to use the system.

Step 10 is about the measurement of the return on investment of knowledge management (Tiwana 2002).

Kikawada and Holthouse (2001) suggested the idea that knowledge management

should consist of 10 dimensions namely:

- 1) Sharing knowledge and best practices
- 2) Instilling responsibility for knowledge sharing
- 3) Capturing and reusing past experiences
- 4) Embedding knowledge in products, services and processes
- 5) Producing knowledge as a product
- 6) Driving knowledge generation for innovation
- 7) Mapping networks of experts
- 8) Building and mining customer knowledge bases
- 9) Understanding and measuring the value of knowledge
- 10) Leveraging intellectual assets.

The ten dimensions are briefly summarized in the following sections. Kikawada and Holthouse (2001) consider the sharing of knowledge and the instilling of responsibility for knowledge sharing as the most important of the 10 dimensions. They argued that companies are always looking for better ways to use, share and reuse the knowledge that are in existence in their organizations. Sharing is often called transfer in the knowledge management literature and the two terms are used interchangeably. Instilling responsibility recognizes the fact that human resistance to sharing is often a problem in knowledge sharing.

Capturing and reusing past experiences means ensuring that past experience can be transferred to new workers or for use by current workers. Embedding knowledge in products, services and processes means discovering the location where valuable knowledge lies in products, services and processes. An understanding of this allows the company to focus their business to take advantage of unique strengths. Producing knowledge as a product means that companies may gain knowledge and sell them as a product. Driving knowledge generation for innovation is basically related to the idea of knowledge creation which has been mentioned earlier. Mapping networks of experts mean creating maps that show the location of knowledge held by people in the organization. Building and mining customer knowledge bases involves the exploitation of knowledge about customers in the creation and delivery of products and services. Understanding and measuring the value of knowledge states that organizations are focusing their efforts on measuring knowledge and tangible assets like patents and

copyrights. Lastly, leveraging intellectual assets means the management of intellectual assets to reap the best return from them. (Kikawada and Holthouse 2001)

According to Grant (1996), the knowledge-based view of the firm provides a pragmatic perspective by suggesting that the value of knowledge resources lies, as with any resource, in how they are combined to create competencies and capabilities. Massingham (2004,b) extends this concept by arguing that firms may develop an international knowledge management strategy by following processes that link strategy, with activities and resources. Massingham (2004,b) also found that firms seeking a sustainable competitive advantage need to manage their knowledge resources by understanding the relationship between what they are trying to achieve, the key business processes necessary to pursue this strategy, and what they need to know to perform well in these areas. Firms can use these knowledge resources to establish competitive advantage by developing competence in key value creating activities.

2.2.3 Knowledge Creation

Knowledge creation is the activity of developing new insight or understanding. Schulz (2001) defines three types of knowledge creation. First, encoding existing knowledge, where the aim is to simplify complex cause and effect knowledge; second, combining existing knowledge, where the aim is to capture current information and apply it to historical context; third, creating new knowledge, where the aim is to provide current information that informs new insight into the organization or to explain contexts the firm does not know (Schulz, 2001).

Much of the literature on knowledge management has considered factors that impede or facilitate knowledge creation and knowledge transfer. Thus in this research, even though there are many processes that can make up knowledge management, this research has chosen to focus on knowledge creation and knowledge transfer. It will first begin with a review on the literature related to knowledge creation. In one of the most influential books written on knowledge creation, Nonaka and Takeuchi (1995) identified seven guidelines for companies who wish to create knowledge at an organizational level:

- 1) Create a knowledge vision
- 2) Develop a knowledge crew
- 3) Build a high-density field of interaction at the front line
- 4) Piggyback on the new-product development process
- 5) Adopt middle-up-down management
- 6) Switch to hypertext organization
- 7) Construct a knowledge network with the outside world

In the very same book Nonaka and Takeuchi (1995) identified the following conditions were identified as enabling conditions for organizational knowledge creation:

- 1) Intention
- 2) Autonomy
- 3) Fluctuation and Creative Chaos
- 4) Redundancy
- 5) Requisite Variety

These guidelines and conditions will be explained in detail in a later section.

There are four modes of knowledge creation which is also known as the SECI knowledge conversion process. SECI stands for Socialization, Externalization, Combination and Internalization. The four modes arise because of the interaction between tacit and explicit knowledge. They are socialization which is the conversion of knowledge from tacit to tacit; externalization which is the conversion of tacit knowledge to explicit knowledge; combination which is the conversion of explicit knowledge to explicit knowledge; and internalization which is the conversion of explicit knowledge to tacit knowledge (Nonaka and Takeuchi 1995).

These four types of knowledge conversion lead to four different types of knowledge. Socialization leads to sympathized knowledge, Externalization leads to conceptual knowledge, Internalization leads to operational knowledge and combination leads to systematic knowledge (Nonaka and Takeuchi 1995).

Figure 2.2: Four types of knowledge conversion (Source: Nonaka and Takeuchi 1995, p.72)

Knowledge Creation Process

The organizational knowledge creation process is made up of five phases:

- 1) Sharing tacit knowledge
- 2) Creating concepts
- 3) Justifying concepts
- 4) Building an archetype
- 5) Cross-leveling of knowledge

In the first phase sharing of tacit knowledge is necessary. This is because an organization can never create knowledge by itself and it is often difficult for firms to transfer tacit knowledge. Thus, knowledge sharing can be considered a subset of knowledge creation. Creating concepts basically deals with externalization. Justifying concepts means the organization goes through the process of determining if the newly created concept is useful for the organization. Building an archetype is related to the idea of converting the justified concept into a prototype. Lastly, cross-leveling of knowledge refers to the idea that organizational knowledge creation is a continuous process. The new knowledge that is created and justified and modeled would go through to a new creation process (Nonaka and Takeuchi 1995).

Nonaka and Konno (1998) would later introduce the concept of “Ba” to knowledge creation. “Ba” is a Japanese word which roughly means “place” in English. It can be thought of as a shared space for emerging relationships and can be physical, virtual, mental or a combination of them. It is also the context which harbours meaning and serves as a foundation for knowledge creation. “Ba” is integrated into the SECI process resulting in four types of “Ba” which is originating “Ba” for socialization; Dialoguing

“Ba” for Externalization; Systemising “Ba” for Combination; and Exercising “Ba” for Internalization (Nonaka, Toyama and Konno 2000).

Originating “Ba” means a context for socialization and is related to individual and face to face interactions. Under this context, people share their feelings, experiences, mental models and emotions. Dialoguing “Ba” is a place where people’s skills and knowledge are shared and converted into common terms. The new knowledge also aids the contributors in their self-reflection of their knowledge. Systemising “Ba” is a context which facilitates collective and virtual interactions. It is related to things like groupware, documentation and networks. Exercising “Ba” is a context which allows for individual and virtual interactions. Workers are able to achieve reflection through actions (Nonaka, Toyama and Konno 2000).

Figure 2.3: Types of Ba (source :Nonaka, Toyama and Konno 2000, p.16)

According to Von Krogh, Ichijo and Nonaka (2000), there are five enablers for knowledge creation which are:

- 1) Instill a vision
- 2) Manage conversations
- 3) Mobilize activists
- 4) Create the right context
- 5) Globalize local knowledge

One of the recent models by Nonaka, Toyama and Konno (2000) propose that knowledge creation would consist of three elements: (i) the SECI process; (ii) “Ba” and (iii) knowledge assets. The SECI process and “Ba” have already been covered. However, the four types of knowledge assets Experiential Knowledge Assets;

Conceptual Knowledge Assets; Routine Knowledge Assets; Systemic Knowledge Assets can be summarized in figure 2.4.

Figure 2.4:Categories of Knowledge Assets (Source: Nonaka, Toyama and Konno 2000,p.20)

According to this unified model of dynamic knowledge creation, leadership plays an important role in the management of the knowledge-creating process. Managers are supposed to create a vision, manage the knowledge assets and facilitate ba effectively. Only then would they be able to create knowledge continuously and dynamically. (Refer to Figure 2.5)

Figure 2.5: Leading the knowledge-creating process (Source: Nonaka, Toyama and Konno 2000, p.23)

2.2.3.1 Summary of Key factors that would influence Knowledge Creation

Factors that would influence knowledge creation are summarized in the following section. Some of these factors are related. Some are actually more important since they are able to influence other factors.

Leadership

With regards to leadership, the knowledge creation process can not be managed with a management approach that is related to controlling. This means that traditional approaches to management can not be used. In addition, leaders are supposed to provide certain conditions that can facilitate knowledge creation (Nonaka, Toyoma and Konno 2000). Thus, leadership can be considered one of the more important factors in the knowledge creation process. Many of the other factors affecting knowledge creation can be affected by it.

Middle-up-down Management

Nonaka and Takeuchi (1995) suggested that with regards to knowledge creation a middle-up-down Management approach would be more effective than top-down and bottom-up management approaches. The authors suggested that in top-down management the company can deal with explicit knowledge, but it would not be able to capitalize on the tacit knowledge gained by the front line of any organization. Similarly, in a bottom-up management approach the organization would be very efficient in dealing with tacit knowledge but would be unable to transfer this knowledge to the rest of the organization. Middle-up-down Management is the key to knowledge creation. It was argued that front-line staff had to handle a lot of information which are often highly specific in nature. However, their perspectives were so narrow that they are unable to translate this information into useful knowledge.

In the middle-up-down model top management creates a vision. It is the job of the middle management to translate the vision into more specific concepts for front-line staff. Thus, middle-management serves as a bridge that links the vision created by top

management with the information provided by front-line staff (Nonaka and Takeuchi 1995).

Knowledge Vision

A knowledge vision provides the definition of the domain for the members of an organization. It is related to the company's strategy (Nonaka and Takeuchi 1995). According to (Von Krogh, Ichijo and Nonaka 2000, p 103), there are three domains in a knowledge vision which are:

- 1) The knowledge vision should provide a mental map of the world organization members live in
- 2) The knowledge vision must include a mental map of the world organizational members ought to live in
- 3) The knowledge vision should specify what knowledge organizational members need to seek and create.

The knowledge vision provides a definition of the value system that evaluates, determines and justifies the quality of the knowledge created by the company. The vision should be created by top management. Middle management is supposed to break down the vision into concepts that can guide the knowledge creation process (Nonaka, Toyoma and Konno 2000).

Von Krogh, Ichijo and Nonaka (2000) suggested seven criteria for a good knowledge vision which are:

- 1) Commitment to Direction
- 2) Generativity
- 3) Specific Style
- 4) Focus on Restructuring the Current Knowledge System
- 5) Focus on Restructuring the Current Task System
- 6) External Communication of Values
- 7) Commitment to Shaping Competitiveness

Strategy and Knowledge Creation

Intention was identified as one of the enablers for knowledge creation. Intention is related to the organization's goals. Strategy is the attempts and efforts to achieve an organization's goals (Nonaka and Takeuchi 1995). According to Von Krogh, Ichijo and Nonaka (2000), knowledge creation strategies can be divided into two basic strategies which are survival strategies and advancement strategies. Survival strategies meant that organizations would focus on knowledge to maintain their current level of success and improved performance. Advancement strategies meant that organizations focus on knowledge that emphasized future success and improved performance. The differences between survival and advancement strategies are in competitive advantage, sources of competitive advantage, role of knowledge, important knowledge processes and result. The most important difference is that knowledge transfer is considered to be the most important knowledge processes in firms using a survival strategy while knowledge creation is considered to be the more important process in firms using advancement strategies (Von Krogh, Ichijo and Nonaka 2000).

Hypertext organization Structure

Nonaka and Takeuchi (1995) believed that there are two basic organization structures which are the bureaucracy and the task force. Some characteristics of the bureaucratic structure are that it is highly formalized, specialized and centralized. It is suitable for companies in stable environments. The task force is an organization structure which is designed to overcome the weakness of bureaucracy. It consists of bringing a team or group together to deal with temporary problems. It is flexible and adaptable. However, one problem with it is that very often new knowledge is not transferred to other parts of the organization.

The Hypertext organization structure was believed to be more effective than these two organization structures for knowledge creation purposes. It is basically a combination of the bureaucracy and the task force. Under the knowledge creation process, the bureaucracy is more suitable for combination and internalization while the task force is more suitable for socialization and externalization. Thus, under the hypertext organization structure the organization can have both the efficiency of the

bureaucracy and the flexibility of the task force. The Hypertext organization structure consist of three layers which are the “business-system layer”, the “project team layer and the “knowledge base” layer. The “business-system layer” is the similar to the bureaucracy. The “project team” layer is similar to that of a task force. The “knowledge-base layer” consists of organizational knowledge generated in the two layers and it is also related to the knowledge vision and organizational culture. The knowledge creation process basically consists of knowledge traveling from one layer to another (Nonaka and Takeuchi 1995).

Ba and Shared Context

Nonaka, Toyama and Konno (2000) state that “Ba” can be built intentionally or it can be created spontaneously. It is also the responsibility of top management to facilitate the creation of “Ba”. They suggest that leaders could provide the environment that can lead to “Ba” through things like meeting rooms, computer network and common goals. Since some “Ba” is connected with each other it is again the responsibility of the leader to ensure that the various “Ba” can interact with each other to create a greater “Ba”.

One of the more popular “Ba” which is identified in the knowledge creation literature is networks. Networks are also known as communities of practice (Brown and Duguid 1998). Networks can help to generate knowledge. Informal networks are often formalized in order to facilitate the knowledge creation process. These networks often start out to share their knowledge. However, once they are able to communicate and collaborate effectively they are often able to create new knowledge for their companies (Davenport and Prusak 1998).

Adaptation to change and Creative Chaos

Changes in competition, technologies, social and economic conditions drive knowledge creation. The reason here is that firms that do not adapt to changing conditions will fail. It was found that it was more difficult to get firms to adapt to changes if they have been successful in the past. A firm’s ability to adapt is based on two factors. One of them is the existing internal resources that the firm can use in new

ways. Another factor is being open to change or having a high “absorptive capacity”. It was found that employees who can acquire new skills and knowledge easily would be more adaptable to changes. Similarly, firms that are more able to adapt to changes tend to have employees who are more open to changes (Davenport and Prusak 1998).

Nonaka and Takeuchi (1995) use the term chaos and creative chaos which is related to the idea of adaptation to change. Chaos refers to real crisis faced by the organization and is related to actual changes. Creative Chaos refers to intentional chaos created by the leaders. It is the responsibility of the leader to introduce creative chaos into the organization at the right place and at the right time. Another factor that can lead to creative chaos includes ambiguous and open-ended visions and philosophy. Lastly, it can also arise from challenging goals being set by the individual organizational members. For the latter, it refers to chaos created independently of top management’s philosophy. However, the benefits of creative chaos can only arise if the members of the organization are capable enough to reflect upon their actions.

Care

According to Von Krogh (1998), good relations can help the knowledge creation process by removing negative barriers like distrust, fear and dissatisfaction. Five dimension of behaviour in relationships are considered to be important. These dimensions are mutual trust, active empathy, access to help, lenience in judgment and courage. It was believed that care gives rise to these forms of behaviour and their interplay. Thus, different levels of care would affect the extent to which the knowledge creation process would differ. (Refer to figure 2.6)

When care is low, the individual employee would try to capture his knowledge and would not share it with his colleagues. His colleagues are also less likely to help him with his needs. When care is low, employees may participate in the creation of social knowledge. However, this tends to be limited to the idea of sharing explicit knowledge. It is difficult to share tacit knowledge when care is low. The reason here being that it is easier to defend one's explicit knowledge when there is little trust, lenience or courage for experimentation. This leads to transacting knowledge.

When care is high, there will be mutual trust, active empathy and more lenient judgements. In such situations individual members are likely to practice bestowing of their knowledge on others as well as receiving help from their colleagues. When there is mutual bestowing, it can lead to indwelling. Indwelling basically means commitment to an idea, experience or a fellow human being. With commitment, it becomes easier for the organization to create shared tacit knowledge (Von Krogh 1998). To create an environment where there is trust and care leaders must use a knowledge vision. It is also necessary that knowledge producers be creative and positive thinkers (Nonaka, Toyoma and Konno 2000).

Knowledge Assets

As mentioned earlier there are four types of knowledge assets. It is the responsibility of top management to facilitate the process of creating knowledge assets from knowledge. This means that management had to identify the knowledge assets available to the company as well as the knowledge assets that would be required by the company. Routine knowledge assets have been found to be both a barrier and enabler of knowledge creation. The authors suggest that the exploitation of knowledge assets and the creation of knowledge assets are both equally important in the knowledge creation process (Nonaka, Toyama and Konno 2000).

Autonomy

Autonomy can improve the probability that an employee of the organization can create new knowledge and find valuable information. One of the ways to create

autonomy is through the use of self-organizing team (Nonaka and Takeuchi 1995). As mentioned earlier this is related to the use of a hypertext structure.

Redundancy

Redundancy refers to the existence of information that exceeds the basic requirements of the organizational members. It refers to overlapping of information within in the company (Nonaka and Takeuchi 1995). Sharing redundant information can have the following benefits. It promotes the transfer of tacit knowledge and can improve the efficiency of the knowledge creation process. It also facilitates consistency in the organization as employees are able to understand their role in the company. It also allows for the provision of information from different perspectives (Nonaka, Toyoma and Konno 2000). One of the ways to facilitate redundancy is through the use of teams that compete against each other and through the use of job rotation (Nonaka and Takeuchi 1995).

Requisite Variety

Requisite Variety means that the internal diversity of the organization must match the external diversity of the environment (Ashby 1956 cited in Nonaka and Takeuchi 1995). In order to deal with contingencies, employees of an organization must have quick access to information. It is necessary for every employee to know the location of the information in the organization. Some of the ways to develop requisite variety include a flat organization structure supported by an information network. Another way is the use of rotation of personnel. Lastly, a diverse pool of talents can also lead to requisite variety (Nonaka, Toyoma and Konno 2000).

Managing Conversations

In the knowledge creation process, conversations are used for knowledge confirmation and the creation of new knowledge. Conversations related with knowledge confirmation deals with the present and to facts and reality. The scope and impact of knowledge confirmation is limited. The concepts that are discussed are already in existence and proven. In contrast, conversations related with knowledge creation deals

with the future and what knowledge should be. There is no reality and the participants of the conversation are supposed to create a new knowledge and a new reality. There are also no ways to prove whether the participant is correct or not. Conversation is involved in all of the five steps of the knowledge creation model.

Von Krogh (2000) suggested four principles for the management of conversation. The four principles are:

- 1) Principle 1: Actively Encourage Participation
- 2) Principle 2: Establish Conversational Etiquette
- 3) Principle 3: Edit Conversations Appropriately
- 4) Principle 4: Foster Innovative Language

Management of the Knowledge-Creating Crew

The knowledge creating Crew can be divided into three types which are: 1) knowledge practitioners, 2) knowledge engineers, 3) knowledge officers. Knowledge Practitioners refer to front line employees and line managers who are in charge of the accumulation and generation of tacit and explicit knowledge. Knowledge engineers refer to the middle managers who are in charge of the four modes of knowledge conversion. They are also called knowledge producers. Knowledge officers refer to top management who are responsible for management of the knowledge creation process at the corporate level. All three type of knowledge creating crew would require different types of qualifications (Nonaka and Takeuchi 1995).

In order to develop requisite variety, it is also necessary for diversity in the pool of talent. The management of the knowledge creating crew is also related to freedom and autonomy. It was suggested that there should be diversity in career ladders to accommodate the diverse pool of talents. There should also be a separate career ladder for employees who would be project leaders in the knowledge creation process. Lastly, knowledge crew members should be evaluated in terms of how new ideas and concepts have been attempted. They should also not be penalized if they failed. This would allow them to have the courage to try out new ideas (Nonaka and Takeuchi 1995).

Related to the idea of a knowledge-creating crew is the management of creative

people. Nemeth and Nemeth (2001) stated that creative people were different from normal people. One difference was that creative people think and associate ideas in weird and unique ways. They are highly independent and are more likely to pursue ideas even though most people have strong objections towards those ideas. They are also unaffected by the opinions of the majority or imitate the actions, behaviour or thinking of the majority. They were more likely to have divergent thinking and playfulness which is a personality trait related to being childlike. Lastly, they may even break rules since creativity often comes from doing so.

Thus, Nemeth (2001) believed that traditional management techniques would not work with these people. Instead, management needs to adopt an approach where there is tolerance for playfulness, diversity in personality, ideas and style.

Job Rotation

In the knowledge creation models, job rotation was found to be had an effect on the following factors which are: 1) Requisite Variety, 2) Redundancy. (Nonaka, Toyama and Konno 2000) It is related to the idea of global assignments, which is one of the factors affecting knowledge transfer. When there are global assignments, people can understand particular operations in specific locations. They also develop insights about other cultures and establish relationships and networks (Bender 2000). It is also a way to resolve conflicts (George 2002). Thus, job rotation can also be related to the development of care in an organization. However, job rotation was not identified as a factor or as an enabling condition or factor in the knowledge creation models. It is included as one of the factors here because of its effect on the other factors.

2.2.4 Knowledge Transfer

There has been a growing interest in the role of knowledge and its transfer in international business (see Gupta and Govindarajan, 2000; and Minbaeva *et al*, 2003). International transfer of knowledge can generally occur in three modes. Firstly, transfer can occur between two units of the same organization (Bresman, Birkinshaw, and Nobel, 1999). Secondly, it occurs in various forms of partnership, such as alliances, joint ventures, and licensing arrangements (Simonin, 1999). Thirdly, it can occur

through a pure market transaction between two independent organizations (Anand, Glick, and Manz, 2002). Improvements in information and communication technology (e.g. the Internet) have made international knowledge transfer more efficient. Further, the globalization of multinational activities and markets, as well as global networks with suppliers, customers, distributors, joint venture partners, and consultants, has led to development of firm infrastructure that facilitates efficient knowledge transfer (Liesch and Knight, 1999). Despite this, knowledge transfer remains a complex challenge for international business firms.

Figure 2.7 is an example of a conceptual framework for knowledge transfer (Goh 2002).

Figure 2.7: An integrative framework: factors influencing effective knowledge transfer (Source: Goh 2002, p. 6).

In the framework, Goh (2002) identifies seven factors that would lead to effective knowledge transfer. These factors as shown in the diagram include leadership, high trust, collaboration, problem seeking, support structures, knowledge recipient and types of knowledge. The advantage of this model is that it is an integration of the various factors in the knowledge management literature that can affect knowledge transfer. This contrasts it from other literature which tends to concentrate on one or few factors (Goh 2002).

Knowledge Transfer Process

Some authors have suggested that knowledge transfer should be seen as a process (Szulanski 1996, Szulanski 2000). According to Szulanski (1996), the knowledge transfer process consists of four stages:

- 1) Initiation
- 2) Implementation
- 3) Ramp up
- 4) Integration.

The initiation stage consists of events leading to the decision to transfer. The firm may have discovered a need for additional knowledge. Once a potential solution has been found the firm would need to consider the possibility of a knowledge transfer. After the firm has made the decision to transfer knowledge the implementation stage begins. This stage involves the transfer of resources between the source and the recipient. It also involves the establishment of transfer-specific social ties. There is often adaptation to the transferred practice to suit the anticipated needs of the recipient. Following the implementation stage is the ramp-up stage which involves the recipients using the transferred knowledge. The recipient will try to identify and solve problems that would affect its performance in using the knowledge. The final stage is the integration stage which begins after the recipient obtains desirable results with the transferred knowledge. It means that the use of the transferred knowledge becomes part of the recipient's routine (Szulanski 1996).

2.2.4.1 Summary of Factors affecting Knowledge Transfer

According to the current literature, knowledge transfer is similar to knowledge creation in that there are also a list of factors and barriers affecting knowledge transfer. However, there are more factors since there is greater amount of research and articles in the area of knowledge transfer. Also some of the factors affecting knowledge transfer also affect knowledge creation as well. An example would be leadership.

Characteristics of the knowledge transferred

The characteristics of the knowledge transferred were found to be an important factor affecting knowledge transfer. The characteristics of the knowledge are

affected by the following factors:

- 1) Causal ambiguity
- 2) Tacit and explicit
- 3) Desirability of knowledge
- 4) Knowledge embeddedness

Causal ambiguity

According to (Lippman and Rumelt 1982, cited in Szulanski 1996), causal ambiguity is present if the reasons for success and failure in replication of a capability in a new setting can not be determined. Causal ambiguity tends to be characteristics found in tacit knowledge (Simonin 1999). It can also be described as the depth of knowledge. Causal ambiguity in the characteristics of the knowledge to be transferred was one of the barriers to knowledge transfer (Szulanski 1996, Simonin 1999).

Tacit and Explicit

According to the current literature, tacit knowledge was harder to transfer compared to explicit knowledge (Simonin 1999, Martin and Salamon 2003, Pak and Park 2004). The current literature also suggests that different mechanisms and methods should be used for tacit and explicit knowledge (Dixon 2000, Nonaka and Takeuchi 1995, Bhagat et al 2002, Goh 2002).

Desirability of knowledge

Pak and Park (2004) found empirical evidence to support the concept of desirability of knowledge. This means that if the knowledge is expected to enhance a firm's skill level and competitiveness the recipient would be more willing to acquire the knowledge from the sender.

Knowledge embeddedness

Knowledge embeddedness means that knowledge is embedded in people, tools and routines. If knowledge is embedded in people, it would mean that it is necessary to

transfer the person in order for the firm to transfer the knowledge. Knowledge can also be embedded in products. It was found that it was more difficult to transfer knowledge that was embedded than knowledge that is not embedded (Cummings and Teng 2003).

Absorptive Capacity

Absorptive Capacity refers to stock of knowledge that was in existence in the receiving firm of a knowledge transfer process. This refers to pre-requisite knowledge and skills relevant to the knowledge. It means the recipient's ability to learn from the transfer. It also refers to the recipient's ability to identify value and apply the new knowledge. A lack of absorptive capacity was found to be a major barrier for knowledge transfer (Szulanski 1996).

According to Grant (1996), there is also a paradox with regards to absorptive capacity. It was argued that if absorptive capacity was high, which means the recipient knows too much compared to the sender, there might not be a need for knowledge transfer. However, if absorptive capacity is too low the recipient would not be able to absorb or use the knowledge that was transferred.

According to Zahra and George (2002), there are four dimensions in absorptive capacity. These four dimensions are acquisition, assimilation, transformation and exploitation. Acquisition and assimilation refer to potential absorptive capacity, while transformation and exploitation refer to realized absorptive capacity. They believed that realized absorptive capacity was more important because it deals with the firm's ability to leverage the knowledge that was transferred.

Appropriate transfer mechanisms

According to Dixon (2000), there is no one best way to transfer knowledge. An effective transfer mechanism was one where it is designed for a specific target that has a specific knowledge need. Three criteria were found to have an impact on the transfer method or mechanism. "Who is the recipient of the knowledge in terms of similarity of task and context"; How frequent and routine is the task?; the type of knowledge that is being transferred" (Dixon 2000, p. 22).

The first criteria meant whether there is any similarity or difference between the recipient and the transferor of knowledge with regards to the task and the context. For the second criteria, frequency meant how often the task would occur. Routine meant that whether there are clear and fixed steps while non routine tasks meant that there is no clear and fixed method to solve the problem. The third criteria refer to tacit and explicit knowledge which has been covered in an earlier section (Dixon 2000).

Relationship between the sender and the recipient

An arduous relationship was one of the major barriers for knowledge transfer (Szulanski 1996). “A relationship between actors can be characterized in terms of the strength of their social ties, their level of trust and the extent to which they share common processes and values (Dhanaraj et al 2004, p. 429). These three factors, strength of social ties, level of trust and common values formed the concept of relational embeddedness. Relational embeddedness was found to be an important factor in determining the effectiveness of knowledge transfer. This factor was also found to be more important for knowledge that was tacit in nature (Dhanaraj et al 2004).

Husted and Michailova (2002,a) suggested that barriers to knowledge-sharing are dependent on three behaviours. The first behaviour is the behaviour of the knowledge transmitter-the person who possesses knowledge which is required by the recipient. The second behaviour is the behaviour of the knowledge recipient who is supposed to receive knowledge from the transmitter. The third behaviour is the behaviour of both the receiver and transmitter in relation to the substance of the knowledge to be transferred. Husted and Michailova (2002,a) went on to suggest that in order to determine the level of knowledge-sharing hostility in an organization, managers need to consider the following factors. The first factor which is related to the knowledge transmitter is the transmitter’s reasons for hoarding knowledge. The second factor which is related to the knowledge recipient is the recipient’s reasons for rejecting. The third factor which is related to the substance of the knowledge is the organization’s attitude towards mistakes.

Headquarters Control Mechanisms

For knowledge transfer across borders, it was suggested that the relationship between the parent company or headquarters and its subsidiary can be compared to that of a principal-agent relationship. Thus, the subsidiary may not be interested in knowledge transfer to other MNC units. This means that there is a need for the headquarters to establish some control mechanisms to manage the knowledge transfer between subsidiaries or from the subsidiary to the parent company. Two control mechanisms were found to have an effect on the effectiveness of knowledge transfer. One of them is a control mechanism where the evaluation of the performance of the subsidiary includes the effectiveness of knowledge transfer. Another mechanism is the use of corporate socialization mechanisms (Bjorkman, Barner-Rasmussen and Li 2004).”Corporate social mechanisms refer to those organizational mechanisms that facilitate the development of interpersonal ties in the MNC” (Bjorkman, Barner-Rasmussen and Li 2004, p. 447-448). As mentioned earlier relationships are an important enabler for knowledge transfer (Szulanski 1996, Dhanaraj et al 2004). Thus, corporate social mechanisms are a factor that affects knowledge transfer directly and indirectly through its effects on relationships.

Source Transfer Capacity

Source transfer capacity can be defined as “the ability of a firm to articulate uses of its own knowledge , assess the needs and capabilities of the potential recipient thereof, and transmit knowledge so that it can be put to use in another location” (Martin and Salamon 2003, p.363). It involves three factors. Firstly, the firm’s ability to identify the knowledge required. Secondly, the firm’s ability to determine the recipient’s readiness with regards to knowledge. Thirdly, the adaptation of the information in a form that is suitable for the recipient. Firms with higher source transfer capacity can transfer tacit knowledge at a lower cost (Martin and Salomon 2003).

Learning Intent

Learning Intent basically refers to the motivation to learn. All things equal, firms

with higher learning intent would be more effective than those with lower learning intent in the knowledge transfer process (Simonin 2004).

Incentive based Learning Capacity

Incentive based learning capacity refers to “ explicit institutional routines, systems, rules and guidelines that clarify individual expectations and duties, steer learning activities in non-ambiguous terms, foster a learning orientation, and induce commitment to a learning objective” (Simonin 2004 , p.410). It includes things like a reward system and a learning agenda that supports learning. Increasing a firm’s incentive based learning capacity would increase the effectiveness and efficiency of knowledge transfer (Simonin 2004).

However, O’Dell and Jackson Grayson (1998) have a different opinion with regards to the use of rewards to encourage knowledge transfer. They believe that rewards are only useful in the short run where it can be used to build up interest. In the long run, the organizational culture has a greater impact on the effectiveness of knowledge transfer.

Partner Protectiveness

Closely related to the idea of source transfer capacity is the concept of partner protectiveness. Partner protectiveness is a factor found to affect the effectiveness of knowledge transfer in strategic alliances. Unless partners in a strategic alliance have an incentive to do so most of them would prefer to protect their knowledge from their partners. Such defensive actions would be a barrier for the knowledge transfer process (Simonin 2004).

Human Resource Management Practices

The employee’s ability and motivation was found to be key features of a firm’s absorptive capacity. In this case, human resource management practices have an indirect effect on the knowledge transfer process. The reason is that they have a direct effect on employee’s ability and employee’s motivation. Human Resource Management practices

of training and performance appraisal have a direct effect on employee's ability. Human Resource Management practices of merit based promotion, performance based compensation and internal communication had a direct effect on employee's motivation. The interaction effect between both employee's ability and employee's motivation were found to have an influence on the knowledge transfer process (Minbaeva et al 2003). Minbaeva (2005) did another research on the effects on knowledge transfer and her findings were inline with the previous findings of Minbaeva et al (2003). In addition, there was empirical evidence to support the idea that human resource management practices must be applied as a system.

Organizational Culture

Organizational culture was one of the more popular factors related to knowledge transfer. "Culture is the combination of shared history, expectations, unwritten rules and social mores that affect the behaviour of all employees" (O'Dell and Grayson Jackson 1999, p.13). It's a set of beliefs that have an influence on the perceptions of actions and communications. Since knowledge transfer is a social activity, culture becomes an important enabler for knowledge transfer. Culture is also a factor that can link people together so that they are willing to transfer tacit knowledge. A supportive and collaborative culture that encourages knowledge transfer has been found to have an important impact on knowledge transfer. Organizations with a team based culture were also found to be more effective and efficient in knowledge transfer (O'Dell and Grayson Jackson 1999).

Davenport, De Long and Beers (1998) suggest that a knowledge friendly culture would be one of the most important factors for successful knowledge transfer. They suggest that a knowledge friendly culture would have the following characteristics. One characteristic would be that employees are innovative and have a positive attitude towards knowledge. Another characteristic would be that people do not have any fear of sharing knowledge. Lastly, the organizational culture must fit with the firm's objectives for knowledge management.

Differences between the organizational culture of the transferor and the recipient were found to have a direct and indirect effect on the effectiveness of knowledge

transfer. According to Simonin (1999), the greater the distance in organizational culture between the transferor and the recipient, the greater the likelihood that there will be ambiguity in the knowledge that is to be transferred. This is an indirect effect since it has already been mentioned earlier that ambiguity in knowledge can be a barrier in knowledge transfer. Cummings and Teng (2003) found that norm distance which is the degree of similarity between the organizational culture of two firms have a direct effect on the effectiveness of knowledge transfer.

Infrastructures

According to Davenport, De Long and Beers (1998), an organizational infrastructure for knowledge transfer should identify organizational members who have the right skills and assign roles to them. O'Dell and Jackson Grayson (1999) share their view on this matter and believe that there are three approaches for infrastructures that would support knowledge transfer. The first approach is self directed which basically involves the use of technology such as databases and card catalogs. The second approach is knowledge services and networks which provides services and networks to facilitate the knowledge transfer process. The third approach is facilitated transfer which involves all the previous services in the previous two approaches and some additional services as well.

