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Knowledge Management in China and in Finland
--- A cross-country comparison

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ABSTRACT

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Nowadays, knowledge management (KM) is important for the success of individuals, organizations, and countries. While comparative study approach of knowledge management is a good way to enlarge peoples' understandings of KM, how these processes and practices are different across countries is an interesting research topic.

The goal of this study is to conduct a cross-country KM comparison between China and Finland. More specifically, the current status of Chinese and Finnish KM will be studied, and then comparisons will be made in three dimensions: knowledge processes, knowledge management practices, and performance and perceptions of KM. A cross-country KM survey was conducted through a well-designed questionnaire.

At the end of the study, current Chinese and Finnish KM findings are presented respectively, and a comparison of KM between the two countries is done. From the comparison, it was found that China and Finland have statistically significant differences in several knowledge processes and KM practices. Some detailed information from the comparison is also illustrated. This research partly filled the theoretical gap in understanding contemporary Chinese KM. The KM comparison between China and Finland provides useful information to KM researchers and practitioners.

Аннотация

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В настоящее время управление знаниями (УЗ) имеет важное значение для успеха частных лиц, организаций и стран. Сравнительный подход к изучению УЗ является хорошим способом увеличить понимание людьми УЗ, и то, чем эти процессы и методы отличаются в различных странах, является интересной темой исследования

Цель данного исследования - проведение сравнения УЗ в Китае и в Финляндии. В частности, было изучено текущее состояние китайского и финского УЗ, а затем было проведено сравнение в трех измерениях: знаниевые процессы, практики управления знаниями, а также результативность и восприятие УЗ. Исследование межстранового УЗ было проведено с использованием тщательно разработанной анкеты.

В конце исследования представлены данные о текущем состоянии УЗ в Китае и Финляндии соответственно, и проведено сравнение УЗ между двумя странами. В ходе сравнения было обнаружено, что Китай и Финляндия имеют статистически значимые различия в нескольких знаниевых процессах и практиках управления знаниями. Также в работе приведены некоторые подробности результатов сравнения. Это исследование частично заполняет теоретический пробел в понимании современного китайского УЗ. Сравнение УЗ в Китае и в Финляндии предоставляет полезную информацию для исследователей и практиков в области УЗ.

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Explanation of Abbreviations and Symbols

KM	Knowledge management
KM Practice (or KMP)	Knowledge management practice
HRM	Human resource management
ICT	Information communication technology
M	Mean value

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1 INTRODUCTION

This study is a cross-border comparative analysis of knowledge management (KM) between China and Finland. Of these two countries, one is the biggest developing country in the world, while the other is a very innovative and developed Western country. The main issues concerned in this study are the status quo of KM in China and in Finland, and the comparison of KM between these two countries.

1.1 Background of research

This study is conducted within a group research project launched by the School of Business, Lappeenranta University of Technology and the Graduate school of Management, St.Petersburg State University. The team leaders are Professor Aino Kianto (LUT) and Senior Lecturer Tatiana Andreeva (GSOM). The student researchers are comprised of Henri Inkinen (Finland), Yaroslav Pavlov (Russia) and Xing Shi (China).

The whole KM project will study different KM topics. This thesis mainly concentrates on the cross-country comparison of KM between China and Finland.

1.2 Theoretical gap

Knowledge management (KM) is an interesting topic in the academic and business world. The theory's roots can be found as early as the 1950s in management theory (Katsoulakos and Zevgolis, 2004). Since the mid-1990s, knowledge management became widely accepted and even more popular because of the great theoretical development and practical programs, instituted by a number of European and Japanese companies.

Ever since then, the study of more detailed knowledge management issues emerged and covered almost every aspect of knowledge management activities. However, among the literatures and researches about knowledge management, most literatures and research studies have been focused on US, Western Europe and Japanese KM practices, which represent the KM situation and trends in developed countries. Before 2005, there were few research works discussing KM within other geographical contexts, especially in developing countries. For example, KM literature about China is limited (Voelpel and Han, 2005).

Before the mid-2000s, accompanied by huge foreign investments into Chinese market, research work about Chinese KM mainly focused on knowledge transfer from foreign countries to China (Si et al., 1999; Buckley et al., 2005). At that time, the Chinese's own KM research faced some problems, such as: a shortage of KM specialists; insufficient planning of KM; and a lack of understanding and application of appropriate KM tools (Voelpel and Han, 2005). However, after 2005, there was an increase in the Chinese's own KM research and most of them concentrate on successful factors in Chinese KM. But still, the study of Chinese KM requires broader approaches and topics from academia; in addition, researchers in China know that they need to study and practice KM more systematically and absorb more foreign experiences into Chinese KM (Peng et al. 2007).

OECD (2003) once pointed out the importance of comparative KM research that can provide a basis for cross-border analysis or for linking data with other national or international studies. This kind of research can help KM practitioners measure the activities of their KM and may have the possibilities improve KM onto a better level. Meyer (2005) already suggests that joint KM research projects by Chinese and Western researchers are necessary. The comparative approach in Chinese KM research can play an important role to better understand KM related issues in a Chinese context.

This study follows the academic demand for understand more about Chinese KM, as well as the research suggestions of doing comparative KM researches. A systematic and holistic study of current Chinese and Finnish KM, plus the comparison of them, fulfill both research directions mentioned above.

1.3 The objectives and the research question of the study

The main objective of this study is to compare the KM between China and Finland. To make this comparison, the status of KM of each country needs to be analyzed systematically and holistically.

The main research question of this study is: What are the main differences of KM between China and Finland? To answer this main question, nine sub-questions are created. All research questions are summarized in table 1.

Table 1 Research questions of the study

Main research question:
What are the main differences and similarities in knowledge management between China and Finland?
Sub-question1:
What is the current status of knowledge process in China?
Sub-question1:
What is the current status of knowledge management practice in China?
Sub-question3:
What is the current status of knowledge management performance and perceptions in China?
Sub-question4:
What is the current status of knowledge process in Finland?
Sub-question5:
What is the current status of knowledge management practice in Finland?

Sub-question6:

What is the current status of KM performance and perceptions in Finland?

Sub-question7:

What are the current differences/similarities in knowledge processes between China and Finland?

Sub-question8:

What are the current differences/similarities in knowledge management practices between China and Finland?

Sub-question9:

What are the current differences/similarities in KM performance and perceptions between China and Finland?

To have a clear understanding of differences in KM between China and Finland, the first step is to draw clear picture of overall KM situation in each country. The overall KM situation in each country is then divided into three parts: the current status of knowledge process, the current status of knowledge management process, and the current KM performance and perceptions.

The theoretical objective of this study is to partly fulfill the theoretical gap in understanding the contemporary KM situation in China holistically. At the same time, the current KM situation in Finland will be studied. In addition, by using a comparative approach, the KM differences between China and Finland will be studied. The managerial objective of this study is to provide KM practitioners up-to-date information regarding current KM in China or/and Finland. Then they can think about how to conduct KM better in their own, or, in the other country.

1.4 Methodology and research method

This study is a cross-country research and data is collected by a cross-country KM questionnaire that is designed by the whole research

team. The creation of the questionnaire is partly based on earlier research evidence and validated KM surveys; the research team also designed our own questions. The research model of the questionnaire is presented in figure 1. This questionnaire structure is the same for the whole research team. In this study most of embedded factors will be analyzed and compared, these factors will be introduced in more detail in the chapter 7.

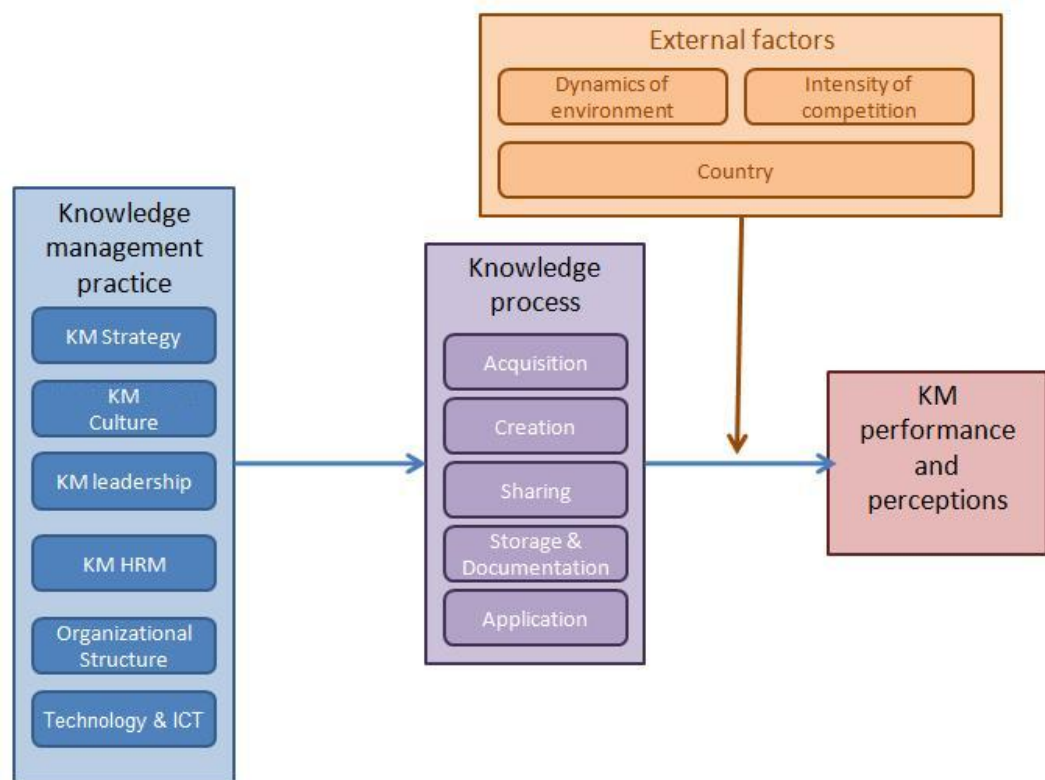


Figure1 Research questionnaire structure

The “Webropol” software was used as an online data collection tool. After data collection, quantitative data is analyzed by SPSS software and independent samples T-tests were conducted to compare key elements. At the same time, observation to the answers of the open questions and the data provides supplementary information to the research results. This uses a combination of quantitative and qualitative approaches.

1.5 Structure of the research

The study starts with the introduction chapter, stating the basic information of the whole research. From the second to the fifth chapter, the theory part of this study will be discussed. Key concepts of KM and the development of KM are reviewed in the second chapter. Chapter three investigates the development of Chinese KM, including characteristics, challenges and the trends of Chinese KM. Then chapter four introduces the KM development in Finland, from the point of view of a nation and those of common Finnish companies. After that, chapter five reviews some well-known previously used KM assessment and survey tools. The empirical part of this study starts from chapter six. The research method is introduced in details in chapter six. Research findings, results and analysis are presented in chapter seven. The last chapter highlights the conclusion, discussions, theoretical and managerial contributions, limitations and suggestions for future research. Figure below shows the whole structure of this study.

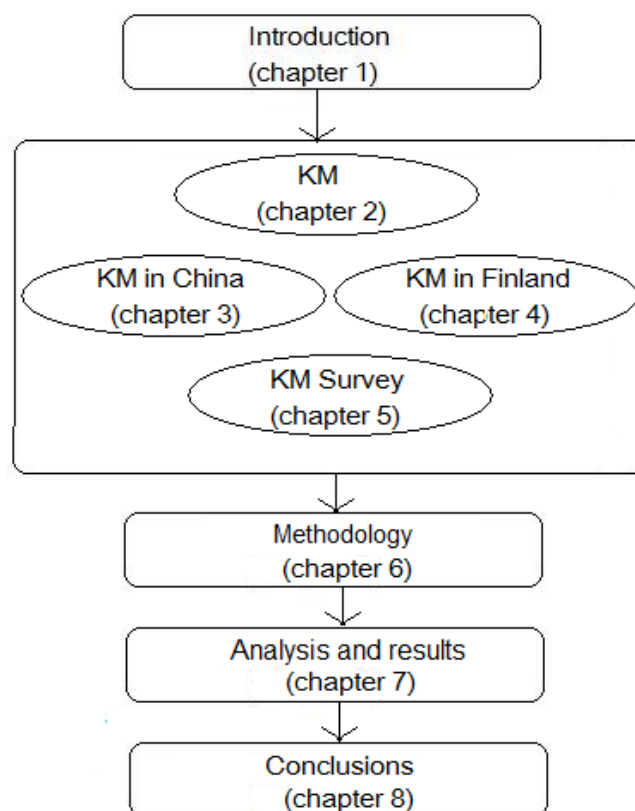


Figure 2 Structure of the study

1.6 Delimitations

This research has several delimitations. Firstly, this study is to give an overall understanding of contemporary KM of China and Finland; and the comparison of KM is based on a holistic KM structure in the questionnaire. While detailed comparative information within each element will be extracted as much as possible, the explanation for all the comparison results cannot be fully answered under this research. Some explanations can be found in previous literature or explained by social and economical knowledge; other reasons need to be studied in the future research.

The second delimitation of this research is about the potential respondents. China is a big country with very unbalanced economical developments, so it is hard to find a group of respondents that can represent the whole of China. In consideration of the feasibility of data collection, most of respondents will come from better-developed parts of China.

A third delimitation that needs to be mentioned is the design of the survey questions. While the research team tries to adapt some questions from previous researches, some changes are made when necessary, e.g. from 5-point Likert-scale to 6-point Likert-scale. These changes may raise the risk of deteriorating the reliability of original questions. To overcome this potential risk, reliability of the new questions will be checked before the data analysis.

2 KNOWLEDGE MANAGEMENT

This chapter reviews some key definitions in knowledge management (KM), as well as the importance of KM. Key definitions introduced in this chapter include: knowledge, KM, knowledge processes, and KM practices. Knowledge processes and KM practices are two important parts in the research structure of this study.

2.1 What is knowledge

The definition of knowledge has been developed along human history and a common applicable definition is difficult to find. A traditional definition of knowledge according to Greek philosopher Plato is “the justified true belief” (Suula et al. 2002). Knowledge can also be defined in many ways, based on different perspectives (Alavi & Leidner, 2001).

Hierarchical view of knowledge

Davenport and Prusak (1998) tried to define knowledge using a hierarchical view of data, information, and knowledge. According to them, data is a set of discrete, objective facts about events. Information consists of data with a meaning or an interpretation. Knowledge is a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. Knowledge originates and is applied in the minds of knowers. In organizations, knowledge is embedded not only in documents or repositories but also in organizational routines, processes, practices, and norms. The relationship between data, information and knowledge is that data is raw numbers and facts, information is processed data, and knowledge is authenticated information.

Dynamic view of knowledge

This definition of knowledge comes from Nonaka and Takeuchi (1995). They see knowledge as a dynamic human process of justifying personal belief toward the truth, as well as a process of applying expertise. Knowledge is created in social interactions among individuals and organizations and therefore has a dynamic characteristic.

Explicit and tacit knowledge

Polanyi (1966) developed the distinction of tacit and explicit knowledge. Explicit knowledge refers to knowledge that is transmittable in formal, systematic language and is easily codified, which is more objective and rational. On the other hand, tacit knowledge has a personal quality, which makes it hard to formalize and communicate. Tacit knowledge is deeply rooted in action, commitment, and is not easily to be codified. This kind of knowledge is more subjective and experiential.

Explicit and tacit knowledge are different, however, these two types of knowledge interact in a dynamic process. This process is the key to organizational knowledge creation. The SECI model from Nonaka and Takeuchi (1995) explains this interactive process, and this process will be illustrated in more detail in section 2.3.

2.2 Knowledge management

2.2.1 Brief history of knowledge management

The roots of contemporary knowledge management are commonly recognized from the management theories of the 1950s (Katsoulatos and Dzevgolis 2004; Barclay and Murray 1997). Drucker (1959) pointed out the most important asset of any organization is its people, and coined the term knowledge worker; he also stressed the growing importance of information and explicit knowledge as organizational resources.