Information Technology (IT)

There is a close relationship between information technology and knowledge Management. Information Technology had increased the speed of knowledge transfer. However, information technology may also be detrimental for knowledge transfer. Information technology is more suitable for the transfer of explicit knowledge. Tacit knowledge should be transferred through the social interaction between people. It was argued that the more valuable the knowledge, the less likely that it should be transferred through IT (O'Dell and Grayson Jackson 1999).

Leadership

As mentioned earlier, leadership was one of the most important factors in the

knowledge creation process. It plays an important role in the knowledge transfer process as well. Firstly, leaders must be convinced of the advantages and usefulness of knowledge transfer. Secondly, they must change their own behaviour towards it and take a more active and supportive role towards knowledge transfer. Other ways include changing the organizational culture; provide the appropriate infrastructure and changing the reward systems (O'Dell and Grayson Jackson 1998).

Measurement

There is a lack of development and research on the measurement of knowledge management. Some of the methods used for measurement include a measurement of the process, activities and outcomes of knowledge transfer. This include improvements in process cycle time, quality of products, business growth from production and increased customer satisfaction. Most firms do not seem to do so. However, it was argued that measurement is important to the knowledge transfer process. The reason being that without measurable success, most employees and management would lose interest in the knowledge transfer process (O'Dell and Jackson Grayson 1999).

Forms of Ownership

Buckley, Clegg and Tan (2004)'s found that different forms of ownership would have different effects on the effectiveness of knowledge transfer. The research was based on knowledge transfer into china. Forms of ownership would have an indirect effect on absorptive capacity which has already been identified earlier as one of the variables affecting knowledge transfer. In wholly owned subsidiaries the parent company had full control over the recruitment and training of its employees. There were lesser barriers in terms of language in wholly owned subsidiaries. However, in joint ventures with Chinese partners there is often a need for the foreign parent company to negotiate with the Chinese partners over human resource management issues. Those joint ventures are also less likely to invest in language training. As mentioned earlier, training can develop an organization's absorptive capacity (Minbaeva 2003).This creates problem in the knowledge transfer process. This results in the use of translation centres which ultimately reduce the speed of knowledge transfer and also affected the absorption process (Buckley, Clegg and Tan 2004).

Strategic Similarity

There are several arguments on why firms with strategic similarity would be more effective in transferring knowledge to each other. Firstly, managers of firms with strategic similarity would find it easier to develop social ties with each other (Darer and Kurtzberg 2000). This is related to an earlier factor on relationships between the recipient and the transferor. Secondly, firms with similar strategic similarity may find it easier to understand each other and are more likely to cooperate with each other. Thirdly, firms with strategic similarity may face common problems. Common problems would improve the effectiveness of knowledge transfer because knowledge usually arises due to the presence of a problem. Lastly, it was argued that two firms with strategic similarity would tend to have similar knowledge structures, which ultimately means that it would be easier to transfer knowledge between them (Darr and Kurtzberg 2000).

Psychosocial Filter

Andrews and Delahaye (2000) suggested the concept of a psychosocial filter which would affect the likelihood of whether employees would import or share knowledge. In this context importing means to gain knowledge from other employees while sharing knowledge refers to transferring knowledge to other employees. Two factors were found to be related to importing knowledge.

The first factor is credibility of the source. It was argued that people often filter information that they obtain from other employees because they fear that the new information or knowledge might be misleading or wrong (Andrews and Delahaye 2000). Another factor affecting the importing of knowledge was social confidence which by itself is made up of two other factors. These two factors are comfort zone and approachability. Comfort zone was defined as the likelihood that an employee would approach another employee to initiate working relationships with them. Basically an employee who is more likely to approach another employee would be more likely to have access to more knowledge. This improves the effectiveness of knowledge transfer.

The other factor is perceived approachability of the employee. It was believed that people were more likely to transfer knowledge to someone who was considered more approachable. Lastly, the factor related to the sharing of knowledge was trust. Employees were more likely to transfer knowledge to someone they trust (Andrews and Delahaye 2000). This factor is related to relationship between the transferor and the recipient.

Concluding Remarks on Knowledge Creation and Knowledge Transfer

There has been considerable research into inter-firm heterogeneity caused by knowledge creating processes (Nonaka and Takeuchi, 1995); differential access to knowledge (Grant, 1996); development of absorptive capacity (Minbaeva *et al*, 2003), and knowledge transfer capacity (Gupta and Govindarajan, 2000; Martin and Salomon, 2003). A common theme in this research is that the knowledge management process, as opposed to the knowledge resource, may be a source of competitive advantage. Szulanski (1996) suggested that ‘the movement of knowledge within an organization is a distinct experience’ and that knowledge flows in a process of dyadic exchanges between the source and recipient units over several stages. Minbaeva *et al*, (2003) suggest that the key element in knowledge transfer is not the knowledge itself rather it is the process of acquiring and using the knowledge. Inkpen and Dinur (1998, p.454-455) argues that knowledge transfer ‘is not a random process and organizations can institute various internal policies, structures, and processes to facilitate learning’. This thesis suggests that a source of inter-firm heterogeneity may be how well the firm manages its knowledge creation and transfer processes. An important part of the firm’s knowledge management (KM) will be the decision whether to standardize or adapt its KM practices.

2.3 Literature on adaptation and standardization in other areas

2.3.1 Adaptation versus Standardization in International Business

There is an ongoing debate on standardization versus adaptation in international business. The argument for standardization argued that differences between cultures and countries may exist. However, basic human needs are the same in every country. They

argued that managers do not need to adapt to these differences in their international strategies. Thus, standardization refers to a common approach for business throughout the world (Lemak 1997). According to Bartlett and Ghoshal (1998), this refers to forces for global integration. Some examples of global integration are technological innovations that allow companies to develop products on a global basis. Another example would be the use of economies of scale to compete against competitors and the convergence of consumer tastes. This idea was first suggested by Levitt (1983) who argued that firms should change their emphasis from producing products adapted for local markets to producing globally standardized products. He argued that technological, social and economic developments over the last two decades have created a unified world market where companies must gain global-scale economies to remain competitive (Levitt 1983).

On the other hand, there are also arguments for adaptation. It was argued that while basic human needs may be similar, but the differences in environmental factors and cultures between countries would lead to differences in the behaviour of people in different countries. While standardization refers to using a common approach, adaptation differs by stating that there is a need to use different approaches in different countries (Lemak 1997). Adaptation is related to the Contingency theory which is based on the open systems paradigm (Lawrence and Lorsch 1967, Thompson 1967). The Contingency theory argued that there is no one best way to manage or to organize and that in order for an organization to be effective it must be designed and managed according to its environment (Burns and Stalker 1961). According to Barlett and Ghoshal (1998), this would refer to forces for local differentiation and the need for responsiveness. Companies in a variety of industries have been forced to become more sensitive to local market differences and host country pressures.

Adaptations according to differences in country and cultures have been widely used in other disciplines. It has been widely use in marketing where arguments are made for adaptation and standardization (Ramparapu 1999, Yip 1995). Adaptation to differences in countries and cultures has also been widely used in human resource management. Under international human resource management, the firm must adapt according to exogenous and endogenous factors with country characteristics being one of the exogenous factors and socio-cultural environment being one of the variables

under country characteristics (Dowling 1993). There are also many studies on the effects of differences in national culture on international business (Czinkota 2002, Griffith 2000, Kogut 1988, Morosini 1998, Luo 2000).

Knowledge Management is a relatively new field compared to other disciplines such as strategic management, marketing and human resource management. In these disciplines and studies, there are already factors, reasons and arguments for standardization and adaptation according to differences in countries (Beamish, Morrison and Rosenzweig 1997, Dowling, Schuler and Decieri 1999, Yip 1995). An example of arguments for standardization and adaptation is provided in the following section. According to Beamish, Morrison and Rosenzweig (1997), there are pressures for globalization and pressures for localization with regards to the formulation of an MNC's international strategy. Globalization refers to standardization while localization refers to adaptation. These terms are often used interchangeably. Pressures towards globalization are:

- 1) Freer trade
- 2) Global financial services and capital markets
- 3) Advances in communication technology
- 4) The Internet
- 5) Universal Customer needs
- 6) Global customers
- 7) High investment intensity
- 8) Pressures for cost reduction

Pressures towards localization are:

- 1) Trade Barriers
- 2) Cultural differences
- 3) Nationalism
- 4) The Internet
- 5) Anti globalization activists
- 6) Organizational resistance to change
- 7) Transportation limitations
- 8) New Production technologies
- 9) Just-in-time manufacturing

According to Bartlett and Ghoshal (1998), the key influence for a firm's strategy in an international context are pressures for cost-reduction, pressures for national responsiveness and pressures for worldwide learning. (Refer to Figure 2.8)

Figure 2.8: Factors affecting the MNC's decision to standardize or adapt its Strategy
(Source: Bartlett and Ghoshal 1998, pp.316)

Bartlett and Ghoshal (1998) state that there are four types of firms which are Multinational companies, Global companies, International companies and Transnational companies. However, they state that transnational companies are companies that they proposed based on a hypothetical organization that does not correspond to any specific company. Multinational companies are companies which have a strategy which allows them to be both sensitive and responsive to differences in national environments around the world. Global companies were companies that were driven by the need for global efficiency and they tend to treat the world market as an integrated whole. International companies were companies which have a strategy of transferring and adapting the parent company's knowledge or expertise to foreign markets. Lastly, transnational companies were companies that seek efficiency in achieve global competitiveness. They also recognize the importance of local responsiveness as a tool for achieving flexibility in international operations.

By mentioning the development in other disciplines, the researcher is trying to highlight the fact that there is a gap in the current literature in the area of cross-cultural

knowledge management. Holden (2001, pp.160) states that” the cross-cultural transfer of knowledge for commercial advantage is nothing new. As a practice is goes back millennia. What is new is the study of the cross-cultural transfer of knowledge from a knowledge management perspective “. Similarly there is a lack of development in the area on arguments and factors for standardization or adaptation of knowledge management practices across nations and cultures.

2.3.2 Frameworks and dimensions of National Culture

As this research topic is related to knowledge management and national cultures, it is necessary for a literature review on frameworks and dimensions of national culture. However, since there are few prior research and studies on the effects of national culture on knowledge management, only basic and simple theories on national culture would be used in the literature review and research. An understanding of the differences in national culture would be useful for sampling. It would also be useful for the design of the data collection methods.

According to Hofstede (1997), “culture can be defined as the collective programming of the mind which distinguishes the members of one group or category of people from another”. National culture refers to the collective programming of the mind acquired by growing up in a particular country. Organizational culture refers to the collective programming of the mind which distinguishes the members from one organization from another. Trompenaars (1998)’s model state that culture is divided into layers. The outer layer would be explicit cultures which consist of language, food and houses. The middle layer would be norms which are the mutual sense a groups has of what is “right” and “wrong”. Values on the other hand determine the definition of “good” and “bad”. The core of culture deals with people’s assumptions about existence.

Every culture has a number of general, universally shared human problems that need to be solved and there are only a limited number of ways in which a society can solve these problems. Thus, it is possible to develop a system that categorizes and compares societies on this basis. It is also possible to categorize social groups according to shared assumptions about the way things ought to be or the way it should be done (Kluckhohn and Strodtbeck 1961, Thomas 2002).

Kluckhohn and Strodtbeck Framework

Kluckhohn and Strodtbeck's (1961) framework covers variations in culture in six dimensions:

- 1) Relationship to nature- People have a need to control or master nature(domination) , to submit to nature (subjugation) or to work together with nature to maintain harmony and balance (harmony).
- 2) Beliefs about human nature- People are good, evil or a mixture of good and evil.
- 3) Relationships among people – The greatest concern and responsibility is for one's self and immediate family(individualist) , for one's own group that is defined in different ways(collateral) or for one's group that are arranged in a rigid hierarchy (hierarchical).
- 4) Nature of human activity – People should concentrate on living for the moment(being) , striving for goals (achieving) or reflecting(think)
- 5) Conception of space- The physical space we use is private or public or a mixture of public and private.
- 6) Orientation to time- People should make decisions with respect to traditions or events in the past, events in the present or events in the future.

(Source: Kluckhohn and Strodtbeck (1961), cited in Thomas 2002)

Hofstede's dimensions on culture (Hofstede 1997)

Hofstede's framework on national cultures is one of the most popular frameworks used in management and it covers five dimensions:

- 1) Power Distance - Power Distance refers to the extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally.
- 2) Individualism-Collectivism – Individualism refers to societies where the ties

between individuals are loose and everyone is expected to look after himself. The opposite of individualism is collectivism where people are integrated into strong cohesive groups. These groups protect them in exchange for unquestioning loyalty.

- 3) Masculinity-Femininity – Masculinity refers to societies where gender roles are distinct. The opposite is femininity which refers to societies where gender roles overlap.
- 4) Uncertainty Avoidance – The extent to which the members of a culture feel threatened by uncertain or unknown situations.
- 5) Short term orientation-Long Term orientation – Short term orientation refers to the fostering of virtues related to the past and present. Long term orientation refers to the fostering of virtues oriented towards future rewards in particular perseverance and thrift.

Dimensions on culture by Trompenaars and Hampden-turner (Trompenaars and Hampden-turner 1998)

The framework has seven dimensions:

- 1) Universalism versus particularism – Universalism states that what is correct and good can be applied to every situation. In particularist cultures the belief is that unique circumstances determine what is right or good.
- 2) Individualism versus communitarianism – This dimension considers whether people regard themselves as individuals or as groups. Is it more important to focus on individuals or to consider the community first? According to Thomas (2002), this is similar to Hofstede's definition of collectivism and individualism.
- 3) Specific versus Diffuse – This dimension refers to the extent to which individuals are willing to allow access to their inner selves to others. In specific cultures there is a separation of their private lives from the public. However, in diffuse cultures there is an overlap between the two.
- 4) Achievement versus Ascription – Achievement means that people are judged based

on their recent accomplishments. Ascription means that the statuses are awarded to people based on their birth, kinship, gender or age.

- 5) Attitudes to Time – The way in which societies look at time also differs. The past is considered important in certain cultures while the future is what matters in other cultures. It also refers to the extent to which time is viewed as linear versus holistic and integrative with past and present together with future possibilities.
- 6) Attitudes to Environment – The extent to which people believed that they have a control over their environment. In some cultures people believe that they can control cultures. In other cultures people believe that nature takes its course and that one should adapt according to the environment.

2.3.3 Cross-Cultural Management

For the definition on cross-cultural management, the definition by Adler (2002) is used for this research. Cross-Cultural Management explains why people in organizations around the world behave differently and tells people how to work in organizations with people from many different cultures. It describes organizational behaviour across countries and cultures and seeks to understand and improve the interaction of co-workers, managers, executives, clients, suppliers and partners from different countries and cultures around the world. It expands the scope of domestic management to include multicultural and international dynamics. The traditional approach of domestic and single culture management is considered a limited subset of cross-cultural management (Adler 2002).

One common argument posed by journals and books written from a cross-cultural perspective is that the world is not converging (Adler 2002, Trompenaars 1998, Thomas 2002, Hofstede 1997, Schneider 1998). Hofstede (1997) argued that there is little evidence of international convergence over time and that countries will remain culturally very diverse. Adler (2002) stated that there is an increase in similarity between organizations in different countries. This is with regards to strategies and structures. However, the behaviour of people within them still contains cultural uniqueness. Schneider (1998) argued that although there are forces for convergence

there are also forces for divergence or fragmentation with one of these forces being culture.

Thus, from a cross-cultural perspective management theories may not be universal and they may not be applicable in every country or culture (Trompenaars and Hampden-turner 1998, Hofstede 1997, Hofstede 1993, Schneider and Barsoux 1998). Hofstede (1993) stated that management is a word invented by Americans. However, the meaning of management and the concepts behind it are different in different cultures. US management theories contain three idiosyncrasies which are a stress on the market, a stress on the individual and a focus on the manager rather than the workers. Thus, these management theories may not be applicable to other cultures (Hofstede 1993). One practice that has been successful in the US but which had failed in France and Germany was the matrix structure. Cultural differences often undermine the rationality of best practices. Some management practices may be suitable for one culture because the social contexts are more favourable towards it. It was argued that transferring management structures and processes relies on the ability to recognize their inherent assumptions and comparing them with cultural assumptions of the host country (Schneider and Barsoux 1998).

Most strategies and models for managing cultural differences tend to consist of two extremes along with some “balanced” approaches. At one extreme would be strategies or models that ignore cultural differences. At the other extreme would be strategies and models that recognize the importance of differences in cultures (Schneider and Barsoux 1998, Adler 2002). Two examples of such models are shown in table2.2 and figure 2.9 below. Since there is a lack of research and studies on cross-cultural knowledge management, it could be argued that most authors’ assumptions would be that culture is irrelevant with regards to knowledge management.

Table 2.2: Strategies for managing cultural differences (Source: Schneider and Barsoux 1997, pp. 211)

2.3.4 Effects of national culture on other areas

This section of the literature review shows how cultural differences can have an effect on disciplines and studies that are related to knowledge management. The purpose of this section of the literature review serves various purposes. Firstly, it provides more evidence on how differences in national culture can have an effect on areas that are related or similar to knowledge management. It strengthens the argument on why there should be a study on knowledge management from a cross-cultural perspective. Secondly, it can be used in the design of the data collection methods such as the design of interview questions.

Effects of national culture on innovation

There is some empirical evidence from the literature that shows how differences in national culture can affect the rate of innovation. Shane (1992)'s study on the number of patents in 33 countries found that cultures with low power distance and individualism have a competitive advantage in inventive activity. Shane (1993)'s study was expanded

to the study of patents and trade marks and the cultural variables were expanded to include the cultural values of uncertainty avoidance and masculinity. He found further evidence that low power distance, individualism and low uncertainty avoidance would usually result in higher innovation rates. However, no evidence was found regarding masculinity. Although the word innovation is used the researcher would not assume that this immediately means higher knowledge creation. The variables used in this case were trademarks and patents and the legal structure or environment of the countries included in the study might have played a role in influencing the number of patents or trademarks. The results do not apply to Japan since from Hofstede (1997)'s study on national culture Japan's culture is collectivist and high in uncertainty avoidance. However, Japan has moderately low power distance which provides some validity for the results.

Another study by Shane was on innovation champions who are individuals who help to overcome sources of inertia to innovation in organizational routines (Shane 1994). It was found that differences in power distance would require the innovation champion to play different roles in the organization. The four roles are organizational maverick, the network facilitator, the transformational leader and the organizational buffer. Shane (1994) once again suggests the idea that uncertainty-accepting societies may be more innovative than uncertainty-avoiding societies.

In 1995, Shane expanded the idea of innovation champion to include the cultural values of power distance, collectivism and individualism and uncertainty avoidance. In Shane (1995)'s study he argued that organizations around the world share features that cause employees to resist innovation and he highlight the importance of an innovation champion. He believed that the same innovation champion strategies would not be effective in all cultures. His research on 30 countries found that different championing strategies should vary with national cultural contexts. The study showed that in more uncertainty avoiding cultures, people would prefer champions to work through organizational norms, rules and procedures to promote innovation. In societies with high power distance, people prefer champions who focus on gaining the support of those in authority before other actions are taken on innovation. Lastly, it was found that the more collectivist a society is the more people prefer champions to seek cross-functional support for the innovation effort. Although innovation champion is not

directly related to knowledge creation, there is some relation between the two. In Nonaka and Takeuchi (1995)'s book, knowledge creation leads to continuous innovation which in turn leads to competitive advantage. Thus, it could be argued knowledge management practices should consider differences in national culture and be adapted accordingly. The researcher shares Shane (1995)'s view that in the absence of management certain countries and cultures would be more innovative and be better in knowledge creation and transfer. However, this difference can be mitigated or minimized with proper management or adaptation according to differences in national cultures.

Effect of national culture on R&D and technological transfer

In this section the researcher will try to provide some other examples where national cultures have been found to have an effect on areas indirectly related to knowledge management. In Kedia, Keller and Julian (1992)'s study on the productivity of research and development (R&D) departments across cultures, it was found that countries with a lower power distance tend to have a higher productivity in terms of their R&D. In another cultural variable, it was found that cultures with higher levels of masculinity would have higher productivity in terms of their R&D. Their study could be used to explain why Japan has an advantage over other cultures in terms of knowledge creation and innovation. However, the study may not be valid since the study was conducted only on 4 firms (Kedia, Keller and Julian 1992).

In Kedia and Bhagat (1988)'s study on transfer of technology, they suggested a model which also considers how cultural differences would have an effect on the success of transfer of technology across nations. The model suggested that organizations located in individualistic cultures are more successful than organizations located in collectivistic cultures in the absorption and diffusion of technology. Another proposition was that collectivistic cultures that are fairly masculine are also effective in such matters. The model also believed that masculine cultures are more effective than feminine cultures in absorbing and transferring technology. Lastly, the model suggested that abstractive cultures are more effective than associative cultures in their ability to absorb and diffuse technology.

Effect of national culture on teaching and learning

Hofstede (1986) believed that there are cultural differences in teaching and learning and that there would be problems in cross-cultural learning situations. Problems in cross-cultural learning situations can lie in four areas:

- 1□ Differences in the social positions of teachers and students in the two societies
- 2□ Differences in the relevance of the curriculum for the two societies
- 3□ Differences in profiles of cognitive abilities between the populations from which teacher and students are drawn
- 4□ Differences in expected patterns of teacher/student and student/teacher interaction.

Hofstede believed that there were differences in teacher/student and student/student interaction for teachers and students who come from different cultures. He explained that there were differences based on his four dimensions on culture which were individualism, power distance, uncertainty avoidance and masculinity.

Cross-cultural learning and cross-cultural knowledge management do share some similarity. According to Hofstede (1997), there are four types of role patterns in four fundamental institutions which are the family, the school, the job and the community. He argued that role patterns in the four types of institutions interact so that for example patterns of teacher/student in a society may be carried over into boss/subordinate relationships. This means that role patterns and value systems in society are carried forward from the school to the job and back.

According to Nonaka and Takeuchi (1995), there are four modes of knowledge creation which are socialization, externalization, internationalization and combination. The researcher believes that cross-cultural knowledge creation of socialization would be related to cross-cultural learning. Socialization involves interaction between individuals and is defined as a process of sharing experiences and thereby creating tacit knowledge such as shared mental models and technical skills. In Nonaka and Takeuchi (1995)'s book, they cite the example of Primera as a good example of cross-cultural socialization which is a necessity for carrying out organizational knowledge creation across national boundaries. In the example, there were two rounds of socialization where Japanese Engineers were sent to Europe to gain tacit knowledge about the European car market. The second round of socialization involved the transfer of Japanese manufacturing

expertise to the British plants. In this case, British Engineers were sent to Japan to gain tacit knowledge about manufacturing practices. Since cross-cultural socialization involves people from different national cultures interacting and learning from each other it would be related to cross-cultural learning.

Related to cross-cultural learning would be the use of expatriates to transfer tacit knowledge. In the current literature, several authors suggested the use of expatriates to transfer tacit knowledge. They argued that expatriates can facilitate the transfer tacit knowledge from the headquarters to the subsidiaries. They also argued that the expatriate can also in turn gained new knowledge from the subsidiaries which they can transfer back to Headquarters (Bender 2000, Downes and Anisya 2000, Massingham 2004,a). It is the researcher's opinion that this form of transfer of tacit knowledge can be considered a form of cross-cultural learning since the expatriate would play the role of a teacher when they transfer tacit knowledge to the subsidiary's Home Country Nationals (HCNs). They may also play the role of a student when they try to gain tacit knowledge from the HCNs working at the subsidiary.

Since cross-cultural knowledge management is related to cross-cultural learning the solution for cross-cultural learning may be related and be of use to cross-cultural knowledge management. According to Hofstede (1986), there are two possible strategies to solving problems in cross-cultural learning situations. The first is to teach the teacher how to teach and the second is to teach the learner how to learn. Hofstede state his preference for the first approach and that it is also a necessity for an expatriate teacher. He also stated that in certain situations a mixture of both would be necessary. He argued that the focus of the teacher's training would be to understand that people learn in different ways. If we were to relate this to cross-cultural knowledge management it would mean that knowledge management practices should be adapted according to the national culture of the subsidiary or that the subsidiary should taught to adapt to the practices. However, the current literature appears to be silent on this matter.

2.4 Knowledge Management and National Culture

The current literature has much information on knowledge management and the

factors that facilitate and hinders knowledge transfer and creation. However, there are hardly any studies or research on cross-cultural knowledge management. One of the first authors to criticize the lack of study on the effects of national culture on knowledge management was Holden (2001). According to Holden (2001,p. 156), ‘the literature gives the impression that knowledge management operates in a kind of unitary vacuum in which diversity in terms of language, cultural and ethnic background are compressed into one giant independent variable which is in any case pushed to the side’. According to Riege (2005, p. 24)’s literature review on knowledge-sharing barriers “While several studies outlined cross-cultural sharing barriers based on organizational culture, there are few empirical studies that investigated the impact of national cultures on knowledge-sharing practices”. On the other hand, one area of research had concentrate on gathering statistical evidence on the effects of cultural or country differences on knowledge management. However, these researches were not able to prove that national culture had an effect on knowledge management (Gupta 2000, Simonin 1999 ,Dana, Korot and Tovstiga 2005).

2.4.1 Knowledge Management and Expatriation

One area of research had been on how firms can use expatriates to transfer knowledge across borders (Bender 2000, Bonache and Brewster 2001, Downes and Anisya 2000, Massingham 2004,a, Riusala and Suutari 2004). Bender (2000) states that there is a need for expatriates to have an appreciation and understanding of differences in national cultures. Kayes,Kayes and Yamazaki(2004) suggested that expatriates need to develop competencies for cross-cultural knowledge absorption. This would facilitate knowledge sharing between expatriates and local employees.

2.4.2 Conceptual frameworks and models related to Cross-cultural Knowledge Management

Some authors have also tried to come up with a framework or model for cross-cultural knowledge management. Desouza and Evaristo (2003) suggested the idea of Global Knowledge Management Strategies. They are 1) Headquarter Commissioned and executed, 2) Headquarter Commissioned and Regionally Executed and 3) Regionally Commissioned and locally executed. The first approach resembled a global strategy while the second approach resembles the transnational strategy. Under the third

approach, knowledge management is left entirely in the hands of the regional offices. They also suggested that knowledge management would vary across cultures and that it would be difficult to come up with a global standard on how to initiate it. They also highlight the importance of knowledge in knowledge transfer across borders. They state that a knowledge created and coded in English would have limited applicability in non English speaking countries (Desouza and Evaristo 2003).

One of the first models for cross-cultural knowledge transfer would be Bhagat et al's (2002) model. It provides a clear explanation compared to the other models. It is also one of the few studies on cross-cultural issues that do not rely on Hofstede (1997)'s cultural dimension. Bhagat et al's (2002) model believed that cross-cultural knowledge transfer are more effective when the knowledge being transferred is simple, explicit and independent and when transfers involve similar cultural contexts. In contrast it was believed that transfer is least effective when the type of knowledge is complex, tacit and systematic and involves dissimilar cultural contexts. Nonaka and Takeuchi (1995) have stressed that Japanese are better at tacit knowledge while Westerners are better at explicit knowledge. Bhagat et al (2002) argued that the reason would be due to the cultural variations of individualism versus collectivism. People in individualism cultures are better at explicit knowledge while people in collectivism cultures are better at tacit knowledge. Vertical and Horizontal dimensions of culture was also used because communication flows differently. In vertical cultures, information is primarily from top to bottom. In horizontal cultures, information flows both ways.

Figure 2.10: Model of knowledge Transfer in a Cross-Border Context
(Source Bhagat et al 2002, p.206)

By combining these two dimensions, there are four types of cultures which are vertical individualism, horizontal individualism , vertical collectivism and horizontal collectivism. Bhagat et al's (2002) model argued that knowledge transfer between the four types of cultures would vary in terms of difficulty according to the degree of similarity and difference between the four cultures. (Refer to Figure 2.11)

Key: 1, less difficult to transfer in either direction; 2, more difficult to transfer in either direction; 3, most difficult to transfer in either direction

Figure 2.11: Cross-Border Transfer of Organizational Knowledge among Four Cultural Patterns (Source: Bhagat et al 2002, p.212)

Some of the propositions from Bhagat et al's (2002) model were also used in Moller and Svahn's (2004) model for cross-cultural knowledge sharing in business nets. This new model provided some general suggestions on crossing cultural barriers in business nets. This was in the areas of goal setting and motivation, communication, careful selection of boundary spanners and the time perspective in establishing net relationships.

Holden (2004)'s model for cross-cultural knowledge transfer uses translation as an analogy for international knowledge transfer. He argued that knowledge transfer across cultures is similar to translation in three aspects. It is a sense making activity, it is concerned with personal cognition and the inter-lingual transfer of knowledge from head to head and into social networks. Knowledge transfer like translation is subject to constraints which affect transferability.

According to Holden (2004)'s model there are three factors that would affect cross-cultural knowledge transfer. One of them is ambiguity that causes perceived confusion about a message source. Two other factors interference and lack of equivalence were factors that would affect the knowledge translation process. In translation theory, interference means that words look the same in different languages but mean something

else. For equivalence Holden (2004,p.133-134) states that “the purpose of international knowledge transfer is to find cross-cultural equivalence: the state of achieving harmonization of view, purpose and priorities”.

Figure 2.12: Extended model of knowledge transfer as translation
(Source: Holden and Von Korfleisch 2004 ,p.134)

Another model related to cross-cultural knowledge transfer would be Kostova (1999)’s model of success of the transnational transfer of organizational practices. The model is about the transfer of strategic organizational practices across MNCs in different countries with one of its propositions being institutional distance between home and recipient. However, for differences in countries the model uses country institutional profile instead of cultural dimensions as the basis for comparison. Kostova (1999) state that there are some overlap and similarities between the CIP and culture and that is simply a matter of different approaches to conceptualizing social context. Despite this fact, it is still one of the few models that recognize how differences in countries would affect the transfer of knowledge or organizational practices across borders.

Schlegelmilch and Chini (2003) took a different approach in their model for knowledge transfer across countries. They basically believe that there are five factors that affect the effectiveness of knowledge transfer and cultural distance was one of the factors. However, the model is rather brief on the issue of cultural distance. No attempt was made to use any dimensions or concepts to explain the difference in cultural

distance. Stanley (2003)'s PhD thesis focused on trying to find out the means by which knowledge is transferred across countries, factors affecting knowledge transfer across countries and indicators of knowledge transfer across countries. In this PhD thesis, the focus was on transfer across countries and national culture was a very minor point in the thesis. However, it was also one of the few PhD thesis that touches on knowledge transfer across cultures. Although the thesis was submitted in 2003, very little literature review was done on the area of cross-cultural knowledge transfer. Holden (2001), Husted and Michailova (2002, b), Bhaghat et al (2002) were some of the classic research articles on cross-cultural knowledge transfer at that time. It is likely that these studies were not incorporated in the thesis because the author's focus was on transfer across countries and not on transfer across cultures.

2.4.3 Knowledge transfer to specific national cultures

Some authors have studied the barriers and problems related to the national culture of Russia, when MNCs transfer knowledge to Russian companies (Husted and Michailova 2002, b, Michailova and Husted 2003, Hutchings and Michailova 2004, May, Puffer and McCarthy 2005). According to Husted and Michailova (2002, b), the national culture of Russia reinforced some of the general barriers of knowledge transfer. For example, they found that the Russians were trained to keep things confidential which affected their ability as knowledge transmitters. Russians were also found to be poor knowledge receivers because they have a high mistrust towards knowledge produced by foreigners. Another example would be that Russians have low absorptive capacity and have difficulty learning from their subordinates. Michailova and Husted (2003) suggested various recommendations to western expatriates on how these expatriates could resolve the barriers to knowledge transfer that are created by Russia's national culture. Some examples include developing mutual trust and a positive knowledge-sharing environment to resolve the barrier related to Russian's fear of making mistakes. Another example would be rotating middle managers and employees to solve the problem of the Russian's high mistrust of foreigners.

There has also been research on how the national culture of China would affect knowledge transfer (Hutchings 2005, Weir and Hutchings 2005, Hutchings and Michailova 2004, Voel and Han 2005). Voel and Han's (2005) study of knowledge

sharing in Siemens ShareNet found that Chinese nationals were more willing to transfer their knowledge to others, compared with staff from the United States. Hutchings (2005) suggested that international managers need to recognize the effects of the national culture of China. This meant that adaptations must be made if they want to create an organizational culture that would encourage knowledge sharing. Some examples include using intermediaries to build relationships with employees and business partners. Another example would be to provide training, motivation and performance appraisal within the context of the group.

There is also a case study on transfer of human resource management knowledge across cultures (Iles, Wong and Yolles 2004). The paper analyses the transfer of knowledge on human resource management practices from the west to the Mauritius. The model provided basically explained that knowledge transfer across cultures may be problematic or it may be inappropriate. It suggested the need for some form of adaptation. One suggestion was through interactive group reflection and learning involving both Western and Mauritian participants. Finestone and Snyman's (2005) study of knowledge management in South Africa found that the diversity of cultures in South African companies resulted in barriers in knowledge sharing. They suggest that there is a need to acknowledge differences in culture and to develop a culture of trust to overcome barriers in multicultural knowledge sharing.

2.4.4 Comparison of Knowledge Management practices between national cultures

Some studies have tried to compare the knowledge management practices of different national cultures. It would be beyond the scope of this thesis to list all of them. Thus, only some of them are explained in greater detail. One of the earliest comparisons would be the comparison by Nonaka and Takeuchi (1995) which was between the West and the Japanese. Nonaka and Takeuchi (1995) stated that there are differences between the Japanese and Western approaches to organizational knowledge creation. (See table 2.3) They then provided two case examples where Japanese companies were able to use their approach to knowledge creation outside of Japan. However, both cases are good examples of adaptation of organizational practices due to differences in national culture. In the case of Nissan, which was trying to build the Primera car in Britain, it was stated that Nissan tried as much as possible to replicate its Japanese operations in Britain

,while recognizing the significance of cultural and other differences between the two national environments. In the case it was said that Japanese workers share a high amount of tacit knowledge and thus didn't really require manuals. However, the British workers were more used to the idea of having operating manuals since they prefer explicit knowledge. What Nissan did was that it codifies its know-how into a manual and sends them to Britain.

Table 2.3: Comparison of Japanese style vs. Western Style organizational knowledge Creation
(Source: Nonaka and Takeuchi 1995, p.199)

Another author who compared the differences in knowledge Management practices between Japan and the west was Jin (2001). According to Jin (2001), different countries have different sectoral patterns of national competitiveness. In his comparison of national competitiveness in the USA and Japan, it was found that the USA had always had a leading position in sectors of aircraft, biotechnology, software, information services, electronic business, and other professional services. On the other hand Japan had always been in a leading position in sectors of automobile, home electronics, machines tools and flexible manufacturing systems. It was argued that differences in national competitiveness exist because different countries have different knowledge creation process and different knowledge creation processes are required for different sectors. Jin (2001, p.3) state that "Instead of following the myth of 'one best way', different societies handle knowledge creation differently according to their different cultural premises and organizing principles."

Takeuchi (2001) provided further information on how there are different approaches to knowledge management based on culture. He states that in the beginning the

approach of European companies towards knowledge management was on measuring knowledge. The approach of the American companies was towards the management of knowledge using information technology. Lastly, the approach of Japanese companies was on creating new knowledge in the organizations. Takeuchi (2001) argued that knowledge management practices are converging and that effective knowledge management would evolve into a universal concept.

According to Wang (2004), there were differences between the Taiwanese and the US with regards to their beliefs and expectations about knowledge management practices. It was found that knowledge workers in Taiwan responded more efficiently to implementations of knowledge management than US workers. The difference in responsiveness was due to the differences in national culture between the two cultures especially with regards to collectivism and Confucian Dynamism. Weir and Hutchings (2005) studied compared the national cultures of the Arab and China and whether the SECI model created by Nonaka and Takeuchi (1995) would apply in these cultures. Hutchings and Michailova (2004) studied the former communist countries of Russia and China and how group membership and personal networks were important facilitators of knowledge transfer in these cultures. They suggested some recommendations on how managers from the West could facilitate knowledge sharing in Russia and china.

2.5 Gap in the Knowledge Management Literature

2.5.1 Arguments for Standardization of Knowledge Management in an International Context

Nonaka and Takeuchi (1995) state that ‘the future belongs to companies that can take the best of the east and the west and start building a universal model to create new knowledge within their organizations. Nationalities will be of no relevance as we will no longer identify the key characteristics of successful companies as being Japanese, American or European.’ Takeuchi (2001) argued that initially there were cultural differences between countries with regards to their approaches towards knowledge Management. However, he argued that there is a convergence of approaches with regards to knowledge management. He concludes that “Knowledge Management is now positioned to branch out and bear its fruits in the field of management; it may blossom

to become the most universal management concept in history” (Takeuchi 2001, p.328). Their view that knowledge management can be applied universally appears to be implicitly acknowledged by the knowledge management community (Holden 2001). Holden (2001) believed that this explains why there are few studies on the effects of national culture on knowledge management, or the need for adaptation of knowledge management practices based on differences in national culture. The researcher agrees with Holden (2001)’s opinion and believed that Nonaka and Takeuchi (1995)’s belief may also explain why there were no studies on other arguments why a firm should standardize their knowledge management practices. Apart from their argument that knowledge management may be a universal concept there is hardly any argument by other authors on why there should be standardization of knowledge management practices across cultures.

Several studies have also failed to provide statistical evidence on the effects of national and cultural differences on knowledge management. In Gupta (2000)’s study, no evidence was found on how higher number of Home Country Nationals in a Mac’s subsidiary would result in a lesser knowledge inflow into that subsidiary. Gupta’s study is not really related to cross-cultural knowledge management since in his article he was studying how the number of HCNs would result in a lower absorption capacity. In his article, he admits that an editor have pointed out that there might be problems with this approach. One flaw in his research would be that cultural or country differences would always result in a lower level of absorption capacity. Similarly in Simonin (1999)’s study on knowledge transfer in strategic alliances between firms in different countries there was no significant evidence that cultural distance have any effect on ambiguity in knowledge transfer.

Jensen and Szulanski(2004)’s study on adaptation of organizational practices in cross-border knowledge transfers also failed to provide any clear answers on whether cultural distance would have an effect on knowledge transfer across cultures. Some of the key findings from this study include the following. Firstly, there was little evidence that adaptation of organizational practices in knowledge transfer would increase the recipient’s motivation. Secondly, adaptation of organizational practices increased the stickiness of cross-cultural knowledge transfer. Thirdly, an increase in the distances between the two countries’ culture actually increases the difficulty of knowledge

transfer. However, there was enough statistical evidence to prove that higher differences in national culture would result in lower recipient's motivation. Although Jensen and Szulanski (2004)'s study failed to provide any statistical evidence they were able to provide a very logical explanation for this research findings. Their explanation was that the problem may not lie with adaptation increasing stickiness. The problem may be due to adaptation being appropriate but is insufficient. Another problem may be due to the fact that adaptation is sufficient but inappropriate.

Dana, Korot and Tovstiga (2005)'s cross-national comparison of knowledge management practices also failed to identify differences in knowledge management practices between the countries of US, Singapore, the Netherlands and Israel. They suggest that innovative and entrepreneurial firms would have the same knowledge management practices even if they belong to different national cultures.

2.5.2 Arguments for Adaptation of Knowledge Management practices in an International context

Knowledge Management is currently one of the most universal management concepts in history. However, a group of authors are against this idea (Pauleen and Murphy 2005, Zhu 2004, Glisby and Holden 2003 and Holden 2001). According to Zhu (2004,pp.67), although there is growing overlaps between cultures, differences among knowledge management styles is likely to continue due to differences in histories, cultures and institutional forces. This means that a universal concept of KM is unrealistic, counterproductive and undesirable". Pauleen and Murphy (2005, p.5) state that "Knowledge management models that exclude the influence of national and regional culture seriously undercut their potential effectiveness particularly in global applications. " He argued that cultural bias exists in data bases and in all business and innovation. However, he state that western analytical assumptions about knowledge and information management dominates both information and knowledge management research and development.

Another reason would be that it is obvious that some form of cross-cultural knowledge transfer is obviously taking place. Companies were actually adapting their practices according to the differences in culture and countries. This was highlighted in

the two case examples in Nonaka and Takeuchi (1995)'s book and in Szulanski and Jensen (2004)'s study

Although Nonaka and Takeuchi (1995)'s book "The knowledge Creating Company" is one of the most influential in the field of knowledge management, Glisby and Holden (2003) argued that the model must be seen as a product of Japan. They argued that the famous SCEI model representing the four modes of knowledge creation socialization, externalization, combination and internalization contains certain Japan-specific cultural constraints. Thus, they believed that the model could not be universally applied and that some form of adaptation would be necessary. Holden (2001) quoted the example of General Motors attempt to transfer Japanese automotive productive schemes to other countries. The transfer resulted in strikes and production losses of \$2bn a week. Holden argued that the transfer was a failure because the company did not take into account of cultural differences between Japan and the countries where the scheme is to be transferred to.

As mentioned earlier apart from Nonaka and Takeuchi (1995) and Takeuchi (2001)'s argument that knowledge management may be applied universally, there are no other arguments that explain why firms should standardize their knowledge management practices across countries and in international business. As mentioned earlier in the section on literature on adaptation in international business in other disciplines there are usually arguments for standardization. Thus, it is necessary to find out if there are other reasons that explain why firms make the decision to standardize their knowledge management practices in international business (Ang and Massingham 2005,a)

2.5.3 Outcomes of knowledge Management from Standardization and Adaptation

Thus, based on the current literature it could be argued that cross-cultural knowledge management outcomes can be divided into four types based on two variables. (Refer to table 2.12) The two variables would be whether to adapt or not to adapt knowledge management practices and the outcomes of the decision. Examples of appropriate adaptation, appropriate standardization, inappropriate adaptation and inappropriate standardization are provided in the following paragraphs.

Authors who believed that differences in national culture have an impact on knowledge management believe that most outcomes for cross-cultural knowledge management would fall under either box Appropriate Adaptation or Inappropriate Standardization. For appropriate adaptation, studies on knowledge management in china and Russia have identified knowledge sharing barriers related to these national cultures and that Western firms need to adopt an adaptation approach for knowledge transfer to be successful (Hutchings and Michailova 2004, Hutchings 2005, Michailova and Husted 2003). Another example of appropriate adaptation would be the case of Rosendahl by Glisby and Holden (2005). In the case of Rosendahl, it was argued that one of the reasons for successful knowledge transfer was because they adapted to some aspects of the Japanese culture and that the MNC did not impose their strategy on their Japanese partners. Another example of appropriate adaptation would be the case of Sharenet by Siemens. Siemens was able to succeed because it took into account differences in national culture. For example pilot projects were undertaken in Australia, Malaysia, China and Portugal to gain cross-cultural insights from their subsidiaries (Voelpel, Malte Dous and Davenport 2005).

Szulanski and Jensen (2004)'s argument that inappropriate or insufficient adaptation may increase the stickiness of knowledge transfer would fall under the second box which is inappropriate adaptation leads to failure or less effective outcomes from knowledge management. Based on Bhagat et al (2002)'s model, the researcher believe that insufficient adaptation might be a possibility since the model suggested that the greater the difference between cultures the greater the difficulty in knowledge transfer across cultures. Thus, what may be sufficient adaptation between cultures that are slightly different may not be sufficient adaptation between cultures that are much different from each other.

The third box would be not to adapt knowledge management practices according to cultural differences and still be able to achieve a favourable outcome. This would appear to be the current view of most of the literature on knowledge management (Holden 2001). It would refer to studies by Jensen and Szulanski (2004) where standardization leads to effective knowledge management outcomes.

Lastly, the fourth box would be situations where the company did not adapt their

knowledge management practices and the decision lead to failure or less effective outcomes from knowledge management (Holden 2001, Paik and Choi 2005 , Javidan et al 2005) This would be referring to the example of General Motor by Holden (2001). Another example of inappropriate standardization would be the case study of Accenture by Paik and Choi (2005). In the case of Accenture, the firm was not successful in transferring its knowledge across countries. It tried to establish a knowledge management system that did not consider differences between countries and cultures. Instead it tried to impose a one-size-fits all policy for knowledge management which lead to ineffective knowledge management outcomes. Javidan et al (2005) states that differences in national culture between Northern Europe and South Asia affected the effectiveness of knowledge transfer. It argues that managers in charge of knowledge transfer need to be aware of differences between national cultures. Managers from different cultures need to define their common goals and assign relationship managers to be in charge of cross-cultural knowledge transfer.

Since there are four outcomes, there is a need to understand the differences in characteristics between firms with an appropriate outcome and firms with an inappropriate outcome. This means for example there are likely to be similarities between a firm with an appropriate standardization outcome and a firm with an inappropriate standardization outcome. However, at the same time there would definitely be differences between these two types of firms. Thus, it would be necessary to study the differences in characteristics between the four types of outcomes.

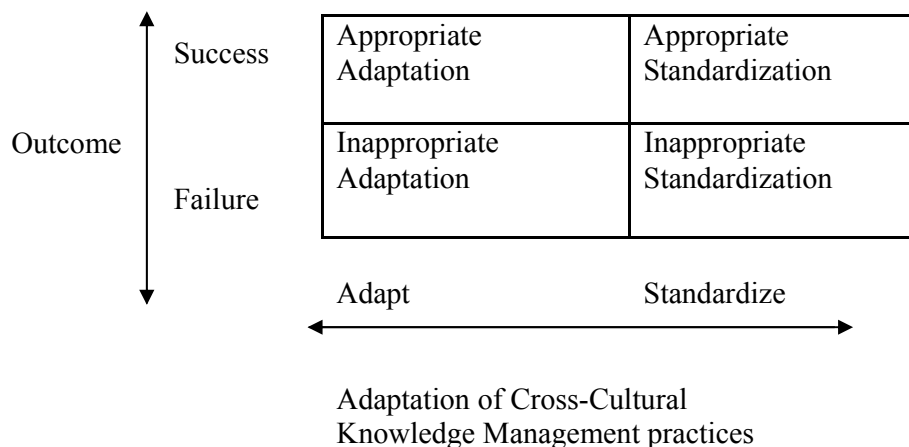


Table 2.13: Adaptation and outcomes for Cross-Cultural knowledge Management
(Source: This is created by the researcher as a summary of the literature.)

3 Conceptual Framework for International Knowledge Management

In this section, a conceptual framework is provided for this research. According to Sarantakos (1998), a conceptual framework “ explains either graphically or in a narrative form the main things to be studied - the key factors, constructs or variables – and the presumed relationship among them” Conceptual Framework are also called research designs and they are only used for qualitative research (Sarantakos 1998,p.105-106). The arguments for a qualitative research will be elaborated in a later section.

According to Saratankos (1998, p.106), a framework contains the following elements :

- 1) It explains the main dimensions of the study (e.g. key factors, variables)
- 2) It describes the presumed relationship between factors and variables
- 3) It specifies who and what is to be studied as well as events, settings, processes, theoretical constructs considered in the study
- 4) It also specifies outcomes of the study
- 5) It guides the researcher through the research process, at the same time being receptive to change, by focusing and refocusing data collection and analysis
- 6) It coordinates research activities by the members of a research team.

Explanation of key factors and their relationships

The key factors and variables in the conceptual framework are :

- 1) Factors affecting knowledge creation and knowledge transfer
- 2) Differences in national culture
- 3) The various outcomes that arises from a firm’s decision to standardize or adapt

An explanation of these factors and their relationships with each other would be explained in the following section. From the literature review, the researcher has identified that there are various factors that can lead to successful knowledge transfer and successful knowledge creation.

<u>Factors Affecting Creation</u>	<u>Factors Affecting Transfer</u>
1) Leadership	1) Type of knowledge to be transferred
2) Middle-up-down Management	2) Absorptive Capacity
3) Knowledge Vision	3) Relationship between sender and Recipient
4) Strategy	4) Headquarter Control Mechanisms
5) Hypertext organization structure	5) Source Transfer Capacity
6) Ba and Shared Context	6) Learning Intent
7) Creative Chaos	7) Incentive based learning Capacity
8) Care	8) Partner Protectiveness
9) Knowledge Assets	9) Human Resource Management Practices
10) Autonomy	10) Organizational Culture
11) Redundancy	11) Infrastructures
12) Requisite Variety	12) Information Technology
13) Managing Conversations	13) Leadership
14) Knowledge Crew	14) Measurement
15) Job Rotation	15) Forms of Ownership
	16) Strategic Similarity
	17) Psychosocial Filter

Factors affecting knowledge creation and knowledge transfer can be factors that are necessary for success and barriers that can prevent the firm from achieving transfer in knowledge management. Most of the current literature does not consider whether these factors would be applicable in every national culture (Holden 2001). Most of the literature on knowledge management can be illustrated in the following figure.

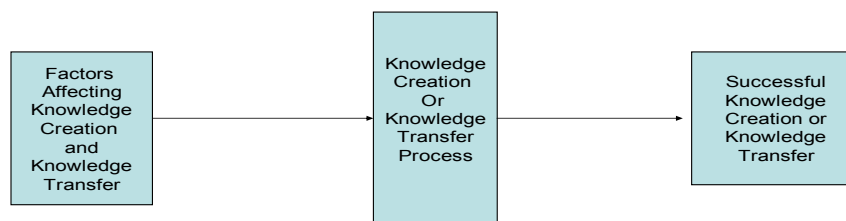


Figure 3.1: Most of the literature on factors affecting knowledge creation and knowledge transfer

However, from the literature review it was found that some authors argued that national culture would have an effect on a firm's knowledge management practices.

They are against the idea that knowledge management is a universal concept and they argue for the need for adaptation according to differences in national culture (Holden 2001, Glisby and Holden 2003, Bhagat et al 2002, Moller 2004, Pauleen and Murphy 2005, and Zhu 2004). Their views on knowledge management can be illustrated in the following figure.

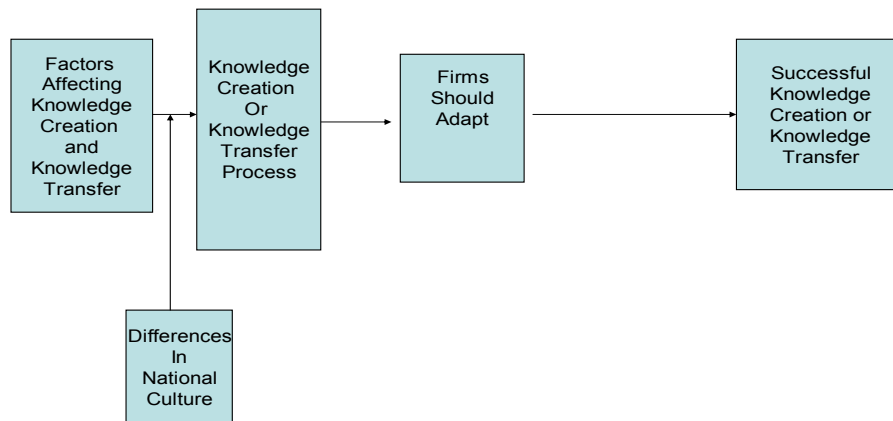


Figure 3.2: Theoretical models that believe that national culture has an effect on knowledge Management

The flowchart shown in figure 3.3 has integrated the literature on knowledge management and the literature and the literature on adaptation or standardization. It is a summary of the literature and it also presents one of the gaps in the current literature. This flow chart recognizes the fact that there are factors affecting knowledge creation and knowledge transfer. However, based on the literature on adaptation and standardization in other disciplines a firm operating in a country where there are differences in national culture a firm has to make the decision to standardize or adapt. In an earlier section on outcomes from cross-cultural knowledge management, four outcomes have already been identified which are: appropriate standardization, inappropriate standardization, appropriate adaptation and inappropriate adaptation. These outcomes occur after a firm makes the decision to adapt or standardize its knowledge management practices.

This is the difference between a firm operating in a foreign country and a firm

operating in its home country. This idea is incorporated into the flow chart and the first research question seeks to find out why firms make the decision to standardize or adapt these practices.

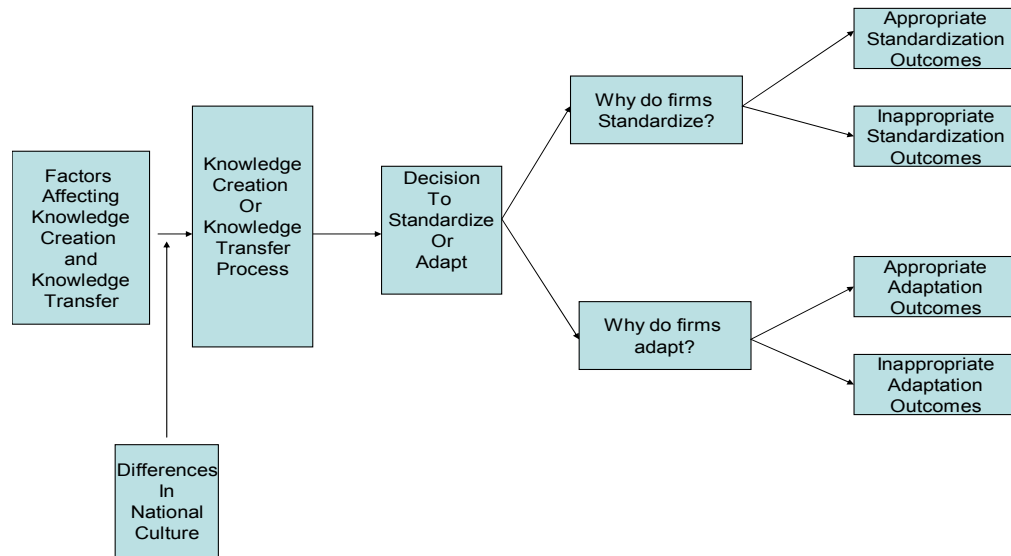


Figure3.3: Flowchart of research on adaptation and standardization of Knowledge Management Practices according to differences in national culture

3.1 Conceptual Model

Based on the literature the researcher and his supervisor proposed the creation of a conceptual model¹ for this research. Ang and Massingham (2005, b) suggests that it is likely that most firms start with a standardized approach towards knowledge management. This is likely due to the firm's belief that standardization leads to cost efficiencies. However, if a problem appears in the process the firm is likely to consider an adaptation process.(Refer to figure 3.4)

¹ This conceptual model was presented in the Australian and New Zealand Academy of Management Conference in 2005. It is also part of a paper that was accepted for publication in the Journal of Knowledge Management which would be published at a later date.

Figure 3.4 Decision Process map for Standardization and Adaptation of KM² (source:Ang and Massingham 2005,b)

Following the model suggested by Massingham(2004,b) for this conceptual model, knowledge management would be labeled as an activity made up of various processes such as the knowledge creation process and the knowledge transfer process. (refer to figure 3.5)

The next step is the standardization versus adaptation decision. The firm must then decide whether to use the firm's standard approach to this process. The researcher and his supervisor suggest that this point is where the influence of national culture may occur. The next step is to examine the impact of culture at the 'sub-process' levels. These include the list of steps associated with knowledge creation (Nonaka and Takeuchi, 1995) and knowledge transfer (Szulanski, 1996). In this way, managers can further identify and isolate the areas that may require an adaptation decision. Taking Nonaka and Takeuchi's (1995) knowledge creation model as an example, it may be that the first and second 'sub-processes' – sharing tacit knowledge and creating concepts – may be affected by differences in national culture but the remaining three steps are not.

² This diagram was not found in the conference proceedings since the researcher and his supervisor did not come up with this decision process map at that time. However this diagram was presented during the researcher's presentation at the actual Australian and New Zealand Academy of Management Conference in 2005.

The manager may then conclude that the firm can standardize three of its knowledge creation sub-processes and adapt the other two. The final step will be to review the standardization versus adaptation decision against a performance measure.

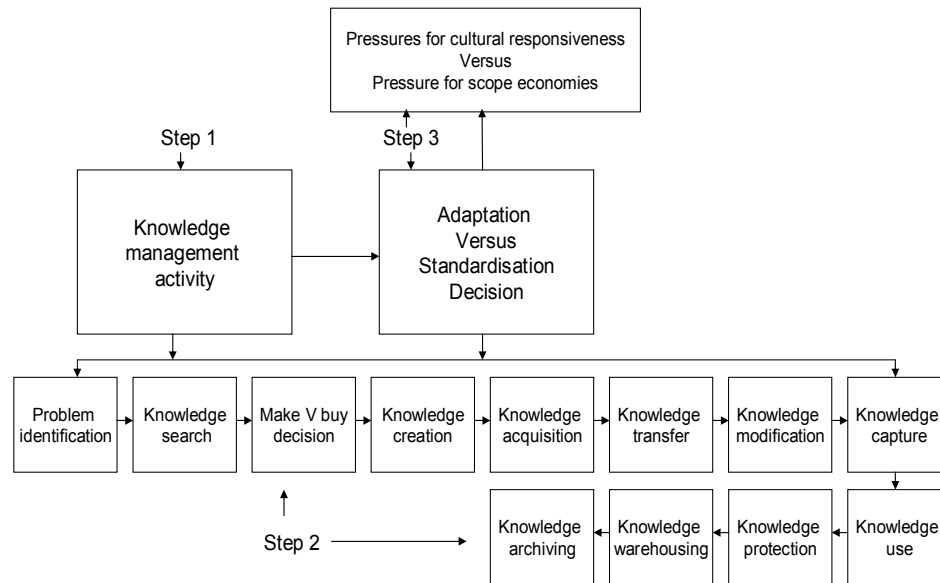


Figure 3.5. Method for identifying the location of cultural impact (and need for scale economies) and isolating the adaptation process and sub-processes

In most other disciplines, e.g. strategy and marketing, the factors influencing the decision are summarized by the opposing tensions of pressures for cost reduction versus pressures for market responsiveness. The researcher and his supervisor propose that the standardization versus adaptation decision in international knowledge management may be influenced by two dimensions: differences in national culture across the firm's global network and economies of scope (Ang and Massingham 2005, c)

Figure 3.6 provides a framework explaining how the two opposing tensions - pressures for scope economies and pressures for cultural responsiveness - may be used to guide the standardization versus adaptation decision in international knowledge management. When the pressures for scope economies are high and pressures for cultural responsiveness are low, a standardization decision is most appropriate. On the other hand, when pressures for cultural responsiveness are high and pressures for scope

economies are low, the most appropriate decision is adaptation. However, this paper did not identified an appropriate decision when the pressures for cultural responsiveness and scope economies are both high (Ang and Massingham 2005, c).

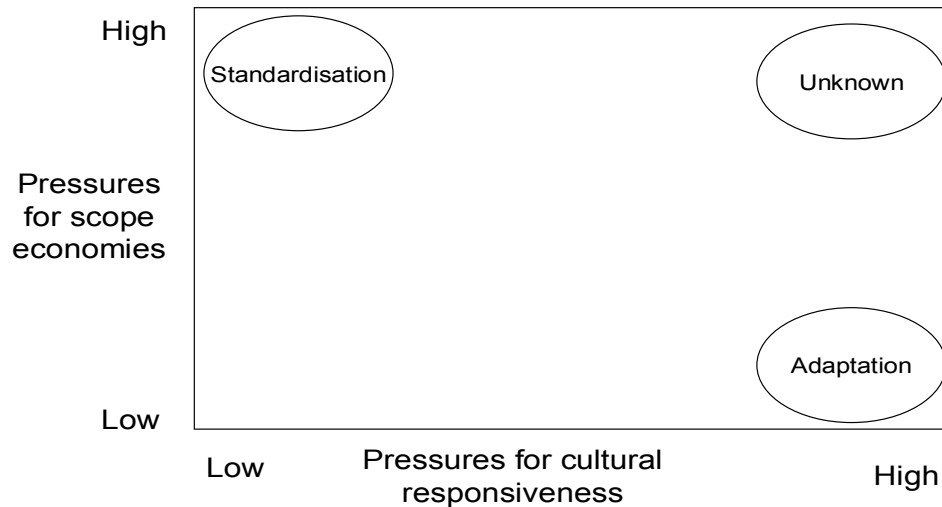


Figure 3.6. National cultural differences and the standardisation versus adaptation decision in international knowledge management

3.2 Formulation of the research questions

Based on the literature review and the conceptual model developed for this research, the researcher proposed the following research questions for this thesis. The primary research question studies on the firm's decision to standardize or adapt knowledge management according to differences in national culture.

- 1) What are the factors affecting a firm's decision to standardize or adapt their knowledge management practices?
- 2) How does difference in national culture affect the standardization and adaptation of the knowledge creation and knowledge transfer process?
- 3) What are the differences in characteristics between the firms with the four different outcomes of appropriate standardization, appropriate adaptation, inappropriate standardization and inappropriate adaptation ?
- 4) How do differences in national culture affect factors that are important for

knowledge creation and knowledge transfer?

Explanation of the first research question

The first research question is “What are the factors affecting a firm’s decision to standardize or adapt their knowledge management practices?” The first question is relatively straight forward and seeks to find out why managers make the decision to standardize or adapt their knowledge management practices. It is relatively broad than the other questions which are more specific.

Explanation of the Second research question

The second research question is “How does difference in national culture affect the standardization and adaptation of the knowledge creation and knowledge transfer process?” It is more specific than the first research question. It is made up of various parts. Firstly, it is interested in how differences in national culture affect the efficiency of the knowledge creation and knowledge transfer. Secondly, it is interested in whether differences in national culture have an impact on the firm’s decision to standardize or adapt the knowledge creation and knowledge transfer process. Thirdly, it is interested to know about the respondent’s satisfaction with the firm’s decision to standardize or adapt the knowledge creation and knowledge transfer process. Lastly, and most importantly which sub-process or steps in international knowledge creation and international knowledge transfer are more affected by differences in national culture.

Explanation of the third research question

The third research question is “What are the differences in characteristics between the firms with the four different outcomes of appropriate standardization, appropriate adaptation, inappropriate standardization and inappropriate adaptation?” This question is relatively straight forward and seeks to find out what are the causes for the differences between these four outcomes.

Explanation of the fourth research question

The fourth research question is “How do differences in national culture affect factors that are important for knowledge creation and knowledge transfer? From the current literature, there were several factors affecting the outcomes of knowledge creation and knowledge transfer. However, very few studies have ever explained how differences in national culture would affect these factors.

Who and what is to be studied?

In the previous section the important variables and their relationship have been identified in the figure. To find out how firms make decisions regarding standardization or adaptation, the unit to be studied would be the managers working in the firm. Only managers working in organizations with an overseas subsidiary will be selected for the study. Their opinions, attitudes and responses towards the survey questions would be studied. More information on the sampling process and strategy would be provided in the next section.

Outcomes of the research

The outcomes of the research would benefit two groups of people. The outcomes of the research would benefit two groups of people namely academics and managers. Firstly, academics would benefit because the researcher have already identified a gap in the knowledge management literature. Answers to the research question would provide much information on standardization and adaptation with regards to international knowledge management. It would also add on to the literature on cross-cultural knowledge management. Information from the research might be a starting point for further research in the area. Managers in charge of knowledge management in MNCs would also benefit from the outcomes of the research. Their decision making process on whether to standardize or adapt would be improved if they have a better understanding of factors in favour of standardization and factors in favour of adaptation.

4 Research Methodologies

4.1 Introduction

This chapter begins with the research objectives and the research questions. The selection of a research design, research methodology and research method involves a number of steps. Different authors have different views on this matter. They also have different names and ideas on what is methodology, strategy and methods (Saratankos 1998, Yin 1994, Malhotra 2002, Robson 1995, Denscombe 1997). The terms used in this proposal are based on the terms suggested by various authors. A researcher has to make many decisions on the research design, theoretical perspective, strategy and method. A summary of the decisions that are made for this research proposal can be seen in table 4.1. The reasons for choosing a particular option will be provided in each section. The references are used for making each decision is also provided in table 4.1. In addition to the factors and elements covered in table 4.1, the researcher have also included information on operationalisation, extraneous variables, validity and reliability, time frame for research ,ethical issues and limitations and problems from the research. Some of these factors will be discussed in depth and an explanation on how it relates to this research will be provided. Some factors are listed to illustrate that the researcher have an understanding on these issues and would take the necessary precautions. The factors and information are chosen to be included in this research proposal based on the literature on research methodology (Kumar 1996, Wong 2005).

Table 4.1:Summary of research methodology used for this research		
The type of decision for this research	The option used for this research	References

Theoretical perspective	Interpretive perspective	Sarantakos (1998)
Qualitative or Quantitative methodology	Mainly Qualitative	Sarantakos (1998) Marshall and Rossman (1998) Bryman and Bell (2003)
Research Design	Mixture of Exploratory and Explanatory but mainly Exploratory	Malhotra (2002) Churchill (1992) Yin (1994) Robson (1995)
Research Strategy	Case Studies	Denscombe (1998) Robson (1995) Yin (1994)
Type of Cross-Cultural Management Research	Comparative type, International and Intercultural	Thomas (2002)
Sampling	Theoretical Sampling	Eisenhardt (1989) Sarantakos (1998) Thomas (2002)
Data Collection Methods	Multiple sources of evidence Qualitative and Quantitative surveys	Johnson and Turner (2003) Yin (1994) Eisenhardt (1989)
Analysis of Evidence	Methods applicable to Qualitative research and case studies	Yin (1994) Eisenhardt (1989) Sarantakos (1998) Denscombe (1998)

4.2 Research Objectives

The research objective for this research is to seek the answers to the following research questions:

- 1) What are the factors affecting a firm's decision to standardize or adapt their knowledge management practices?
- 2) How does difference in national culture affect the standardization and adaptation of the knowledge creation and knowledge transfer process?
- 3) What are the differences in characteristics between the firms with the four different outcomes of appropriate standardization, appropriate adaptation, inappropriate standardization and inappropriate adaptation ?
- 4) How do differences in national culture affect factors that are important for knowledge creation and knowledge transfer?

4.3 Steps in the choice of paradigm , design , strategy and collection methods

Many different authors have different criteria and opinions on what are the steps involved in making decisions regarding the research paradigm, design, and strategy and collection methods in a research project. This research proposal will use a mixture of the ideas by the various authors.

A brief explanation of the steps suggested by the various authors will be provided in the following section. Full details and definitions will be provided in the later sections. The researcher will provide reasons based on the background of this research and the literature on research methodology to explain why he has made a particular choice for each decision related to the research paradigm, design, and strategy and collection methods.

According to Sarantakos (1998), there are three steps. Firstly, a researcher should determine what his research paradigm is. Some examples of research paradigm include positivist perspective, interpretive perspective and critical perspective. Secondly, a researcher should choose his methodology which is whether it is a quantitative methodology or a qualitative methodology. Lastly, the researcher should determine his methods which refer to his data collection methods. One thing to note is that according to different authors have different definitions. Sarantakos (1998) 's definition of methodology actually refers to Bryman and Bell(2003)'s definition of strategy.

According to Denscombe (1998) and Robson (1995), a researcher should determine a research strategy which will influence his choice of research methods. Some examples of research strategy include surveys, case studies ,experiments and action research. Some examples of methods refer to data collection methods like questionnaires and interviews and observation. Their definition of data collection methods is similar to that of Sarantakos (1998).

Some authors believe that there is a need to determine a research design. By a research design, they refer to whether it is exploratory research, casual research and descriptive research. The choice of a research design will influence the method. By methods, Malhotra (2002) and Churchill (1992) do not really differentiate between strategy and methods. For example, according to Malhotra (2002), both observation and case studies are classified under methods. According to authors like Denscombe (1998),

Yin (1994) and Robson (1995), observation is considered a method for data collection while case studies are considered a research strategy. Another difference is that qualitative methods are considered as methodology by Sarantakos (1998) and a strategy by Bryman and Bell (2003). However, Malhotra (2002) considers it as a data collection method.