In the next few decades, knowledge management developed fast and became a key research interest for many scholars (Katsoulatos and Dzevgolis, 2004). In the 1960s, the theory of industrial dynamics was an important landmark in the early stage of knowledge management. In this theory, the importance of the learning process is emphasised. In the 1980s, the importance of knowledge as a competitive asset of organizations was broadly accepted and theories and research of KM started to become mature. The most famous works about knowledge management in the 1990s is from Nonaka's and Takeuchi's *the Knowledge Creating Company* (Nonaka et al, 1995), *How Japanese Companies create the Dynamics of Innovation*. According to Wiig (1997), the 1990s was an important period for KM development. During that period, knowledge management initiatives flourished. Not only did the number of academic books and articles published on the topic of knowledge management increase exponentially; a lot of European consulting companies began to offer knowledge management consultancies; knowledge management conferences and seminars were held across Europe and the US.

In the 21st century, the ongoing academic interest in knowledge management is still visible (Hislop, 2005). However, contemporary knowledge management is new to developing countries such as China. Literature about Chinese knowledge management is very limited (Peng et al, 2007). Okunoye (2003) explained that the majority of the modern KM practices occurred in developed countries, so the outcome of the research is relatively narrowly focused on organizations within developed countries.

So this research is a study that reveals the current state of knowledge management of China, one of the biggest developing countries. At the same time, the result will be compared with a developed country, Finland. This study describes the status quo of KM of China and Finland, and also compares KM of two countries.

2.2.2 Definition of knowledge management

Similar to knowledge, knowledge management is also difficult to define (Earl, 2001). KM has been defined in various ways. According to Bollinger and Smith (2001), there are currently three major schools of thoughts on what knowledge management is. One school regards knowledge management primarily as an issue of information technology. A second school regards knowledge management more as a human resource issue with emphasis on organizational culture and teamwork. And the third school suggests the development of processes to measure and capture the organization's knowhow.

Quintas et al. (1997) defined KM as the process of continually managing knowledge of all kinds to meet existing and emerging needs, to identify and exploit existing and acquired knowledge assets, and to develop new opportunities. This definition indicates that knowledge management programs contain a number of dimensions, including organizational structure and culture, human aspects, and processes and technology.

Another KM definition created by Yew and Aspinwall (2004) defines KM as a way management is to deal with knowledge related activities such as creating, organizing, sharing, and using knowledge in order to create value for an organization. It is promoted as an essential cornerstone for companies to develop sustainable competitive advantage and to remain at the forefront of excellence in the market playing field. This definition clarifies different activities in knowledge management which links KM with competitive advantage.

To summarize from different definitions, KM generally covers any systematic process or practice of acquiring, sharing, creating, storing, and using knowledge, wherever it resides, to enhance learning and performance in organizations. At the same time, some supporting factors

such as culture, organizational structure and technology, are closely related to KM. All these processes and supporting factors will be further illustrated in the next sector.

2.3 Knowledge process and knowledge management practices

2.3.1 Knowledge process

Knowledge process is a group of naturally existing processes in the organization, in which knowledge are embedded. In any organization, these processes exist to some extent even without intentional management interference. Knowledge acquisition, knowledge creation, knowledge sharing, knowledge storage and documentation, and knowledge application are the main knowledge management processes.

Knowledge acquisition

Acquiring knowledge from external sources and making it suitable for subsequent use is known as knowledge acquisition (Holsapple and Jones, 2004). More specifically, this begins with identifying needed knowledge from the external sources of an organization. The organization can acquire needed knowledge either directly or indirectly, and then transform it into its own knowledge that can be employed by the organization. Main methods in direct acquisition of knowledge include: licensing copyrights and patents, obtaining trade secrets, soliciting knowledge from external sources and receiving external training. On the other hand, hiring new employees, forming joint-ventures with others organizations, using relationships in acquiring information are some examples of indirect knowledge acquisition.

Knowledge creation

Knowledge creation process is developing new contents or replacing

existing content within the organization's tacit or explicit knowledge (Alavi and Leidner, 2001). This process is a dynamic and creative interaction between tacit and explicit knowledge. It is Nonaka and Takeuchi (1995) who theorized the process of knowledge creation using their famous SECI model. As figure 3 shows, knowledge creation in SECI model has four modes, they are: socialization, externalization, combination, and internalization.

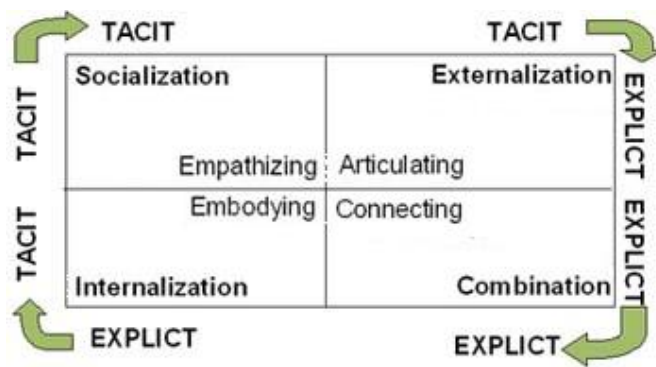


Figure 3 Knowledge creation process

(Adapted from Nonaka and Takeuchi 1995)

Based on the SECI model, Nonaka, Toyama and Konno proposed three key elements of knowledge creation in organizations (Nonaka et al. 2000). These three elements are: (1) the SECI process, knowledge creation through the conversion of tacit and explicit knowledge; (2) 'ba', the shared context for knowledge creation; and (3) knowledge assets, the inputs, outputs and moderators of the knowledge-creating process. They describe knowledge creation as the result of interactions of these factors. SECI process takes place in "ba", and where new knowledge is created, and is the basis for a new spiral of knowledge creation.

Knowledge sharing

Lee (2001) defines knowledge sharing as activities of transferring or disseminating knowledge from one person, group or organization to another. This definition broadly includes sharing of both tacit and explicit

knowledge, as well as intra- and inter organizational knowledge sharing.

Knowledge sharing is a valuable link between the individual and the organization, because it moves knowledge that resides in individuals to the organizational level. This process is considered important to the dissemination of innovative ideas and creativities of the organization (Armbrecht et al, 2001; Ipe, 2003).

Besides information technology tools, some factors are very important in facilitating good knowledge sharing, such as organizational reward system, good design of work process and jobs, and an environment that encourages a climate of trust and openness (Bartol and Srivastava, 2002; Cabrera et al, 2002).

Knowledge storage and documentation

Knowledge storage and documentation involve different components of remembering knowledge, such as: written documentation, information stored in databases, recorded organizational processes, and tacit knowledge acquired by individuals (Alavi and Leidner, 2001). According to Renzl (2008), this process cannot be merely solved by IT, but need more support from managers of the company, who can provide motives to do this process better and more efficiently.

Knowledge storage and documentation may have either positive or negative effects on other knowledge processes. More specifically, this process can help store and reapply workable solutions when the organization encounter similar problems that happened previously; on the other hand, if overly dependent on previous experiences, both individuals and organizations may lose opportunities to acquire, create or apply new knowledge (Chou, 2005).

Knowledge application

Knowledge application is the process in which the organization utilizes the knowledge and technology generated into new products and processes (Song et al, 2005).

Organizations can employ their knowledge in various ways. This process can make knowledge become more relevant and active for the firm in creating value, and Bhatt (2001) pointed out that swift application of knowledge is important in sustaining the competitive advantage in fast changing markets nowadays.

All of the above described knowledge processes are embedded in organizations' daily works. The status of these processes in China and Finland will be studied and compared in this study.

2.3.2 Knowledge management practices

Several key knowledge processes were introduced in the previous section. There are some knowledge management practices that can facilitate and enhance these processes. These practices are intentional actions from management, which can enhance knowledge processes. Main knowledge management practices studied in this research are: knowledge management strategy, knowledge management culture, knowledge management leadership, human resource management, organizational structure and technology, and ICT.

Knowledge management strategy

While providing a process for conceptualizing knowledge strategy, Zack (1999) also pointed out the importance of creating knowledge strategy that can help organizations focus and prioritize their investment in KM and come out ahead of competitors. According to Smith (2005), a KM strategy should contain four key components: clear objectives of KM activities,

well-developed action plan, budget for the action plan, and measurements that can evaluate the progress and success of the KM. When developing a KM strategy, business sector characteristics, organizational culture and structure, nature of the knowledge of organizations need to be taken into account (Haggie and Kingston, 2003). A clear KM strategy is an important basis for good knowledge management (Skyrme& Amidon 1997; Dalkir 2005).

Knowledge management culture

Organizational culture is the set of commonly held beliefs in the organization; it also represents the desires, goals, and customary practices of organizations (Tienne et al, 2004). An effective organizational KM culture contains norms and practices that increase the free information flow among employees and across departments.

Previous studies revealed how organizational culture influenced the knowledge processes. KM culture plays a key role in knowledge management processes such as knowledge sharing and creation (Davenport et al. 1998, Dorothy et al.2006, Kristen et al. 2004, Tienne et al, 2004). Based on a research of Leidner et al (2006), individualistic organizational culture inhibits sharing and reuse of knowledge, while cooperative organizational culture enables the evolution of all knowledge processes.

Knowledge management leadership

Leadership is very important in ensuring success in most initiatives within an organization (Jarkko, 2004). KM leadership is about setting direction, motivating, and inspiring employees to be involved in KM activities.

In case of KM, leadership plays a crucial role in implementing and sustaining a knowledge-sharing culture as well as in facilitating and enabling all knowledge activities (Ribiere, 2003). According to Tienne et al (2004), leadership can directly impact the organization's culture and is

critical to the overall success of KM. Leadership needs to permeate all levels of an organization, and a knowledge officer is a new position that can greatly enhance and coordinate a company's knowledge processes.

Human resource management

Human resource management (HRM) policy and practice play a significant role in KM (Hislop, 2003; Scarbrough, 2003; Wong, 2005). Scarbrough (2003) pointed out three aspects of HRM that are particularly important in shaping the flow of people and knowledge, they are: employee selection methods, compensation strategies, and career development systems.

Different researchers value these three aspects (Scarbrough 2003, Tienne et al, 2004; Wong, 2005). Firstly, effective selection of new employees is crucial because it is the process of building onto an organization's knowledge and competences. Organizations should hire those who have the required knowledge and skills that they desire. Secondly, compensation strategies can help promote KM. Both tangible and intangible incentives can motivate employees to share and create knowledge. However, sometimes rewards for some can create dissatisfaction for others, or can make individuals put more effort towards personal contribution than cooperate with other employees. The third aspect is career systems, which concerns systematic training and education to employees and how to retain good employees and their knowledge when they leave the organization.

Organizational structure

Organizational structure is another central aspect in implementing KM (Gold et al, 2001; Quintas et al, 1997, Wong, 2005). A set of roles and teams performing knowledge related activities need to be established to enhance internal cooperation and communication. Flexible organizational structures can encourage knowledge processes both within and between organizations.

Technology and ICT

Technology tools and ICT are important for KM activities. They are not simple and static archiving tools, but also connectors of people; it enables rapid search, access and retrieval of information, and can support collaboration and communication between organizational members (Wong, 2005).

It is important to notice that successful KM projects need a balanced use of people and technology. Technology itself cannot be the ultimate solution to KM. It can help organizations manage and leverage their knowledge systematically and actively, but cannot substitute the role of people (Alavi&Leidner, 2001; Hariharan, 2005; McDermott, R, 1999).

Hasanali (2002) gave some key issues that need to be taken into consideration when developing and using technology and other ICT tools. Such as, focusing on user's needs, building common and easy-to-use platforms, concentrating on both tacit and explicit knowledge management, giving enough training to users, and giving sustainable maintenance to ICT systems.

Knowledge processes and knowledge management practices introduced in this section are the key elements to be investigated and compared between China and Finland. Figure 1 in chapter one has shown this partly, more details about how these key elements will be positioned and measured in the whole KM model of this research will be introduced in the methodology part, namely chapter six of this study.

2.4 Knowledge management and company performance

There have been intensive discussions amongst researchers about the importance of knowledge management (Carneiro 2000, Martensson 2000, Ndlela & Toit 2001). The management of knowledge is promoted as an important and necessary factor not only for the survival of organizations,

but also for the maintenance of competitive advantages of organizations.

Martensson (2000) says in both the private and the public sectors, KM is considered as a prerequisite for higher productivity and flexibility. KM is described as both an information handling tool and a strategic management tool.

By building relationships between knowledge development, personal characteristics and personal development, Carneiro (2000) provides an in-depth understanding on the linkages between KM, innovation and competitiveness. By having good KM in organizations, managers are more able to analyze and evaluate environmental factors and make better decisions. In a fast-changing environment, the competitive advantage of many companies is based on the decision to exploit and, to develop the power of knowledge development. KM plays an efficient role in supporting innovation and competitiveness of organizations.

Ndlela and Toit (2001) further verified that the establishment of a knowledge management program can ensure the sustainable competitive advantage within organizations with their research. They investigated the understandings of various factors in knowledge management such as enablers and barriers to implement knowledge management. Their survey results suggested that organizations should adopt a holistic and integrated approach when implementing KM and this will be a source of sustainable competitive advantage for organizations.

To summarize, successful KM can bring various benefits to both governmental and business organizations in today's fast-changing market. By implementing KM, organizations can create value more effectively and maintain their innovativeness and competitiveness.

3. KNOWLEDGE MANAGEMENT IN CHINA

As mentioned in previous chapters, knowledge management has a long history and is now a popular research topic both academically and practically. However, there is a dearth of KM literature about developing countries (Boumarafi and Jabnoun 2008, Kale; D. and Little 2005). According to Kale and Little, most of those researchers who concentrate on the process of KM have mainly focused their studies on developed countries. In developing countries such as China and India, there is not much about firm level KM study. In this chapter, the general KM development of China will be introduced. For example, the history of Chinese KM research, the characteristics of Chinese KM, and the trends and the challenges of Chinese KM research.

3.1 China's fast development and challenges in knowledge-based economy

According to the official data from the National Bureau of Statistics of China (NBS), China's average annual GDP growth is more than 8 per cent in the past 28 years. Even in the time of financial crisis during the years of 2007 and 2008, the GDP growth of China was 13 per cent and 9 per cent respectively (NBS, 2009).

China's rapid development in the past few decades is significant. Dahlman and Aubert (2001) see the main reasons of this are because of China's shift of workers and resources from low productivity agriculture to industry, and the high growth rates in both domestic and foreign investment.

However, to maintain prosperity in the new century, China must confront the knowledge revolution and ensure the effective use of knowledge in all economic sectors, such as agriculture, industry, as well as services. China faces the challenge of shifting towards a knowledge-based economy,

which is compounded by the knowledge and information revolution. To overcome these challenges, the Chinese government needs to help the country quickly exploit the knowledge revolution and succeed in promoting and regulating a new socialist market economy based on knowledge.

So the effective development and exploitation of knowledge is becoming more important for China's economic activities, competitiveness, and future growths. The importance of the codification of scientific understanding of nature and the rapid dissemination and exploitation of all knowledge is huge. China must exploit knowledge efficiently to gain its place in the new world economy.

Dahlman and Aubert (2001) pointed out the main challenges China will face toward knowledge-based economy. They suggested main knowledge implications for China that can be used in dealing with the current challenges in knowledge-based economic growth.

Table 2 Knowledge related challenges for China

(Adapted from Dahlman and Aubert , 2001)

Challenge	Knowledge implication
Maintaining growth	Go from factor intensive to knowledge intensive by increasing productivity across the board. Improve financial system. Develop social safety nets. Harness ICT infrastructure, etc.
Providing employment	Knowledge will make job market more competitive. Knowledge can protect existing jobs and develop new job opportunities.
Addressing income and regional inequality	Invest in physical infrastructure and knowledge infrastructure. Invest in education and technology.
Ensuring environmental sustainability	Policy, technical and productive knowledge are needed for environmental issue.

As it can be seen from table 2, if China uses knowledge efficiently for sustaining its development in the long term, China needs to make changes in various policy domains, which deepen, complement, or reorient ongoing reforms. All of these actions need knowledge and good management of knowledge.

3.2 Chinese KM research history

This section reviews the development of KM research in China. When KM started gaining attention in the Western community, China was still experiencing dramatic economic and social changes (Lin, 2010). It was in the year 1997 that KM was formally introduced into China for the first time (Song, 2003). In that year, a research about knowledge economy was conducted in one of the earliest high-tech parks of China: Zhongguancun of Beijing. In that research, the role of knowledge in organizations was studied.

Even though KM came to China relatively late compared to the developed countries, those international companies who established their Chinese subsidiaries promoted KM very fast within China, for example, IBM and HP are frequently quoted examples of those who invested in KM technology and software in China (Lin and Kwok, 2006).

Two main stages of Chinese KM research development

There are two main stages of Chinese KM research development, which represent different emphasis in KM research topics: one stage is from late 1990s to mid-2000s, the other stage is starts since the mid-2000s.

In the first stage (late 1990s to mid-2000s), KM research was comparatively new to Chinese researchers. According to Voepel and Han (2005), most of the Chinese KM research works in that period simply refer to leading Western KM literatures. Discussions such as the definition of KM, the importance of KM to Chinese firms and the knowledge transfer from

overseas to China dominated the range of tackled topics (Li, 2001; Song, 2003). Concluding from two KM researches in 2002 and 2005, Peng et al (2007) suggested that KM practice in Chinese companies was still at a very early stage before 2005.

However, in mid-2000s, Voelpel and Han (2005) predicted that while China gradually increased its integration in to the world economy, KM development in China will differ significantly from those in Western countries, therefore, research on KM in China will gain more attention than before. Indeed, after 2005, there is a transition in the research emphasis. Discussions about how to implement KM and critical issues of KM implementation started to gain researchers' attention (Yet et al, 2006; Chang and Lee, 2007; Lin, 2010).

After a search of web sites of Chinese KM news reports and journals, it is found that there are three KM intensive regions across China, they are: Beijing, Shanghai and Shenzhen. Also, there are some Chinese universities running KM research related centers, such Beijing University and Shanghai Jiaotong University. KM consulting in China is also in its early development (KMC, 2008).

To summarize, KM has been in China for about one decade. Before 2005 it was in the early growth stage; after that, Chinese KM started to develop faster in academic research and daily practice. However, what is the holistic KM status of China is unclear; this study is to answer this question.

3.3 KM issues in China

As mentioned in section 3.2, so far there are two stages of Chinese KM research. Before 2005, besides the discussion of definitions and importance of KM, works about knowledge transfer was the most significant contribution in this period. After 2005, the KM research interests

are broadened and researchers paid more attention on factors affecting KM. So in this section, works about these two areas are introduced, to help us have a better understanding of Chinese KM research.

Research about Knowledge transfer to China

Even though the KM research in developing countries is relatively limited as mentioned earlier, the Chinese policy of openness and major policy reforms triggered a series of KM studies concentrating on knowledge transfer from foreign countries to China (Si et al., 1999; Buckley et al., 2005; Liu et al., 2006).

Si et al.(1999) pointed out that China has a far more complex business environment than elsewhere in the world, so they suggest that foreign firms should think through their own and their Chinese partners' knowledge needs at the beginning of the joint venture co-operation.

Buckley et al. (2005) stated that knowledge transfer across national borders within multinational enterprises depend on two main factors. One is the common language necessary for communication; and the other is the shared social knowledge necessary to understand and predict the behavior of parties engaged in the knowledge-transfer process.

Liu et al. (2006) studied the best practices for multinational corporations (MNCs) to transfer knowledge to their Chinese subsidiaries. While some practices have higher influence on efficient knowledge transfer, they also pointed out that certain practices are better suited in transferring certain types of knowledge. Their research revealed the use of technologies in terms of providing platforms and applications on computers as the most frequently used tool to enable employees to share their experiences and knowledge.

Some special Chinese factors influencing Chinese KM

As mentioned earlier, in the second stage of Chinese KM research, many articles emerged either explicitly or implicitly studied the factors that affect KM implementation in China. However, some special Chinese factors are unique to Chinese KM, some of these Chinese factors are reviewed next.

Guanxi

The word “Guanxi” means relationship in English. In common understanding, it always refers to a personal information networks (Veolpel and Han, 2005). This factor is found positively related to knowledge sharing in China. Healthy Guanxi is important in building trust between each other and therefore plays a vital role in enhancing knowledge sharing in the Chinese organizations (Hutchings, 2005; Fu et al, 2006, Michailova and Hutchings, 2006). Guanxi influences knowledge acquisition as well, because Chinese people are more confident in those who they have known for a long term personally (Ramasamy et al, 2006).

Collectivism thinking

This factor is especially important in China because China is a highly collectivism-oriented nation (Chow et al, 2000). This factor shapes a strong tendency in internal knowledge sharing among in-group members. At the same time, if sharing personal knowledge is good to enhance or protect collective benefits, Chinese people are willing to put individual benefits to the secondary position (Zhang et al, 2006). In the study of Chow et al (2000), he found that Chinese and Americans are to be equally willing to share knowledge that does not have a conflict between self and collective interests; but for knowledge that does have such a trade-off, Chinese people expressed a greater willingness to share than Americans.

Confucianism

Confucianism is a Chinese ethical and philosophical system developed by the ancient Chinese philosopher Confucius. Chow et al (2000) used the

term Confucian dynamism to measure the effects of Confucianism to knowledge sharing in China. This dynamism includes eight items and the whole Confucian dynamism is a factor that positively influences the knowledge-sharing behavior of Chinese people. Among those eight items, “personal steadiness” and “respect for tradition” support knowledge sharing best.

3.4 Characteristics of Chinese KM

Management practices in China are different in many ways from that of the West, as well as in knowledge management. Many researchers have tried to define the Chinese characteristics of KM (Zhu, 2004; Burrows et al. 2005; Peng et al. 2007). In China, we have a Chinese style of KM approach. In this section, Chinese KM characteristics will be introduced through two examples, one uses a Chinese KM model; the other uses a comparative approach, in which Chinese, U.S and Japanese KM are presented together.

WSR framework of Chinese KM

Drawing upon insights from Oriental (Chinese) philosophy, Zhu (2000, 2004) proposed a unique KM framework that Chinese people inherited from Confucianism.

One of the main characteristics of the Chinese philosophy is its intention toward harmony and holism. While Western people focus more on relations between humankind and the material world, the Chinese uphold a cultural tradition which focuses more on *Guanxi* (social relationships), which exists within members of a family, within or between organizations, and within society as a whole.

In WSR framework, Wuli denotes the material–technical aspect of managing knowledge. It is objective existence (natural or social, concrete or abstract), which consists of material surroundings as well as structural

organizations. Shili means patterns of human interaction with the world to facilitate the constructive-cognitive knowing process. The Chinese believe that the best approach to KM is to equip knowers with various methods, techniques and skills, flexible organizational arrangements and cross-boundary conversation opportunities, and then leave the knowing agents to learn, to create, to share and to apply knowledge in the ways easy for them. Renli is concerned with the governing of social-political relations among knowers. Renli stresses the inter-subjective relations among parties within the organization. In studying Renli, the focus is on generating and fostering possible synergistic factors, as well as avoiding or overcoming obstructive ones. Being oriented toward human ensures that the organization serves various human interests better, and consequently formulation and implementation of knowledge can become easier.

Comparative approach to study Chinese KM

Burrows et al (2005) described the Chinese approach of KM by using a comparative method. He summarized three approaches of KM based on regional and cultural differences, as well as different management models.

The first one is the American approach, which emphasizes explicit knowledge and its codification, collection, distribution, application and measurement. Investment on IT, knowledge repository and data mining are regarded as crucial factors to the success of innovation and productivity.

The second KM approach is the European/Japanese approach. In this approach, the key factor is people. High standard and productivity depend mostly on the socialization process of expertise and tacit knowledge.

The third one is the Chinese KM approach. This is a “middle of the road” or “moderation” approach that combines codification and personalization together. The “actual usability” of KM is a predominant factor in Chinese way of applying KM. This explains why short-term return from KM investment is a key concern of the Chinese companies’ management and

lots of Chinese companies are keen to invest IT systems. Chinese KM is also influenced by its traditional history and culture. Therefore informal and inexplicit communications are popular in Chinese contexts. Interpersonal links via oral communication in a relatively small community or “social circle” is where the knowledge is most likely to be transferred among people. Table 3 presents some key points of these three KM approaches.

Table 3 Distinctive characteristics of knowledge management in the U.S., Japan, and China (Adapted from Burrows et al, 2005)

	U.S.	Japan	China
View of Knowledge	Measurable and manageable entity	Largely tacit and contextual	Largely tacit and contextual
Key assumption	Knowledge is mostly objective and can be made explicit	Knowledge is mostly subjective and socially dependent	Knowledge has both objective and subjective elements
KM in daily work	Knowledge workers capture, codify, and share knowledge from experience	Everybody creates and shares knowledge as an integral part of socialization	Senior managers and supervising staff act as repositories of knowledge
KM goals	Profits & improved productivity	Social consensus of people	Profits and people harmony

Above comparison by Burrows et al (2005) is a good example of studying KM by comparative approach. In the table above, part of the Chinese KM characteristics are compared with other two countries. This makes it easier for researchers understand KM in different countries.

3.5 Challenges and future trends of Chinese KM

KM research in China needs to be closely related with the trends of the

development of the Chinese economy and continuous reform. Under this thinking, Peng et al. (2007) proposed the following KM research trends and challenges in China:

- (1) In many critical industries, the government retains a significant share. So the KM research should concentrate on what the differences of KM state owned enterprises (SOEs) and private companies in China are.
- (2) To build effective KM research community. Chinese and Western management scholars must be joined together in order to apply comparative research and/or conduct joint projects.
- (3) In consideration that the private economy makes up more than 60 per cent of GDP in China, Chinese KM researchers should study the role of KM in Chinese domestic private companies and firms.
- (4) The topics concerning the mechanisms by which external and internal knowledge is managed in China under China's specific cultural and social influences will be covered by more researchers.
- (5) In what ways KM practices in China differ from the West needs to be studied and a comparative approach needs to be used.
- (6) In January 2006, China launched a 15-year "Medium-to-Long-Term Plan for the Development of Science and Technology" that targets to make China an "innovation-oriented society" by the year 2020. Innovation has become an increasingly important factor in KM research in recent years. So some research topics about innovation and KM can be studied, for example: What specific factors are there in China KM practice to affect innovation if compared with Western and Japan KM styles?

- (7) The research on “best KM practices” in service sector, manufacturing sector, governmental and non-profit sectors in China are needed, to help people implement KM in different sectors.

From above trends, it is clear that KM researches in China need to be expanded in a lot of directions and there is a big demand to study KM under a comparative approach. For example: KM comparison between private and states-owned companies; KM comparison between different sectors; and KM comparison between China with other countries. By comparing KM between China and Finland, this study closely follows some of the research trends that Peng et al (2007) disclosed.

4. KNOWLEDG MANAGEMENT IN FINLAND

Being one of the most innovation countries in the world, Finland successfully transformed itself from industrial society to an information society and then to a knowledge society. Knowledge management plays an important role both in government and in business organizations (Dahlman et al, 2001; Jussilainen, 2001; Suurla et al. 2002; Salojarvi et al, 2005). In this chapter, the development of KM in Finland will be introduced briefly, concentrating on the KM in Finnish government and in Finnish business life.

4.1 Finland—an innovative knowledge society

As mentioned in chapter three, China requires an integrated policy in using knowledge to develop its knowledge economy. The leading body of this integrated policy needs to have the authority to coordinate all ministries, which is crucial for creating the overall national knowledge strategy. Even this kind of integrated approach is not easy work. Finland, the most innovative economy in the world can be an inspiring model for this integrated approach that uses pragmatic methods and explicitly designed plan for a nation's transition to a knowledge-based economy.

When Finland was still an information society, there was already a clear knowledge strategy that stated: To make the best use of the opportunities in the information society, Finland has a vision and strategy to be a forerunner in building an information society based on humane and sustainable development (Dahlman et al, 2001).

During the course of transitions from an industrial society to an information society to a knowledge society, Finland saw understanding and wisdom as the two major challenges for both individuals and social communities. It is believed that the society has the responsibility to create equal

preconditions and needs an inspiring atmosphere for the required change to take place. Everybody needs to build a strong personal educational base for lifelong learning, so that Finnish people can regenerate the view of the coming societal, occupational and personal changes.

According to Suurla et al. (2002), compared to other nations, Finland as a society has good practices on operating efficiently as an information society as well as a pioneer of knowledge society development. From the perspective of Finnish political regime, knowledge management is an important tool that can help Finland exert government power and strengthen parliamentarianism.

Knowledge has been important for a long time in Finland. The transition from information society to knowledge society took place successfully under the efforts of all Finnish people. So in the next two sections, KM in Finnish government and in business life will be studied in more details.

4.2 KM in Finnish government

Finnish government is aware of the importance of the knowledge held by its people. As early as 1998, the Finnish government pointed out in its future report that the citizens' competence, their skills and expertise are the only basis for Finland's success. In particular, the government defined Finnish national action plans for Finland to develop towards a knowledge society (Suurla et al. 2002), which are made of three terms:

1. Steadily increase the resources available for research and development from the year 2000 on; at the same time, seek to increase the returns from such investment.
2. Lead the transition to an information society, seeking a role in the European Union as an "information society laboratory". Use the information

society as a tool for increasing Finland's human and social capital.

3. Introduce a system of lifelong learning encouraging skill enhancement and mobility during the entire individual life cycle. In the business policy, emphasize quality, education, management skills and personal development.

Besides the creation of knowledge policies, Finland established a science and technology policy council. This organization is lead directly by the Finnish prime minister, to develop a series of knowledge and innovation strategy for the country. The council includes all ministers and representatives of civil society and business. The main issue is to move Finland to a leading economic position in the world. Under the supports of a secretariat, the council met regularly to discuss and create key policy in the various domains of developing a knowledge and innovation strategy (Dahlman et al, 2001). Figure 4 shows the role of KM in the reform of Finnish government and the knowledge strategy of Finland as a nation.

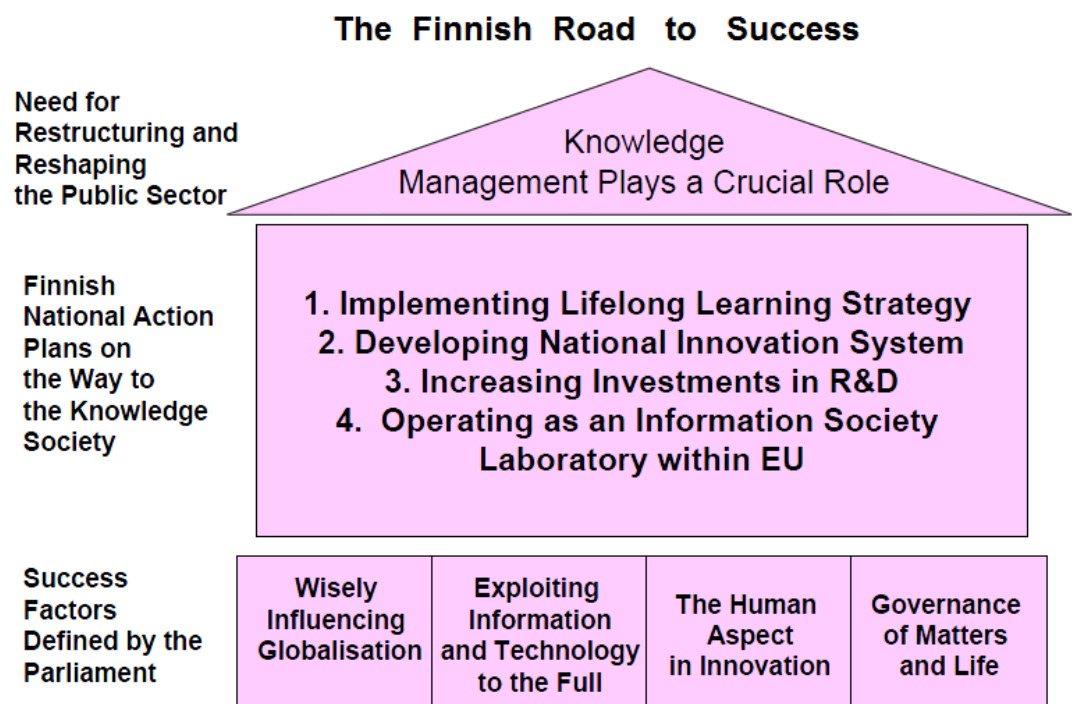


Figure 4 The role of KM in Finnish government

(Adapted from Suurla et al, 2002)

Knowledge management was regarded as a part of the central government's reform in Finland around the year 2000 to 2001. Since then, KM as a tool was accepted by more and more Finnish governmental organizations (Maija, J. 2001).