At this point of time, it would appear that there is some confusion regarding the terms to be used. Thus, a comparison of the terms and the items that fall under them can be seen in table 4.2. For research paradigm, since the researcher is only using references from one author there is no problem. However, for research method the researcher will stick with the definition by Denscombe (1998) and Robson (1995) and separate strategy and data collection methods into separate categories. The researcher will use the definition of a research design by Malhotra, and will also make a decision on whether this research will be using a quantitative or qualitative approach. According to Saratankos (1998) and Yin (1994), some researchers consider a case study to be a data collection method. However, Yin (1994) argued that a case study should be a research strategy. Thus, for this research the researcher is taking this stance and will consider case studies to be a research strategy.

Table 4.2:A comparison of the terms used by different authors with regards to research methodology				
Theoretical	Methodology	Research	Research Strategy	Data Collection

	perspective		Design		methods
Sarantakos (1998)	Positivistic Interpretive Critical	Quantitative or Qualitative			Experiments and focus groups Surveys Documentary
Denscombe (1998)				Surveys Case Studies Experiments Action Research Ethnography	Questionnaires Interviews observation Documents
Robson(1995)			Exploratory Explanatory Descriptive	Case Studies Experiments Surveys	observations Interviews Questionnaires
Malhotra(2002)			Exploratory Causal Descriptive		Surveys Case Studies Secondary data Qualitative research
Yin (1994)			Exploratory Explanatory Descriptive	Experiment Survey Archival analysis History Case Studies	Documents Archival records Interviews Direct Observation Participant observation Physical Artefacts

4.4 Research Paradigm

A research paradigm is defined as “ a set of propositions that explain how the world is perceived; it contains a world view, a way of breaking down the complexity of the real world, telling researchers and social scientists in general what is important, what is legitimate and what is reasonable” (Sarantakos 1998: 31-32). It is also defined as a set of beliefs, values and techniques which is shared by members of a scientific community and which acts as a guide or map, dictating the kinds of problems scientists should address and the types of explanations that are acceptable to them (Kuln 1970 cited in Sarantakos 1998, p. 32).

There are three types of paradigms in the social sciences which are positivistic, interpretive and critical. Descriptions of these paradigms are shown in table 4.3.

Table 4.3 Main paradigms in the social sciences (Source: Sarantakos 1998 , p.33)

According to Sarantakos (1998), there are four differences between these perspectives which are perception of reality , perception of human beings, nature of science and purpose of social research. These differences would influence the choice of methodology, method of data collection and the process related to data analysis.

With regards to this research, the researcher believed its research paradigm would be interpretive. Firstly, the researcher would consider that he hold an interpretive perspective. Interpretive theorists believe that reality is subjective and is interpreted differently by people. Positivism states that reality is objective and that there are universal laws (Sarantakos 1998). With regards to this research, the researcher believed that different academics and people have different interpretations and opinions with regards to knowledge management in a cross-cultural context. The researcher had already stated that he rejected Takeuchi (2001)'s belief that knowledge management may become a universal management concept. This research does not have a stand on whether a firm should standardize or adapt. Instead, the researcher interprets the gap in the literature as it is possible to standardize and adapt. The decision and the outcomes depend on the factors. Thus, it means that just because Takeuchi(2001) claims that the concept may be universal it does not mean that there are no other factors that can affect standardization. Similarly, because the researcher also believes that if the concept is not universal, there must be reasons why firms should adapt their knowledge management practices according to differences in national culture.

Secondly, under positivism knowledge is obtained from the sense while from an interpretive perspective knowledge is derived not only through the senses; understanding meanings and interpretations is more important (Sarantakaos 1998, p.37-38). In this case for this research, it is trying to find out the reasons why managers of

firms make the decision to adapt or standardize their knowledge management practices. There is a need to understand the meaning and also make interpretations on these meanings. This is because the reasons may not be direct and straight forward and there is no “right” or “wrong” answers to such questions or information.

Thirdly, it was argued that positivism was related with deductive approaches and interpretive perspective was related with inductive approaches (Sarantakos 1998). Deductive approaches involved the use of hypothesis and it's a process where researchers have a theory and involves a testing of the theory. In contrast, inductive approaches involves the generation of theory (Bryman and Bell (2003). In this case with regards to this research to a certain extent, this research is not really trying to test a hypothesis. It could be argued that it is trying to come out with a theory that can explain why firms make the decision to standardize or adapt. Thus, it can be concluded that due to these three reasons the research paradigm chosen is that of an interpretive perspective. The choice of an interpretive perspective will influence the decision on whether a qualitative or quantitative approach would be used. This will be discussed in a later section.

4.5 Research Design

Different authors use different terms and in some cases have different opinions on research design and research strategies. Research design will be covered in the first section. It can be defined as “the framework or plan for a study that guides the collection and analysis of the data” (Churchill 1992, p.108). According to Malhotra (2002), there are two broad types of research designs which are exploratory design and conclusive design. The objective of exploratory research is to provide insights and understanding while the objective of conclusive research is to test specific hypotheses and examine relationships.

There are two types of conclusive research designs, which are descriptive research and causal research. “The major emphasis of descriptive research is on determining the frequency with which something occurs or the relationship between two variables” (Churchill 1992, p.108). Causal research refers to a design where the focus is on determining cause-and effect relationships (Churchill 1992). Robson(1995) uses the

term explanatory research which is slightly different. Explanatory research refers to research that seeks an explanation of a situation or a problem. A summary and comparison of the three research designs are presented in table 4.4.

Table 4.4: A comparison of Basic Research Designs (Source: Malhotra 2002 , p. 87)

In this case, the research is not causal as it is not testing any specific hypotheses because there is no accurate understanding of the problem. This research is not descriptive because it requires extensive previous knowledge of the situation to be researched or described, so that you know the appropriate aspects on which to gather information (Robson 1995). For this situation, there is little or no research being conducted on why firms choose to adapt or standardize knowledge management practices. Thus, it would be difficult to come out with a survey and questions. In fact, due to the lack of prior studies on the area, this research could be considered exploratory work since the researcher is trying to gather new ideas on the area of cross-cultural knowledge management.

This study would also be considered explanatory, but to a lesser extent because it seeks an explanation of a situation or problem usually in the form of causal relationships (Robson 1995). Thus, at this point it would appear that in terms of research design this research is a mixture of exploratory and explanatory work. However, it is the researcher's opinion that to a greater extent and degree this research would be exploratory since the focus is on gathering new information and ideas in the area. According to Robson (1995), there are three traditional research strategies which are

experiment, survey and case study. Research can also be classified into three types which are exploratory, descriptive and explanatory. Case studies are appropriate for exploratory work, surveys are appropriate for descriptive studies and experiments are appropriate for explanatory studies. By following the idea by Robson (1995), the researcher has to either choose between an experiment and a case study. However, other authors have different opinions on the importance of a research design in a research.

According to Yin (1994), a common misunderstanding was that research strategies should be arranged in a hierarchical order. He argued that people often have the misconception that case studies are only suitable for exploratory research, experiments are only suitable for explanatory or causal research and lastly surveys can only be used for descriptive research. He argues that this view is incorrect and that researchers should take a pluralistic perspective in this area. He states that each research strategies can be used for all exploratory, descriptive and explanatory work. There can be exploratory, descriptive and explanatory case studies. Churchill (1992) shares his view in that he argues that although it is possible to divide research designs into neat categories there are problems from doing so. Firstly, he also argues that the distinction is not absolute and that the design of the research should come from the problem. Secondly, he believes that the three basic research designs can be considered as stages. Exploratory work is usually considered the first step and researchers may come out with certain explanations or hypothesis. (Refer to figure 4.1) Lastly, they may then conduct descriptive work to test the hypothesis. Based on the explanations by these two authors, it is the researcher's opinion that although the researcher believe that the research design is considered a mixture of descriptive and explanatory research, the researcher do not think that stating that the research design is definitely an exploratory work or explanatory work is really that important.

Figure 4.1 :Relationships among Research Designs (Churchill 1992 , pp. 110)

4.6 Research Strategy

Different authors have different ideas on what are the types of research strategies available. According to Yin (1994, pp. 4), the choice of a research strategy depends on three conditions which are:

- 1) The type of research question posed
- 2) The extent of control an investigator has over actual behavioural events
- 3) The degree of focus on contemporary as opposed to historical events

The relation between these three conditions and the five types of strategies experiments, surveys, archival analysis, histories and case studies are shown in table 4.5.

Table 4.5 : Relevant situations for Different Research Strategies (Yin 1994 ,p. 6)

According to Yin (1994), there are two type of “what” questions. The first type of “what” questions is questions related to exploratory study. Yin (1994) believed that exploratory work can be used for any research strategies. The second type of “what” questions are basically used to measure “how many” and “how much”. Such questions as shown in table 4.5 should be used in surveys and archival analysis. The researcher believes that the first research question is the former and not the latter. It was also stated that “How” and “Why” questions are more explanatory and are usually used in experiments, case studies and histories.

Thus, from Yin (1994)’s first condition on questions, it can be seen that this research should not be using a survey or archival analysis. Firstly, the researcher believes that some of the research question has a “what” and can be considered exploratory work. However, for the first research question, although it has been phrased as “what” the question is actually interested in finding out why firms make the decision to adapt or standardize knowledge management practices. As for the second and fourth research question, it starts with “how” which shows that a case study is more appropriate.

The second condition by Yin (1994), is the extent of control over behavioural events. Here it is obvious that experiments and case studies are similar in that they both

deal with how and why research questions. However, they differ in that experiment requires control over behavioural events. In this case, if the study were to be on whether adaptation of knowledge management practices according to national culture would lead to possible outcomes an experiment would be more suitable. However, since in this case the study does not require control over the independent variable which is differences in national culture a case study would be more appropriate. The researcher also does not think that it would be possible for him to have control over such variables.

The third condition is focus on contemporary events and not on historical events (Yin 1994). According to Yin (1994), the difference between histories and case studies is that histories focus only on historical events while case studies can examine both histories and contemporary events. History means there is no one alive to provide information. The researcher must use documents and artifacts as his evidence. Yin (1994) believes that there are many similarities between a case study and a histories but their main difference is that case studies rely on multiple sources of evidence. Also case studies are more likely to use observation and interviewing which are usually not possible with histories. With regards to this research, the researcher is interested in understanding why firms make decisions on adaptation and standardization. Such information was more likely to be obtained through interviews. It is unlikely that such information would be documented in historical documents.

There are also other reasons why the researcher has chosen a case study approach. According to Denscombe (1998), convenience can be a reason why people use case studies. However, the author argued that convenience should not be the main reason for a researcher to do so. With regards to this research, the researcher had already proven in an earlier section why a case study is suitable for this research. A case study would be a matter of convenience to the researcher because his supervisor Dr Peter Massingham has more experience with case studies compared to other research strategies. It would be more troublesome and inconvenient for the researcher's supervisor and him if the researcher were to use another type of research strategy.

Lastly, according to Yin (1994), in some circumstances it is also possible to use more than one strategy. He quotes the example of a survey within a case study or a case study within a survey. In this research, the researcher is using a case study but some

parts of the data collection would resemble a survey. It is the researcher's opinion that the flexibility provided from a case study is also one of the reasons why he is using it.

Components of Research Designs in Case Studies

There are five components of a research design in a case study (Yin 1994):

- 1) A study's question
- 2) Its proposition, if any
- 3) Its units of analysis
- 4) The logic linking the data to the propositions and
- 5) The criteria for interpreting the findings.

The study's question and proposition has been covered earlier in the research question and the conceptual framework. The unit of analysis is related to sampling and will be covered under that section. The logic linking the data to the propositions and the criteria for interpreting the findings

4.7 Selection of a Qualitative Approach

According to Marshall and Rossman (1998), the choice of using either a qualitative or quantitative method often influences the choice of a research strategy. They also argued that when a researcher is discussing about a research strategy, he must indicate why he has chosen a qualitative approach and to give his reasons for doing so. However, it is important to note that according to Yin (1994), a case study can use multiple sources of evidence and these evidence can be either quantitative studies or qualitative studies. Yin (1994) even suggests that a case study can be limited to quantitative evidence. He states that the contrast between quantitative and qualitative evidence does not differentiate the various research strategies. The researcher shares Yin (1994)'s view in this matter. Thus, the researcher's approach is considered to be mostly qualitative with some small aspects of a quantitative approach in it. Only some parts of the data-collection process contain aspects of a quantitative approach as it involves the use of some close ended survey questions. According to Tashakkori and Teddlie (1998, p.19), they defined mixed method studies as "studies that are products of the pragmatist paradigm and that combine the qualitative and quantitative approaches within different

phases of the research process”. The researcher did consider the possibility that his research should be classified as a mixed method approach. However, after a discussion with his supervisor Dr Peter Massingham, the researcher believe that the approach would be qualitative because although some parts of the data collection process involves quantitative surveys the researcher is using a qualitative approach in the analysis of the results. The researcher did not use any statistical analysis such as T-test or Chi-square analysis in the analysis of the results.

Before the researcher provides the reasons why a qualitative approach has been selected, there is a need to provide a definition on quantitative methods and qualitative methods. According to Bryman and Bell (2003, p. 25), “quantitative research can be construed as a research strategy that emphasizes quantification in the collection and analysis of data and that:

- 1) entails a deductive approach to the relationship between theory and research in which the accent is placed on the testing of theories
- 2) has incorporated the practices and norms of the natural scientific model and of positivism in particular; and
- 3) embodies a view of social reality as an external, objective reality. “

According to Bryman and Bell (2003, p.25), qualitative research can be defined as “a research strategy that usually emphasizes words rather than quantification in the collection and analysis of data and that:

- 1) predominantly emphasizes and inductive approach to the relationship between theory and research, in which the emphasis is placed on the generation of theories;
- 2) has rejected the practices and norms of the natural scientific model and of positivism in particular in preference for an emphasis on the ways in which individuals interpret their social world; and
- 3) embodies a view of social reality as constantly shifting emergent property of individual’s creation. “

An important point to note is that qualitative research is related to the interpretive perspective which was the research paradigm the researcher have chosen for this research. According to Saratankos (1998), research methodology in this case whether a qualitative or quantitative approach is taken is heavily dependent on the theoretical perspective.

Marshall and Rossman (1998, p. 43) states that qualitative approach is suitable for the following types of research:

- 1) research that delves in depth into complexities and processes
- 2) research on little-known phenomena or innovative systems
- 3) research that seeks to explore where and why policy and local knowledge and practice are at odds
- 4) research on informal and unstructured linkages and processes in organizations
- 5) research on real as opposed to stated organizational goals
- 6) research that can not be done experimentally for practical or ethical reasons
- 7) research for which relevant variables have yet to be identified

From the list by Marshall and Rossman (1998), some of those conditions appear to be present in this research. Firstly, there are two processes in this research. One of them is the decision making process of managers and the other process is the knowledge management process in the organization. This research has to be in depth, since only then can the researcher obtain an understanding on how national cultural differences would affect these two processes. It is also the researcher's opinion that the addition of a variable national culture makes this research a more complicated one compared to a research on knowledge management. Secondly, there is little research on this area in knowledge management. From the literature review, the area is still in its infancy which means it can be considered innovative. Thirdly, as mentioned earlier it is impossible for the researcher to conduct an experiment to test whether differences in national culture would have an effect on a firm's decision to standardize or adapt. Fourthly, and most importantly there is little research from the current literature on what factors are relevant. This refers to the factors affecting a firm's decision to standardize or adapt. If there are a list of factors the researcher would have simply design a questionnaire based on these factors and find out which factors are the most important. However, in this case there is a lack of information in this area.

Effects of a Qualitative approach

The differences between qualitative and quantitative approaches mean that the choice of a qualitative approach would have influence on other areas of the research. It would have an effect on the data collection methods, the sampling and on

operationalisation. The effects on data-collection methods, sampling will be discussed in a later sections. The researcher would like to provide an explanation on the effects of a qualitative approach on operationalisation.

4.8 Operationalisation

According to Sarantakos (1998, p.130), “Operationalisation is the process of converting concepts into their empirical measurements, or of quantifying variables for the purpose of measuring their occurrence, strength and frequency.” It is used for the conversion of abstract concepts into synonymous empirical referents. It involves three characteristics which are 1) selection of indicators, 2) quantification of indicators and 3) quantification of the variable. Operationalisation is a requirement for the quantitative researcher (Sarantakos 1998).

However, operationalisation is not applicable to qualitative researchers and the best operationalisation for a qualitative researcher is zero operationalisation. It is considered to be a useless instrument due to its number of weaknesses with regards to qualitative research. A list of the problems of operationalisation in qualitative research can be found in Saratankos (1998, p.132-133). Bryman and Bell (2003) shares a similar view on this matter. Operationalisation was found in the chapters related to quantitative research but no mention of it was made in the chapters related to qualitative research. It is important to note that there are some difference between quantitative research and qualitative research that are related to operationalisation. It was argued that qualitative data are often hard and reliable. The data is clear because of the accuracy offered by their measurement. Qualitative data is considered to be rich and deep due to the researcher’s long term involvement in the research (Bryman and Bell 2003). One difference is that while quantitative research is more particularistic and concentrates on elements and variables , qualitative research is more holistic and focuses on the whole unit. Another difference is quantitative research employs high levels of measurement while qualitative research employs low levels of measurement (Sarantakos 1998).

Since this research consists of both qualitative and quantitative type of questions some form of operationalisation would be necessary for the quantitative type of questions. According to Sarantakos (1998), nominal scale refers to the classification of

events into categories that are distinct, unidimensional, mutually exclusive and exhaustive. In addition, these resulting scales are “naming” scales. Ordinal scales involve the elements of nominal scale and also involve categorizing elements into orders and ranking from the highest to the lowest. Lastly, interval-level measurements possess the properties of ordinal scale and also provide information about the distance between the values. They also contain equal intervals which allow the researcher to judge differences between respondents and to obtain more detailed information about the research topic.

For the classification questions Q_a to Q_i , a nominal scale would be used. (Refer to appendix 2) Nominal scales would also be applied for questions 3.1 to 3.5 and for questions 4.7, 5.7 and 6.2. Question 4.7 is about the satisfaction with the standardization or adaptation of the knowledge creation process. Question 5.7 is about the satisfaction with the standardization or adaptation of the knowledge transfer process. Lastly, question 6.2 is about the respondent’s overall satisfaction with the knowledge management process in the company. However, it is important to note that according to Yin (1994), people often doubt the construct validity of case studies because of the lack of operationalisation in them. The means by which the researcher would ensure construct validity will be covered in a later section.

4.9 Extraneous Variables

The researcher would like to touch on extraneous variables which is something related to operationalisation. “Extraneous variables are basically variables that may affect changes attributed to independent variables “(Kumar 1996, p.51). In this case, it is likely that some extraneous variables that are not related to differences in national culture would affect a firm’s decision to standardize or adapt. They might also influence a respondent’s perception on whether the firm’s adaptation is appropriate or not.

Despite the fact that the researcher understands the importance of extraneous variables, the researcher would like to provide some reasons why it is not necessary to provide a list of extraneous variables now. According to Eisenhardt (1989), theory building research should begin with the idea that there is no theory or hypotheses to test. However, since that is an unlikely scenario a researcher can identify a research problem

and specify some variables. The researcher should “avoid thinking about specific relationships between variables and theories as much as possible, especially at the outset of the process” (Eisenhardt 1989, p.536).

For a quantitative researcher, it is necessary for the researcher to determine extraneous variables before the commencement of the research. This is due to various reasons. One reason being is that a closed approach and the research process are predetermined. In contrast, qualitative approaches are flexible and change can be made to it (Sarantakos 1998).

Another reason is that the selection of an appropriate sample can reduce the effects of extraneous variation (Eisenhardt 1989). The researcher believe that the use of theoretical sampling which is explained in a later section would reduce the likelihood of extraneous variables and their effects. Lastly, Yin (1994) suggested that a way to deal with extraneous variables in case studies was to use pattern matching which is an analytical strategy. This means extraneous variables are dealt with in the data analysis stage. There is no mention of the need to identify extraneous variables in the initial stages.

4.10 Types of Cross-cultural Management research

Since this research is related to differences in national cultures there is a need to determine what type of cross-cultural management studies is suitable for my research. This is important because the choice of a cross-cultural management approach would have an influence on my sampling procedures which is discussed in a later section. According to Thomas (2002), there are six types of cross-cultural management studies which are:

- 1) Domestic
- 2) Replication
- 3) Indigenous
- 4) Comparative
- 5) International
- 6) Intercultural

A summary of these six types of studies are found in table 4.6

Table 4.6: Types of Cross-Cultural Management Studies (Source: Thomas 2002 , p.249)

This research would be considered comparative research. Comparative studies seek to find both similarities and differences that exist across cultures regarding a particular management issue. Its key question includes the extent to which a theory is universal as well as aspects unique to a particular culture. However, it can also to a certain extent be considered as international since it also involves studies of how multinational organizations operate in multiple countries. It can also be considered as intercultural since it also involves studies of intercultural interactions in organizations (Thomas 2002). The first research question fits in perfectly with the type of research questions for comparative research. The researcher is trying to understand why some firms would adapt while some firms would standardize their knowledge management practices based on differences in national culture. Similarly, at the same time the researcher is also trying to find out if the theory is universal.

4.11 Sampling

Sampling is “the process of choosing the units of the target population which are to be included in the study” (Sarantakos 1998, p.139). Three areas of this research have an influence on the research procedures for this research. They are the use of a qualitative approach, the selection of a case study as a strategy and lastly because this research is a comparative type of cross-cultural management research.

According to Sarantakos (1998, p.155), “qualitative sampling is directed□

- 1) not towards large numbers of respondents but rather towards typical cases
- 2) not towards fixed samples but towards a sample that is flexible in size and type or subjects
- 3) not towards statistical or random sampling but towards purposive sampling
- 4) not towards mechanical sampling but towards theoretical sampling
- 5) towards fewer global settings than quantitative sampling
- 6) not towards choosing a sample before the study started but while the study is in progress
- 7) not towards a strictly defined size but a sample whose number will be adjusted while the study is in operation
- 8) not towards representativeness but rather towards suitability “

Eisenhardt (1989) shares the same view that for theory building from case studies, random sampling is not suitable or correct. Instead, case studies should also use theoretical sampling which is “to choose cases which are likely to replicate or extend emergent theory” (Eisenhardt 1989, p.537). It was argued that because case studies will only study a limited number of cases, it would be best to select cases such as “extreme situations and polar types “(Eisenhardt 1989, p, 537).

The use of extreme situations was also suggested for cross-cultural management research. The selection of a sample based on theoretical reasons was considered an appropriate procedure. It was stated that for comparison of differences between countries it is best to select countries where there are great differences in their national cultures. Also as mentioned earlier, since the research is a comparative type of cross-cultural management research this means that two countries must be chosen for the

research (Thomas 2002).

Thirdly, as stated from the concept of theoretical sampling the researcher should look for extreme cases. In this case two types of firms should be selected. One firm with a greater degree of standardization in its knowledge management practices should be compared with a firm where there is a greater degree of adaptation in its knowledge management practices. This would allow the researcher to find out the reasons why a firm would make the decision to standardize and why another firm would make the decision to adapt. Fourthly, in order to study what is considered appropriate adaptation, there is a need to identify a firm where the firm has made an adaptation and the adaptation was considered appropriate. There is no way the researcher would know if an adaptation is appropriate until he has interviewed the respondents. However, in this case this is not a problem, since according to the theory of sampling for qualitative research sampling can occur when the study is in progress. Also qualitative sampling can be considered more flexible in its approach compared to quantitative sampling.

As mentioned earlier, theoretical sampling can reduce the effects of extraneous variables and the likelihood of their occurrence (Eisenhardt 1989). Thus, it can be argued that there should be stricter criteria for my sampling procedures so that the researcher can eliminate extraneous variables. However, the researcher would disagree with such an idea. Firstly, according to Yin (1994), the identification of extraneous variables is more relevant for explanatory research. The first research question is a mixture of both exploratory and explanatory research. It is in fact more exploratory in nature. The researcher's view is that if a strict criterion is enforced, it might mean that this research might missed out on some factors that might cause a firm to make the decision to standardize and adapt. As mentioned earlier, a case study is very flexible and new cases can be added (Eisenhardt 1989, Yin 1994). Thus, a strict criterion for sampling for this research is not required or necessary. Unlike a quantitative approach, a qualitative approach gives this research the flexibility to make changes at a later stage.

4.12 Data-Collection methods

The most popular method of data collection in cross-cultural research was questionnaires followed by interviews (Thomas 2002). According to Yin (1994), there are six sources of evidence available for case studies:

- 1) Documentation
- 2) Archival Records
- 3) Interviews
- 4) Direct Observations
- 5) Participant Observations
- 6) Physical Artifacts

Since the researcher would be using interviews as his data-collection, further elaboration on interviews would be provided in the following paragraphs. Yin (1994) believed that there are three types of interviews which are:

- 1) Interviews of an open-ended nature
- 2) Focused Interview
- 3) Formal Survey

Interviews of an open-ended nature refer to interviews where the researcher asks respondents their opinions on particular events. There are certain set of questions to be used. In contrast, a focused interview consists of questions in which a respondent is interviewed for a short period of time based on a certain set of questions. Lastly, a survey would resemble the survey strategy mentioned in an earlier section. This means a list of close ended questions (Johnson and Turner 2003).

According to Johnson and Turner (2003), there are three types of questionnaires. Type 1 data collection consists of a qualitative approach made up of mainly open-ended and in-depth questionnaires. Type 3 data collection consists of a completed structured and close-ended questionnaire that is commonly used in purely quantitative research. Type 2 is a questionnaire which consists of both open-ended and close-ended questions. After a discussion with the researcher's supervisor, the researcher chose a survey made up of both open-ended and close-ended questions.

According to Johnson and Turner (2003), there are three types of interviews. The first type would be qualitative interviews, similar to what Yin (1994) termed as interviews of an open-ended nature. The second type of interviews refers to quantitative

interviews where the interviewer simply reads out a script and then proceeds to record the answers in a close-ended survey. The third type of interviews refers to mixed methods interviews where the researcher asks both open-ended and close-ended questions from the respondents.

A self-administered questionnaire is an instrument used to collect information from people who complete the instrument themselves (Bourque and Fielder 1995, p.2). In the case of this research, some of our respondents were able to answer the questionnaires by themselves. However, in some cases around nine of our respondents did not really understand some of the questions. For this second group of respondents mixed methods interviews were used to collect the data. The researcher called up the respondents by phone and tried to explain the theories and information behind the questions. Another reason why mixed-methods interviews were used to supplement the self-administered surveys was that the response rates for self-administered surveys were usually very poor (Bourque and Fielder 1995).

Three principles of data collection

Lastly, according to Yin (1994), there are three principles of data collection which are necessary for dealing with problems of validity and reliability of a case study. Thus, it is important to mention them here since a researcher must take these principles in consideration during the data collection. The first principle is the use of multiple sources of evidence. In this case, it was argued that using multiple sources of evidence or triangulation is an advantage that case studies have over other research strategies. By providing multiple evidence of the same phenomenon, triangulation can solve the problem of construct validity. The second principle is creating a case study database. A case study database allows other researchers to review the information. Without a database, researchers can only check the quality of the research from the final report. Thus, it was argued that a case study database can increase the reliability of the case study. The third principle is maintaining a chain of evidence. This basically means that an external party would be able to look at the evidence and understand the process from the beginning where the researcher designed the research questions all the way to the conclusion of the final report. This means using a structured and systematic way in the presentation of the information (Yin 1994).

Other information on data collection

It is also important to note that for some researchers there might be overlapping between data collection and data analysis. It was argued that such a method can facilitate the data analysis process. Another important point to note for data collection for case studies is that additional adjustments can be made to data collection methods. This can range from adding new sources of evidence or adding another case or the addition of another question (Eisenhardt 1989).

4.13 Analysis of Evidence

Analysis of Qualitative data

Since this research is going to use qualitative interviews as one of the data collection methods and case studies as the strategy, the literature on research methodology for these two areas will be used in this section. There would be some overlap between qualitative interviews and case studies since they are closely related. According to Sarantakos (1998), there are five steps involved in the analysis of qualitative interviews. Step 1 is transcription which involves the transfer of information from the original format into paper. An example would be from video to paper. Step 2 is checking and editing which basically means checking the transcripts to prepare it for analysis. Step 3 is analysis and interpretation. Step 4 is generalization where the findings are generalized. This is done by identifying similarities and differences in the data. Step 5 is verification which involves checking the transcript again for validity of interpretations.

Denscombe (1997) suggested similar steps for the analysis of qualitative data. Step 1 is coding and categorizing the data. Step 2 is reflections on the early coding and categories. Step 3 is identification of themes and relationships. Step 4 is return to the field to check out emerging explanations. Step 5 is to develop a set of generalizations. Step 6 is to use the new generalizations to improve any relevant existing theories. Coding means the separation of the data into units for analysis and the categorization of units. This process is guided by things like existing theories and intuition.

According to Yin (1994), a researcher should determine how he is going to analyse his evidence before he begins his data collection process. He argues that there is a need to first determine the general strategy to be used for the analysis. After the researcher has chosen the general strategy he can then use four dominant modes of analysis for the analysis of their evidence.

The first strategy is relying on theoretical propositions. Under this strategy the researcher uses literature review and research questions to determine the objectives and design of the case study. In addition, the proposition would have determined the data collection methods and the means by which the data should be analysed. The second strategy is developing a case description which as the name suggests a descriptive framework for a case study. It is used in the absence of theoretical propositions (Yin 1994). It is obvious that the strategy for analysis would be a general strategy. This is because the researcher has identified a gap in the current literature which would be used for the research questions. In addition, the data collection methods and research strategies were all derived from the research questions and research objectives.

With regards to the four dominant mode of analysis, they are pattern-matching, explanation-building, time series analysis and program logic models. They are used to deal with the problems of internal validity and external validity (Yin 1994). Pattern-matching basically means comparison of an “empirically based pattern with a predicted one” (Yin 1994, p.106). If the results are the same it can strengthen the internal validity of the research. Explanation-building is a special type of pattern type of pattern-matching that tries to provide an explanation for a case. Time series analysis is similar to the time series analysis used in experiments. Lastly, program logic models are basically a mixture of pattern-matching and time series analysis. As mentioned earlier extraneous variables are dealt with using pattern matching analysis.

Eisenhardt (1989) suggests the following steps for analysis. The first is within-case analysis which means that the researcher must gain in depth knowledge of a case. Only then can the researcher be able to identify unique patterns in each case. The second step is to look for cross-case patterns which are similar to the idea of pattern-matching suggested by Yin (1994). The third step is shaping hypotheses where the

researcher tries to replicate data across cases and to identify reasons for the relationship. Lastly, Eisenhardt (1989) suggests a comparison of the emergent theory obtained from the findings with the existing literature. This refers to both conflicting literature and similar literature. This would increase the validity and generalizability of the theory. With regards to conflicting literature, evidence of factors for standardization can be compared with the works of authors who believed that there is a need for adaptation due to differences in national culture. Another conflicting literature would be the comparison of the factors for adaptation with Takeuchi (2001)'s argument that knowledge management can be a universal concept. With regards to similar literature, the researcher can compare them with the literature on knowledge management or with the literature in other disciplines. The latter would seem to be more useful due to the lack of information in the field of knowledge management.

Conversion of data

The bulk of this research uses a qualitative approach in the analysis of the evidence. However, some data were converted from qualitative data to quantitative data and vice versa. Only very simple quantizing techniques were used in this analysis. According to Tashakkori and Teddlie (1998, p.128), "quantizing might include a simple frequency count of certain themes, responses, behaviours or events". In this case, very simple frequency counts of certain themes for some of the various qualitative questions were used. Further details on the process would be provided in the section under findings and results.

"Qualitizing data refers to the transformation of the quantitative data into qualitative data or narratives profile formation"(Tashakkori and Teddlie, 1998, p.129-130). According to Tashakkori and Teddlie (1998), studies involving qualitative analysis of quantitative data are rare. Since such studies are rare, it is the researcher's opinion that a more detailed explanation of such analysis would be presented in this section. This is to provide the reader with a clearer understanding of the rare methodology used in this research.

According to Tashakkori and Teddlie (1998, pp. 130-132), there are at least five types of profiles:

- 1) Modal profile is a detailed narrative description of a group of people (e.g., a group of women) based on the most frequently occurring attributes in the group. For example, if the majority of the individuals are 50 years old, the group is identified as middle-aged.
- 2) Average profile is a narrative profile based on the average (e.g., mean) of a number of attributes of the individuals or situations. The profile consists of a detailed narrative description of the group on the basis of these average attributes.
- 3) Holistic profile refers to narrative profile which consists of the overall impressions of the investigator regarding the unit of investigation. Unlike the average profile, the specific information that is the basis of such holistic impressions may not be presented or available.
- 4) Comparative profile refers to the type of narrative profile which is the result of comparison of one unit of analysis with another and includes possible differences/similarities between them.
- 5) Normative profiles are profiles similar to comparative profiles but are based on the comparison of an individual or group with a standard. The “standard” might be a standardization sample or a specific population. General impressions are based on comparing the individual’s score pattern with that of the normative group.

A description of the process by which the researcher divides the respondents into various profiles and groups would be provided in a later section.

4.14 Validity and Reliability

According to Yin (1994), four tests are used for checking the quality of the research. The researcher believed that it is necessary to include them here because this would allow the researcher to take precautions throughout the process of this research. The four tests are construct validity, internal validity, external validity and reliability.

The definitions of these four tests are (Yin 1994, p.33):

Construct validity: establishing correct operational measures for the concepts being studied

Internal validity: establishing a causal relationship whereby certain conditions are shown to lead to other conditions as distinguished from spurious relationships.

External validity: establishing the domain to which a study's findings can be generalized

Reliability: demonstrating that the operations of a study- such as the data collection procedures can be repeated with the same results.