The use of KM in Finnish government is a good start to promote KM as a common practice in the whole country.

4.3 KM in Finnish business life

As the new policies from the government were implemented, Finnish business organizations began to pay attention to new changes in their business environment. Thereafter, knowledge management has become one of the greatest challenges faced by business organizations of various types and sizes.

While the Finnish government implemented KM, more and more business organizations began to analyze the meaning of knowledge community, what type of value it produces, and how to measure, evaluate and develop their knowledge and other intangible capital assets. Later business organizations realized the importance of providing a trusting working community, which equally appreciates various knowledge contributions by all employees. Only in this kind of environment, the entire available competence capacity can be fully exploited and increased by employees. Therefore, knowledge management becomes crucial for organizations. The primary objective of knowledge management is to support and help individuals cope with the information deluge and help them find the correct knowledge at the right time (Suurla et al. 2002).

According to a KM survey conducted in Finland by Salojarvi et al. (2005), Finnish small and medium-sized companies display a surprisingly high awareness about KM. A total of 53 percent knew the concept of KM

personally, 35 percent of the respondents reported their enterprise to actively discuss KM or to deal systematically with the KM. About 11 percent of the companies reported that they have constructed their own knowledge management system.

About knowledge management systems, 35 percent were using some well-known management systems. In conducting different knowledge management activities, 70 percent of the enterprises have sometimes done customer or employee satisfaction surveys to gain knowledge along the value chain. A total of 15 percent had used competence mapping. About 80 percent of companies answered that they conducted employee development discussions.

As described, KM in Finnish business life is initiated by the implementation of KM by Finnish government. By the mid-2005, there are many Finnish companies doing KM related activities. However, what the current KM status in Finnish business life is a question to be answered by this research.

4.4 Simple summary of Chinese and Finnish KM

In chapter three and chapter four, general information of Chinese and Finnish KM have been discussed. Based on available literature, it is hard to find valuable information to answer the research questions of this study and make detailed comparisons on KM of the two countries. However, a few simple statements can be summarized based the development of KM of two countries. Main points are summarized below:

- (1) The first proponents of KM. In China, it was transnational corporations who pioneered and promoted KM in business life at their Chinese subsidiaries in the early 2000s (Lu and Kwok, 2006). In Finland, it was the central government who promoted KM in different governmental

organizations, and this action is regarded as part of the reform of Finnish government (Jussilainen, 2001; Suurla et al, 2002).

- (2) In both countries, Technology and ICT play important role in KM. In China, transnational corporations introduced these technologies and ICT tools (Lu and Kwok, 2006). And in Finland, technology and ICT were already very developed as Finland once was regarded as an information society before its transition to knowledge society. It is even said that ICT industry itself is a very active in the business sector in promoting KM (Lelic, 2002).
- (3) By the mid-2000s, KM had attracted a lot of attention in the Finnish business sectors (Salojarvi et al, 2005). During the same period, about 50% of Chinese companies began to increase their attention to KM and started to think about investing in KM activities (Xia, 2009). Today, we have entered the beginning of the 2010s, so it is a good time to see how KM has developed in each country and analyze the current KM status in these two countries using a comparative approach.

To summarize, KM was introduced to both countries about a decade ago. Though different parties in China and in Finland initially promoted KM during the early 2000s, KM has attracted attention from practitioners and researchers in both countries in the past decade. However, the current KM status in these two countries is not clear. This study is to fill this theoretical gap and provide up-to-date information about current KM in these two countries in a logical and holistic manner, then compare KM between these two countries. In the next chapter, some KM measurement tools will be reviewed, to help understand the structure and key elements needed in a good KM measurement and comparative research.

5 COMPARATIVE STUDY TOOLS OF KM

To have a good comparison of KM between China and Finland, the first question is how to measure KM comprehensively and systematically. This chapter tries to answer this question by discussing some important issues: the basis of KM comparison, the approaches of KM measurement and a review of previous KM measurement tools.

5.1 The basis of KM comparison

During the development of KM, people realized the importance of measuring KM (Kulkarni 2003; Grossman 2006). KM measurement is not only important for benchmarking and improving, but can also increase the innovative ability of organizations.

According to Kulkarni (2003), more and more organizations realize the importance of knowledge management as they notice that sustainable competitive advantage depends on effective management of their knowledge. However, developing the tools to assess how effectively they conduct KM is a challenging mission. Assessment is the basis and the first step before any improvement.

Grossman (2006) listed some important reasons for formally assessing KM, some of them are: identify and map intangible assets; recognize the knowledge flow patterns within the organization; prioritize the critical knowledge issues; accelerate learning patterns within the organization; identify and diffuse best practices; increase innovation; increase collaborative activities and a knowledge sharing culture as a result of increased awareness of the benefits of knowledge management.

While understanding the importance of measuring KM, we should keep some clear goals in mind when we conduct KM measurement. Mertins et al.

(2003) stated five objectives of KM measurement which are summarized as follows:

- (1) Uncovering the strengths and weakness of knowledge management in organizations. By KM measurements, organizations should and can objectively assess if knowledge management activities are integrated into their business process; at the end of a KM measurement, both employees and management should know the future potential of their KM activities.
- (2) Analyzing current KM circumstances, barriers, and enablers for knowledge management, these include corporate culture, KM leadership, human resource management, ICT, etc.
- (3) Increasing awareness for knowledge management within the organization. This objective can be realized by involving employees in the KM measurement activity and the KM measurement report. This process of employees' participation and the recognition of the employees needs in concrete business processes are essential for KM successes.
- (4) Designing a blueprint for future knowledge management. After knowledge management measurements organizations will know which measures should be taken, and if any, where that starting point should be. By means of the KM measurement, organizations can understand the existing circumstances clearly, at the same time, future potential are made transparent and systematically taken into account when further actions for the implementation of knowledge management are recommended.
- (5) Collecting measurable data to control knowledge management. Organizations can measure the benefits that are achieved through KM initiatives and the organizations' KM practices.

While reviewing the importance and objectives of KM measurements, above five points give valuable advice in designing a KM measurement tool. In this research, since a cross-country KM questionnaire will be developed to measure KM in China and Finland, keeping these advices in mind is very meaningful during the design process of the questionnaire.

5.2 Combined approach for KM measurement

In the question of how to measure KM, the first question we are concerned with is the approaches for KM measurement. When scholars analyze different kinds of approaches, most of them recommend that a combination of different approaches is the best way to measure KM.

Kulkarni (2003) identified two types of approaches of KM measurement for benchmarking KM levels. One is measuring inventory of KM systems, methods and processes. The other is the perceived worth of the KM to organization members. The former is to measure the KM infrastructure; the latter is to measure the effectiveness of the KM infrastructure. These two types of assessments together can draw a holistic picture of the state of KM in an organization.

Grossman et al. in 2005 proposed that qualitative and quantitative methods can be used for KM measurement and the blending of both methods is necessary to get a complete picture of organizations' KM status.

Quantitative methods are those originally developed in the natural sciences to study natural phenomena and now are well accepted in the social sciences. These methods include techniques such as surveys, lab experiments, and numerical methods. Qualitative methods are those that rely on more non-numerical forms of information, and are more appropriate to study social and cultural phenomena. Qualitative methods always include direct observation, interviews, as well the researcher's

impressions.

A mix of both qualitative and quantitative KM assessment measures is necessary to get a holistic picture on KM status. It is recommended that qualitative KM assessment is most suitable during the early stages of the KM initiative, because KM experience level is generally low. At this stage, KM measurement can be done by means of informal chatting with employees; semi-structured and structured interviews, and even accumulation of anecdotal evidence that indicates the success or failure of various KM efforts. On the other hand, a greater reliance on quantitative assessment techniques is better to use when organizations are more experienced in KM activities (Grossman, 2006). In the coming section, some famous KM measurement tools will be reviewed.

5.3 From comparable KM audit to cross-country KM survey

Among KM evaluation approaches and tools, some are targeted to check the knowledge of an organization, some are targeted to the comparison among different organizations, and others are designed to make international KM comparisons. Below is the review of some famous tools in this field.

5.3.1 Knowledge management assessment tool

The Arthur Andersen Consulting Company in co-operation with the American Productivity and Quality Center in 1995 developed the Knowledge Management Assessment Tool (KMAT). According to Hiebeler (1996), in the year after the development of this tool, 70 questionnaires were evaluated. The participating companies were world's famous brands from different industries from across the globe.

This benchmarking KM measurement tool is designed to help organizations assess how well they manage knowledge and, where their strengths and opportunities lie in managing knowledge (Jager 1999; APQC 2001, Mertins et al. 2003). After using KMAT, organizations do not only know their own position with regard to knowledge management levels in comparison to other companies, but can also evaluate the efficiency of the implementation of the knowledge processes.

This tool consists of some sections: the knowledge process; leadership; culture; technology; measurement. This design is based on an organization knowledge management model, in which the major knowledge management activities and enablers are put together in a dynamic system. In the model, seven core activities of the process of knowledge are: share, create, identify, collect, adapt, organize and apply of knowledge. Four enablers support these activities are: leadership, culture, technology and measurement (see Figure 5).

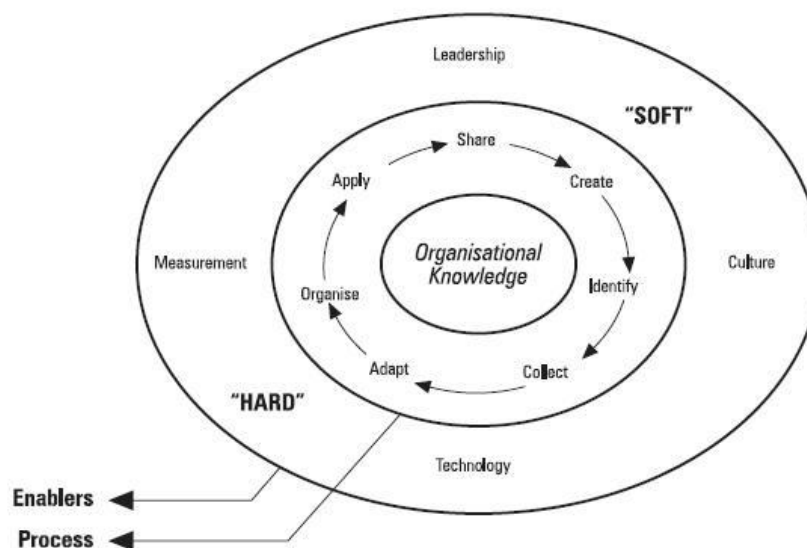


Figure 5 KMAT KM system model (source: Jager 1999, page 370)

After a KMAT measurement, three types of comparison reports can be generated from the results. External benchmarking reports can help companies compare their KM with an organization in the overall KMAT

database or a smaller customized group. Internal benchmarking reports compare KM of an individual or division within the same organization or with a group of their peers who have also participated the KMAT program. Average benchmarking reports deliver average comparisons of the group or individuals within an organization with the overall KMAT database, or a smaller customized group.

KMAT is a highly structured questionnaire. Within each section there are four to six statements. The person who fills in the questionnaire judges how well he or she thinks the company realizes the given statement by using a five step scales ranging from “bad”, “poor”, “fair”, “good”, “excellent”.

The KMAT questionnaire is a very good example of KM survey tool. As seen from the figure 5, it is well structured. However, this tool was designed a decade ago, some knowledge processes cannot be used directly and there are some knowledge management practices to be studied in this research (what they call enablers), which are missing in KMAT framework.

5.3.2 Cross-country KM surveys

Accompanied by the fast development of KM in the middle 1990s, surveys in the field of KM appears to be a popular tool to reach a lot of purposes in KM study (Chauvel et al. 2002, Chen et al. 2005). A consulting firm, an academic organization, or the combination of academic, corporate and/or publishing firms initiate most of these surveys. KPMG, OECD, APQC, are famous organizations in the field of KM research surveys.

Surveys on good practices in KM in European countries

The first benchmarking project on knowledge management driven from a Pan-European perspective was conducted in 1997 under the cooperation between the European Foundation for Quality Management (EFQM) and the American Productivity & Quality Center (APQC). The objective of this

survey is to search for good practice in the area of knowledge management through a benchmarking study project. The KM defined in this survey is “all the necessary activities to orchestrate an environment in which people are invited and facilitated to apply, develop, share, combine and consolidate relevant knowledge in order to achieve their individual and collective ambitions” (Mertins et al. 2003). This definition concentrates on different knowledge processes.

The main purpose of this survey is to identify the current state of knowledge management across Europe and the creation of a list of potential good practices used by different organizations. In addition, normal general information on the respondent's organization is collected, i.e. industry sector, number of employees and turnover etc. Both qualitative and quantitative questions are created in this survey. Key issues covered in this survey include:

- The general approach and most successful practices of knowledge management in organizations
- Strategies of knowledge and objectives of knowledge management.
- KM culture and motivation policy
- Leadership in KM
- Competency establishment in knowledge management
- Results of KM

The respondents of the survey are those who have been actively involved in working with KM in their organization. By taking the survey they can learn how other organizations manage their knowledge management activities and also can compare their own KM with other organizations.

This survey not only concentrates on knowledge processes and knowledge management practices, but also on KM results. In addition, respondents' information creates a more holistic view and makes it possible to make better and deeper analysis.

OECD National comparative survey of KM

Under the notion that there is a need of common reference framework for international KM comparison within OECD countries and a glut of KM information is based on case studies rather than in-depth analysis of KM, the center for educational research and innovation (CERI) within OECD launched a comparative research in OECD member countries in the year 2000. This research targets the learning about status, motives and effectiveness of knowledge management activities, as well as general understanding of knowledge management.

The definition of knowledge management in the OECD survey involves those activities related to the capture, use and sharing of knowledge by the organization. This survey studies these activities under four headings: IT related issues, human resource related KM issues, KM strategies, and the capture and inter-organizational knowledge exchanges.

The OECD survey is a good example of cross-country KM survey. However, the survey structure mixes knowledge processes and knowledge management practices together. In this study, the mix of these two is not good for a logical description and comparison of KM.

5.3.3 Key elements of KM surveys

It is important to have a clear understanding of key elements covered in KM surveys. Table 4 summarizes the key elements measured in different KM surveys selected from the year 1997 to 2009. In this table, the summary of the first four surveys are adapted from Chauvel and Despres' (2002) research.

Table 4 Summary of KM surveys

Year	Name of the research	Key elements covered
1997	Benchmarking study of leading US companies (by Wiig and Odem)	KM and business strategy, transfer of knowledge or best practices, customer focused knowledge, personal responsibility for knowledge, intellectual asset management, innovation and knowledge creation
1999	Survey on KM (by AMA research institute)*	State of existing KM programs, obstacles of KM programs, Results and goals of KM projects, Definition of KM components, Measurable benefits, Difficulties in KM projects.
1999	MAKE (by KNOW network)	Knowledge culture, Top management support, knowledge based goods and services delivery, Enterprise's intellectual capital, Environment of knowledge sharing, culture of continuous learning, management customer knowledge, Management of knowledge to generate shareholder value
2001	Global KM benchmarking survey (by Knowledge associates)	Critical success factors, KM infrastructure, K networking levels.
2001	Canada knowledge management practices survey (by Science, Innovation and Electronic Information Division of Canada)	Knowledge management practices, Reasons for using KM, results of using knowledge management practices, responsibility for KM, Effectiveness of KM, Sources of KMPs, spending on KM, resistance to KM, Incentives to using KM.
2002	Global Law Firm KM Survey (by Curve Consulting Pty Ltd)	KM strategy and objectives, KM culture, Scope of knowledge and KM, KM technology, KM and client service delivery, KM and learning, the value of knowledge management.
2003	KMPG KM European	Management involvement, KM budget, KM

	KM survey (by KMPG consulting)	benefits, KM objectives, KM challenges,
2008	ORCI survey (by LUT)	Knowledge documentation, knowledge sharing, knowledge acquisition and etc.
2009	OPM KM Survey (by U.S. Office of Personnel Management)	KM strategy, KM leadership, KM benefits, best used KM practices, unsuccessful KM projects

The KM surveys in table 4 are conducted in various countries and industries, and famous consulting companies or universities designed the questionnaires. Key elements covered in these surveys are very valuable references in designing the KM questionnaire for this study.

The learning points from this chapter can be summarized in two aspects. Firstly, main objectives and approaches of KM measurement are getting clearer. It is important to have these objectives in mind and to use proper approaches when creating a new KM measurement questionnaire. Secondly, by reviewing some previous KM assessment tools and surveys, key elements to be covered in a comprehensive KM questionnaire were revealed. The issues covered in this chapter can help us have a good understanding about the brief of KM questionnaire design.

6. METHODOLOGY

This chapter explicates the research methods used in this study. The data collection of this study is carried out by a cross-country survey. The research team designed a KM questionnaire based on multiple research targets. Specifically to this study, I used most parts of the questionnaire to gain all needed data for the KM of China and Finland, as well as for the comparison of KM between China and Finland. Main topics in this chapter include: structure of the questionnaire, introduction of the measure development, pretesting of the questionnaire, data collection, data analysis method, and data reliability test.

6.1 The structure of the questionnaire

In the previous chapter, I reviewed different KM surveys. To have a good KM comparison, a questionnaire that enables a holistic KM measurement for each respondent organization is necessary. Based on previous KM researches and surveys, four main parts of the questionnaire are decided as: Descriptive information of the organizational background, knowledge processes, knowledge management practices, and performance and perceptions of KM.

In the descriptive information part, information to be collected include: the position and the working time of the respondent, the respondent's organization basic information and some other questions such as the business environment and competitiveness of the organization.

In the knowledge process part, key KM processes covered include: knowledge acquisition, knowledge creation, knowledge sharing, knowledge storage and documentation, and knowledge application.

In the knowledge management practices part, the following practices are to be examined: KM strategy, KM culture, KM leadership, HRM, organizational structure, technology and IT tools.

Finally in the KM performance and perception part, main issues covered are: how KM is generally understood by the organization, investment in KM and performance of KM.

To have a clear view of the questionnaire design, two figures are shown here. Figure 6 shows the key elements to be studied and compared in this research; Figure 7 presents the layout of the whole questionnaire.

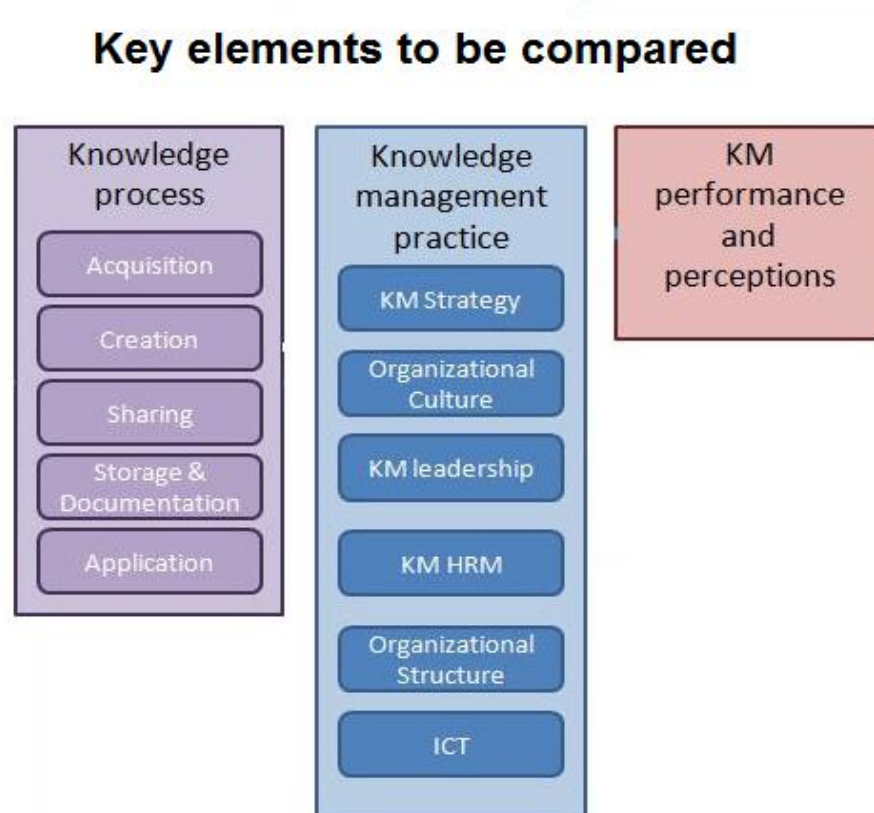


Figure 6 Key elements to be studied and compared

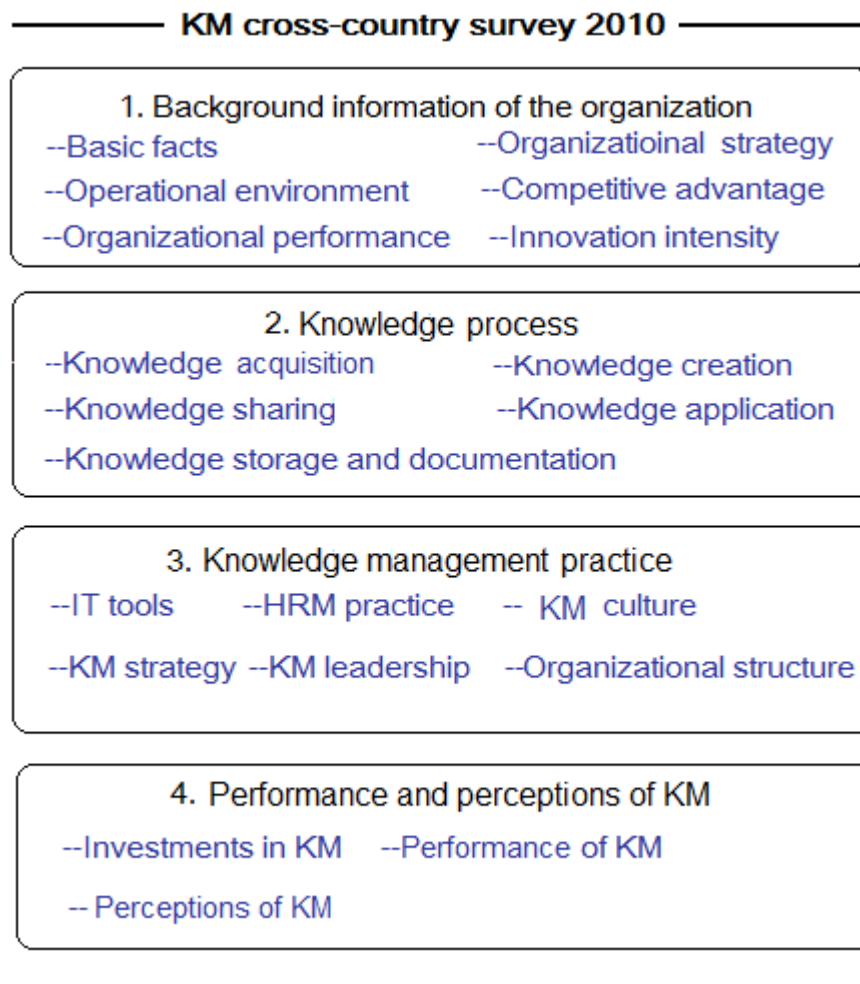


Figure 7 Layout of the KM questionnaire

6.2 Question design and development of measures

This questionnaire consists mostly of multi-item measures that have been validated by previous researchers. Various types of questions are applied in each section: filling out blanks, multiple choice, Likert-scale, and open questions.

The following sections will explain how the measures are chosen or created in this questionnaire. However, in this study not all questions in the questionnaire are needed for the data collection of this study, so I will only explain those to be used in this study.

6.2.1 Opening part and background information of the organization

In the opening part, the basic information of respondent is collected by two questions: the level of his/her position within the organization and how long he/she has been working in the company.

Then the first part of the questionnaire starts. Basic information of the organization is collected, such as the age of the organization, the number of employees in the organization, and the capital structure of the organization. This kind of information is simple and is for demographic description of respondents.

6.2.2 The knowledge process questions

This section is about knowledge processes in organizations that are related to acquisition, creation, sharing, storage and documentation, and application of knowledge.

Knowledge acquisition

In the knowledge acquisition process, the entity to acquire knowledge and the sources of knowledge acquisition are the main interests. Kianto (2008) in her ORCI survey provides very good questions. Six questions are adapted from this ORCI survey, two of them concentrate on the entity of knowledge acquisition and four questions concern the sources of knowledge acquisition.

Knowledge creation

For this process, what and how respondents create knowledge are the main concerns. The research team, targeting at what type of knowledge respondents create more, created two questions: knowledge of products

and services, or knowledge of working methods and processes. The other two questions concentrate on how organizations create their knowledge, asking if the knowledge creation process collaborates more with internal or external partners. These two questions are adapted from Kianto (2008) ORCI survey.

Knowledge sharing

In knowledge sharing, three key issues include: vertical and horizontal knowledge sharing, internal and external knowledge sharing, and sharing of both tacit and explicit knowledge. Four questions concerning the first two issues are designed by the research team; questions concerning the third issue are adapted from Kianto's (2008) ORCI survey.

Knowledge storage and documentation

For knowledge storage and documentation, questions are designed to measure if the organization actually does this and the how they store their tacit and explicit knowledge. One question is selected from research of Karadsheh (2009) about if the respondent currently engages in this process. For more detailed questions of this process, Kianto (2008) ORCI survey is again reviewed. There are seven questions in her original survey, five of them are chosen for this questionnaire. Besides these five questions, two questions about tacit knowledge storage are designed by the research team.

Knowledge application

In knowledge application, key issues are the application of internal and external acquired knowledge, how well the organization use the knowledge of their employees and the knowledge it stores. One question is borrowed from Kianto (2008) ORCI survey, asking if the organization use their current knowledge creatively. Two questions from Darroch (2003) are adapted to measure the knowledge application of employees. Then four questions were designed by the research team, asking about knowledge application in more details, such as the use of external and internal

knowledge, the use of the knowledge in database.

6.2.3 Knowledge management practice questions

In this part, six knowledge management practices are to be measured. The development of measure questions is described below.

Knowledge management strategy

This part aims to measure the practice of how the organization establishes knowledge-strategy link and if there is a focus of clear knowledge management strategy. Nine items are selected from different previous researches or created by the research team. Four questions from Kianto (2007) and McKeen (2005) are selected to measure if the organization understands what it currently knows well; if KM is regarded as a strategic resource of the organization; and what knowledge is needed to fulfil future goals. In addition, another four questions from OECD (2001) and Kruger (2007) are added to measure the development of a clear knowledge strategy inside the organization. The last question is created based on the literature of Zack (1999), which asks respondents if knowledge is regarded as an important resource.

KM culture

Organizational culture is the combination of shared history, expectations, unwritten rules, and social customs that are rarely articulated but can influence people's communicational behaviours (Jarkko, 2004). A lot of empirical studies revealed the importance of building an organizational culture of KM in facilitating knowledge processes (Davenport et al. 1998, Dorothy et al. 2006, Kristen et al. 2004). Six questions selected from KMAT (2001), Kulkarni (2003) and Steyn et al. (2008) to measure the key aspects of KM culture, which mainly include: trust and openness, perception to mistakes and drive of learning.

KM leadership

Leadership as a practice from different levels of management is very important in ensuring success in most initiatives within an organization. In case of KM, it is even more pronounced because it has a greater impact on an organization when managers model the KM activities they want to promote amongst employees. Leadership plays a crucial role in implementing and sustaining a knowledge-sharing culture as well as in facilitating and enabling knowledge processes (Jarkko 2004, Ribier 2003). In this part, we designed four questions to see who is actually leading the KM activities in respondents' organizations, the role of top and middle managers, and that of employees are measured. In addition, we ask about if the organization has dedicated people or department for KM is asked.

Human resource management

This part is concentrated on HRM practices that indirectly or directly enhance KM. Within all HRM questions, three questions are created for staffing functions, asking if the organization regard knowledge as important factor during recruitment; if they have policies to keep the retention of workers; and do they take actions in storing knowledge before the retirement of experienced employees. After questions about staffing, four questions are asked in order to investigate their remuneration policy that motivates knowledge sharing and knowledge creation. The last four questions in HRM are related to staff evaluation and training.

Organizational structure

This part consists of various questions about internal communications, division of responsibilities and job design. The first two questions ask about the horizontal and the vertical communications within the organization. Then, the next three questions are related to the division of responsibilities, such as the use of cross-functional teams and projects, and the overlap of employee responsibilities. The last three questions are concerned with job design, e.g. if the employees' working environment is good for learning by imitation and observation. Most questions in this part are created by the

research team and one question is adapted from the ORCI survey (Kianto, 2008).

Technology and ICT Tools

Technology and ICT tools are commonly used in our daily life and work. In the context of KM, many scholars have mentioned the importance of technology infrastructure and use of ICT tools. They are necessary for organizations to implement the knowledge management process. The right balance between people and technology can help organizations manage and leverage their knowledge systematically and actively (Alavi and Leidner, 2001; Hariharan, 2005; McDermott, 1999). In this part, five questions concentrate on if organizations currently use technology and ICT tools, how much they use them, and whether present tools are efficient enough to support their daily work and KM activities.

6.2.4 Performance and perceptions of KM

This is the last part of the questionnaire. The first section of this part has some open questions that are placed to collect opinions about the benefits of KM, the challenges they face in KM, the importance of knowledge to their organizations, and if they use the term “knowledge management” in their organizations. The second section of this part is KM budget and KM performance. Questions about current KM budget and expectations for future KM budget are asked; and the performance of KM is measured in four aspects: time saving, money saving, improved revenue and improved innovativeness.

So far, all questionnaire measures to be used in this study have been introduced. The whole questionnaire can be found in Appendix 1.

6.3 Pretesting of the questionnaire

Since the data needed for this research will be collected from China and Finland respectively, as soon as the beta version of the questionnaire was created in English, it was translated into Chinese and Finnish immediately. Two Chinese KM experts went through the Chinese version and made suggestions on the translation of some terminologies. After that, a back translation was done to compare with the original English questionnaire. According to Brislin (1970), this process is very important in conducting cross-cultural researches in order to have a good translation quality and no language issues.

After the language check, a pilot test was conducted by six people in different industries. The purpose of this test is to further ensure the questions in the questionnaire were clear, easily understandable, and unambiguous. The results of the pilot test revealed all these issues were fine and the questionnaire can be answered in about 25 minutes.

6.4 Data Collection

The first issue in data collection is that, in order to compare data from China and Finland, respondent companies from two countries should have similar characteristics. So, a meeting with all the research team members was held and some agreements were reached: (1) we set a size limit for the respondent company; small firms with a total employee under 50 people will be excluded from the research. (2) To have a better sample pool, some industries with similar low, medium or high growth-rates are selected from both countries, these industries branches are our main targeted respondent pool. However, in consideration of the difficulties during data collection, our survey will also be opened to those organizations out of these selected industries, to collect as many as answers.

The second issue here is the data collection tool. The survey can be conducted by means of regular post, phone call, online interview or online questionnaire. Taking all factors into consideration, online survey software “Webropol” was chosen as the tool of data collection in both countries. Firstly, this survey tool provides 24-hour accessibility to respondents; secondly, operational interface of this tool is very user-friendly; lastly, online survey tool is cost and time efficient. All these factors are crucial for a good data collection.

The third question in data collection is the means to reach our respondents. In China, this process is partly supported by Knowledge Management Centre of China (KMC). This is the biggest online KM community of China, which has about 1000 members from different industries and in different cities. At the same time, some respondents are reached through the personal network of the researcher.

6.5 Methods of analysis

After data collection, the SPSS software analyzed all data. The analysis starts from the reliability tests of the questions. Cronbach’s alpha is calculated for each scale. After that, Chinese and Finnish KM status will be summarized from the data observation. During the comparison stage, independent samples T-test is done for each single scale, to find out which country has higher scores and if there are any statistically significant differences between two countries. At the same time, supplementary comparative information will be extracted from data observation, to give as much as information.

6.6 Reliability analysis

As mentioned earlier, scale reliability is checked by calculation of Cronbach's alpha. Since the KM questionnaire is distributed in two countries, this calculation of Cronbach's alpha is adapted to the answers from both countries.

Table 5 shows the Cronbach's alpha of key scales to be studied in this study. All Cronbach's alphas are over satisfactory level of 0.7, and a lot of them are over 0.8 and 0.9, these figures show the questions in the questionnaire have very good reliabilities.