Yin (1994, p. 34-38) has provided an explanation on the problems with validity and reliability that can occur from case studies and the solutions to these problems. A summary of these pages are included for this research proposal. This is to ensure that the researcher have an understanding of the precautions and steps that the researcher have to take to ensure validity and reliability for this research. There are problems with construct validity because people often argue that operationalisation is missing from case studies and that people often used judgments in data collection. The solution for this is to use multiple sources of evidence, establish a chain of evidence and get key personnel to review the report. There are problems with internal validity as well. This might be caused by the existence of extraneous variables. The solution was to use pattern-matching, explanation building and time-series analysis to solve it. For problems related to external validity, the solution was to use replication which means selecting another case and to see if the same results can be obtained from the new case. For problems related to reliability, the objective was whether another researcher can repeat the case study. The solution suggested was the use of a case study database.

4.15 Time Frame for Research

According to Marshall and Rossman (1995), the process of planning the resources required for a proposal is an important component of qualitative research. By resource, they refer to time, personnel and financial support. It was believed that time spent on data collection would have a great impact on the time required for analysis and report writing. Thus, it was suggested that some framework for time management are designed for the research. They argued that only with a time management framework can the researcher prove that the research is feasible. However, they also argued that it is important that the framework is only a guide. Modifications and changes can be made as the progress is being made (Marshall and Rossman 1995).

4.16 Ethical Issues in research

Kumar (1996, p.192-196) has provided a list of ethical issues that researchers should consider regarding their research. For issues relating to ethics, two of them are applicable to this research. The first is seeking consent and maintaining confidentiality. It is obvious that the researcher need to obtain consent from the respondents before he can collect information from them. However, with regards to confidentiality it is important that the researcher does not share information about the respondent with external parties.

4.17 Limitations and possible problems from the research methodology

Any study is likely to have a problems and limitations. What the researcher have done here is identify the possible problems and limitations that might occur from this research. An understanding of these problems and limitations is important. This is because by having an understanding of these problems, the researcher can try to avoid or minimize the impact that can be caused by these limitations. The researcher will first start with problems and limitations related to case studies, followed by issues related to cross-cultural (Yin 1994). One argument is that there has been a lack of rigour in case study research. There have been many instances where the case study researcher had allowed biased views and sloppiness to influence the quality of the research.

Another problem with case studies is that they provide little basis for scientific generalization. There is also a frequent problem in that case studies take a long time and result in massive, unreadable documents (Yin 1994). This can be a problem for this research since the researcher is only doing a Master's thesis and have to finish the research by February 2006. Thus, the researcher may not be able to go into depth in the collection and analysis if there isn't enough time.

One major problem with cross-cultural research is equivalence (Thomas 2002). It was believed that there is a high probability for bias because of cultural-differences in values and attitudes. Equivalence means that participants from different cultures understand equally the concept and its relationship to other concepts in the study. Thus,

there is a need to ensure method equivalence and metric equivalence for such research. Method equivalence refers to whether the measurement unit is the same in all groups, while metric equivalence refers to whether the questions have similar measurement properties across different groups. One of the methods suggested to ensure equivalence would be appropriate translation of research instruments (Thomas 2002). This is not really a problem since the surveys were written in English and respondents were asked to clarify and ask questions if they were unclear or unsure about the questions.

Lastly, there might be some problems with the data-collection. It was suggested that when the interviewer and the respondent come from different cultures there is a higher probability that the characteristics of the interviewer might influence the respondent's answer. This refers to bias in the interview. An example given was that a Chinese person may give different responses to a Malay interviewer than to another Chinese interviewer (Thomas 2002). With regards to this research, it is possible that an Australian might give a different answer to the researcher than to another Australian research student.

4.18 Formation of the Questionnaire

The questions in the questionnaire were developed based on the literature review and the conceptual model that was mentioned earlier. The survey questions can be found in appendix 2. The questions Qa to Qi and Q3.1 to 3.5 were developed as classification questions. They were mainly derived from the literature on international business, and the literature on standardization and adaptation (Bartlett and Ghoshal 1998, Lemak 1997, Levitt 1983, Lawrence and Lorsch 1967, Thompson 1967, Beamish, Morrison and Rosenzweig 1997).

The questions 4.1 to 4.7 deal with the standardization and adaptation of the knowledge creation process. The questionnaire uses the knowledge creation process suggested by Nonaka and Takeuchi (1995). The questions 4.4 and 4.5 were to measure the impact of national culture on the knowledge creation process. Some of the scales for questions 4.6 were developed based on Jensen and Szulanski (2004)'s research. The question 4.7 deals with the satisfaction with the knowledge creation process. This would be used for the classification of the firms into the four different outcomes of appropriate

standardization, appropriate adaptation, inappropriate standardization and inappropriate adaptation.

The questions 5.1 to 5.7 deal with the standardization and adaptation of the knowledge transfer process. The questionnaire uses the knowledge transfer process suggested by Szulanski (1996). The questions 5.4 and 5.5 are similar to the questions 4.4 and 4.5 in that they were used to measure the impact of national Culture. The question 5.7 deals with the satisfaction with the knowledge transfer process.

The questions 6.1 to 6.3 were designed with the intention of measuring the firm's performance with knowledge management. The question 6.1 is used to determine if the firms have indicators of a learning organization. (Kluge et al 2001, p.181) It was included in order to supplement questions 4.7 and 5.7. Lastly, questions 6.2 and 6.3 were more direct questions asking the respondents about their overall satisfaction with their company's knowledge management.

Chapter 5 Findings and Results

5.1 Exploratory and Descriptive Limitations

In this section, the answers to the research questions would be presented. This research is an exploratory study for the purpose of finding something interesting and descriptive in the area of international knowledge management. As this is an exploratory study, it does not attempt to suggest causality. In order to suggest causality, a much larger sample size and a purely quantitative approach would be required. Instead, it believes that the results from this study would be the basis for further qualitative and quantitative research.

The term international knowledge management is used instead of cross-cultural knowledge management. The reason is that cross-cultural knowledge management would mean that it is about knowledge management across cultures. However, the researcher feels that because this research also includes factors affecting standardization, the term international knowledge management would be more appropriate.

5.2 Survey Response

For this research, the answers to the surveys were collected through a variety of means. The following are the methods that were used to collect the responses:

- 1) Surveys were send by mail
- 2) Surveys were sent by email
- 3) Responses were collected by interviews over the phone.
- 4) Responses were collected through face to face interviews

Responses from Australian companies

As mentioned earlier in the section under Research Methodology, this research uses theoretical sampling as the basis for its data-collection. Eighty surveys were sent via mail to 80 companies in Australia. These companies were selected on the basis of

their information under the “Business Who’s Who” database. Only companies with overseas subsidiaries were selected. Due to cost and time constraints, the researcher was only allowed to send out 80 mailed surveys. Only people working in top and middle management were targeted for the survey. The responses for mailed surveys were usually very low, and to get a higher response would require sending out a lot of mailed surveys, and sending reminders to the respondents after a few weeks (Bourque and Fielder 1995). For this research, the researcher faced considerable time and cost constraints. It was not possible to send out 200-500 mailed surveys, which were the norm for some PhD thesis involving mailed out surveys. It was also not possible to send out reminders to the respondents. Instead, the researcher had to make phone calls to the 80 companies at his own expense.

Out of these 80 phone calls, most of them refused to complete the survey. One of the common reasons was that the survey was too long and involved too many qualitative questions. Some respondents replied that they would not mind doing it, if more than half the survey questions were removed. Another common response was that the company had a policy of not answering surveys and questionnaires designed by universities. For all of the 80 phone calls, the researcher tried to persuade them to either allow him to send an email of the survey or to ask the respondents the questions over the phone. Out of the 80 companies in Australia, 6 of them agreed to the researcher’s request to send the email and 2 of them agreed to the researcher’s request to ask those questions in a phone interview. All the six respondents in Australia that received the email answered the survey and sent it back via email. Thus, the response rate for the mailed survey to the Australian companies was 8 out of 80. This is a response rate of 10%. There are 9 responses from Australia because one of the respondents was a friend of the researcher. The researcher obtained the response from this respondent through the use of face to face interviews.

Responses from other regions

There was a problem with the eight responses in that most of them were Australian companies with either a subsidiary in USA, UK or New Zealand. Based on Bhaghat et al (2002)’s model, there was minimal differences in national culture between headquarters and the subsidiary. Since this research is supposed to use theoretical

sampling there is a need for extreme cases to be used as a basis for comparison. Thus, there is a find other types of samples from other countries. This is for the purpose of comparison across cultures. Thus, after a discussion with his supervisor, the researcher sent the surveys via email to his friends who were working in MNCs.

Approximately 30 surveys were sent out via email. In this case, the same rules for determining suitability of the respondent were applied. This means only respondents working in MNCs with a subsidiary and who were working in top and middle management received the survey. In some cases, the researcher asked his friend who has received the survey to pass it to his superior or someone who is more qualified to answer the survey. Most of the respondents were from China or Singapore because the researcher knew many people who were working in these two countries. In the end, the researcher obtained 22 responses from respondents outside of Australia. Thus, in total the researcher obtained 31 responses. Since this is an exploratory research using qualitative methods, a large sample size is not required. Large sample sizes would be required for quantitative methods because of the need to use statistical analysis. In fact, the researcher believes that this research has achieved its sampling objective because it has obtained responses from all four types of outcomes for knowledge management. This refers to the four outcomes of appropriate standardization, appropriate adaptation, inappropriate standardization and inappropriate adaptation.

If this research was a quantitative study, it would be considered convenience sampling. In fact convenience sampling was often the most common type of sampling used in international and cross-cultural research (Thomas 2002). In this case from a theoretical sampling perspective, there was a need to use extreme cases as a basis for comparison. It is also common for researchers to use convenience sample for their research. In an example of a Masters thesis on knowledge management, the researcher's respondents came from the company that the researcher was working for (Stanley 2003). However, the researcher also believed that this would be a possible limitation in his research.

Although the respondents were divided into people who were working in headquarters and subsidiaries, the researcher did not think that it was possible to do a comparison between these two groups. This was because comparisons should be made

between respondents working in the same company. Another problem was that some of the respondents did not really answer all the questions. Some of the qualitative and open-ended questions were not answered by the respondents. One last limitation from the sampling was that despite the researcher's best efforts, it was not possible to obtain a high number of really extreme samples. According to Bhaghat et al (2002)'s model for cross-cultural knowledge transfer, difficulty of knowledge transfer can range from "0" which is easiest to "3" which is the most difficult. The researcher's sample did not have a high number of responses where the difference in national culture would result in a difficulty of "3".

5.3 Comparison of the three Approaches towards International Knowledge Management

Approach towards International Knowledge Management

For this research, pattern matching was used to analyze the results. Only results that are relevant are presented. This is to prevent the presentation of redundant information that is unrelated to the research. The 31 respondents were first divided into three groups based on their answers to question 3.2 which is the firm's approach towards international knowledge management. (refer to appendix 2)

Table 5.1 Approach towards International Knowledge Management

Total	Standardized		Adapted		Uncertain	
N=31	N	%	N	%	N	%
	15	48.39	13	41.9	3	9.68

As shown in Table 5.1, around 48.39% of the respondents state that their organization was using a standardized approach towards international knowledge management. Around 41.94% of the respondents were using an adapted approach and 9.68% of the respondents were not sure about their firm's approach towards knowledge management. Most of the comparisons would be made between the standardized approach and the adapted approach, since the researcher believes that the sample size for the uncertain group was too small.

Approach towards Strategy

As seen in table 5.2, there are some differences in approach with regards to strategy. One of the main differences between firms with a standardized approach and firms with an adapted approach was that firms with a standardized approach tend to use a Global Strategy. These firms in our sample were also likely to have unclear idea about their firm's approach towards strategy. From Table 5.2, it can be seen that 33.33% of the firms with a standardized approach were using a Global strategy, while 40% did not know which strategy was used in their firms. In contrast, firms in this sample which has an adapted approach were more likely to use a Transnational approach towards strategy. They were also to a slight extent more likely to use a Multidomestic approach towards strategy. From Table 5.2, it can be seen that 53.85% of the firms with an adapted approach were using a Transnational Strategy and 30.77% of these firms were using a Multidomestic Strategy.

Table 5.2 Main approach towards Strategy (Comparison of Approaches)

	Total		Standardized		Adapted		Uncertain	
	N=31	%	N=15	%	N=13	%	N=3	%
Global	6	19.35	5	33.33	1	7.69	0	0
Multidomestic	8	25.81	3	20.00	4	30.77	1	33.33
Transnational	9	29.03	1	6.67	7	53.85	1	33.33
International	0	0.00	0	0.00	0	0.00	0	0.00
Don't Know	8	25.81	6	40.00	1	7.69	1	33.33
	31	100%	15	100%	13	100%	3	100%

There is a likelihood that some respondents may have misinterpreted this question since there are quite a high number of respondents who answered that they do not know about their firm's main approach towards Strategy. From Table 5.2, it can be seen that 25.81% of the entire sample were not sure about their firm's approach towards Strategy. There are also no respondent who answered that their firm has an International approach towards Strategy.

Different Organization's structure

From Table 5.3, it can be seen that firms with a standardized approach towards knowledge management tend to have use a centralized control over their subsidiaries. From Table 5.3, it can be seen that 86.67% of them have a centralized control. On the other hand, firms with an adapted approach were likely to use either a centralized

control, de-centralized control or an interdependent form of control. From Table 5.3, it can be seen that 30.77% were using a centralized control, 30.77% were using a de-centralized control and 30.77% were using an interdependent form of control.

Table 5.3 Organization's structure

	Total		Standardized		Adapted		Uncertain	
	N=31	%	N=15	%	N=13	%	N=3	%
Centralized Control	19	61.29	13	86.67	4	30.77	2	66.67
De-Centralized Control	6	19.35	2	13.33	4	30.77	0	0.00
Interdependent	5	16.13	0	0.00	4	30.77	1	33.33
Don't know	1	3.23	0	0.00	1	7.69	0	0.00
	31	100	15	100	13	100	3	100

Importance of English as a means of communication

From Table 5.4, it can be seen that English was the most frequently used language that the headquarters and the subsidiaries use to communicate. This is the similarity between all three approaches to international knowledge management. According to Table 5.4, 80.65% of the respondents stated that English was the most frequently used language that they used for communication with subsidiaries.

Table 5.4 Communication with subsidiaries

	Total		Standardized		Adapted		Uncertain	
	N=31	%	N=15	%	N=13	%	N=3	%
English	25	80.65	13	86.67	10	76.92	2	66.67
Subsidiary's local language	6	19.35	2	13.33	3	23.08	1	33.33
Others	0	0	0	0	0	0	0	0
	31	100	15	100	13	100	3	100

Approach towards International Business

According to table 5.5, the MNC's approach towards other international business has an impact on its approach towards international knowledge management. For companies with a standardized approach towards knowledge management, they were very likely to have a standardized approach towards international business. According to Table 5.5, 93.33% of the firms with a standardized approach towards knowledge management also had a standardized approach towards international business.

In contrast, most firms with an adapted approach towards international knowledge management were most likely to have an adapted approach towards international

business. According to Table 5.5, 69.23% of these firms had an adapted approach towards international business. However, it can also be seen that there are a small group of firms which choose an adapted approach towards international knowledge management even though they have a standardized approach towards international business. According to Table 5.5, 30.77% of the respondents were using an adapted approach towards international knowledge management even though they have a standardized approach towards international business.

Table 5.5 Approach Towards International Business

3.1 Approach to IB	Total		Standardized		Adapted		Uncertain	
	N=31	%	N=15	%	N=13	%	N=3	%
Standardized	19	61.29	14	93.33	4	30.77	1	33.33
Adapted	12	38.71	1	6.67	9	69.23	2	66.67
Don't know	0	0	0	0	0	0	0	0
	31	100	15	100	13	100	3	100

5.4 Factors Influencing International Knowledge Management

5.4.1 Response based on Question 3.3

Table 5.6 was created based on question 3.3 which asks respondents to choose from a list of options, the factors influencing their organization's decision to standardize or adapt knowledge management. From Table 5.6, there are some differences between the two approaches with regards to what their respondents regard as factors influencing international knowledge management. For this question, respondents were allowed to choose more than one answer for what they believe to be factors influencing international knowledge management.

From the group of respondents who were using a standardized approach, most of them cited "Pressures for cost reduction" as a factor influencing knowledge management. According to Table 5.6, 35.29% of the respondents with the standardized approach state that "Pressures for cost reduction" as a factor. This is consistent with their response for Global Strategy. Most of the respondents selected a Global Strategy which is related to cost reduction. However, it is also interesting to note that only firms with a standardized approach cited "Little differences in cultures" as one of the factors influencing international knowledge management. Another interesting observation would be that "Don't Know" was also one of the factors influencing international

knowledge management. According to Table 5.6, 29.41% of the firms with a standardized approach chose the response “Don’t Know” as one of the factors influencing international knowledge management. The response risk reduction was initially not in the questionnaire. However, one of the respondents chooses it as one of the reasons why his organization chose to standardize knowledge management.

In contrast, for respondents who have an adapted approach towards international knowledge management, most of them state that pressures for cultural differences as a factor. According to Table 5.6, 27.78% of firms with an adapted approach state that pressures for cultural differences were a factor. Another popular factor was pressures for cost reduction. This is likely to be because most of the firms in the adapted sample were using a Transnational Strategy. Thus, this is likely to be the reason why “Pressures for cost reduction” was also one of the important factors chosen by those in the adapted group. Similarly, there is also a percentage of the adapted group who were not sure on the factors influencing international knowledge management.

Table 5.6 Factors Influencing International Knowledge Management

	Total		Standardized		Adapted		Uncertain	
	N=31	%	N=15	%	N=13	%	N=3	%
Pressures for cost reduction	13	32.50	6	35.29	5	27.78	2	40.00
Pressures for cultural differences	11	27.50	2	11.76	7	38.89	2	40.00
Little difference in cultures	2	5.00	2	11.76	0	0.00	0	0.00
Economies of scope	4	10.00	1	5.88	2	11.11	1	20.00
Risk Reduction	1	2.50	1	5.88	0	0.00	0	0.00
Don't know	9	22.50	5	29.41	4	22.22	0	0.00
	40	100	17	100	18	100	5	100

5.4.2 Response based on Analysis of Qualitative responses

An analysis was also made based on the respondent’s response to open-ended questions in 4.1, 4.5, 5.1, 5.4, and 6.3. An attempt was made to classify responses into responses that explained why a firm chooses to standardize knowledge management and responses that explained why a firm chooses to adapt knowledge management. After the response has been classified, the researcher attempts to interpret the reason behind the response.

5.4.2.1 Responses related to Standardization

There are several reasons why a firm chooses to standardize its international knowledge management practices.

National Culture of the Headquarters

One of the reasons for standardization was the national culture of the headquarters. This can be seen from the following response:

“The cultural difference is that Germans are very efficient. The Germans want everything done their way. They want extra details in their reports. Nearly everything in the subsidiary was standardized. Knowledge management was not an exception”

From the above respondent’s comments, it can be seen that the German National culture had an influence on the firm’s decision to standardize their international knowledge management. It could also be argued that this was related to the leadership of the company. Leadership was one of the factors influencing knowledge creation and knowledge transfer. (Nonaka, Toyoma and Konno 2000, O’Dell and Grayson Jackson 1998).

Organization culture and Creative Chaos

Another reason for standardization was the organization culture of the company. This can be seen from the following response:

“One reason why we choose a standardized approach was that our company is a traditional company with traditional ways. It is not adapted for the future and it is not adapted for pressures from the global economy. “

Organization culture was one of the factors affecting knowledge transfer (Davenport,

De Long and Beers 1998). However, it is also more likely that this organization lacks creative chaos which means the leaders of the organization introduces intentional chaos into the company so that employees can react to the chaos and change (Nonaka and Takeuchi 1995, Davenport and Prusak 1998).

Knowledge Management is a new idea

It is also likely that firms choose a standardized approach towards knowledge management, because the idea of knowledge management is a relatively new idea in the organization. This was similar to Ang and Massingham (2005,b)'s decision making map in Figure 3.4, where they argued that it is likely that most firms start out with a standardized approach towards international knowledge management. This can be seen from the following responses:

“We choose a standardized approach for knowledge management because the Journey has just started at the global level.”

“A Standardized approach is used because knowledge management is a new idea in the company.”

Organization Structure

The organization's organization structure was also a factor influencing the standardization of international knowledge management. This is seen from the following response:

“We use a standardized international knowledge management since it matches our company's organization structure which is standardized and centralized. However, I think that a decentralized structure would improve efficiency.”

“Our company has a well designed management structure which is related to knowledge management.”

An organization's structure was also an important factor for knowledge creation

(Nonaka and Takeuchi 1995).

Industry of the organization

A likely reason for standardization was the industry which the firm belongs to. This was based on one of the respondent's response:

“Standardization is the norm in this industry since we believe that standardization of the way we deal with information would reduce risk for our company.”

Minimal Differences in National Culture

The lack of differences in national culture was also a reason why firms choose to standardize international knowledge management. This can be seen from the following response:

“Our subsidiaries operate in fairly similar markets. This means that there are little differences in national culture between subsidiaries and between the subsidiary and headquarters. Thus, a standardized and centralized approach to knowledge management is appropriate”.

Pressures for Cost reduction

Pressures for Cost reduction or the lack of financial expenses being allocated to international knowledge management was also one of the reasons for a standardized Approach. This can be seen from the following response:

“My company verbally encourages knowledge management but everyone here knows that the company is working on a limited budget for international knowledge management. Due to cost constraints, there is insufficient training for new expatriates and new employees.”

From the above statement, it can be interpreted as the lack of management support or leadership for knowledge management. This in turn resulted in pressures for cost reduction for international knowledge management. The researcher's opinion is that pressures for cost reduction may be a result of the company's leaders and not due to actual pressures from the environment or industry. In such situations, the pressure for cost reduction may result in a standardized approach for international knowledge management. However, this standardized approach may not be an appropriate one.

5.4.2.1 Responses related to Adaptation

Although there were several qualitative reasons why a firm choose to standardize their international knowledge management practices, there is only one qualitative reason why firms choose to adapt their knowledge management practices.

Differences in National Culture

Most of our respondents who chose an adapted approach wrote about things that were related to our differences in national culture resulted in an adaptation decision. Some examples include the following:

“Due to differences in national culture, there were various age barriers since people from Headquarters and subsidiaries had different opinion on the ability of young expatriates.”

“Westerners and Asians have different mentality.”

“Initially there were great communication barriers since some of the expatriates could not speak or write in fluent English.”

“Differences in national culture made it more difficult for us to resolve conflicts.”

“It was difficult to get people together at the same time since people from different cultures have different ideas about time.”

“Before the adaptation, the differences in national culture increased the time required to transfer the knowledge.”

5.5 Mixture of Standardization and Adaptation

It is interesting to note that although there are firms using both standardized and adapted approach towards international knowledge management, there are also firms which use a mixture of both approaches. From Table 5.7, it can be seen that out of the 15 firms which were using a standardized approach towards knowledge management, there were 2 firms which choose to adapt their knowledge creation process. From Table 5.8, it can be seen that out of the 15 firms which were using a standardized approach towards knowledge management, there were 2 firms which chose to adapt their knowledge transfer process. Similarly in Table 5.8, there were also firms which choose to standardize their knowledge transfer process even though they had an adapted approach towards knowledge management.

Table 5.7 Approach towards Knowledge Creation

	Total		Standardized		Adapted		Uncertain	
	N=31	%	N=15	%	N=13	%	N=3	%
Standardized	14	45.16	13	86.67	0	0.00	1	33.33
Adapted	14	45.16	2	13.33	11	84.62	1	33.33
Don't know	3	9.68	0	0.00	2	15.38	1	33.33
	31	100	15	100	13	100	3	100

Table 5.8 Approach towards Knowledge Transfer

	Total		Standardized		Adapted		Uncertain	
	N=31	%	N=15	%	N=13	%	N=3	%
Standardized	18	58.06	13	86.67	2	15.38	3	100.00
Adapted	13	41.94	2	13.33	11	84.62	0	0.00
Don't know	0	0.00	0	0.00	0	0.00	0	0.00
	31	100	15	100	13	100	3	100

From Ang and Massingham (2005, b)’s conceptual framework, they suggested the idea that knowledge management is an activity made up of various processes. They suggested that management do not have to standardize or adapt every process. They can simply choose to standardize or adapt based on the situation and circumstances. It can be seen that there are a small number of firms which are using a hybrid approach towards international knowledge management. This can for example be a standardized

approach towards knowledge transfer and an adapted approach towards knowledge creation.

5.6 The Five outcomes of Knowledge Management

From the Literature review, it was shown that there were four different outcomes that can occur from international knowledge management which were:

- 1) Appropriate Standardization
- 2) Appropriate Adaptation
- 3) Inappropriate Standardization
- 4) Inappropriate Adaptation

The 31 respondents were classified based on their answers to the survey questions. Firstly, they were asked to state in question 3.4 whether they were using a standardized or adapted approach towards knowledge creation. This was double-checked with their scores for question 4.6 where they were asked to state the degree of adaptation for international knowledge creation. This was to ensure for consistency and to prevent mistakes in classification. It was also necessary since some respondents did not know which approach they were using for international knowledge creation.

After the firm's approach has been determined, it was necessary to determine its satisfaction with the decision to standardize or adapt the knowledge creation process. This was determined by observing their answers to question 4.7. The researcher counted the frequency for the entire knowledge creation process which was made up of five sub-processes. If there is a high percentage of "Yes" responses and a low percentage of "No" responses, the creation process was classified as appropriate. On the other hand, if respondents gave a high percentage of "No" responses and a low percentage of "Yes" responses, the process was classified as inappropriate.

However, since some sub processes such as Step 1 of knowledge creation: Sharing tacit knowledge had more questions than the other steps, a second round of checking and comparison were also made. For example, there were six questions for Step 1 of the knowledge creation and three questions for Step 2. Thus, an average of the

percentage of “Yes”, “No” and “Don’t know” were made for each step. By doing a comparison of the total response and the average for each step, the researcher was able to classify the respondents into the different outcomes for knowledge creation. The process by which the respondents were classified for the knowledge transfer process is similar and only involves different questions.

However, instead of four outcomes, the researcher found that there were in fact five different outcomes that can occur in international knowledge creation and international knowledge transfer. The fifth outcome was termed “Some parts were appropriate” since the respondent expressed satisfaction with some sub processes and dissatisfaction with some sub processes. An example would be the respondent state that they were satisfied with the first two steps of the knowledge creation process, but were disappointed with the other steps of the knowledge creation process. In this case, it would not be possible to classify them as either appropriate or inappropriate. For those classified as “some parts are appropriate” they tend to have a percentage of “Yes” response that is between the percentages of 40% to 55%. In addition, they also tend to have an equally high percentage for either “No” response or “Don’t know” response. This was the reason they were classified as “Some parts are appropriate”. For most of the respondents, it was a relatively easy matter to classify them into either “Appropriate” or “Inappropriate”.

Table 5.9 shows the different outcomes for international knowledge creation. It can be seen that there were eight firms with appropriate standardization, eight firms with inappropriate standardization, three firms with the outcome of “Some parts are Appropriate”, eight firms with appropriate adaptation and lastly four firms with inappropriate adaptation.

Table 5.10 shows the different outcomes for international knowledge transfer. It can be seen that there were 11 firms with appropriate standardization, six firms with inappropriate standardization, two firms with the outcome of “Some parts are Appropriate”, Seven firms with appropriate adaptation and lastly five firms with inappropriate adaptation.

Table 5.9 Appropriate and Inappropriate International Knowledge Creation outcomes

Appropriate Standardization	8	25.81
Inappropriate Standardization	8	25.81
Some parts are Appropriate	3	9.68
Appropriate Adaptation	8	25.81
Inappropriate Adaptation	4	12.90
Total	31	100

Table 5.10 Appropriate and Inappropriate International Knowledge Transfer outcomes

Appropriate Standardization	11	35.48
Inappropriate Standardization	6	19.35
Some parts are Appropriate	2	6.45
Appropriate Adaptation	7	22.58
Inappropriate Adaptation	5	16.13
Total	31	100

5.7 Comparison for International Knowledge Creation

5.7.1 Effects of National Culture on the five outcomes for International Knowledge Creation

In this section, there will first be a comparison between the five outcomes with regards to the effects of national culture on the standardization and adaptation of the international knowledge creation process. This will be followed by a comparison of the effects of national culture on the five different steps for the knowledge creation process.

Firstly, for the measurement of the effect of national culture on the five outcomes, two methods were used. The first method was the respondent's response to question 4.4 which asks them to state on a scale of "1" to "5" the effect that the differences in national culture had on the knowledge creation process. The mean for each step was then calculated for each of the five outcomes. This was basically the respondent's perception on how differences in national culture affected the knowledge creation process. From Table 5.11, it can be seen that respondents with an appropriate standardization outcome for international knowledge creation had the lowest mean for effects of national culture. It can also be seen that most respondent's state that differences in national culture has the highest effect on Step 1: Sharing Tacit Knowledge.

Table 5.11 Comparison of the effects of National Culture between the five Knowledge Creation outcomes

Step	Average	Standardization		Some are	Adaptation	
	for all	Appropriate	Inappropriate	appropriate	Appropriate	Inappropriate
Step 1: Sharing Tacit Knowledge	2.63	1.11	3.17	2.94	3.30	3.38

Step 2: Creating Concepts	2.35	1.00	3.13	2.33	2.92	3.00
Step3:Justifying Concepts	2.29	1.19	2.75	2.83	2.68	2.75
Step 4: Building an archetype	2.34	1.25	3.13	2.83	2.56	2.75
Step 5: Cross-leveling of Knowledge	2.44	1.25	3.13	2.67	2.75	2.63
Overall average for effect on creation	2.41	1.16	3.06	2.72	2.84	2.90

(The average for effect on creation is based on the average for all responses. Some steps have more responses. It is not an average of Step 1 to Step 5.)

For the second method to measure the differences in national culture, the researcher used the knowledge transfer model by Bhaghat et al (2002) as a guide. From the literature review, Bhaghat et al (2002)'s model discusses about how the difficulty of knowledge transfer would be affected by differences in national culture. They state that difficulty can range from zero to three based on the interactions between the four types of national culture which were Vertical Individualism (VI) , Vertical Collectivism (VC) , Horizontal Individualism (HI) , Horizontal Collectivism (HC). (refer to figure 2.10). The range of scores to measure the difficulty, ranges from "0" which is the easiest to "3" which is the highest. The researcher calculates the difficulty of knowledge creation between these cultures using figure 2.11 as a guide. The countries and the difficulty are shown in Table 5.12 in the Appendix.

However, there are some limitations with using this model, because not every country are listed in Bhaghat et al (2002)'s model. For this study, some countries were not listed in Bhaghat et al (2002)'s model. These countries were Switzerland, New Zealand and United Arab Emirates (UAE). In this case, the researcher tried to classify them based on their dimensions for Individualism and Power distance from Hofstede (1997). Another limitation from using this model was that it was a conceptual model designed for knowledge transfer and not for knowledge creation. Lastly, as mentioned earlier, there were very few responses where the difficulty is "3". Most of them were from "0", "1" and "2".The researcher recognizes the limitations and inaccuracies that can arise from doing so.

Table 5.13 Comparison of Creation process using Bhaghat et al (2002)'s model

Outcome	Difficulty	Ranking by 5 outcomes	Ranking by 4 outcomes
Appropriate Standardization	0.75	5th	4th
Inappropriate Standardization	1.625	2nd	1st
Some parts are Appropriate	2	1st	
Appropriate Adaptation	1	4th	3rd
Inappropriate Adaptation	1.25	3rd	2nd

Table 5.13 is simply the summary of Table 5.12 in the Appendix. The results for table 5.13 were compared to the results of Table 5.11. In Table 5.11, the highest score

for effects of national culture on the difficulty of the knowledge creation process was inappropriate standardization. This was followed by inappropriate adaptation, appropriate adaptation, some parts are appropriate and lastly by appropriate standardization. In contrast, the rankings were different in Table 5.13, if we were to compare the two rankings by using 5 outcomes. As shown in table 5.13, the highest difficulty came from some parts are appropriate followed by inappropriate standardization.

However, the rankings are more similar if comparison between the difficulty in table 5.13 and 5.11 were made using four outcomes. This mean not considering the section for some parts are appropriate. Another interesting observation would be whether differences in national culture are an actual event that affects knowledge creation or is it something related to the perception of the respondent. It is also possible that respondents with an adapted approach would perceive that there is differences in national culture between the countries and thus give a higher score. The reason is that in the list of countries for appropriate adaptation, there were certain combinations where the researcher would expect a standardized decision for knowledge creation. An example would be the researcher would expect that an Australian headquarters with a New Zealand subsidiary should have chosen a standardized approach over an adapted approach. However, there were some respondents who selected an adapted approach, even though there should be minimal differences in national culture between their headquarters and the subsidiaries. This is because according to Bhaghat et al (2002)'s model for knowledge transfer the difficulty of the transfer should have been the lowest.

As for the effects of national culture on firms with inappropriate standardization as one of their knowledge creation outcomes the results seem to be more consistent. These respondents give the highest score for effects of national culture on the knowledge creation process. The actual difficulty according to Bhaghat et al (2002)'s model was also higher than most of the other outcomes.

5.7.2 Comparison for Standardization and Adaptation for the Five outcomes of Knowledge Creation

Table 5.14 contains the mean scores for standardization and adaptation of the

knowledge creation process. It is based on the respondent's answers to question 4.6. (Refer to Question 4.6 in Appendix 2) A mean score between "1" to "2" would indicate a standardized approach since in our questionnaire, "1" stands for "Exactly the same" and "2" stands for "Essentially the same". A mean score greater than "2" would mean that the firm has a more adapted approach towards international knowledge creation.

Table 5.14 Comparison of the degree of Standardization and Adaptation for the five Knowledge Creation outcomes

Step	Average	Standardization		Some are	Adaptation	
	for all	Appropriate	Inappropriate	appropriate	Appropriate	Inappropriate
Step 1: Sharing Tacit Knowledge	2.23	1.00	1.87	3.28	3.45	2.46
Step 2: Creating Concepts	2.08	1.00	1.75	3.22	3.14	2.50
Step 3: Justifying Concepts	2.02	1.13	1.71	3.00	2.81	2.50
Step 4: Building an archetype	2.03	1.13	1.75	3.00	2.94	2.38
Step 5: Cross-leveling of Knowledge	2.08	1.13	1.75	2.33	3.13	2.38
Overall average for effect on creation	2.07	1.08	1.77	2.97	3.09	2.44

(The average for effect on creation is based on the average for all responses. There is more response for step 1. It is not an average of Step 1 to Step 5.)