Table 5 Summary of Cronbach's alphas

Key factor	China	Finland
Knowledge acquisition	0.755	0.885
Knowledge creation	0.886	0.918
Knowledge sharing	0.904	0.829
Knowledge storage and documentation	0.932	0.889
Knowledge application	0.914	0.906
KM strategy	0.939	0.935
KM culture	0.958	0.957
KM leadership	0.842	0.700
HRM	0.921	0.914
Organizational structure	0.915	0.901
Technology and ICT	0.833	0.898
KM performance	0.932	0.874

7 RESULTS AND ANALYSIS

In this chapter, all data collected from China and Finland will be presented and analyzed. The chapter is divided into four parts: Demographic information, the results from China, the results from Finland and KM comparisons between China and Finland. Firstly, the demographic information of respondents will be presented.

7.1 Demographic information

The data collection lasted for two weeks. Altogether, 83 respondents from China filled this questionnaire. Since the sample pool in China was about 1000 people, the estimated response rate is 8.3% in China. Among all 83 respondents, there are 10 respondent companies that have less than 50 employees, so the actual eligible respondents from China are 73. In Finland, 1264 survey invitations were sent out and 94 people replied with their answers. The response rate of Finland is 7.5%. Among all 94 Finnish respondents, 10 of them did not reach the minimum employee number we required, so the eligible respondents from Finland were 84.

Table 6 and table 7 show the summaries of the key demographic information of respondents. Among 73 eligible respondents from China, 53.4 % are middle or top managers, and 43.8% are specialists. From the respondents, 93.2% have worked more than 1 year in their companies. In Finland, 70.2% of respondents are middle or top managers, and 22.6% are specialists. From the respondents, 92.9% have working experience of more than 1year in their companies. These figures show that over 90% of the respondents from both countries have had at least one year working experiences in their companies, so they know their companies well and are capable of answering most of the questions in the questionnaire.

Table 6 Demographic background 1/3/: respondents' job positions

	Respondent's job position				
	Specialist	Middle manager	Top manager	Other	Total
China	32 (43.8%)	23 (31.5%)	16 (21.9%)	2 (2.8%)	73 (100%)
Finland	19 (22.6%)	20 (23.8%)	39 (46.4%)	6 (7.2%)	84 (100%)

Table 7 Demographic background 2/3: respondents' working time

	Respondents' working time					
	≤ 1 year	1-3 years	4-10 years	11-20 years	≥ 20 years	Total
China	5 (6.8%)	18 (24.7%)	41 (56.2%)	5 (6.8%)	4 (5.5%)	73 (100%)
Finland	6 (7.1%)	16 (19.0%)	28 (33.3%)	15(17.9%)	19(22.7%)	84 (100%)

Table 8 describes the capital structures of the respondents companies. In China, 63% are total domestic companies, 39% have partly or total foreign capital. In Finland, over 71% are total domestic companies and 28.6% have partly or total foreign capital.

Table8 Demographic background3/3: Capital structure of respondents companies

	Capital structure of respondent company			
	Total domestic capital	Partly foreign capital	Total foreign capital	Total
China	46 (63.0%)	11 (15.1%)	16 (21.9%)	73 (100%)
Finland	60 (71.4%)	12 (14.3%)	12 (14.3%)	84 (100%)

More detailed information of all eligible respondents from two countries can be found in appendix 2.

7.2 Results from China

This section answers the first three sub-research questions of this study: (1) The status of Chinese knowledge process and (2) The status of Chinese knowledge management practices. (3) KM performance and perceptions in China. Each question will be answered by a general analysis and a

detailed analysis of each factor within the questionnaire framework.

7.2.1 Knowledge processes in China

There are five knowledge processes assessed in our research. From the overall observation of the data, among all five knowledge processes, Chinese companies received highest score in knowledge storage and documentation (M=4.19), while the lowest score was found at knowledge acquisition. A detailed view of the five knowledge processes in China is shown by figure 8.

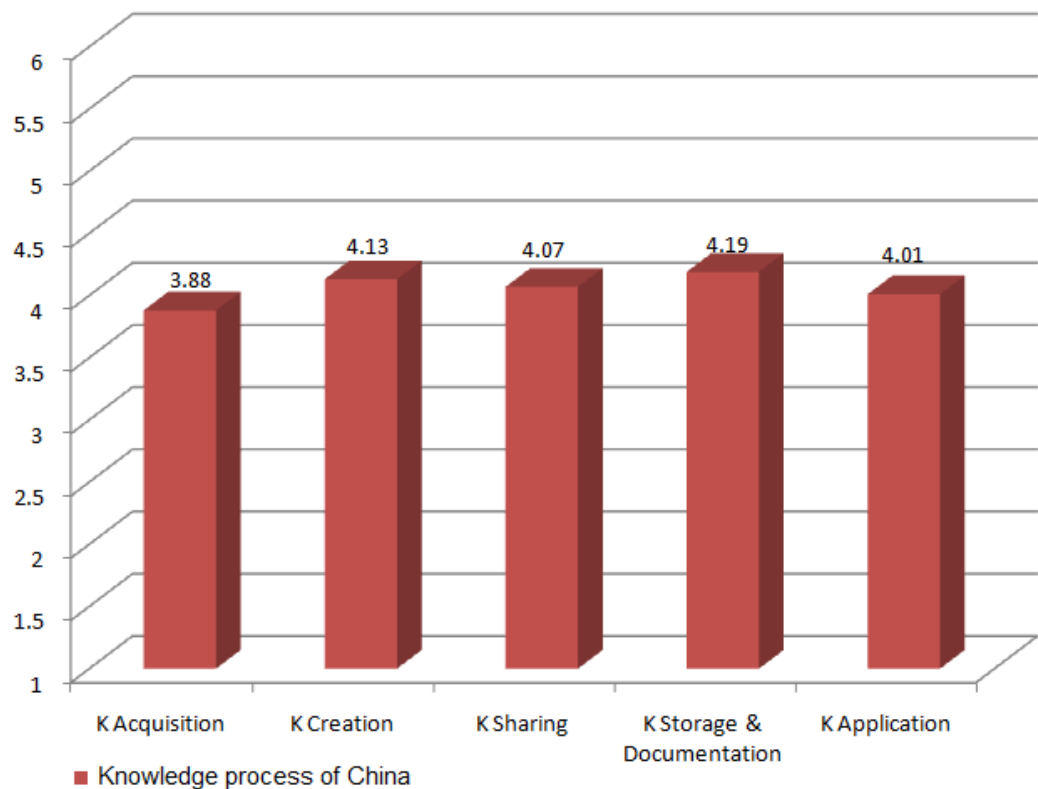


Figure 8 Knowledge processes overview of China

Having a general understanding about overall knowledge processes in China, some detailed information is provided for each knowledge process.

Knowledge Acquisition

Knowledge acquisition is ranked lowest in all five knowledge processes with a mean score of 3.88. Within this factor, the entity of knowledge

acquisition and the source of knowledge acquisition are our main concerns. Our data shows that in knowledge acquisition, organization (M=3.97) play bigger roles than employees (M=3.79). About the source of knowledge acquisition, indicated by a score of 4.50, industrial associations, clients and suppliers are seen as the first choices for Chinese companies. Competitors and public institutions such as universities and governmental labs have scores of 3.70 and 3.60 respectively; therefore these two sources are the secondary choices for Chinese companies in knowledge acquisition.

Knowledge Creation

Knowledge creation is ranked second among all knowledge processes in China. Based on the answers to this process, two facts were found. The first one is that, Chinese companies' knowledge creation in product and service (M=3.92) is on the same level of that on working methods and processes (M=3.93). The second fact is, during the course of knowledge creation, internal co-operation (M=4.44) is much stronger than external co-operation with other organizations (M=3.80).

Knowledge Sharing

Knowledge sharing has an overall score of 4.07 and ranked third in the five knowledge processes. In this process, two facts were revealed by the collected data: (1) The extent of horizontal and vertical knowledge sharing are close to each other within Chinese companies. (2) The knowledge sharing with strategic partners (M=3.92) is stronger than that with competitors (M=3.61).

Knowledge Storage and Documentation

This process is ranked first (M=4.19) among the knowledge processes. Within this process, storage and documentation of explicit and tacit knowledge were measured. Since the questions in this part did not ask about knowledge storage and documentation of tacit and explicit knowledge separately, it is hard to compare what kind of knowledge was getting more attention in this process. However, it is found that more

knowledge is stored in forms of documentation and database rather than in patents and licences.

Knowledge Application

Knowledge application is applying available knowledge into daily routines. In this process, one of the main concerns is the application of knowledge gained from internal sources and those from external sources. The data shows that the application of externally acquired knowledge ($M=4.25$) is more than those acquired from internal sources ($M=4.11$).

7.2.2 Knowledge management practices in China

There are six knowledge management practices measured in the questionnaire. From the overall glimpse of the data collected, “technology and ICT” takes the highest score of 4.29, followed by KM culture closely with a score of 4.28. Organizational structure ($M=4.24$) and KM strategy ($M=4.13$) are ranked third and fourth. After these, both KM HRM ($M=3.99$) and KM leadership ($M=3.94$) were graded lower by respondents. Figure 9 gives a virtual view of the use of all six KM practices in China.

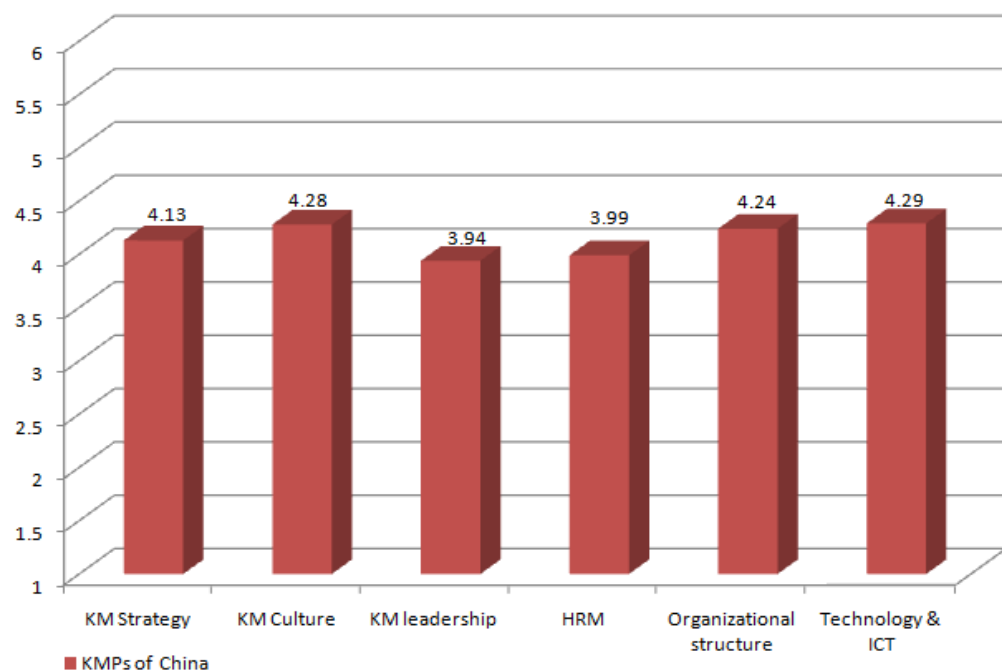


Figure 9 KM practices overview of China

As seen from the figure, it is obvious that KM leadership and KM related HRM are relatively behind other KM practices used in China. Next, more detailed facts of each KM practice will be presented.

KM Strategy

In questions about KM strategy, the perception and understanding of current knowledge within the organization, the knowledge strategy and written KM plan for future knowledge development are asked from respondents. Based on the observation of the scores received, Chinese companies regard knowledge as an important strategic source of development (M=4.24), and they have a clear understanding about what they currently know (M=4.59) and what they need to know to reach their future goals (M=4.50). However, compared to their understanding about knowledge, they have a relatively low score of 3.90 regarding having a clear KM strategy and even a lower score of 3.61 on having a written KM policy or plans. This indicates that even though knowledge is regarded as important in Chinese companies, clear knowledge strategy and written KM plan have still not yet received enough attention compared to knowledge itself.

KM Culture

Within KM culture, compared with answers to other issues, the drive of learning is highly valued by Chinese companies (M=4.58). At the same time, the perception towards mistakes (M=4.45) is very positive. Chinese people show their willingness to share lessons (M=4.32). Both successful and unsuccessful experiences are considered valuable for organizations (M=4.45). However, the perception of openness and trust (M=3.99), the perception to flexibility and desire to innovate (M=3.79) are relatively weak in KM culture. This shows that in KM culture practice, building openness and trust and to encourage flexibility are some work that need to be improved.

KM Leadership

About KM leadership, the main concerns are the body of KM leading roles and if there are any specified people or department in charge of KM. From the data collected, with a highest score of 4.29, top managers show they are more responsible than other levels of employees in leading knowledge processes. The role of middle managers and normal employees are equally graded by a score of 3.71, this is much lower than the score of top managers. In China, the allocation of specific people and department for leading KM received the lowest score of 3.64 in all questions concerning KM leadership, this shows this kind of KM leadership is a relatively little used knowledge process in China.

HRM

Four key HRM practices are measured under this scale: staffing, evaluation of employees, incentive policy and trainings. Among these four practices, Chinese companies pay more attention to staffing and training issues, while respondents graded incentive policy and evaluation of employees lower. For the incentive policy, a deeper observation is done to have a better understanding about the structure of incentives for knowledge sharing and creation. As Figure 10 shows, Chinese companies have more emphasis on knowledge creation when using both tangible and intangible incentives. Tangible incentives were used more than intangible incentives in knowledge creation; however it is slightly less used than intangible incentives in knowledge sharing.

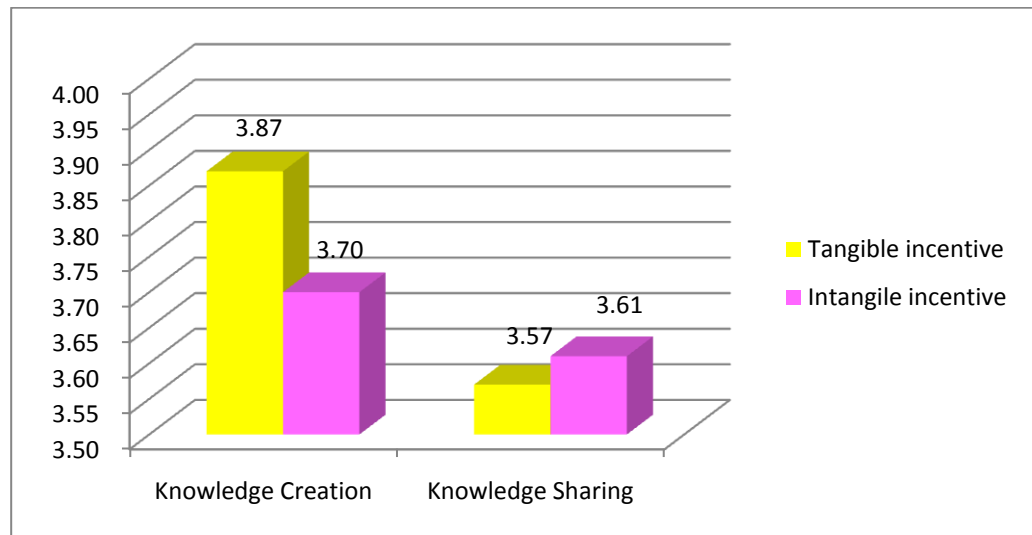


Figure 10 Incentives for knowledge creation and sharing in China

Organizational Structure

Within organizational structure, it is found that Chinese companies encourage learning-by-doing ($M=4.68$) within the work processes; however, the arrangement of work processes in a knowledge sharing friendly way has a lower score of 4.17. This indicated a lack of supporting actions to promote learning-by-doing in Chinese companies. In ways of communication, discussion between managers and employees ($M=3.99$) is graded much lower than informal communications among peoples from different departments ($M=4.45$). The reason of this point can be partly found in the previous research of Weir and Hutchings (2005), in which they pointed out Chinese employees are reluctant to share information with managers, and that Chinese managers do not feel comfortable in receiving advice or information from people on a lower hierarchy.

Technology and ICT

For this KM practice, two issues are concerned: (1) whether companies use technology and ICT tools; (2) The sufficiency of the existing technology and ICT tools. Collected data shows that in China, the popularity of the using KM software systems ($M=3.67$) is much lower than that of common ICT tools such as e-mails and intranet ($M= 4.39$). About the sufficiency of technology and ICT tools, the sufficiency level of supporting knowledge sharing process along value chain ($M=3.80$) is relatively low in China. The

sufficient level of technology and ICT is highest in supporting normal daily work ($M=5.17$), and is second best in supporting management decision making ($M=4.27$).

7.2.3 Performance and perceptions of KM in China

KM performance is also measured and some open questions are asked in the questionnaire to find some other perceptions of KM in China. Below is the summary of main findings from this part.

KM Performance

In KM performance, the extent of KM's effects is measured along four aspects: time saving, money saving, revenue increase and improved innovativeness. Among these four aspects, "Improved innovativeness" ($M=4.29$) got the highest score, which indicates the KM's effects are best shown in improved innovativeness in Chinese companies. Time saving ($M=4.21$) is the second best affected aspect of KM in China. However, KM's performance in money saving ($M=3.91$) and revenue increase ($M=3.93$) are relatively low in China. Figure 11 shows the KM performance in these four aspects visually.

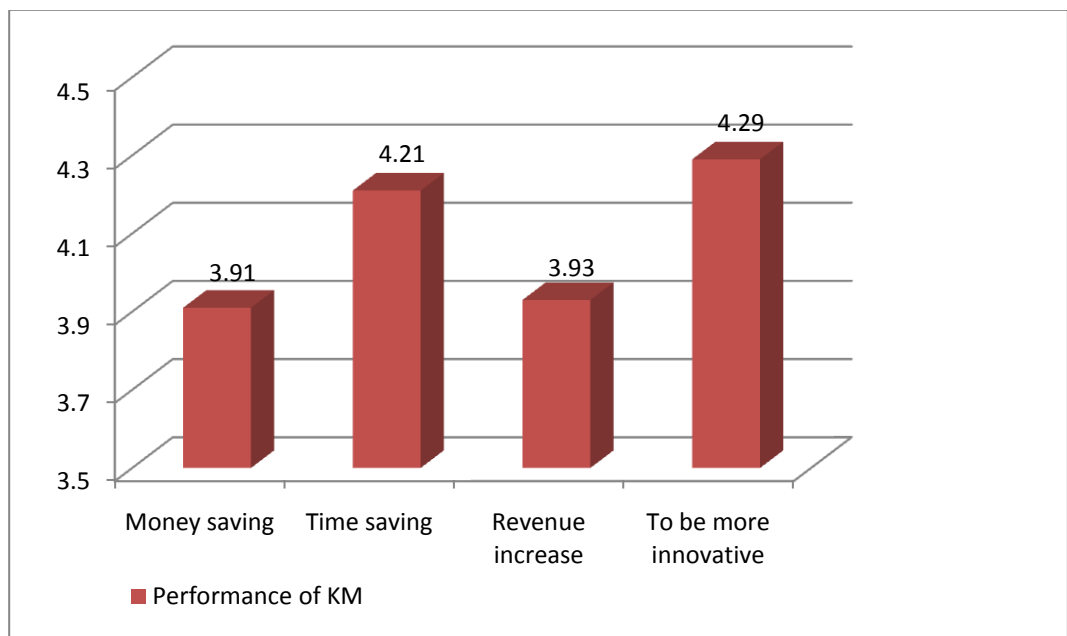


Figure 11 KM performance of China

The popularity of the term “Knowledge Management”

In China, 35 of 73 respondents (48% of all respondents) say that their organization use the term “Knowledge Management” to label the activities related to more efficient usage of knowledge. Amongst those who don’t use this term, “study” and “training” were the mostly used words to describe their KM activities.

Challenges of KM faced by Chinese Companies

About challenged faced by Chinese companies. Some challenges mentioned the most include:

- Lack of time
- Lack of management support
- Lack of efficient KM tools
- It is difficult to apply KM to all levels of people within the organization

Dedicated KM budget and Expectation for future Budget

Among Chinese respondents, only 27 respondents (37% of total) say their companies currently have dedicated budget for KM activities, while others said “No” or “I don't know”. However, when asking about future expectations, 58% percent support dedicated budget for future KM and almost the same amount of respondents want to keep this budget increasing in the next two years. These figures show a strong demand from Chinese companies to implement KM and a desire to get more financial support for KM in the coming future.

7.3 Results from Finland

In this part, data collected from Finnish respondents will be presented and analyzed. Still, knowledge processes, knowledge management practices and KM performance and perception in Finland will be analyzed separately.

7.3.1 Knowledge processes in Finland

Among all five knowledge processes investigated in this research, Finnish people gave knowledge application the highest score of 3.73. The second highest ranked knowledge process is knowledge creation ($M=3.61$), the third highest ranked is knowledge acquisition ($M=3.57$). Knowledge sharing ($M=3.32$) and knowledge storage and documentation ($M=3.31$) received relative low scores and ranked as the last two among all five processes. Figure 12 shows the overall scores for knowledge process in Finland, knowledge sharing, knowledge storage and documentation are far behind other knowledge processes.

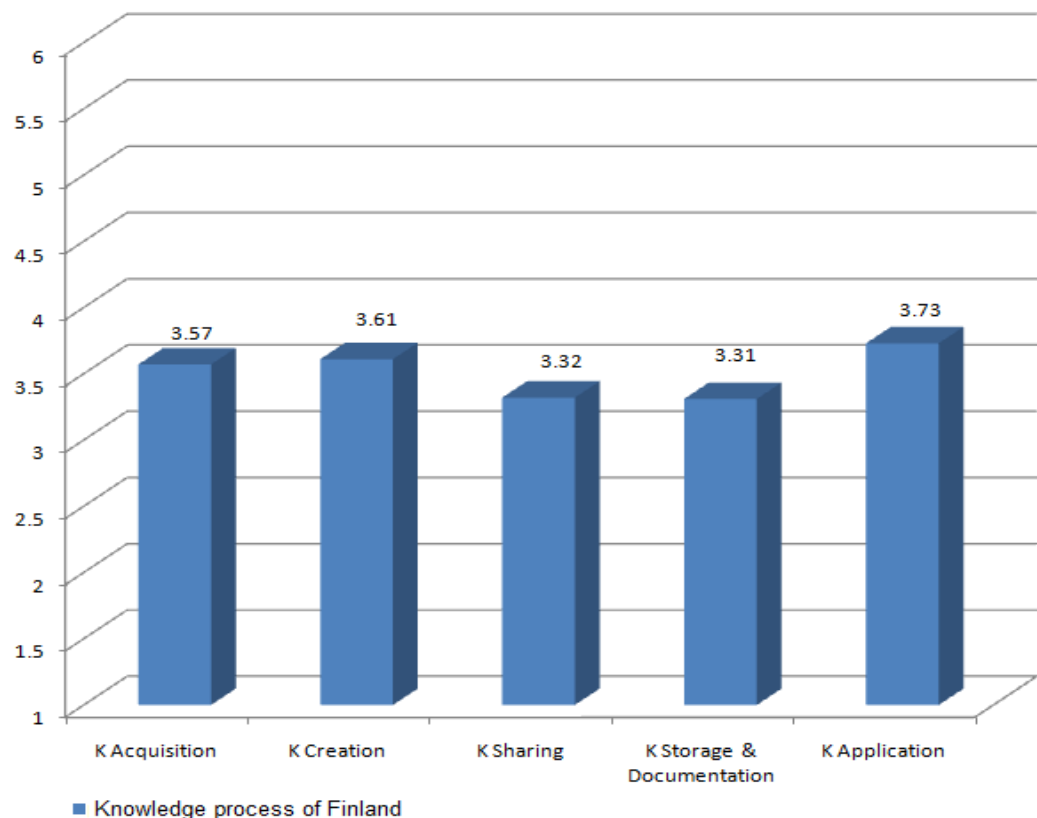


Figure12 Knowledge processes overview of Finland

Knowledge Acquisition

In knowledge acquisition, the staff plays a more important role in Finnish companies as the entities of knowledge acquisition (with $M=3$ for companies.⁴⁹ and $M=3.33$ for employees). About sources of knowledge

acquisition, Finnish companies choose suppliers, customers and industrial associations as their first choice (M=3.89) of knowledge acquisition, competitors (M=3.63) and public institutions (M=3.11) as knowledge acquisition sources were placed far behind.

Knowledge Creation

Knowledge creation is ranked second among knowledge processes in Finland. As seen from the data, knowledge creation in products and services (M=3.45) are weaker than knowledge creation on working methods and processes (M=3.54). For the internal and external cooperation during knowledge creation, internal cooperation (M=3.54) is higher than external cooperation (M=3.47).

Knowledge Sharing

With a score of 3.32, knowledge sharing is ranked fourth among all knowledge processes in Finnish companies. A fact that was found out was that, in horizontal internal knowledge sharing, knowledge sharing between units (M=3.11) is weaker than that of knowledge sharing inside units (M=3.65). In external knowledge sharing, knowledge sharing with strategic partners (M=3.44) is much more active than with competitors (M=2.51).

Knowledge Storage and Documentation

Knowledge storage and documentation (M=3.31) is ranked at the bottom among all knowledge processes. This part measures the storage and documentation of both tacit and explicit knowledge. In this process, more knowledge is stored in forms of documentation and database than in patents and licences.

Knowledge Application

Knowledge application ($M=3.73$) is ranked first among all knowledge processes in Finland. The main question is about the use of the organization's available knowledge. From the data, the application of externally acquired knowledge ($M=3.46$) is stronger than the application of internally acquired knowledge ($M=3.31$).

7.3.2 Knowledge management practices in Finland

Six knowledge management practices are measured in this part. Among them, knowledge management culture ($M=4.35$) was the best used in Finland. Knowledge management strategy ($M=3.99$) took the second place, after that is technology and ICT ($M=3.88$). Knowledge management leadership ($M=3.84$) and organizational structure ($M=3.82$) are ranked in the fourth and fifth positions. Finally, knowledge management HRM has the lowest score with 3.35. Figure 13 gives a visual view of the overall KM practices in Finland.

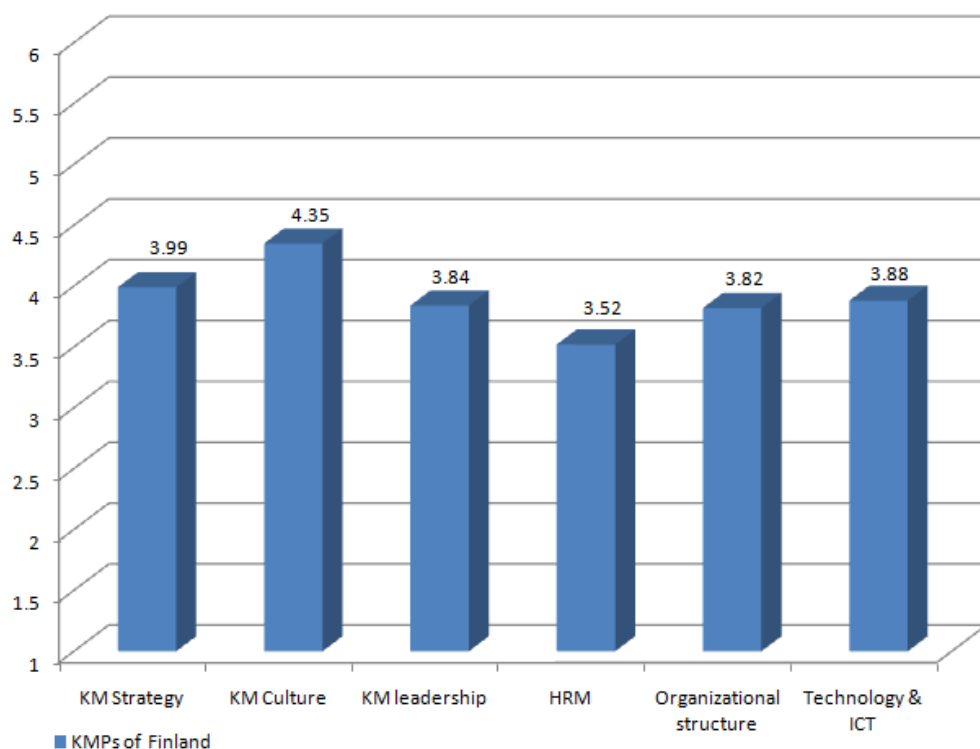


Figure 13 KM practices overview of Finland

Knowledge Management Strategy

Based on all answers to the questions under knowledge management strategy, Finnish companies understand the core knowledge they currently have (M=4.72) well and the knowledge they need to know to reach future goals (M=4.57). They also regard knowledge as a strategic resource (M=4.59) and regard knowledge as a key element in planning (M=4.33). However, Finnish companies have much lower scores in having a clear knowledge strategy (M=3.72) and a written KM policy (M=3.15) .

Knowledge Management Culture

According to the data collected, flexibility and the desire to innovation (M=4.53), trust and openness (M=4.45), were given the highest scores from Finnish respondents under KM culture. These are highly valued compared to other issues such as the willingness to share mistakes, acceptance of value of unsuccessful lessons in Finnish KM culture. Also in Finnish companies, the encouragement for collaboration has the lowest score (M=4.21) in KM culture questions.

Knowledge Management Leadership

In Finland, the KM leadership from top managers (M=4.37) and employees (M=4.35) are higher than the role of middle managers (M=4.01). Placing a dedicated person or department in leading KM (M=2.49) has a very low score, indicating this kind of leadership in Finnish KM is still weak.

Knowledge Management HRM

In HRM practice, the data shows that questions about incentive policy received the lowest scores among all HRM questions. This indicates that Finnish companies put relatively low emphasis on incentive policy than other HRM practices. Having a more in-depth view at incentive practices of Finnish companies, intangible incentives are used more than tangible

incentives in both knowledge sharing and knowledge creation processes, as figure 14 shows.

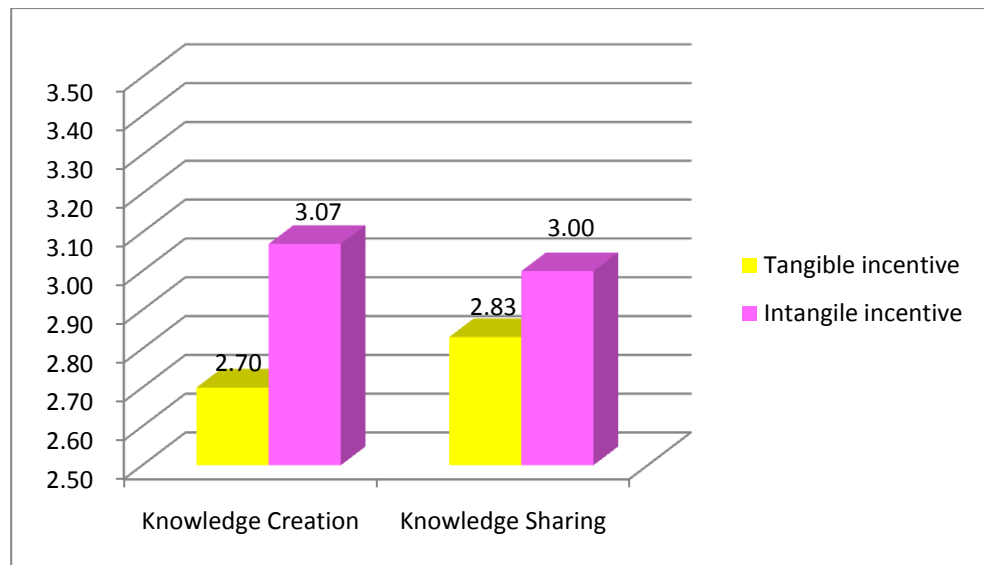


Figure 14 Incentives for knowledge creation and sharing in Finland

Organizational Structure

The way of learning within work processes, communication within the company and the structure of the company are main concerns of organizational structure. Finnish companies show a high intention to encourage learning-by-doing with the highest score of 4.41. However, the arrangement of a knowledge sharing friendly environment got a lower score ($M=3.71$). In daily communications, Finnish companies have a higher score ($M=3.88$) in vertical talks between managers and employees than horizontal communications between different units ($M=3.26$).