By comparing the mean scores in Table 5.14 and 5.11, it can be seen that firms with an adapted approach tend to have higher degrees of adaptation than firms with a standardized approach. However, the degree of adaptation is not really high since the respondents did not really give a high score for the effects of national score on the knowledge creation process in Table 5.11. In addition, based on Bhaghat et al (2002)'s model the mean scores for differences in national culture in table 5.13 were not really high as well. Thus, by comparing the scores in Table 5.14, 5.13 and 5.11, it can be seen that they are fairly consistent.

5.7.3 Comparison for Satisfaction with decision to Standardize or Adapt International Knowledge Creation

From Table 5.15, it can be seen that the most satisfied are firms with appropriate standardization. This is followed by the firms with the outcome of appropriate adaptation. The firms with the outcomes inappropriate standardization and inappropriate adaptation were quite dissatisfied with their firm's decision to standardize or adapt international knowledge creation.

Table 5.15 Comparison for Satisfaction with decision to Standardize or Adapt International Knowledge Creation

Step	Average	Standardization		Some are	Adaptation	
	for all	Appropriate	Inappropriate	appropriate	Appropriate	Inappropriate
Sharing Tacit Knowledge						
Total % of Yes for Step1	54.05	97.92	4.17	38.89	80.85	12.50
Total% of No for Step1	33.78	2.08	83.33	16.67	10.64	87.50
Total % of Don't know for Step1	12.16	0.00	12.50	44.44	8.51	0.00
Creating Concepts						
Total % of Yes for Step2	54.79	100.00	4.17	22.22	86.96	25.00
Total% of No for Step2	28.77	0.00	66.67	33.33	13.04	66.67
Total % of Don't know for Step2	16.44	0.00	29.17	44.44	0.00	8.33
Justifying Concepts						
Total % of Yes for Step3	59.57	93.75	25.00	0.00	93.33	25.00
Total% of No for Step3	36.17	6.25	75.00	66.67	6.67	75.00
Total % of Don't know for Step3	4.26	0.00	0.00	33.33	0.00	0.00
Building and archetype						
Total % of Yes for Step4	63.27	100.00	12.50	20.00	81.25	75.00
Total% of No for Step4	14.29	0.00	37.50	60.00	6.25	25.00
Total % of Don't know for Step4	22.45	0.00	50.00	20.00	12.50	0.00
Cross-levelling of Knowledge						
Total % of Yes for Step5	51.02	100.00	12.50	20.00	73.33	25.00
Total% of No for Step5	28.57	0.00	50.00	60.00	0.00	75.00
Total % of Don't know for Step5	20.41	0.00	37.50	20.00	26.67	0.00
Total						
Total % of Yes for Creation	55.74	98.33	8.62	25.58	82.76	26.67
Total% of No for Creation	29.78	1.67	68.10	37.21	8.62	71.67
Total % of Don't know for Creation	14.48	0.00	23.28	37.21	8.62	1.67

(Total % of Yes is the based on the total responses. There are more responses for Step 1.It is not the average of Step 1 to Step 5.)

5.7.4 Effects of National Culture on the Five steps in the Knowledge Creation process

In this section, a comparison will be made on the effects of national culture on the five steps in the knowledge creation process. Rankings will be made based on the results. This refers to the respondents' response in Table 5.11, 5.14, 5.15. The respondent's responses in Question 4.1, 4.5 were also taken into consideration.

Differences in National Culture have the greatest effect on Step 1 Sharing Tacit knowledge. This is based on various reasons. Firstly, it has the highest mean score of 2.63 for effects of National culture in Table 5.11. Firms with the outcomes of inappropriate standardization, appropriate adaptation and inappropriate adaptation also gave it high scores as well. Secondly, it also has the highest mean of 2.23 for adaptation

in Table 5.14. Firms with the outcomes of inappropriate standardization and appropriate adaptation also gave it the highest scores. Thirdly, it has the second lowest percentage for satisfaction with the decision to standardize or adapt.

In addition some of the responses for Question 4.1 indicate its importance:

“Headquarters wanted to introduce new software in the subsidiary’s market. Selected staffs were sent from the subsidiaries to undertake training related to knowledge creation at the Headquarters.”

“Knowledge creation in our company usually starts with meetings between the Expatriates and the local employees from various departments.”

“To discuss about the possibility of collaboration in a new market, the staff from the other subsidiaries flew in from other countries into our subsidiary.”

Besides the responses for question 4.1, the responses in question 4.5 also indicate its importance:

“It would be too detailed to list out all of the differences in national culture between the people in the subsidiaries and the people in the headquarters.”

“Staff from different countries has different opinions towards goals and how these goals should be met.”

“Differences in National culture made this process a slow and futile one.”

“People from the subsidiary only associate with people from the subsidiaries. They do not mix with the expatriates and vice-versa.”

“People from the Headquarters have a poor command of English. This created many misunderstandings and communication barriers.”

The second most important process would be Step 5: Cross-Levelling of

knowledge. In Table 5.11, national culture has the second highest effect on it. Most importantly respondents indicate the lowest level of satisfaction with this step. From Table 5.14, only 51.02% indicate that they were satisfied with the firm's decision to standardize or adapt this step. Some of the respondent's comments in question 4.5 also indicate its importance:

“Due to the difference in National Culture, some members openly disagree about the criteria.”

“People from the Subsidiaries show a lack of involvement for this process.”

“There was an increased in lead time.”

The researcher considers Step 1 and Step 5 to be more important than the rest of the other steps. After Step 1 and Step 5 would be Step 2, Step 3 and Step 4. Step 2 is considered to be slightly more important than Step 3 and Step 4 because it has a slightly higher mean for differences in national culture in Table 5.11 and for Adaptation in Table 5.14. In addition, it has a lower percentage of satisfaction for the process. Some of the comments for question 4.5 include the following:

“People have different working patterns, different thoughts so things are sometimes a big mess.”

“There was a need to change the structure and parts of the organization in order to get people to participate in this process.”

The researcher would consider Step 3 and Step 4 to be less affected by national culture if a comparison is made between Step 3 and 4 with the rest of the other steps in the knowledge creation process. Firstly, these two steps have the lowest mean score in Table 5.11 and the lowest adaptation score in Table 5.14. In addition, these two steps have the highest percentage for satisfaction with the decision to standardize or adapt the knowledge creation process.

5.7.5 Effects of National Culture on Factors Affecting Knowledge Creation

In an earlier section, national culture was identified as both a force for standardization and a force for adaptation for international knowledge management. In this section, the respondent's response to questions 4.1 and 4.5 were examined and compared to the factors affecting knowledge creation in a domestic context. This section seeks to examine how factors affecting knowledge creation in a domestic context would be affected in an international context.

Based on a comparison of the responses and the researcher's understanding of the factors affecting knowledge creation, the researcher found that differences in national have an affect on the following factors.

Care

According to Von Krogh (1998), care refers to good relations can help the knowledge creation process by removing negative barriers like distrust, fear and dissatisfaction. Five dimension of behavior in relationships are considered to be important. These dimensions are mutual trust, active empathy, access to help, lenience in judgment and courage. It was believed that care gives rise to these forms of behavior and their interplay. Thus, different levels of care would affect the extent to which the knowledge creation process would differ.

From the respondent's response it seems that differences in national culture have an impact on care:

“People from the HQ do not trust us. They seem to be on their guard against us.”

“Very often our opinions and ideas were not trusted because of the fact that we are not expatriates.”

From the first respondent's response, it can be suggested that differences in national culture can lead to lower trust between people involved in the international knowledge creation process. From the second respondent's response, it can be suggested that there is a lack of lenience in judgment and a lack of trust. The expatriates appear to be trusted while the company appears to be judgmental towards the opinions and ideas of respondents who were not expatriates.

Managing Conversations

The respondent's answers in the section under "care", also applies to the factor in this section which is managing conversation. In this case, Von Krogh (2000) suggested four principles for the management of conversation. The first principle is "Actively Encourage Participation" In this case, it can be seen that when differences in national culture resulted in a situation where the company does not trust people working in the subsidiary the factor managing conversations is affected as well. The reason is that people working in the subsidiary do not feel that management trusts them. Thus, they would not actively participate in the knowledge creation process.

Job Rotation

In the domestic context, job rotation was one of the factors that affected several factors in the knowledge creation process (Nonaka and Takeuchi 1995). However, in the international context differences in national culture have an impact on job rotation. In the international context, job rotation could be considered the transfer of expatriates to the various subsidiaries. In this case, the benefits of rotating expatriates would be affected by the quality of the expatriate. This can be seen from the following responses:

"There are still communication barriers between the Japanese and us. Many of the Japanese Expatriates do not speak or write in fluent English. For those of us who do not speak Japanese there will always be some communication barriers."

"The expatriates do not really mix well with the locals."

5.8 Comparison for International Knowledge Transfer

5.8.1 Effects of National Culture on the five outcomes for International Knowledge Transfer

In this section, the results will be presented for international knowledge transfer. Since the pattern matching procedures are the same as the ones being used for the international knowledge creation process, there will not be any explanation on how the results were obtained. From Table 5.16, it can be seen that respondents with an appropriate standardization outcome for international knowledge transfer had the lowest mean for effects of national culture. This is followed by firms with an appropriate adaptation outcome for international knowledge transfer. The highest mean scores are for firms with an inappropriate standardization outcomes followed by the ones with the outcome of: "Some parts are appropriate". The firms with inappropriate adaptation are ranked 3rd among all of the outcomes.

Table 5.16 Comparison of the effects of National Culture between the five Knowledge Transfer outcomes

Step	Average	Standardization		Some are	Adaptation	
	for all	Appropriate	Inappropriate	appropriate	Appropriate	Inappropriate
Step 1: Initiation	2.59	1.82	3.61	3.67	2.52	3.33
Step 2: Implementation	2.86	1.82	4.11	3.33	2.95	3.73
Step 3: Ramp-Up	2.18	1.73	3.25	2.50	2.36	2.40
Step 4: Integration	2.21	1.45	3.17	3.50	2.21	2.40
Average for effect on transfer	2.46	1.70	3.53	3.25	2.51	2.97

(The average for effect on transfer is based on the average for all responses. There are more response for step 1 and step 2. It is not an average of Step 1 to Step 4.)

The researcher calculates the difficulty of knowledge transfer between these cultures using figure 2.10 as a guide. The countries and the difficulty are shown in Table 5.17 in the Appendix. Figure 5.18 is a summary of the results in Figure 5.17.

Table 5.18 Comparison of Transfer process using Bhaghat et al (2002)'s model

Outcome	Difficulty	Ranking by 5 outcomes	Ranking by 4 outcomes
Appropriate Standardization	0.55	5th	4th
Inappropriate Standardization	1.33	3rd	
Some parts are Appropriate	2	1st	1st
Appropriate Adaptation	1.29	4th	3rd
Inappropriate Adaptation	1.60	2nd	2nd

From a comparison of Table 5.16 and Table 5.18, it can be seen that the rankings for appropriate standardization and appropriate adaptation appear to be fairly accurate. Both had the lower difficulty in Table 5.16 and in Table 5.18. It is interesting to note that in Table 5.16, the respondents gave a fairly high score for the effects of national culture on the knowledge transfer process although the difficulty was the second highest according to Bhaghat et al (2002)'s model. It is the researcher's opinion that the reason why the scores are different for inappropriate standardization and inappropriate adaptation was that the respondents for inappropriate standardization may have given a higher score for the effects of national culture in Table 5.17. If the rankings are based on 4 outcomes the results were similar to that of Bhaghat et al (2002)'s model. It is the researcher's opinion that there is possibility that firms with appropriate standardization and appropriate adaptation have a better understanding of the effects of national culture. This is because their scores were more accurate and consistent with Bhaghat et al (2002)'s model. There is also a possibility that there are other factors that the researcher are not aware of which would affect the respondent's perception of the effects of national culture.

5.8.2 Comparison for Standardization and Adaptation for the five outcomes of Knowledge Creation

From Table 5.19, it can be seen that firms with an appropriate adaptation outcome for international knowledge transfer have a higher mean score than the rest. The second highest was for firms with the outcome "Some parts are appropriate" and firms with inappropriate adaptation. Firms with appropriate standardization and inappropriate standardization have the lowest means. However, firms with the outcomes of inappropriate standardization had slightly higher scores.

Table 5.19 Comparison of the degree of Standardization and Adaptation for the five Knowledge Transfer outcomes

Step	Average	Standardization		Some are appropriate	Adaptation	
	for all	Appropriate	Inappropriate		Appropriate	Inappropriate
Step 1:Initiation	2.06	1.58	1.72	2.33	2.90	2.33
Step 2: Implementation	2.11	1.52	1.78	2.33	3.33	2.40
Step3:Ramp-Up	1.77	1.45	1.58	2.00	2.79	2.00
Step 4: Integration	1.85	1.45	1.5	3.50	2.50	2.00
Average for effect on transfer	1.95	1.50	1.65	2.54	2.88	2.18

(The average for effect on transfer is based on the average for all responses. There are more response for step 1 and step 2. It is not an average of Step 1 to Step 4.)

5.8.3 Comparison for Satisfaction with decision to Standardize or Adapt International

Knowledge Transfer

From Table 5.20, it can be seen that firms with appropriate standardization have a higher satisfaction with their firm's decision to standardize the knowledge transfer process. This is in comparison with the firms with the outcome of appropriate adaptation.

Table 5.20 Comparison for Satisfaction with decision to Standardize or Adapt International Knowledge Transfer

Step	Average for all	Standardization		Some are appropriate	Adaptation	
		Appropriate	Inappropriate		Appropriate	Inappropriate
Step 1: Initiation						
Total % of Yes for Step1	55.43	87.88	41.46	0.00	71.43	13.33
Total % of No for Step1	31.52	6.06	36.59	80.00	0.00	73.33
Total % of Don't know for Step1	13.04	6.06	21.95	20.00	28.57	13.33
Step 2: Implementation						
Total % of Yes for Step2	53.26	100.00	6.25	40.00	76.19	0.00
Total % of No for Step2	36.96	0.00	93.75	40.00	0.00	80.00
Total % of Don't know for Step2	9.78	0.00	0	20.00	23.81	20.00
Step 3: Ramp-Up						
Total % of Yes for Step3	70.00	90.91	65.38	100.00	78.57	40.00
Total % of No for Step3	23.33	0.00	30.77	0.00	14.29	60.00
Total % of Don't know for Step3	6.67	9.09	3.85	0.00	7.14	0.00
Step 4: Integration						
Total % of Yes for Step4	64.52	95.45	65.38	100.00	78.57	20.00
Total % of No for Step4	27.42	0.00	30.77	0.00	14.29	80.00
Total % of Don't know for Step4	8.06	4.55	11.12	0.00	7.14	0.00
Total						
Total % Yes for transfer	59.48	93.64	20.69	50.00	75.71	16.00
Total % No for transfer	30.72	1.82	67.24	37.50	5.71	74.00
Total % Don't know for transfer	9.80	4.55	12.07	12.50	18.57	10.00

(Total % of Yes is based on the total responses. There are more responses for Step 1 and 2. It is not the average of Step 1 to Step 4.)

5.8.4 Effects of National Culture on the Five steps in the Knowledge Transfer process

In this section, a comparison will be made on the effects of national culture on the five steps in the knowledge creation process. Rankings will be made based on the results. This refers to the respondents' response in Table 5.16, 5.18, 5.19. The respondent's responses in question 5.1, 5.5 were also taken into consideration.

Differences in national culture have the greatest effect on Step 2 Implementation of the knowledge transfer process. This can be seen from the fact that it has the highest mean in Table 5.16 and Table 5.19. The respondents in this sample also appear to have the lowest percentage of satisfaction with this process as well. This can be seen from the percentage in Table 5.20. Only 53.26% of the respondents were satisfied with their

firm's decision to standardize or adapt this step. The importance for this Step can also be seen from the following response to question 5.1:

“Employees who have attended training in the Headquarters were sent to the subsidiaries to train other staff at the subsidiary.”

“Issues related to the knowledge are corresponded to the subsidiary via internet and conference calls.”

“Every new employee who joins the subsidiary has to undergo on the job training. This involves them being assigned to a mentor who is usually Expatriate. The mentor would transfer his experience and knowledge to the new employee during his first year in the company. “

The importance for this step can also be seen from the responses to question 5.6:

“Cultural barriers distorted the information that was transferred.”

“Information transferred across countries often end up being transferred in a different context.”

“It is important to establish a personal relationship in dealing with an employee in China. If there is a “Guan Xi”, the knowledge transferred would be given priority.

“Values, beliefs, codes were very different.”

“There are still communication barriers between the Japanese and us. Many of the Japanese Expatriates do not speak or write in fluent English. For those of us who do not speak Japanese there will always be some communication barriers.”

“Differences in First Language and existing Know-how affected the process.”

“Cultural differences due to backward work ethics, pay, company organization support, management efficiency, technology, mindset and career options....”

The second most important step in the knowledge transfer process would be Step 1: Initiation. It has the second highest mean in Table 5.16 and Table 5.19. It also has the second lowest percentage of satisfaction in Table 5.20. Only 55.43% of the respondents were satisfied with the firm's decision to standardize or adapt this process. The importance of this step can also be seen from the response to question 5.1:

“Knowledge is usually first used in Headquarters before we decide that it should be transferred to the Subsidiaries.”

The importance of this step can also be seen from the following responses to question 5.5:

“People from the HQ and the Subsidiary have different opinions about the problem.”

“The process by which people determine the problem in the subsidiary was different for people from different cultures.”

“Due to differences in National Culture, it was difficult to determine whether the knowledge would be useful, or which knowledge would be necessary. “

The other Steps 3 and 4 are of lesser importance due to lower mean scores in Table 5.16 and 5.19. Respondents also expressed higher satisfaction with these two steps. Approximately 70 % of the respondents were satisfied with their firm's decision to standardize or adapt Step 3 of the knowledge transfer process. Approximately 64.52% of the respondents were satisfied with their firm's decision to standardize or adapt Step 4 of the knowledge transfer process.

5.8.5 Effects of National Culture on Factors Affecting Knowledge Transfer

Stanley (2003) classified factors affecting the transfer of knowledge across countries and cultures into the following factors:

- 1) Factors relating to the individual
- 2) Factors relating to the organization
- 3) Factors related to the external environment

- 4) Characteristics of the most prevalent adopters
- 5) Need for ownership, control and personalization

The researcher's approach in this thesis is different in that the researcher compares the respondents' response to the open-ended questions in 5.1 and 5.5 and matches them with factors affecting knowledge transfer in a domestic context. However, there are some similar factors that have been mentioned by Stanley (2003). This is true for factors relating to the individual and factors relating to the organization.

Relationship between the sender and the Recipient

The relationship between the sender and the recipient in the international knowledge transfer process is usually related to the relationship between the expatriate who is usually the sender and the employee working in the subsidiary. This is related to the factor job rotation of expatriates which is one of the factors affecting knowledge creation which is also affected by differences in national culture.

There are both positive and negative comments from the respondents about the relationship between people from different national cultures. Some of the negative comments include the following:

“Bad relationship between the people from the Headquarters and people from the subsidiary, due to different values, beliefs and opinions about various issues.”

“People from the subsidiary only associate with people from the subsidiaries. They do not mix with the expatriates and vice-versa.”

One of the positive comments was:

“Every new employee who joins the subsidiary has to undergo on the job training. This involves them being assigned to a mentor who is usually expatriate. The mentor would transfer his experience and knowledge to the new employee during his first year in the company. “

Leadership

As mentioned earlier, the national culture of the leaders had an impact on the firm's decision to standardize or adapt their knowledge management practices. This point has already been covered in the section under factors affecting standardization. The important point to note is that leadership affects both knowledge creation and knowledge transfer.

Human Resource Management practices

As a factor, the human resource management practices of the firm are greatly influenced by the national culture of the headquarters. The effects are in two areas. One of them is on the expatriates and the other is on the employees working in the subsidiary. For the expatriates, some of our respondents indicate that there appears to be a need for more training for the expatriates. This can be seen from the following statement:

“Expatriates appear to require additional training. Many of them require more lessons in English.”

There also appears to be a lack of training for the employees working in some of the subsidiaries. This can be seen from the following statements:

“People working in the subsidiaries lack the necessary skills to do the job.”

“The company verbally supports knowledge management but does not provide sufficient training to people working in the subsidiaries.”

“Poor pay and the fact that there are plenty of career options for the workers in China resulted in high employee turnover in our company. Sometimes we are reluctant to transfer knowledge.”

Absorptive Capacity

As most knowledge transfer situations described by our respondents relates to the transfer of knowledge from headquarters to the subsidiary, absorptive capacity applies to the employees working in the subsidiary. In this case, differences in national culture resulted in lower absorptive capacity for workers working in the subsidiary. This can be seen from the following response:

“My subordinates in China lack the necessary skills and knowledge for the job. The high turnover rate meant that many of those workers who have the necessary skills have left the company. The end result is that I have to teach the same basic skills to the new employees who have joined the company.”

Knowledge Transfer Capacity

For knowledge transfer capacity, most of them revolve around the knowledge transfer capacity of the expatriates. This is divided into two parts. The first part consists of the headquarters’ ability to identify the knowledge required for the transfer. In this case, differences in national culture had an effect. The responses used in this section have been mentioned earlier.

“People from the HQ and the Subsidiary have different opinions about the problem.”

“The process by which people determine the problem in the subsidiary was different for people from different cultures.”

“Due to differences in National Culture, it was difficult to determine whether the knowledge would be useful, or which knowledge would be necessary. “

Knowledge transfer capacity also includes the transferor’s ability to transfer knowledge which is source transfer capacity. In this case, some problems of the expatriates were found to be a problem. This is seen from the following response:

“Expatriates appear to require additional training. Many of them require more lessons in English.”

Desirability of Knowledge

Knowledge that is useful in one context may not be useful in another context. This affects the desirability of knowledge. This could be seen from the respondent's response:

“Some knowledge from USA does not seem to apply to certain countries such as China or Singapore. It is not possible to monitor the use of such knowledge.”

5.9 Comparison for Indicators of a learning Organization and satisfaction for the five outcomes of Knowledge Creation and Knowledge Transfer

Table 5.21 and Table 5.22 provide a comparison for indicators of learning organization for the five different outcomes. It is interesting to note that there are minimal differences between the five types of firms with regards to indicators of a learning organization. The average for all indicators is 2.92. For firms with an outcome of appropriate standardization for knowledge creation the mean score is 3.18. This is only slightly higher than the firms with an outcome of inappropriate standardization for knowledge creation which is 2.65. It is the researcher's opinion that indicators of learning organization are completely different things compared to satisfaction with the firm's decision to standardize or adapt the creation or transfer process. Thus, it is likely that this may be why the scores are similar.

Another possible explanation would be that on the whole the firms in this sample were not really satisfied with the knowledge management in their company. This can be seen that for example for firms with an outcome of appropriate adaptation for knowledge transfer the score is only 2.8. However, on the whole it can see that firms with appropriate outcomes they tend to have slightly higher mean scores for indicators of a learning organization and also slightly higher satisfaction with knowledge management.

Table 5.21 Comparison for Indicators of learning organization and satisfaction for the five outcomes of International Knowledge creation

Indicators of learning Organization	Average	Standardization		Some are	Adaptation	
	for all	Appropriate	Inappropriate	appropriate	Appropriate	Inappropriate
Average for Knowledge pull	2.88	3.00	2.50	3.44	3.17	2.42
Average for Subjectivity	2.87	3.13	2.79	2.89	3.13	2.00
Average for Transferability	3.13	3.42	2.96	3.67	3.13	2.50
Average for Embeddeness	2.90	3.28	2.58	2.75	3.25	2.13
Average for Self-reinforcement	3.01	3.17	2.92	2.78	3.46	2.17
Average for Perishability	2.85	3.19	2.63	3.25	2.78	2.44
Average for Spontaneity	2.77	3.09	2.16	3.33	3.00	2.44
Average for all indicators	2.92	3.18	2.65	3.15	3.13	2.30
Satisfaction with KM	3.00	3.75	2.43	3.00	3.00	2.50

Table 5.22 Comparison for Indicators of learning organization and satisfaction for the five outcomes of International Knowledge Transfer

Indicators of learning Organization	Average	Standardization		Some are	Adaptation	
	for all	Appropriate	Inappropriate	appropriate	Appropriate	Inappropriate
Average for Knowledge pull	2.88	3.12	2.78	2.83	3.10	2.27
Average for Subjectivity	2.87	3.30	2.94	2.67	2.71	2.40
Average for Transferability	3.13	3.36	2.89	3.17	3.48	2.67
Average for Embeddeness	2.90	3.34	2.75	2.38	3.21	2.35
Average for Self-reinforcement	3.01	3.52	2.94	2.17	3.19	2.67
Average for Perishability	2.85	3.41	2.67	3.25	3.04	1.95
Average for Spontaneity	2.77	2.95	2.29	3.13	3.11	2.65
Average for all indicators	2.92	3.29	2.75	2.80	3.12	2.42
Satisfaction with KM	3.00	3.73	2.00	3.00	2.80	2.40

Some of the respondent's responses to question 6.3 include the following examples. The responses for question 6.3 were matched with the respondent's answer to question 6.2. Question 6.2 is a question which asks respondents their level of satisfaction with their organization's knowledge management based on 5 possible responses. (refer to questionnaire in appendix) Question 6.3 is an open-ended question which asks respondents to explain why they feel this way. These statements were matched to their responses in question 6.2. The following are some statements made by the respondents:

“Terrible place with a poor understanding of knowledge management.” (Not at all satisfied-1)

“Ideas of local employees are not appreciated.” (Not satisfied-2)

“Executives seeks knowledge management initiative but there is a lack of commitment from many of the staff. “ (Undecided-3)

“Final results were positive.” (Satisfied-4)

“I always had all the data required. “ (Very Satisfied-5)

6 Findings and Conclusions

This chapter summarizes the results from the previous chapter and organizes them in order according to the research questions. For example, this meant that 6.1 refer to the first research question. It then draws conclusions by comparing the results with the existing literature from knowledge management and to a lesser extent the literature on cross-cultural management and international business.

6.1 Factors affecting a firm's decision to standardize or adapt their Knowledge Management practices

6.1.1 Forces for Standardization

Global Strategy

One of the forces for standardization of knowledge management would be a Global Strategy. This could be seen from the response rate in Table 5.2 where 33.33% of the firms with a standardized approach towards international knowledge management were found to be using a Global Strategy. According to Beamish, Morrison and Rosenzweig (1997,p.155), "Under a global strategy, businesses focus on maximizing international efficiency by locating activities in low-cost countries, producing standardized products from world-scale facilities, globally integrating operations and subsidizing inter-country market share battles." It can be seen that Global strategy is related to the production of standardized products. The question here is whether Global strategy is related to the standardization of knowledge management.

According to Bartlett and Ghoshal (1998), for firms with Global Organizational characteristics, knowledge is usually developed and retained at the center. Bartlett and Ghoshal (1998) suggested that the four types of firms Multinational, Global,

International and Transnational have different approaches towards the development and diffusion of knowledge. Bartlett and Ghoshal (1998)'s idea is useful in that it explains a link between strategy and the ways different firms create and transfer knowledge across borders. It is likely that a firm with a Global Strategy would seek to standardize their operations and functions in international business and knowledge management is not an exception to the rule.

However, it is also important to note that according to Yip (2003, p.1), "a Global strategy should not be equated with any one element-standardized products or worldwide market coverage or a global manufacturing network. Global Strategy should, instead be a flexible combination of many elements." It is the researcher's opinion that Yip (2003)'s definition of a Global strategy may be a reason why there are both outcomes of appropriate standardization and inappropriate standardization in the sample. Firms with an inappropriate standardization for their knowledge creation or knowledge transfer may have tried to impose a standardized approach, even though the circumstances may not facilitate the implementation of a standardized approach towards knowledge management. In this case, the circumstances may be a high level of differences in national culture which can be seen from the high mean scores for culture for firms with an outcome of inappropriate standardization.

Centralized Organization Structure

Another factor would be a centralized organization structure. According to Table 5.3, 86.67% of the firms with a standardized approach towards international knowledge management were using a centralized control for its organization's structure. According to Yip (2003), centralization is one of the most effective ways to implement a global strategy. Earlier in the previous section, there seems to be a relationship between a Global Strategy and a standardized approach towards knowledge management. Thus, it is the researcher's opinion that firms with a Global Strategy use a centralized organization structure which allows them to implement a standardized approach towards international knowledge management.

According to Nonaka and Takeuchi (1995), organization structure was one of the important factors affecting knowledge creation. Thus, in this case a factor that affects

knowledge creation in a domestic context is also a factor resulting in a standardized approach towards knowledge management.

Organization culture and Creative Chaos

One of the arguments posed by one of our respondents was that the organization had a traditional culture and was not adapted for the future. According to Beamish, Morrison and Rosenzweig (1997), MNC-specific factors are pressures that reduce an MNC's ability to respond to forces for globalization. These factors might also improve its ability to respond to pressures for localization. Organizational resistance to change was one of the factors preventing a firm from responding to forces for globalization.

As mentioned earlier, Organization culture was one of the factors affecting knowledge transfer (Davenport, De Long and Beers 1998). In addition, it is likely this organization lacks creative chaos which is one of the factors affecting knowledge creation (Nonaka and Takeuchi 1995, Davenport and Prusak 1998). Thus, the researcher believed that organization culture would be a force for standardization. It is not only a force for standardization but also a factor affecting both knowledge creation and knowledge transfer.

Standardized approach towards International Business

A standardized approach towards international business is related to a standardized approach towards knowledge management. This was seen in Table 5.5, where 93.33% of the respondents with a standardized approach towards international knowledge management were found to have a standardized approach towards international business. It is the researcher's opinion that this might be because these firms were using a Global Strategy (Yip 2003, Beamish, Morrison and Rosenzweig 1997, Barlett and Ghoshal 1998) or the firms had a preference for standardizing their operations.

Pressures for Cost reduction

One of the most important pressures for standardization in international business is pressure for cost reduction (Beamish, Morrison and Rosenzweig 1997, Yip 2003, Bartlett and Ghoshal 1998). Cost reduction is one of the greatest benefits that can arise from the production of standardized products (Yip 2003, Bartlett and Ghoshal 1998). There is some evidence from this research that shows that respondents believe that a standardized approach towards knowledge management can result in cost reduction for the company. There are both quantitative and qualitative responses that support this view. In Table 5.6, 35.29% of the respondents with a standardized approach towards international knowledge management state that pressures for cost reduction were one of the factors affecting knowledge management. One of the responses from the qualitative survey also cited it as an important factor affecting their company's knowledge management.

Risk Reduction

According to Dowling (1999), there is greater risk involved in international business than in domestic business. This is because the human and financial consequences of failure are much higher. Risk reduction was one of the reasons cited by the respondents on why their company is using a standardized approach towards knowledge management. Thus, it can be seen that because of the higher risk of international business some firms may perceive that a standardized approach towards international knowledge management would reduce the risk associated with it.

Industry of the organization

The industry of the organization was one of the reasons why firms choose a standardized approach towards knowledge management. This was one of the qualitative responses that were given out by one of the respondents. According to Ghoshal and Nutria (1993), there are four types of MNC environments which are Global environment, Multinational environment, transnational environment and International environment. They argue that different industries operate in different environments. (Refer to figure 5.23)

Figure 5.23 The Environment of MNCs:Classification of Businesses
(Source:Ghoshal and Nohria 1993,pp.27)

It can be seen that different firms in different industries face different forces for Global Integration and different forces for Local responsiveness. It is likely that different industries have different approaches for dealing with knowledge management. Dana, Korot and Tovstiga (2005) conducted a cross-national comparison of knowledge management practices in four nations. They studied innovative and entrepreneurial firms in the four countries of USA, Singapore, The Netherlands and Israel. However, there was little or no difference in the knowledge management practices of firms in these four countries. The authors suggest that the reason why differences in national culture did not seem to have an effect could be attributed to the fact that there is a sub culture that transcends national culture boundaries. They suggest that innovative and entrepreneurial firms in different countries would tend to have similar knowledge management practices. Thus, the finding from this research reinforces Dana, Korot and Tovstiga (2005)'s finding that the industry that a firm belongs to has an impact on knowledge management. This research advances Dana, Korot and Tovstiga (2005)'s finding by suggesting that Industry is a force and factor for the standardization of international knowledge management.

Knowledge Management is a new idea

One of the respondents states that one of the reasons why their company is using a standardized approach towards knowledge management was because knowledge management is a new idea in their company. This was related to Ang and Massingham (2005, b)'s suggestion that it is likely that firms might start with a standardized approach towards international knowledge management. By comparing the findings with the existing literature, another idea related to this would be the phase model of Global Knowledge Management systems in multinational corporations by Nielsen and Michailova (2004). In this phase model, the authors suggest that Global Knowledge Management systems are divided into four phases which are awareness, take-off, Development and Advanced.

It was believed that MNCs progress through different stages of the Global Knowledge Management systems. As firms advance through the different phases, management need to identify the key managerial issues related to each phase. The interesting point to note here is that at the awareness stage few resources (financial, human or time) are allocated to the Global Knowledge Management systems. By combining these perspectives, it is the researcher's opinion that it is likely that for firms which regard international knowledge management as a new idea, a standardized approach might be more appropriate because management might have allocated lesser resources towards it. An adapted approach might not work well because of the limited resources. It could be argued that this research has advanced the phase model by Nielsen and Michailova (2004) by suggesting that firms in the awareness stage are more likely to adopt a standardized approach towards knowledge management.

Minimal Differences in National Culture

Minimal difference in national Culture was one of the reasons cited by the respondents. This was one of the responses to a quantitative question chosen by firms with a standardized approach towards international knowledge management. This can be seen in Table 5.6, where only firms with a standardized approach towards international knowledge management choose the response "Little differences in Culture". It was also one of the qualitative responses that were provided in the

interviews. Lastly, from table 5.12 and 5.17, firms with an outcome of appropriate standardization for international knowledge creation and international knowledge transfer tend to be those where there were minimal differences in national culture between the headquarters and the subsidiary.

In a way, this result appears to support the view of authors in the field of cross-cultural knowledge management (Holden 2001, Holden 2002, Glisby and Holden 2003, Bhaghat et al 2002, Pauleen and Murphy 2005, Zhu 2004). This means that if there are minimal differences in national culture firms would be able to use a standardized approach towards international knowledge management.

National Culture of Headquarters

One of the respondents indicated that the national culture of the headquarters had a great influence on the knowledge management practices of the subsidiary. The respondents indicate that the German headquarters preferred a standardized approach towards knowledge management. According to Holden (2002), the national culture of the headquarters had an effect on the knowledge management practices in the subsidiaries. In his book, Holden (2002) state that the two Danish firms, Novo Nordisk and LEGO were quite committed to the idea of localization. In contrast, the Japanese company Matsushita had a more ethnocentric approach towards its subsidiaries. In a way this research confirms Holden (2002)'s findings that the national culture of an organization's headquarters have a great impact on the subsidiary's knowledge management practices.

Another interesting point from a comparison with the related literature is that according to Yip, Johansson and Roos (1996), nationality have an impact on Global Strategy. This research found that European firms have organization structures that are more centralized; they have human resource practices and organization cultures that are more suited for a Global Strategy.

6.1.2 Forces for Adaptation

Transnational or Multidomestic Strategy

In this research's sample, respondents that have chosen an adapted approach towards international knowledge management are more likely to have either a Transnational or Multidomestic strategy. This can be seen in Table 5.2 where 53.85% of them state that their firm was using a Transnational Strategy and 30.77% of them state that their firm was using a Multidomestic Strategy.

Multinational companies are companies which have a strategy which allows them to be both sensitive and responsive to differences in national environments around the world. Transnational companies were companies that seek efficiency in achieve global competitiveness. They also recognize the importance of local responsiveness as a tool for achieving flexibility in international operations (Bartlett and Ghoshal 1998). In this case, it is likely that a Multinational strategy or a Transnational Strategy were related to an adapted approach towards international knowledge management. It is the researcher's opinion that the reason for this is that both of these strategies were used by companies that understand the importance of local responsiveness. In addition, the importance of local responsiveness appears to apply to international knowledge management as well.

More decentralized control for its structure

Most respondents with a standardized approach towards international knowledge management state that their firm is using a centralized approach to control its operations. However, in contrast most respondents with an adapted approach towards international knowledge management were more likely to use either a decentralized approach or and interdependent approach. According to Table 5.3, 30.77% of them were using de-centralized approach and 30.77% were using an interdependent approach. The results in this section appear to support the previous section that a transnational strategy and a multinational strategy are related to an adapted approach towards international knowledge management. This is because according to Bartlett and Ghoshal (1998), Multinational companies were more likely to use a decentralized approach while transnational companies were more likely to use an interdependent approach.

Adapted approach towards International Business

An adapted approach towards international business was found to be strongly related to an adapted approach towards international knowledge management. This appears to be related to the idea that firms with a multinational or transnational strategy were more likely to consider the effects of differences between countries in their operations (Barlett and Ghoshal 1998, Beamish, Morrison and Rosenzweig 1997). Thus, they are more likely to adapt according to difference between countries and that knowledge management is not an exception.

Differences in National Culture

Difference in national culture was one of the key reasons why a firm has chosen an adapted approach towards international knowledge management. According to Table 5.6, 38.89% of the firms with an adapted approach state that “Pressures for cultural differences” was a factor affecting international knowledge management. It also appears to be one of the reasons for outcomes of inappropriate standardization and inappropriate adaptation. According to Table 5.11 and Table 5.16, firms with the outcomes of inappropriate standardization and inappropriate adaptation had higher mean scores for the effects of differences in national culture. The fact that differences in national culture is a force for an adapted approach towards international knowledge management confirms the findings by authors who are against the idea of a standardized approach towards international knowledge management (Glisby and Holden 2003, Holden 2001, Zhu 2004, Pauleen and Murphy 2005).

6.2 Effects of difference in national culture on the standardization and adaptation of the knowledge creation and knowledge transfer process

In an earlier section, the researcher mentioned about a conceptual framework designed by the researcher and his supervisor (Ang and Massingham 2005, b). One of the important points of this framework was that firms did not have to choose a completely standardized or adapted approach towards knowledge management. Instead the authors suggest that firms could either standardized or adapt the parts or sub-processes that required the greatest attention or present the greatest problem. In this section, the effects of national culture on the knowledge creation process and

knowledge transfer process would be explained in greater literature. This section will first compare the knowledge creation process with the knowledge transfer process before highlighting the important sub-processes for the knowledge creation and knowledge transfer process.

According to this research's study of 31 respondents, it appears that differences in national culture have a slightly greater impact on the international knowledge creation process than the international knowledge transfer process. This assumption was made by the researcher after an examination of the outcomes of both international knowledge creation and international knowledge transfer. Firstly, there were a higher number of appropriate outcomes for the knowledge transfer process and a lower number of inappropriate outcomes for knowledge transfer process. For appropriate outcomes, this refers to outcomes of appropriate standardization and appropriate adaptation. For inappropriate outcomes, only outcomes of inappropriate standardization and inappropriate adaptation were counted. This could be seen from the scores in Table 5.9.

Another indicator that national culture has a greater effect on the creation process would be that on average, the mean score for adaptation was higher for the creation process. This could be seen from the mean scores in table 5.14 and in table 5.19. Respondents also indicate a higher percentage of satisfaction with the knowledge transfer process. This can be seen from the percentage scores in Table 5.15 and Table 5.20. Although respondents indicate a slightly higher score for the effects of national culture on the knowledge transfer process, it is the researcher's opinion that were more evidence that national culture had a greater effect on the knowledge creation process.

For the knowledge creation process, this research has already identified the most important phase or sub-process to be Step 1: Sharing Tacit Knowledge. The second most important phase or sub-process was Step 5: Cross-Levelling of Knowledge. According to Nonaka and Takeuchi (1995), knowledge creation can take place across cultures and outside Japan which they describe as "Global Organizational Knowledge Creation". They suggested that there is a need for a key adjustment which is a prolonged phase of socialization. This research confirms Nonaka and Takeuchi (1995)'s suggestion on the importance of socialization in global organizational knowledge creation. Step 1: Sharing Tacit Knowledge involves socialization. However, this research also advances Nonaka

and Takeuchi (1995)'s findings by suggesting that National Culture also has an impact on Step 5: Cross-Levelling of Knowledge.

For the knowledge transfer process, the most important step was Step 2: Implementation. The second most important phase was Step 1: Initiation. In this case, implementation involved the establishment of social ties between the sender and the recipient. It is thus related to the idea of socialization described by Nonaka and Takeuchi (1995). In this case, it can be seen that this research has once again confirm Nonaka and Takeuchi (1995)'s findings on the importance of socialization in international knowledge management. This research has also advances the findings of Szulanski (1996) and Jensen and Szulanski (2004). It found that differences in national culture had a greater effect on two of the steps in the knowledge transfer process.

By applying Ang and Massingham (2005, b)'s conceptual framework to the findings the researcher would suggest that in the case of the 31 respondents, it would appear that there might be a need to pay more attention to the knowledge creation process. For the knowledge creation process and the knowledge transfer process, more attention should also be made to those steps and phases which are more likely to be affected by differences in national culture.

6.3 Differences in characteristics between the firms with the five different outcomes of Appropriate Standardization, Appropriate Adaptation, Inappropriate Standardization, Inappropriate Adaptation and Some parts are Appropriate

Due to time and cost constraints, this research was not able to seek further input from the respondents on reasons why their firms were successful or unsuccessful. However, a study of the respondent's response and the literature review suggests that difference in national culture and the level of adaptation adopted by the firms may be on of the key reasons for the five different outcomes.

For the new outcome "some parts are appropriate", these firms are a mixture of firms with a standardized approach and firms with an adapted approach. However, their level of satisfaction with the firm's decision to standardize or adapt knowledge

management was at a percentage where it was difficult for the researcher to classify them into either appropriate or inappropriate outcomes. In this case, these firms were able to handle the effects of differences in national culture on some of the sub-processes. However, they were unable to do so for some of the sub-processes. In this case, it would appear that the existence of this 5th type of outcome is related to the conceptual framework by Ang and Massingham (2005, b). In this case, it would appear that national culture has different impact on different steps and sub-process of the knowledge creation and knowledge transfer process. It is the researcher's opinion that this 5th type of outcome may have occurred because the firm did not pay more attention to some of the sub-processes.

For firms with an outcome of appropriate standardization, most of them involve knowledge creation and knowledge transfer situations where there are minimal differences in national culture between headquarters and the subsidiary. It is likely for this group of firms that since there is minimal impact from national culture a standardized approach would naturally lead to an outcome of appropriate standardization. However, there are also a small minority among these firms where somehow the firm was able to overcome differences in national culture and achieve an outcome of appropriate standardization. It is the researcher's opinion that perhaps there were strong forces for standardization affecting these firms. Thus, they were able to succeed. Another possibility would be that these firms were better at managing differences in national culture compared to firms with an inappropriate outcome.

For firms with an outcome of inappropriate standardization, most of them are firms which use a standardized approach, even though there were substantial differences in national culture between headquarters and the subsidiary. For firms with an outcome of inappropriate adaptation, these are usually firms which use an adapted approach and there are great differences in national culture between headquarters and subsidiary. However, it is likely that the amount and level of adaptation may not be sufficient to meet the differences in national culture. The idea that adaptation may not be sufficient was first suggested by Jensen and Szulanski (2004). It would appear that the idea of insufficient adaptation also applies to firms in this research's sample. The reason is that the mean score of adaptation for firms in this group was much lower than those firms with the outcome of appropriate adaptation.

Lastly, for firms with an outcome of appropriate adaptation they were mostly firms which choose to adapt their knowledge creation and knowledge transfer process according to differences in national culture. Their level of adaptation was much higher than firms with an outcome of inappropriate adaptation. It is likely that a minority of these firms were much cautious and risk adverse than other firms. This is because there is a small group of firms which used an adapted approach towards knowledge creation or knowledge transfer even though according to the model by Bhaghat et al (2002), there should be little or not difference in national culture between the headquarters and the subsidiary.

This section of the findings actually confirms Jensen and Szulanski (2004) and Bhaghat et al (2002)'s research that differences in national culture actually increases the difficulty of knowledge transfer. This research actually advances Jensen and Szulanski (2004)'s findings by suggesting that there is a 5th type of outcome which is "Some parts are appropriate". This was done by using a different method to classify the outcomes.

This research also to a certain extent confirms the findings of Bhaghat et al (2002). Bhaghat et al (2002) suggested that difficulty of knowledge transfer between different national cultures would be from "0" to "3". This research compared the mean score of the difficulty suggested by the respondents with the mean score of the difficulty based on Bhaghat et al (2002)'s model. The rankings for both scores were quite accurate to a certain extent. (refer to table 5.13 and table 5.18)

6.4 Effects of differences in national culture on factors that is important for Knowledge Creation and Knowledge Transfer

Creation

Most of the literature had concentrated on factors that affect knowledge creation and knowledge transfer. Most of the literature had ignored the effects of national culture on the implementation of these factors. Some of the few exceptions include Husted and Michailova (2002, b), Holden (2002).

From this research, some of the factors affecting knowledge creation were affected by difference in national culture. They include care (Von Krogh 1998), managing conversations (Von Krogh, Ichijo and Nonaka 2000), and job rotation (Nonaka and Takeuchi 1995). Of particular importance would be job rotation, since in an international context, expatriates were very important in knowledge management (Bender 2000, Bonache and Brewster 2001, Downes and Anisya 2000, Massingham 2004, a, Riusala and Suutari 2004, Kayes, Kayes and Yamazaki 2004). Bender (2000) state that there is a need for expatriates to have an appreciation and understanding of differences in national cultures. Kayes, Kayes and Yamazaki (2004) suggested that expatriates need to develop competencies for cross-cultural knowledge absorption. This would facilitate knowledge sharing between expatriates and local employees.

This research has also found that expatriates were very important to international knowledge creation and international knowledge transfer. Thus, it has confirmed the existing findings on the importance of managing the expatriates to ensure that international knowledge management would be successful. In fact, expatriates were also related to other factors affecting international knowledge transfer. This includes relationship between the sender and the recipient, human resource management practices and knowledge transfer capacity.

Transfer

One of the factors affected by differences in national culture would be the relationship between the sender and the recipient. Quite a number of authors have written on the importance of the relationship between the sender and the recipient (Szulanski 1996, Dhanaraj et al 2004, Husted and Michailova 2002, b). The importance of relationships for international knowledge management was first suggested by Nonaka and Takeuchi (1995). They suggested the importance of a longer socialization period for Global Organizational Knowledge Creation. This has already been mentioned in an earlier section.

The current literature on cross-cultural management suggests that there are different leadership styles due to difference in national culture (Thomas 2002, Schneider and Barsoux 1998). One of our respondents suggested that the national culture of the

leaders at the headquarters had an impact on international knowledge management. Leadership was an important factor affecting knowledge transfer (O'Dell and Grayson Jackson 1998). It is also an important factor affecting knowledge creation (Nonaka, Toyama, and Konno 2000). This research advances the findings on the importance of leadership on knowledge management by suggesting that national culture would affect leadership which would then affect knowledge management.

Human Resource Management was another factor that is important for knowledge management (Minbaeva, *et al*, 2003) and is also affected by differences in national culture. According to Dowling (1999), there are differences between domestic human resource management and international human resource management. These include the following:

- 1) More Human Resource activities
- 2) The need for a broader perspective
- 3) More involvement in employee's personal life
- 4) Change in emphasis as the workforce mix of expatriates and locals changes
- 5) Risk exposure
- 6) More external influences.

In Schuler, Dowling, and De Cieri (1993)'s model for international human resource management difference in national culture was one of the factors affecting international human resource management. Thus, based on a the above perspectives, it is the researcher's opinion that while human resource management would be a factor affecting knowledge management in a domestic context, international human resource management is likely to be a factor affecting international knowledge management.

Absorptive capacity was one of the important factors in knowledge transfer. It is related to the ability of the staff to understand and receive knowledge (Szulanski 1996). According to Husted and Michailova (2002, b), the national culture of Russia would result in a lower absorptive capacity. According to Holden (2002), absorptive capacity was an important factor related to cross-cultural knowledge management. Thus, this research has confirms the existing finding that difference in national culture would affect absorptive capacity in international knowledge management.

Source transfer capacity is similar to absorptive capacity except that it involves the transferor's ability to transfer knowledge (Martin and Salomon 2003). For this research, the firm's ability to identify the knowledge necessary for the transfer is affected by differences in national culture. The transferor's ability to transfer knowledge was affected by differences in national culture. For this research, one of the factors affecting the transferor's ability to transfer knowledge was the transferor's competency in the English language. According to Holden (2002), top management's competency in the English language was an important factor in cross-cultural knowledge transfer. Thus, this research has advanced Martin and Salomon (2003)'s findings and confirmed Holden (2002)'s findings.

According to Nonaka and Takeuchi (1995), Westerners prefer to deal with explicit knowledge and Japanese prefer to deal with tacit knowledge. Bhaghat et al (2002) suggested that there are four types of cultural patterns. They suggested that the four cultural patterns have different preferences for different type of knowledge. Thus, the current literature has already established a relationship between national culture and the type of knowledge. Pak and Park (2004) suggested that recipients are more motivated to learn if the knowledge to be transferred is a knowledge that they desire. From this research, some respondents state that the knowledge that is applicable in one national culture does not apply to another national culture. Thus, this research advances Pak and Park (2004)'s findings by suggesting that differences in national culture would affect the desirability of knowledge. This point is also related to the previous point Source transfer capacity since differences in national culture may affect the source transferor's ability to identify the appropriate knowledge that is to be transferred.

6.5 Summary of Findings and conclusions

A very brief summary of the findings and conclusions are presented in table 6.1.

Table 6.1 Brief Summary of Findings and Conclusions

Research Question	Finding
<p>One What are the factors affecting a firm's decision to standardize or adapt their knowledge management practices ?</p>	<p>Forces for Standardization</p> <ul style="list-style-type: none"> * Global Strategy * Centralized Organization Structure * Organization culture and creative chaos * Standardized approach towards International Business * Pressures for Cost reduction * Risk Reduction * Industry of the organization * Knowledge Management is a new idea * Minimal Differences in National Culture * National Culture of Headquarters <p>Forces for Adaptation</p> <ul style="list-style-type: none"> * Transnational or Multidomestic Strategy * More Decentralized Structure * Adapted approach towards International Business * Differences in National Culture
<p>Two How does differences in national culture affect the standardization and adaptation of the knowledge creation and knowledge transfer process?</p>	<ul style="list-style-type: none"> * National culture have greater impact on knowledge creation process than the knowledge transfer process <p>National culture had the greatest impact on the following knowledge creation sub-process</p> <ul style="list-style-type: none"> * Step 1: Sharing Tacit Knowledge * Step 5: Cross Levelling of Knowledge <p>National culture had the greatest impact on the following knowledge transfer sub-process</p> <ul style="list-style-type: none"> * Step 2: Implementation * Step 1: Initiation
<p>Three What are the differences in characteristics between the firms with the four different outcomes of appropriate standardization, inappropriate standardization, appropriate adaptation and inappropriate adaptation?</p>	<ul style="list-style-type: none"> * Differences in national culture and level of adaptation may be reasons for different outcomes * appropriate standardization-low difference and low adaptation. Satisfied with standardization * inappropriate standardization-high difference and low adaptation. Dissatisfied with standardization * appropriate adaptation-high difference and high adaptation. Satisfied with adaptation * inappropriate adaptation-high difference and high adaptation. Insufficient adaptation. Dissatisfied with adaptation
<p>Four How do differences in national culture affect factors that are important for knowledge creation and knowledge transfer</p>	<p>Knowledge Creation factors that are affected</p> <ul style="list-style-type: none"> * Care * Managing Conversations * Job rotation <p>Knowledge Transfer factors that are affected</p> <ul style="list-style-type: none"> * Relationship between sender and recipient * Leadership

* International human resource management * Absorptive capacity * Source Transfer capacity * Desirability of Knowledge

6.6 Model to explain International Knowledge Management

By combining the findings presented by the research questions with the current literature on knowledge management, the researcher suggests the creation of a model to explain international knowledge management. From the current literature, it could be seen that there are factors affecting knowledge creation and knowledge transfer. The literature suggests that if firms were able to overcome these barriers or possess these factors they would be able to obtain successful or appropriate outcomes for knowledge creation or knowledge transfer. In Figure 6.2, this is illustrated by an arrow from “Factors affecting Knowledge Creation and Transfer” towards “Appropriate Outcomes”.

However, most of this literature on factors affecting knowledge creation and knowledge transfer often ignore or do not consider the effects of national culture on knowledge management (Holden 2001). From this research, the researcher found that there are some differences between domestic knowledge management and international knowledge management. Firstly, international knowledge management involves a standardized approach and an adapted approach. This means that there is a need to understand forces for standardization and forces for adaptation that would affect international knowledge management. The forces for standardization and adaptation are also divided into factors that can be controlled by the firm and factors beyond the control of the firm. Factors that are beyond the firm’s control would be minimal or great differences in national culture between the headquarters and the subsidiary, national culture of headquarters, industry of the organization. If factors beyond the firm’s control are present, it is likely that the firm’s approach should follow these factors. However, if these factors are not present and the firm insists on using either a standardized or an adapted approach it is likely that the firm would be able to change factors such as strategy, organization structure and approach towards international business.

Secondly, factors affecting knowledge creation and knowledge transfer had a relationship with forces for standardization and adaptation. Factors affecting knowledge creation and knowledge transfer were also forces for standardization. This refers to the factor organization culture and creative chaos and the factor organization structure. This is illustrated in Figure 6.2, by an arrow moving from “Factors affecting Knowledge Creation and Transfer” and towards “Factors Affecting Standardization and Adaptation of Knowledge Creation and Transfer”. This means that a change to such factors would affect both the outcomes and the forces for standardization and adaptation. An example would be if a firm makes a change from a centralized organization structure towards a decentralized organization structure, it would affect the outcomes of knowledge creation and also lead to the creation of a force for an adapted approach towards knowledge management.

Forces for standardization and adaptation also have an effect on factors affecting knowledge creation and knowledge transfer. This refers to differences in national culture. Factors affecting knowledge creation and knowledge transfer that are affected by differences in national culture include the following:

- 1) Care
- 2) Managing conversations
- 3) Job Rotation
- 4) Relationship between the sender and the recipient
- 5) Leadership
- 6) Human Resource Management practices
- 7) Absorptive capacity
- 8) Source Transfer capacity
- 9) Desirability of Knowledge

This is illustrated in Figure 6.2 by an arrow moving from “Factors Affecting Standardization and Adaptation of Knowledge Creation and Transfer” towards “Factors affecting Knowledge Creation and Transfer”. This is a difference between domestic knowledge management and international knowledge management. It is likely that differences in national culture may weaken or negate the effectiveness of factors affecting knowledge creation and transfer. This means that if the firm does not

understand the effects of national culture and take appropriate actions or adaptations the firm might end up with an inappropriate outcome. This is illustrated in Figure 6.2 from the arrow moving from “Factors affecting Knowledge Creation and Transfer” and towards “Inappropriate Outcomes”.

From Figure 5.24, it can be seen that there are factors affecting the standardization and adaptation of knowledge creation and knowledge transfer. Thus, based on these factors the firm makes a decision to either standardize or adapt their knowledge creation or knowledge transfer process. From here if the decision is made based on negative factors it is likely that the firm would obtain an inappropriate outcome. An example of a negative factor would be firm did not understand the forces for standardization or forces for adaptation. Based on the response by the respondents for this research, quite a number of respondents state that they did not know what are the factors affecting the standardization and adaptation of knowledge management.

Another example of a negative factor would be the firm makes a decision even though there are factors against that decision. This means that if the forces for adaptation are strong and the firm still makes the decision to choose a standardized approach towards either knowledge creation or knowledge transfer. For positive factors it means making a decision based on the forces affecting knowledge creation and knowledge transfer. An example here would be making the decision to adapt knowledge creation or knowledge transfer based on differences in national culture.

However, just making a decision based on positive factors does not mean that a firm would achieve appropriate outcomes for international knowledge creation and international knowledge transfer. For firms which made a decision to adapt their international knowledge creation and international knowledge transfer process, the level of adaptation is also important. The level of adaptation should match the level of differences in national culture. Difference in national culture affects both the decision to standardize or adapt and the type and degree of implementation. This is shown in Figure 6.2, by the arrow moving from “Factors Affecting Standardization and Adaptation of Knowledge Creation and Transfer” towards “Type and degree of Implementation”. Firms which did not adopt a sufficient level of adaptation might end up with the outcome of inappropriate adaptation.

For firms with an inappropriate outcome, they would need to examine the problems at the sub-process level and process level. They would either need to change their approach which means either moving from a standardized approach to that of an adapted approach or vice versa. Alternatively they would need to change the level of adaptation for some of the sub-processes.

Thus, for international knowledge management, firms need to be aware of the following factors that can lead to an appropriate outcome. There is a need to understand factors affecting knowledge creation and knowledge transfer. There is a need to understand the importance of understanding factors affecting the standardization and adaptation of knowledge management. Based on the understanding of these factors and making, the correct decision for the standardization and adaptation of knowledge creation and knowledge transfer can be made. Lastly, the importance of the implementation of the decision must also be taken into consideration.

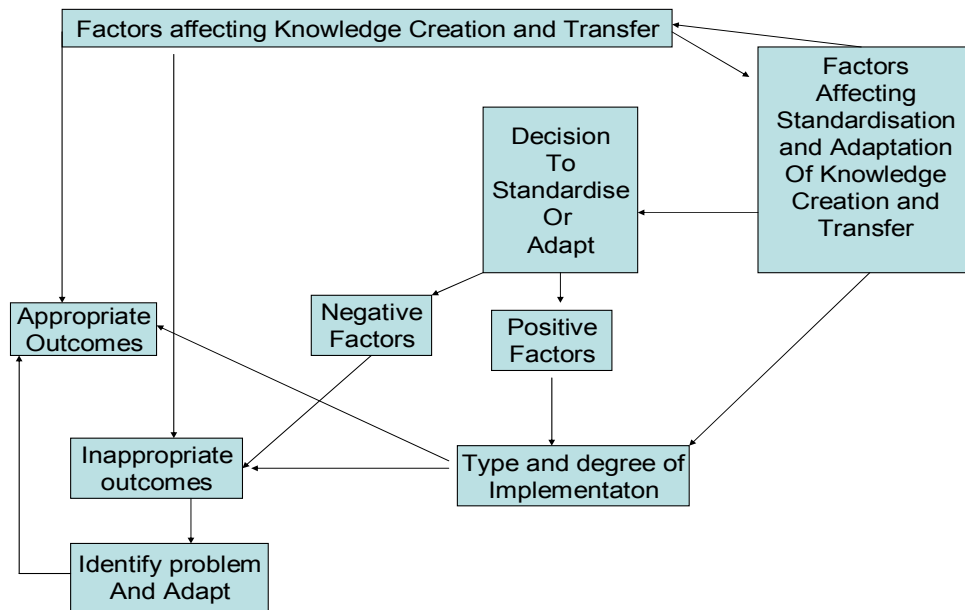


Figure 6.2: Model to explain Standardization and Adaptation in International Knowledge Management

6.7 Recommendations and Implications

Differences between International Knowledge Management and Knowledge Management

Managers in charge of international knowledge management need to be aware of the differences between international knowledge management and domestic knowledge management. For domestic knowledge management, managers only need to be aware of factors affecting knowledge creation and transfer. However, to achieve an appropriate outcome in international knowledge management, the manager needs to have an understanding of factors affecting the standardization and adaptation of knowledge management.

It is also important for them to note that there is a need to be aware that indicators of a learning organization and the standardization and adaptation of international knowledge management are quite different matters. A firm may have all the indicators of a learning organization but it does not mean the employees are satisfied with the firm's decision to standardize or adapt the knowledge creation or knowledge transfer process.

Understand forces for standardization and Adaptation

The manager in charge of international knowledge management needs to understand forces for standardization and adaptation and compare it with their company's situation. They must understand that forces for standardization and adaptation would also affect factors that would affect knowledge management in a domestic context. This refers to factors affecting knowledge creation and knowledge transfer. Secondly, they must also ensure that the decision to standardize or adapt are correctly implemented since some factors such as differences in national culture would have an effect in the implementation process.

Understand differences between the five outcomes

Managers can also compare their firm's performance with the five different outcomes presented in this research. For example, a firm with an outcome of inappropriate standardization could compare their situation with our findings. They would be able to understand the reasons for their problems. This section is very useful for MNCs with subsidiaries in many countries. They would be able to understand why a

subsidiary might obtain appropriate outcomes and why another subsidiary might obtain inappropriate outcomes.

Understand effects of national culture on Knowledge Management

Lastly, managers should all have an understanding of the importance of differences in national culture on international knowledge management. Differences in national culture would affect factors that are important for knowledge creation and knowledge transfer. This means that there is a need to improve the management of these factors. Of particular importance would be the management of expatriates and international human resource management practices. These two factors have an impact on other factors that are important for knowledge management.

The management of expatriates is also closely related to international human resource management practices. The management of expatriates is also related to other factors such as source transfer capacity and the relationship between the sender and the recipient. International Human Resource Management practices are also related to absorptive capacity which is another factor related to knowledge transfer. Thus, in this case by understanding the effects of national culture on factors affecting knowledge creation and transfer, managers should ensure that the proper implementation of international human resource management practices and the management of expatriates.

National culture is an important factor affecting the standardization and adaptation of international knowledge management. The national culture of headquarters and management is an important factor why firms choose to standardize. Another reason for standardization is the fact that there are minimal differences in national culture between headquarters and the subsidiary. On the other hand, difference in national culture was an important factor for the adaptation of international knowledge management. As for whether management should ignore or undermine the effects of differences in national culture, the answer is managers should consider the circumstances and situation. This means whether there are strong forces for standardization.

Besides affecting the manager's decision on whether they should standardize or adapt, differences in national culture also affect the implementation process. Firstly, the

greater the differences in national culture, a manager should implement a higher level of adaptation. A lower level of adaptation might lead to the outcome of inappropriate adaptation.

Another important factor that the manager should take note of would be that differences in national culture would have different levels of impact on different sub-processes for the international knowledge creation and the international knowledge transfer process. In this case, this means more attention must be paid to those steps and sub-processes that would be more affected by differences in national culture.

6.8 Limitations of this Research

As this is just an exploratory study on the standardization and adaptation of international knowledge management, the researcher does not claim causality of the findings and results. Instead, the researcher believes that time and cost constraints along with the small sample size may have affected the validity of this research. However, it is the researcher's opinion that this research is an interesting and useful contribution to the limited literature on international knowledge management.

6.9 Future Research Opportunities

Further quantitative research should be conducted to measure the strength of the factors affecting the standardization and adaptation of international knowledge management. This would help in explaining the relationship between the factors and the outcomes. It would explain which factors would be most important in international knowledge management. This might mean designing a purely quantitative survey and to target a higher number of respondents. Since this is an exploratory research which does not suggest causality, further research with greater emphasis being placed on quantitative methods might be able to suggest causality.

Another alternative would be to examine the effect of national culture of certain countries on the standardization and adaptation of international knowledge management. This means holding the national culture of either the subsidiary or the headquarters constant. An example might be to study firms with a headquarters in

Germany. In this case, all the findings would reflect on how the German National culture would affect international knowledge management.

6.10 Final Thoughts

Although the researcher faced time and cost constraints in this research, this research still managed to gather some interesting findings on the field of international knowledge management. It would also be difficult for another researcher to replicate the results and findings in this research. The idea of standardization and adaptation of international knowledge management is still a relatively new idea and the researcher believes that more research should be conducted in this area.

Appendix

**Table 5.12 Comparison for differences in National culture in Knowledge Creation
Appropriate Standardization for Knowledge Creation Process**

Countries		Bhaghat et al(2002)'s model		
HQ	Subsidiary	HQ	Subsidiary	Difficulty
Australia	New Zealand	HI	HI	0
Hongkong	China	VC	VC	0
UK	India	VI	VC	2
Germany	Australia	VI	HI	1
Australia	USA	HI	VI	1
Australia	USA	HI	VI	1
Hongkong	China	VC	VC	0
Australia	USA	HI	VI	1
Average difficulty				0.75

Inappropriate Standardization for Knowledge Creation Process

USA	China	VI	VC	2
USA	Singapore	VI	VC	2
France	Singapore	VI	VC	2
USA	Singapore	VI	VC	2
Japan	Singapore	HC	VC	1
Australia	New Zealand	HI	HI	0
France	Singapore	VI	VC	2
France	China	VI	VC	2
Average difficulty				1.625

Some parts are appropriate for Knowledge Creation Process

Australia	UK	HI	VI	1
Switzerland	Singapore	HI	VC	3
UK	UAE	VI	VC	2
Average difficulty				2

Appropriate Adaptation for Knowledge Creation Process

Singapore	China	VC	VC	0
USA	China	VI	VC	2
USA	Singapore	VI	VC	2
Australia	New Zealand	HI	HI	0
Australia	New Zealand	HI	HI	0
UK	China	VI	VC	2
UK	Singapore	VI	VC	2
Singapore	China	VC	VC	0
Average difficulty				1

Inappropriate Adaptation for Knowledge Creation Process

Singapore	China	VC	VC	0
Singapore	Japan	VC	HC	1
USA	Singapore	VI	VC	2
USA	China	VI	VC	2
Average difficulty				1.25

Appendix

**Table 5.17 Comparison for differences in National culture in Knowledge Transfer
Appropriate Standardization for Knowledge Transfer Process**

Countries		Bhaghat et al(2002)'s model		
Australia	New Zealand	HI	HI	0
USA	Singapore	VI	VC	2
Australia	New Zealand	HI	HI	0
Hongkong	China	VC	VC	0
Australia	New Zealand	HI	HI	0
Germany	Australia	VI	HI	1
Australia	USA	HI	VI	1
Australia	New Zealand	HI	HI	0
Australia	USA	HI	VI	1
Hongkong	China	VC	VC	0
Australia	USA	HI	VI	1
Average difficulty				0.55

Inappropriate Standardization for Knowledge Transfer Process

France	Singapore	VI	VC	2
Japan	Singapore	HC	VC	1
Switzerland	Singapore	HI	VC	3
France	Singapore	HC	VC	1
France	China	HC	VC	1
Singapore	China	VC	VC	0
Average difficulty				1.33

Some parts are appropriate for transfer

USA	Singapore	VI	VC	2
UK	UAE	VI	VC	2
Average difficulty				2

Appropriate Adaptation for Knowledge transfer Process

Australia	UK	HI	VI	1
Singapore	China	VC	VC	0
USA	China	VI	VC	2
Singapore	China	VC	VC	0
UK	India	VI	VC	2
UK	China	VI	VC	2
UK	Singapore	VI	VC	2
Average difficulty				1.29

Inappropriate Adaptation for Knowledge transfer Process

USA	China	VI	VC	2
Singapore	China	VC	VC	0

USA	Singapore	VI	VC	2
USA	China	VI	VC	2
USA	Singapore	VI	VC	2
Average difficulty				1.6

Appendix - Cover Letter

Dear _____

We would like to invite you to participate in leading edge research on knowledge management in international business. This is a very exciting area. Managers and academics recognise the importance of strategic innovation, of becoming a learning organisation, and the strategic value of knowledge as a source of competitive advantage. However, it is also widely accepted that knowledge management is very difficult and costly, particularly in international business where geographic and cultural distances create many problems.

In international business, one of the most important decisions is whether to standardise (i.e. do everything the same) or adapt (i.e. change the way things are done to adapt to local markets).

This study examines whether differences in national culture affect the decision to standardise or adapt knowledge management practices.

Please find attached a questionnaire. It is fairly straightforward, but just leave questions you can't or don't want to answer blank. It might take about 30 minutes to complete. We assure you that your answers will be confidential and will not be disclosed to any other party. The results will be compiled into a **Report that we will send you in return for your cooperation in completing the study**. The Report will have two parts. The first part will present the overall findings. All respondents will receive this part. The second part will be our analysis of your responses benchmarked against other responses from your industry and the overall results. This section will be confidential and only forwarded to you. We offer this as a thank you for your cooperation. It will allow you to see the implications of your current knowledge management approach.

We would be grateful if you would return the completed questionnaire by email to _____ by 30 November 2005. Please contact _____ on the contact details below if you wish to discuss.

Thank you for your cooperation and your contribution to research at the University.

Director of the Centre for Leadership and Knowledge Management
University of Wollongong

Email:

Phone:

Zhiyi Ang
Masters student
University of Wollongong

Appendix-Questionnaire

1 Introduction

This questionnaire examines the standardisation and adaptation decision for knowledge management in international business. Firms often have to decide whether to standardise or adapt their operations. Standardization refers to a common approach to business throughout the world, while adaptation requires a different approach in each market. Previous research has found that national culture has an effect in a range of operations, e.g. human resources, marketing. However, there has been limited research on the influence of culture on knowledge management. The purpose of this study is to develop a model that helps managers decide whether to standardize and adapt knowledge management processes based on differences in national culture.

The questionnaire will be confidential. Your responses will not be published. Individual answers will be aggregated into an overall report.

Please answer the questions based on your own perceptions. There is no right or wrong answer. We have provided definitions, where necessary, to help you in answering the questions.

In return for your time in completing this questionnaire, we offer to provide you with a report on the outcomes, and an analysis of how your firm is benchmarked against other respondents. This latter report will be confidential and for your eyes only.

Please contact the research team using the contact details on the front of the questionnaire if you have any questions.

Respondent details. Please complete the following details. (Note: it is not compulsory. If you wish to complete the questionnaire but not provide these details, please do so, and forward to the following email address –

Name: _____

Position: _____

Email: _____

Do you want a copy of the industry report/project findings?

Yes	1
No	2

If so, where can we email or email the report?

2 Classification questions

These questions provide some background on your company that we will use to help benchmark your answers.

Qa How many staff does your organisation have? (estimate is ok)

Under 50	
1	
Between 50 and 100	2
Between 101 and 200	3
Between 201 and 500	4
Between 501 and 1,000	5
Between 1,000 and 5,000	6
More than 5,000 staff	7

Qb What was your organisations total sales revenue in the 2004/5? (estimate is ok)

Under \$1 million	
1	
Between \$1 million and \$2 million	2
Between \$2 million and \$5 million	3
Between \$6 million and \$10 million	4
Between \$11 million and \$20 million	5
Between \$21 million and \$50 million	6
More than \$50 million	7

Qc What was your organisations overseas sales revenue in the 2004/5, as a percentage of total sales revenues? (estimate is ok)

Under 5%	
1	
Between 5% and 10%	2
Between 11% and 20%	3
Between 21% and 50%	4
Between 51% and 75%	5
More than 75%	6

Qd How long has your organisation been involved in international business/overseas markets (estimate is ok)

Under 1 year	
1	
Between 1 and 2 years	2
Between 3 and 5 years	3
Between 5 and 10 years	4
Between 10 and 20 years	5
More than 20 years	6

Qe Where is your main focus overseas? (circle one only)

- China 1
 - India 2
 - Japan 3
 - New Zealand 4
 - United Kingdom 5
 - United States 6
 - Other (please specify) 7
-

Qf How would you describe your organisation's main approach to strategy? (circle one only)

- Global: same approach to business everywhere 1
- Multi-domestic: different approach to business everywhere 2
- Transnational: flexible approach, adopting aspects of both of the above 3
- International: Focus on exploitation of Knowledge 4
- Don't know 5

Qg How would you describe your organisation's main source of competitive advantage (circle one only)

- Cost leadership: pressures for cost reduction are most important 1
- Market responsiveness: pressures for local market response are most important 2
- Both: pressures for both cost reduction and market responsiveness 3
- Don't know 4

Qh How would you describe your organisation's structure (circle one only)

- Centralised control: Head office makes key decisions 1
- De-centralised control: Subsidiary makes its own decisions 2
- Interdependent: Decisions involve relevant staff, irrespective of location 3
- Don't know 4

Qi How does your Head Office communicate with subsidiaries (circle one only)

- English language 1

The subsidiary's local language

2

Other (please specify)

3

3 Standardisation versus adaptation

These questions examine your organisation's general approach to its international business activities.

Q3.1 Thinking about your organisation's approach to international business, do you think the way it does business (e.g. marketing, HR, finance) is standardised (i.e. the same in every country) or adapted (i.e. different in some or all countries)? (Please circle one only)

Standardised

1

Adapted

2

Don't know

3

Q3.2 Thinking about your organisation's knowledge *management*, is it standardised (i.e. the same in every country) or adapted (i.e. different in some or all countries)? (Please circle one only)

Standardised

1

Adapted

2

Don't know

3

Q3.3 Thinking about your organisation's knowledge management, which of the following factors have the greatest influence on your organisation's decision to standardise or adapt knowledge management practices. (Multiple response is ok)

Pressures for cost reduction

1

Pressures for cultural differences

2

Little or no difference in the national cultures of the HQ and the subsidiary
Economies of scope (the more you do, the more you know)

3

4

Don't know

5

Q3.4 Thinking about the way your organisation *creates* knowledge, do you think this is standardised (i.e. the same in every country) or adapted (i.e. different in some or all countries)? (Please circle one only)

Standardised	1
Adapted	2
Don't know	3

Q3.5 Thinking about the way your organisation *transfers* knowledge, do you think this is standardised (i.e. the same in every country) or adapted (i.e. different in some or all countries)? (Please circle one only)

Standardised	1
Adapted	2
Don't know	3

4 Knowledge creation

These questions examine your organisation's knowledge creation. In answering the questions below, please think about a typical situation that involved knowledge creation between your Head Office and an overseas subsidiary.

Q4.1 Please briefly describe a typical situation that involved knowledge creation between your Head Office and an overseas subsidiary.

Q4.2 Where is your Head Office located?

Q4.3 Where is the subsidiary involved in this situation located?

Q4.4 For each activity in table 4, please indicate whether differences in national culture between the Head Office and subsidiary had an affect on the efficiency of this activity. By efficiency, we mean that the activity is affected in terms of cost or speed. Please insert a number in the Q4.4 column using the following scale:

Activity is not applicable or not done in your organisation	0	
No affect at all		1
Minor affect	2	
Moderate affect	3	
Significant affect	4	
Very significant affect		5

Q4.5 For each activity in table 4 where you indicated that differences in national culture had

an affect, please briefly describe why you feel this way, i.e. what are the pressures involved.

Q4.6 For each activity in table 4 where you indicated that differences in national culture had an affect, please indicate the degree to which the firm adapted to the way this activity is done to accommodate the affect. Please insert a number in column Q4.6 using the following scale:

Exactly the same		1
Essentially the same	2	
Slightly modified		3
Markedly modified	4	
Completely different	5	

Q4.7 Are you satisfied with the decision to standardise or adapt this process?

Yes	1	
No		2
Don't know	3	

Table 4 – Knowledge creation				
Activity	Q4.4 Affect	Q4.5 Describe cultural affect	Q4.6	Q4.7
<i>Step 1: Sharing tacit knowledge</i>				
Staff from across functions meet socially (i.e. informally)				
Cross functional teams identify organisational problem (i.e. knowledge creation topic)				
Cross functional teams set a common goal to solve the problem				
Management sets challenging targets for the cross functional team				
The cross functional team sets its own task boundaries				
The cross functional team begins gathering knowledge necessary to complete the tasks				
<i>Step 2: Creating concepts</i>				
The cross functional team meets to discuss the problem				
Multiple reasoning methods are used examine the problem (e.g. brainstorming)				
Concepts are developed about the problem, e.g. flow charts, decision frameworks, checklists				
<i>Step 3: Justifying concepts</i>				
Management set the criteria to evaluate whether the concepts are justified or worthwhile				
The concepts are screened against this evaluation criteria				
<i>Step4: Building an archetype</i>				
For new product development, developing a prototype				
For process innovation, developing a model operating system				
<i>Step5: Cross-levelling of knowledge</i>				
Cross-fertilisation of ideas generated by the concepts into other areas				
Improvements to the concepts based on customer or other external feedback				

(This page was intentionally left blank in the original survey, so that respondents could fill in additional information if there is insufficient space.)

5 Knowledge transfer

These questions examine your organisation's knowledge transfer. In answering the questions below, please think about a typical situation that involved knowledge creation between your Head Office and an overseas subsidiary.

Q5.1 Please briefly describe a typical situation that involved knowledge transfer between your Head Office and an overseas subsidiary. Please include in your answer the type of knowledge transfer.

Q5.2 Where is your Head Office located?

Q5.3 Where is the subsidiary involved in this situation located?

Q5.4 For each activity in table 5, please indicate whether differences in national culture between the Head Office and subsidiary had an affect on the efficiency of this activity. By efficiency, we mean that the activity is affected in terms of cost or speed. Please insert a number in the Q5.4 column using the following scale:

No impact at all	1
Minor impact	2
Moderate impact	3
Significant impact	4
Very significant impact	5

Q5.5 For each activity in table 5 where you indicated that differences in national culture had an affect, please briefly describe why you feel this way, i.e. what are the pressures involved.

Q5.6 For each activity in table 5 where you indicated that differences in national culture had an affect, please indicate the degree to which the firm adapted to the way this activity is done to accommodate the affect. Please insert a number in column Q5.6 using the following scale:

Exactly the same	1
Essentially the same	2
Slightly modified	3
Markedly modified	4
Completely different	5

Q5.7 Are you satisfied with the decision to standardise or adapt this process?

Yes	1
No	2
Don't know	3

Table 5 – Knowledge transfer				
Activity	Q5.4 Affect	Q5.5 Describe cultural affect	Q5.6	Q5.7
<i>Step 1: Initiation</i>				
Problem is identified				
Necessary knowledge is identified				
The feasibility of the knowledge transfer is evaluated				
<i>Step 2: Implementation</i>				
Decision to proceed with the knowledge transfer				
Resources flow between the recipient(s) of the knowledge and the source				
Social ties between the recipient(s) of the knowledge and the source is established				
<i>Step 3: Ramp-up</i>				
Monitor how well the recipient(s) uses the new knowledge				
Rectify knowledge gaps that emerge from early knowledge use				
<i>Step 4: Integration</i>				
Identify that the recipient uses the new knowledge satisfactorily				
The use of the new knowledge becomes routine				

(This page was intentionally left blank in the original survey, so that respondents could fill in additional information if there is insufficient space.)

6 Knowledge management practices

The following questions will be used to benchmark your organisation as a learning organisation. Please indicate your organisation's typical behaviour in each of the following areas by marking the appropriate column for each activity below.

Q6.1 Please indicate your organisation's typical behaviour in each of the following activities by marking the most appropriate box.

Table 6 – Knowledge Management Practices					
Knowledge activity	Not used at all	Seldom used	Occasionally used	Often used	Always used
<i>Knowledge pull</i>					
Setting targets to achieve or surpass world-class level					
Combining these targets with individual incentives					
Active involvement of employees in product portfolio and product innovation decisions					
<i>Subjectivity</i>					
Frequent, informal bottom-up and top-down communication					
Setting up cross-functional teams					
Common goals and values within different functions/departments					
<i>Transferability</i>					
Application of benchmarking techniques					
Using external knowledge sources via strategic alliances					
Commitment of all employees to track customer and market requirements					
<i>Embeddedness</i>					
Co-location, especially with external partners					
Job rotation and teamwork in development					
Joint teams or personal meetings with external partners					
Employee knowledge profiles available on the intranet					
<i>Self-reinforcement</i>					
Regular training with internal and external experts					
Network building with external partners					
Open access to knowledge infrastructure					
<i>Perishability</i>					
Company-wide process standards					
Systematic retention & updating of process experiences					
Regular process optimisation based on experiences					
Decisions are made at the lowest appropriate levels					
<i>Spontaneity</i>					

Internet access for all employees					
Open idea database to store product ideas					
Application of creativity techniques and idea contests					
Degrees of freedom for all employees away from daily work pressures					

Q6.2 Overall how satisfied are you with your organisation's knowledge management? (Please circle one only)

- Not at all satisfied 1
- Not satisfied 2
- Undecided 3
- Satisfied 4
- Very satisfied 5

Q6.3 Why do you feel that way?

Thank you very much for your cooperation.

References

- Anand, V., Glick, W.H. and C.C. Manz. (2002). Thriving on the knowledge of outsiders: Tapping organisational social capital, *Academy of Management Executive*, 16(1), pp. 87-101.
- Ang, Z.Y. and Massingham, P. (2005, a). Factors affecting the Standardisation and Adaptation of Knowledge Management Practices, *9th Annual Waikato Management School, Student Research Conference*.
- Ang, Z.Y. and Massingham, P. (2005, b). The Impact of National Culture on the Standardisation versus Adaptation of Knowledge Management, *Australia and New Zealand Academy of Management Conference*.
- Ang, Z.Y. and Massingham, P. (2005, c). National Culture and the Standardisation versus adaptation of Knowledge Management, *Journal of Knowledge Management*. (Accepted for publication, date to be decided)
- Andrews, K. M. and Delahaye, B. L. (2000). Influences on knowledge processes in organizational learning: The Psychosocial Filter, *Journal of Management Studies*, 37(6), pp. 797-810.
- Barlett, C. and Ghoshal, S. (1998). *Managing across borders: the transnational solution*, London: Random House Business Books.
- Beamish, P. W., Morrison, A. and Rosenzweig, P. M. (1997). *International Management: text and cases*, Burr Ridge, Ill.: Irwin.
- Bender, S., Fish, A. (2000). The transfer of knowledge and the retention of expertise: the continuing need for global assignments, *Journal of Knowledge Management*, 4(2), pp. 125-145.
- Bergeron, B. (2003). *Essentials of knowledge management*, Hoboken, N.J.: Wiley.
- Bhagat R. S., Kedia B. L. , Harveston P. D. , Triandis H. C.(2002). Cultural Variations in the cross-border transfer of organizational knowledge: An integrative Framework, *The Academy Management Review*, 27(2), pp. 204-221.
- Bjorkman, I., Barner-Rasmussen, W. and Li, L. (2004). Managing knowledge transfer in MNCs: the impact of headquarters control mechanisms, *Journal of International Business Studies*, 35, pp. 443-455.
- Bonache, J. and Brewster, C. (2001). Knowledge Transfer and the Management of Expatriation, *Thunderbird International Business Review*, 43(1), pp. 145-168.

- Bourque, L.B. and Fielder, E.P. (1995). *How to conduct Self-Administered and Mail Surveys*, Sage Publications.
- Bresman, H., Birkinshaw J. and Nobel, R. (1999). Knowledge transfer in international acquisitions, *Journal of International Business Studies*, 30(3), pp. 439-462.
- Brown, J.S. and Duguid, P. (1998). Organizing Knowledge, *California Management Review*, Spring, 40, pp. 90-111.
- Buckley, P. J., Clegg, J. and Tan, H. (2004). Knowledge transfer to China: policy lessons from foreign affiliates, *Transnational Corporations*, 13(1), pp. 30-72.
- Burns, T. and Stalker, G. M. (1961). *The Management of Innovation*, London: Tavistock Publications.
- Bryman, A. and Bell, E. (2003). *Business Research Methods*, Oxford University Press.
- Churchill, G.A. (1992). *Basic Marketing Research*, Fort Worth: Dryden Press.
- Clark, T., Grant, D., Heijltjes, M. (1999). Researching comparative and international human resource management, *International Studies of Management and organization*, White Plains, 29(4), pp. 6-20.
- Creswell, J.W. (1994). *Research Design: Qualitative and Quantitative approaches*, Sage: Newbury Park, CA.
- Cummings J, L. and Teng BS (2003). Transferring R&D knowledge: the key factors affecting knowledge transfer Success, *Journal of Engineering Management*, 20, pp. 39-68.
- Czinkota, M.R., Ilkka A. R., Moffett M. H. (2002). *International business* , United States ; Australia : South-Western Thomson Learning.
- Dana, L.P., Korot, L. and Tovstiga, G. (2005). A cross-national comparison of Knowledge Management practices, *International Journal of Manpower*, 26(1), pp. 10-22
- Darr, E. D. and Kurtzberg, T.R. (2000). An Investigation of Partner Similarity Dimensions on Knowledge Transfer, *Organizational Behavior and Human Decision Processes*, 82(1), pp. 28-44.
- Davenport T. H, Prusak, L. (1998). *Working Knowledge: how organizations manage what they know*, Boston, Mass: Harvard Business School Press.
- Davenport, T. H., De Long D.W. and Beers, M. C. (1998). Successful Knowledge Management Projects, *Sloan Management Review*, winter 39(2), pp. 43-57.
- De Long, D.W. and Fahey, L. (2000). Diagnosing cultural barriers to knowledge Management, *The Academy of Management Executive*, 14(4), pp. 113-127.

- Denscombe, M. (1998). *The Good Research Guide for small-scale social research projects*, Open University Press.
- Desouza, K. and Evaristo, R. (2003). Global Knowledge Management Strategies, *European Management Journals*, 21(1), pp. 62-72.
- Dhanaraj C., Lyles M. A., Steensma, H. K. and Tihanyi, L. (2004). Managing tacit and explicit knowledge transfer in IJVs: the role of relational embeddedness and the impact on performance, *Journal of International Business Studies*, 35, pp. 428-442.
- Dixon N. C. (2000). *Common Knowledge: how companies thrive by sharing what they know*, Harvard Business School Press.
- Dowling, P. (1999). *International Human Resource Management: Managing people in a Multinational Context*, South-Western College Publication
- Downes, M., Anisya S. T. (2000). Knowledge transfer through expatriation: The U-curve approach to overseas staffing, *Journal of Managerial Issues*, Pittsburg, 12(2) pp. 131-150.
- Eisenhardt, K. M. (1989). Building theories from Case Study Research, *The Academy of Management Review*, 14(4), pp. 532-550.
- Fahey, L. and Prusak, L. (1998). The eleven deadliest sins of knowledge Management, *California Management Review*, 40(3), pp. 265-277.
- Finestone, N. and Snyman, R. (2005). Corporate South Africa: making multicultural knowledge sharing work, *Journal of Knowledge Management*, 9(3), pp. 128-141.
- Ghoshal, S. and Nohria, N. (1993). Horses for Courses: Organizational Forms for Multinational Corporations, *Sloan Management Review*, Winter, pp. 23-35
- Glisby, M. and Holden, N. (2003). Contextual constraints in knowledge management theory: The Cultural Embeddedness of Nonaka's Knowledge-creating Company, *Knowledge and Process Management*, 10(2), pp. 29-36.
- Glisby, M. and Holden, N. (2005). Applying knowledge Management concepts to the supply chain: How a Danish firm achieved a remarkable breakthrough in Japan, *Academy of Management Executive*, 19(2), pp. 85-89
- Goh, S. C. (2002). Managing effective knowledge Transfer: An integrative framework and some practice implications, *Journal of knowledge Management*, 6(1), pp. 23-30.
- Grant, R. M. (1996). Toward knowledge based theory of the firm, *Strategic Management Journal*, Winter Special Issue, 17, pp. 109-122.
- Griffith, D. A, Hu, M.Y., Ryans, J. (2000). Process standardization across intra and inter-cultural relationships, *Journal of International Business Studies*, 31(2), pp. 303-

325.

Gupta A. K., Govindarajan, V. (2000). Knowledge Flows within multinational corporations, *Strategic Management Journal*, 21, pp. 473-496.

Holden, N. (2001). Knowledge Management: Raising the Spectre of the Cross-cultural Dimension, *Knowledge and Process Management*, 8(3), pp. 155-163.

Holden, N. (2002). *Cross-Cultural Management: A Knowledge Management Perspective*, Prentice Hall.

Holden ,N. and Von Korfzfleisch , H.F.O. (2004). Why Cross-Cultural Knowledge Transfer is a Form of Translation in More Ways than you think, *Knowledge and Process Management*, 11(2), pp. 127-136.

Hofstede, G. (1986). Cultural Differences in teaching and learning, *International Journal of intercultural Relations*, 10, pp. 301-320.

Hofstede, G. (1993). Cultural constraints in Management theories, *The Academy of Management Executive*, 7(1), pp. 81-94.

Hofstede, G. (1997). *Cultures and organizations: software of the mind*, New York, McGraw Hill.

Husted, K. and Michailova, S. (2002, a). Diagnosing and Fighting Knowledge-Sharing Hostility, *Organizational Dynamics*, 31(1), pp. 60-73

Husted, K. and Michailova, S. (2002, b). Knowledge Sharing in Russian Companies with Western Participation, *Management International*, 6(2), pp. 17-28

Hutchings, K. (2005). Examining the Impacts of Institutional Change on Knowledge Sharing and Management Learning in the People's Republic of China, *Thunderbird International Business Review*, 47(4), pp. 447-468.

Hutchings, K. and Michailova, S. (2004). Facilitating knowledge Sharing in Russian and Chinese subsidiaries: the role of personal networks and group membership, *Journal of Knowledge Management*, 8(2), pp.84-94.

Iles, P., Wong, A.R. and Yolles, M. (2004). HRM and knowledge migration across cultures issues, limitations and Mauritian specificities, *Employee Relations*, 26(6), pp. 643-662.

Inkpen, A.C. and Dinur, A. (1998). Knowledge Management Processes and International Joint Ventures, *Organizational Science*, 19(4), pp. 454-467.

Javidan, M., Stahl, G.K., Brodbeck, F. (2005). Cross-border transfer of knowledge: Cultural lessons, *The Academy of Management Executive*, 19(2), pp. 59-76.

Jensen, R. and Szulanski, G. (2004). Stickiness and the adaptation of organizational practices in cross-border knowledge transfers, *Journal of International Business Studies*, (35), pp. 508-523.

Jin, D., J. (2001). *The Dynamics of Knowledge Regimes: technology, Culture and National Competitiveness in the USA and Japan*, Continuum.

Johnson, B. and Turner, L.A. (2003). *Data collection Strategies in Mixed Methods Research, Handbook of Mixed Methods in Social & Behavioral Research* edited by Tashakkori and Teddlie, Sage Publications.

Kayes, D.C., Kayes, A.B. and Yamazaki, Y. (2005). Essential competencies for cross-cultural Knowledge absorption, *Journal of Managerial Psychology*, 20(7), pp. 578-589.

Kedia, B.L. and Bhagat, R.S. (1988). Cultural Constraints on transfer of technology Across Nations: Implications for Research in International and Comparative Management, *Academy of Management the Management Review*, Oct 1988 13(4), pp. 559-573.

Kedia, B.L., Keller, R.T. and Julian, S. D. (1992). Dimensions of National Culture and the productivity of R&D units, *The Journal of High Technology Management: Research*, 3(1), pp. 1-18.

Kikawada, K. and Holtshouse, D. (2001). "The knowledge Perspective in the Xerox Group", *Managing Industrial Knowledge: creation, transfer and utilization* edited by Ikujiro Nonaka and David J. Teece, London Sage

Kluckhohn, C., & Strodtbeck (1961). *Variations in value orientations*. Westport, CT: Greenwood.

Kluge, J., Stein, W., Licht, T. and Bendler, A. (2001). *Knowledge Unplugged the McKinsey & Company global survey on Knowledge Management*, New York: Palgrave

Kogut, B. and Singh H. (1988). The effect of National Culture on the choice of entry mode, *Journal of International Business Studies*, 19(3), pp. 411-432.

Kogot, B. and Zander, U. (1992). Knowledge of the firm, combinative capabilities and the replication of technology, *Organization Science*, 3(3), pp. 383-397

Kostova, T. (1999). Transnational Transfer of strategic organizational practices: A contextual perspective, *Academy of Management Review*, 24(2), pp. 308-325.

Kuhn, T. S. (1970). *The structure of Scientific Revolutions*, Chicago: University of Chicago Press.

Kumar, R. (1996). *Research Methodology: A step by step guide for Beginners*, Longman

Lemak, D. J. and Aruthanes, W. (1997). *Global Business Strategy: a contingency*

approach, *Multinational Business Review*, 5(1), pp. 26-37.

Liesch, P.W. and Knight, G. A. (1999). Information internalization and hurdle rates in small and medium enterprise internationalization. *Journal of International Business Studies*; 30(1), pp. 383-394.

Lippman, S. A. and R. P. Rumelt (1982). Uncertain imitability: An analysis of interfirm differences in efficiency under competition, *Bell journal of Economics*, 13, pp. 418-438.

Luo Y.D. (2000). Determinants of local responsiveness: perspectives from foreign subsidiaries in an emerging market, *Journal of Management*, 27, pp. 451-477.

Malhotra, N. K. (2002), *Basic Marketing Research, application to contemporary issues*, Prentice Hall

Marshall, C. and Rossman, G. (1998). *Designing Qualitative Research*, Sage Publications.

Massingham, P. (2004, a). Creating a Preamble knowledge Management interface between Expatriates and locals, *Global Business Conference on Business and Economics*, Amsterdam, Netherlands, July 2004

Massingham, P. (2004, b). Linking business level strategy with activities and knowledge resources, *Journal of Knowledge Management*, 8(6), pp. 50-62.

Martin, X. and Salamon, R. (2003). Knowledge transfer capacity and its implications for the theory of the multinational corporation, *Journal of International Business Studies*, 34, pp. 356-373.

McDermott, R. and O'Dell, C. (2001). Overcoming Cultural barriers to sharing knowledge, *Journal of Knowledge Management*, 5(1), pp. 76-86.

Minbaeva D, Pederssen, T., Bjorkman I, Fey CF and Park H (2003). MNC knowledge transfer, subsidiary absorptive capacity, and HRM, *Journal of International Business Studies*, 34, pp. 586-599.

Minbaeva, D. B. (2005). HRM practices and MNC knowledge transfer, *Personnel Review*, 34(1), pp. 125-144.

Minbaeva, D. B., Michailova, S. (2004). Knowledge transfer and expatriation in multinational corporations: The role of disseminative capacity, *Employee Relations*, 26(6), pp. 663-679.

Michailova, S., Husted, K. (2003). Knowledge sharing hostility in Russian firms, *California Management Review*, 45(3), pp. 59-77.

Moller, K. and Svahn, S. (2004). Crossing East-West boundaries: Knowledge sharing in intercultural business networks, *Industrial Marketing Management*, 33, pp. 219-228.

- Morosini, P., Shane, S. and Singh, H. (1998). National Cultural distance and cross-border acquisition performance, *Journal of International Business Studies*, 29(1), pp. 137-158
- Nielsen, B.B., Michailova, S. (2004). Towards a phase-model of global Knowledge Management systems in Multinational corporations, *CKG Working Paper* No. 3/2004
- Nonaka I., Konno, N. (1998). The concept of “ba”: Building a foundation for knowledge Creation, *California Management Review*; Spring; 40 (3), pp. 40-55.
- Nonaka, I. and Takeuchi, H. (1995). *The knowledge-creating Company*, New York, Oxford University Press.
- Nonaka, I., Toyama, R. and Konno, N. (2000). SECI, BA and Leadership: a Unified Model of Dynamic Knowledge Creation, *Long Range Planning*, 33, pp. 5-34.
- O’Dell, C. and Jackson Grayson C. (1999). Knowledge transfer: Discover your value proposition, *Strategy & Leadership*, 27(2), pp. 10-15.
- O’Dell, C. and Jackson Grayson, C. (1998). If only we knew what we know: Identification and transfer of internal best practices, *California Management Review*, Spring, 40(3), pp. 154-174.
- Paik, Y.S. and Choi, D.Y., (2005). The shortcomings of a standardized global knowledge, *The Academy of Management Executive*, 19(2), pp. 81-84.
- Pak, Y. S. and Park, Y.R. (2004). A framework of knowledge transfer in cross-border joint ventures: an empirical test of the Korean context, *Management International Review*, 44(4), pp. 417-435.
- Pauleen, D. J. and Murphy, P. (2005), In Praise of Cultural Bias, *MIT Sloan Management Review*, Winter, 46(2).
- Ramarapu, S., Timmerman, J.E. and Ramarapu, N. (1999). Choosing between globalization and localization as a strategic thrust in your international marketing effort, *Journal of Marketing Theory and Practice*, 7(2), pp. 97-105.
- Riege, A. (2005). Three-dozen Knowledge-sharing barriers managers must consider, *Journal of knowledge Management*, 9(3), pp. 18-35.
- Riusala, K. and Suutari, V. (2004). International Knowledge Transfer through Expatriate, *Thunderbird International Business Review*, 46(6), pp. 743-770.
- Robson, C. (1995). *Real World Research, A Resource for Social Scientists and Practitioner-Researchers*, Blackwell Publishers.
- Sarantakos, S. (1998). *Social Research*, South Melbourne: Macmillan Education Australia.
- Schulz, M. 2001. The uncertain relevance of newness: organizational learning and

knowledge flows, *Academy of Management Journal*, 44(4), pp. 661-681.

Schlegelmilch B.B., Chini, T. C. (2002). Knowledge transfer between marketing functions in multinational companies: a conceptual model, *International Business Review*, 12, pp. 215-232.

Schneider, S. C. and Barsoux, J.L., (1998). *Managing Across Cultures*, Prentice Hall, and Sydney.

Schuler R.S., Dowling, P. J, and De Cieri, H. (1993). An Integrative Framework of Strategic International Human Resource Management, *International Journal of Human Resource Management*, 19(2), pp. 717-764.

Shane, S. (1992). Why Do Some Societies Invent more than others? , *Journal of Business Venturing*, 7, pp. 29-46.

Shane, S. (1993). Cultural Influences on National Rates of Innovation, *Journal of Business Venturing*, 8, pp. 59-73.

Shane, S. (1995). Uncertainty Avoidance and the preference for innovation championing roles, *Journal of International Business Studies*, 26(1), pp. 47-68.

Shane, S., Venkataraman, S. and MacMillan, I. (1995). Cultural Differences in innovation championing strategies, *Journal of Management*, 21(5), pp. 931-952.

Sparkes, J, R. and Miyake, M. (2000). Knowledge transfer and human resource development practices: Japanese firms in Brazil and Mexico, *International Business Review*, 9, pp. 599-612.

Simonin, B. L. (1999). Ambiguity and the process of Knowledge transfer in strategic alliances, *Strategic Management Journal*, 20(7), pp. 595-623.

Simonin B. L (2004). An empirical investigation of the process of knowledge transfer in international strategic alliances, *Journal of International Business Studies*, 35, pp. 407-427.

Stanley, T. (2003). *Knowledge Transfer Across Countries and Cultures: An International Theory-Building Case Study*, PhD Thesis, Queensland University of Technology Brisbane.

Szulanski, G. (1996). Exploring Internal Stickiness: Impediments to the transfer of best practices within the firm, *Strategic Management Journal*, Winter special issue, 17, pp. 27-43.

Szulanski, G. (2000). The Process of Knowledge Transfer: A Diachronic Analysis of Stickiness, *Organizational Behavior and Human Decision Processes*, 82(1), pp. 9-27.

Tiwana, A. (2002). *The knowledge Management Toolkit, orchestrating IT, strategy and Knowledge Platforms* (2nd edition), Prentice Hall.

- Thomas, D. (2002). *Essentials of International Management, A Cross-Cultural Perspective*, Thousand Oaks, Calif.: Sage Publications.
- Takeuchi, H. (2001). Towards a Universal Management of the Concept of knowledge, *Managing Industrial Knowledge: creation, transfer and utilization* edited by Ikujiro Nonaka and David J. Teece, London Sage.
- Tashakkori, A. and Teddlie, C. (1998). *Mixed Methodology: Combining Qualitative and Quantitative Approaches*, Sage Publications.
- Trompenaars, A. and Hampden-turner, C. (1998). *Riding the Waves of Culture: Understanding Cultural diversity in global business*, New York, McGraw Hill.
- Voel, S.C. and Han, C. (2005). Managing Knowledge Sharing in China: the case of Siemens ShareNet, *Journal of Knowledge Management*, 9(3), pp. 51-63.
- Voel, S.C., Dous, M. and Davenport T.H. (2005). Five steps to creating a global knowledge-sharing, *The Academy of Management Executive*, 19(2), pp. 9-23.
- Von Krogh, G., Ichijo, K. and Nonaka, I. (2000). *Enabling Knowledge Creation: How to unlock the mystery of tacit knowledge and release the power of innovation*, Oxford University Press.
- Von Krogh G. (1998). Care in Knowledge Creation. *California Management Review*, 40(3), pp. 133-153.
- Wang, P.J. (2004). *An exploratory study of the effects of national culture on knowledge Management factors, expectations and practices: A cross-cultural analysis of Taiwanese and United States Perceptions*, The George Washington University.
- Weir, D. and Hutchings, K. (2005). Cultural Embeddedness and Contextual Constraints: Knowledge Sharing in Chinese and Arab Cultures, *Knowledge and Process Management*, 12(2), pp. 89-98.
- Wong, P. (2005). *How to write a Research Proposal*, <<http://dar.ju.edu.jo/ju2/sprojects/guidelines.htm>> (Accessed 1 Apr. 2005).
- Yin, R. K. (1994). *Case Study Research Design and Methods*, Sage Publications.
- Yip, G. (1995). *Total global strategy: managing for worldwide competitive advantage*, Englewood Cliffs, N.J.: Prentice Hall, c1995.
- Yip, G. (2003). *Total global Strategy II: updated for the Internet and service era*, Prentice Hall, 2003.
- Zack, M.H. (1999). Managing codified knowledge. *Sloan Management Review*. 40, pp. 45-58.
- Zahra, S.A. and George, G. (2002). Absorptive Capacity: a review, reconceptualization,

and extension, *Academy of Management Review*, 27(2), pp. 185-203.

Zhu, Z.C. (2004). Knowledge Management: towards a universal concept or cross-cultural contexts?, *Knowledge Management Research & Practice*, 2(2) pp. 67-77.