Technology and ICT

For this KM practice, two issues are discussed: (1) whether companies use technology and ICT tools; (2) The sufficiency of the existing technology and ICT tools. The use of special KM software ($M=3.71$) is weaker than the use of normal technology and Internet tools ($M=4.24$) in Finnish companies. About the efficiency of the technology and ICT tools, Finnish companies

rate the ICT efficiency in sharing knowledge with other organizations ($M=3.91$) higher than efficiency in supporting normal daily works ($M=3.82$) and in decision making ($M=3.77$).

7.3.3 Performance and perceptions of KM in Finland

Performance of KM

As mentioned earlier, four kinds of performances of KM are measured: time saving, money saving, revenue increase and “Becoming more innovative”. In Finnish companies, two highly recognized KM performances are time saving and “Becoming more innovative”, which received the same high scores ($M=3.62$) from respondents; on the contrary, increasing revenue and money saving in comparison have lower scores of 3.42 and 3.44 respectively. Figure 15 gives a detailed view of KM performance in Finland.

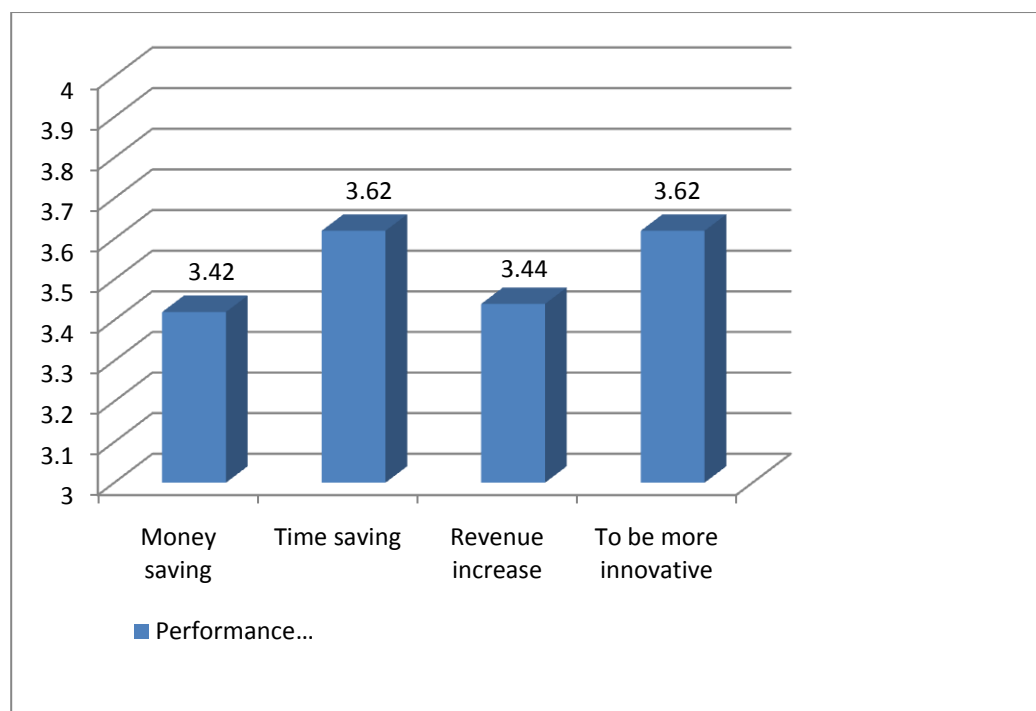


Figure 15 KM Performance of Finland

The popularity of the term “Knowledge Management”

According to the collected data of Finland, 64% of the respondents

companies use the term “Knowledge Management” to label their activities related to KM. Among those who do not use this term, “studying and training” are the most mentioned terms. At the same time, some other terms are also used to label KM activities, such as “utilization of knowledge” and “development of knowledge”.

Challenges of KM faced by Finnish Companies

About challenges mentioned by respondents faced by Finnish companies include:

- Lack of top management support
- Application of using new technology and working methods
- Employee retention
- Knowledge storage of experienced and retired employees
- Efficient sharing and application of tacit knowledge
- Knowledge acquisition from clients

Dedicated KM budget and Expectation for future Budget

About current dedicated spending on KM, 54 of 84 respondents (64% of total respondents) say their companies do not have this. However, when asking about future budget of KM, 43% of the respondents want their companies have this budget in the future; 32% of the respondents want the budget for KM to keep increasing in the next two years. This shows a huge need for a dedicated budget for KM is huge in Finnish companies, for Finnish KM, more financial supports are needed.

7.4 KM comparison between China and Finland

In this part, the data from two countries is compared with each other. Based on the structure of the questionnaire, knowledge processes, knowledge management practices, Knowledge performance and perceptions will be compared between China and Finland. For the quantitative data in knowledge process, knowledge management practices and knowledge management result part, independent-samples T test is done for each

process or practice after the check of the normality of distributions of answers. Besides independent-samples T test, observations are conducted for the data collected as a supplementary comparison to find either common or different points in KM of China and Finland. For questions asked in open questions, observations are also the main methods of comparison.

7.4.1 Comparison of knowledge processes

Both independent-samples T tests and observations are conducted for all knowledge processes; it is found that China has higher scores in all knowledge processes. At the same time, four of five knowledge processes show significant differences between China and Finland. Figure 16 gives an overview of the knowledge process comparison between China and Finland. T-test comparative results are presented for each process.

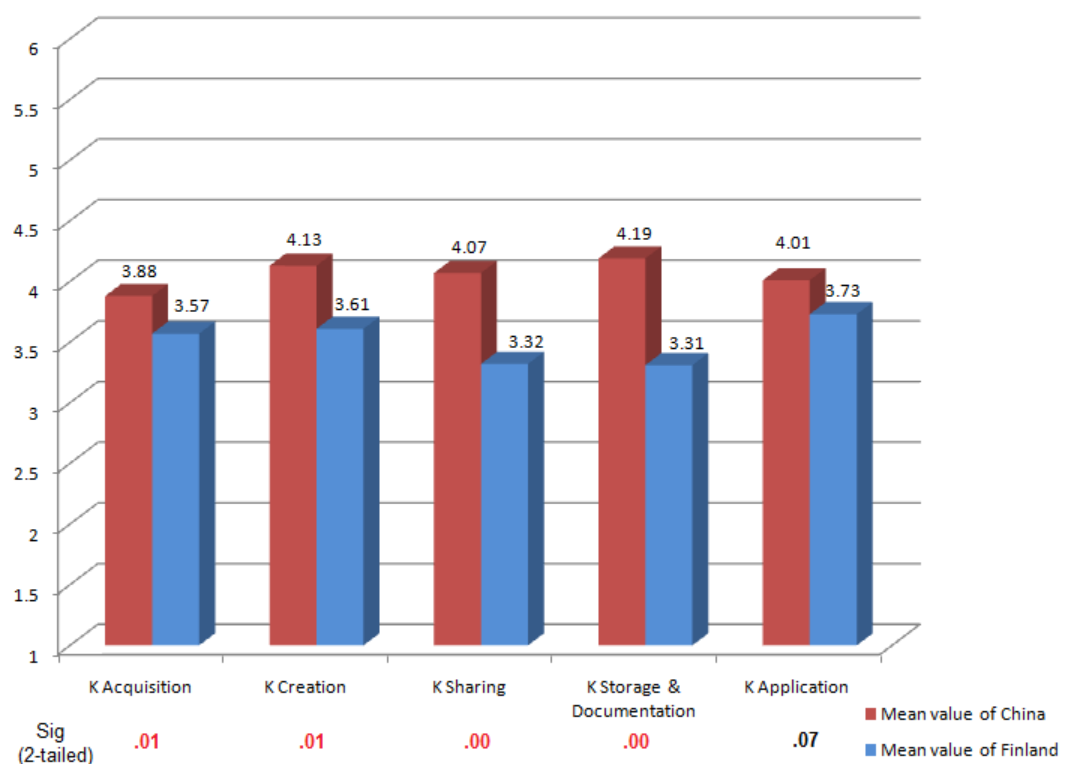


Figure 16 Comparisons of Knowledge Processes between China and Finland

Knowledge Acquisition

Chinese companies seem to put more effort in knowledge acquisition than Finnish companies. In comparison of knowledge acquisition, there is significant difference in scores for China ($M=4.01$, $SD=.98$) and Finland ($M=3.57$, $SD=1.00$); $t(155)=2.77$, $p=.01$ (two-tailed). The magnitude of the difference in means (mean difference=.44, 95% CI: .12 to .75) is very small ($\eta^2=.05$).

Knowledge Creation

About knowledge creation process, Chinese companies have a higher score than Finnish companies. There is a significant difference in scores for China ($M=4.13$, $SD=1.24$) and Finland ($M=3.61$, $SD=1.08$); $t(154)=2.81$, $p=.01$ (two-tailed). The magnitude of the difference in means (mean difference=.52, 95% CI: .15 to .88) is small ($\eta^2=.05$).

Knowledge Sharing

Looking at the scores, it seems that Chinese companies conduct more knowledge sharing than Finnish companies. The reason of this finding may be found in previous literatures. Chinese people are more likely to share knowledge due to their highly collective way of thinking and their intentions to share knowledge within their personal network (Lin and Kwok, 2006). But Finns are more introvert and expect independence from others, and it is difficult to lower the knowledge sharing barriers between individuals (Karppinen, 2006). With the T-test, there is significant difference in scores for China ($M=4.07$, $SD=1.16$) and Finland ($M=3.32$, $SD=.78$); $t(155)=4.71$, $p=.00$ (two-tailed). The magnitude of the difference in means (mean difference=.76, 95% CI: .44 to 1.08) is moderate ($\eta^2=.013$).

Knowledge Storage and Documentation

About this knowledge process, Chinese companies got higher scores than Finnish companies. There is a significant difference in scores for China ($M=4.19$, $SD=1.21$) and Finland ($M=3.31$, $SD=.97$); $t(155)=5.03$, $p=.00$ (two-tailed). The magnitude of the difference in means (mean

difference=.88, 95% CI: .53 to 1.22) is moderate (eta squared=.14).

Knowledge Application

As for knowledge application, Chinese companies also got higher scores than Finnish companies, but there is no significant difference between China (M=4.04, SD=1.13) and Finland (M=3.73, SD=.95); $t(154)=1.85$, $p=.07$ (two-tailed). The magnitude of the difference in means (mean difference=.31, 95% CI: -0.02 to .63) is very small (eta squared=.02).

Supplementary Information of Knowledge Process Comparison

During the course of data analysis, observation is also conducted to the data and there are some supplementary information for KM process comparison of China and Finland. From the observation, either commonality or difference in each knowledge process is found. These results are summarized below.

- (1) Among sources of knowledge acquisition, both China and Finland choose suppliers, customers and industrial institutions as their first knowledge acquisition source. Competitors and public institutions are secondary choices of knowledge acquisition for both countries. According to Hong and Olanders (2010), their research conducted in China and in Finland found that the collaboration between business organizations and public institutions depends more on the formal governance, familiarity and long-term relationships. So the reason why suppliers and customers are first choices of knowledge acquisition may come from the fact that these partners along value chain are more easily accessed and the relationships with them are more stable. It is understandable knowledge acquisition from competitors is always difficult and was ranked last among all knowledge acquisition sources.
- (2) In the knowledge creation process, internal collaboration is stronger than external collaboration in both countries.

- (3) For both countries, knowledge sharing inside the unit is stronger than that of inter-unit sharing; in addition, external knowledge sharing with partners is stronger than that with competitors. The finding concerning knowledge sharing inside organizations is interesting. According to Weir and Hutchings (2005), in China personal networks generally operate on a departmental basis and the information is only shared within departments than with other departments. Now it seems the situation is the same within Finnish companies.
- (4) In knowledge storage and documentation, more knowledge is stored in documents and database than in patents and licence forms, for both China and Finland.
- (5) The application of external acquired knowledge is stronger than internal shared knowledge, in both countries.

To summarize comparison of knowledge processes, China has higher scores in all knowledge processes than Finland; at the same time, China and Finland have significant differences in four knowledge processes, knowledge application is the only knowledge process that these two countries do not have a significant difference. Among those processes with significant differences, the magnitudes are small in knowledge acquisition and creation, and are moderate in knowledge sharing and knowledge storage and documentation.

7.4.2 Comparison of knowledge management practices

For six knowledge management practices, the T test was again conducted for each practice. While the scores from China are again higher than those from Finland in five of the six practices, half of the knowledge management practices have significant differences statistically between these two countries. Observation is still conducted as a supplementary comparison of

knowledge management practices. Figure 17 gives a visual view of overall comparison of knowledge management practices.

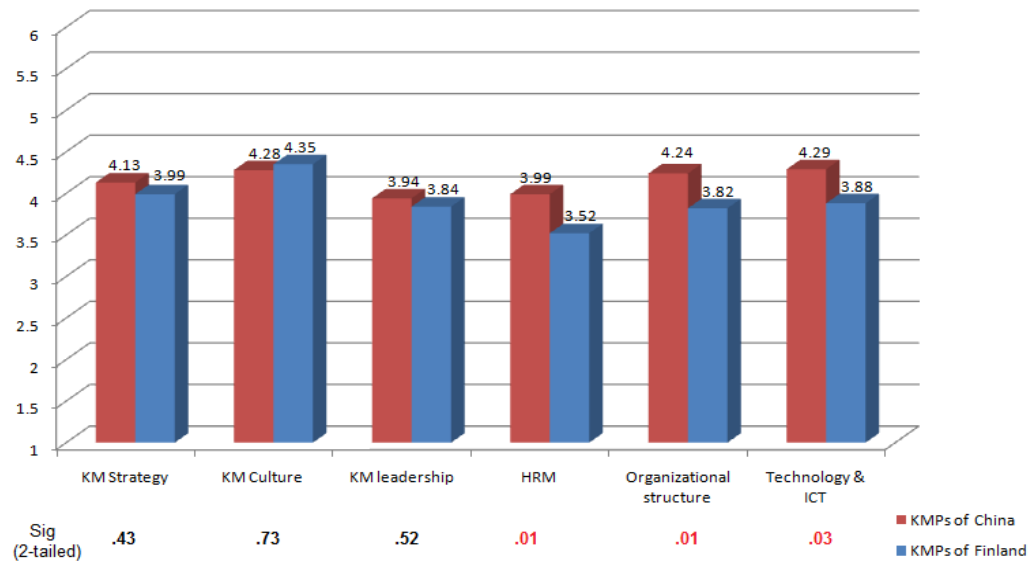


Figure 17 Comparisons of KMPs between China and Finland

Knowledge Management Strategy

About the knowledge management strategy, there is no significant difference between China ($M=4.13$, $SD=1.19$) and Finland ($M=3.99$, $SD=1.03$); $t(153)=-.78$, $p=.44$ (two-tailed). The magnitude of the difference in means (mean difference $=-.14$, 95% CI: -0.21 to $.49$) is very small (eta squared $=.00$).

Knowledge Management Culture

In the comparison of culture, no significant differences are found in scores for China ($M=4.28$, $SD=1.35$) and Finland ($M=4.35$, $SD=1.12$); $t(154)=-.35$, $p=.73$ (two-tailed). The magnitude of the difference in means (mean difference $=-.07$, 95% CI: -0.46 to $.32$) is very small (eta squared $=.00$).

Knowledge Management Leadership

In knowledge management leadership, there is no significant difference between China ($M=3.94$, $SD=1.39$) and Finland ($M=3.84$, $SD=.996$); $t(152)=.52$, $p=.52$ (two-tailed). The magnitude of the difference in means (mean difference $=.10$, 95% CI: -0.28 to $.48$) is very small (eta

squared=.00).

Knowledge Management HRM

For knowledge management HRM, a significant difference was revealed in scores for China (M=3.99, SD=1.13) and Finland (M=3.52, SD=.96); $t(155)=2.83$, $p=.01$ (two-tailed). The magnitude of the difference in means (mean difference=.47, 95% CI: .14 to .80) is small (eta squared=.05).

Organizational Structure

In organizational structure, there is a significant difference revealed in scores for China (M=4.24, SD=1.08) and Finland (M=3.82, SD=.90); $t(153)=2.69$, $p=.01$ (two-tailed). The magnitude of the difference in means (mean difference=.43, 95% CI: .11 to .74) is small (eta squared=.05).

Technology and ICT

In technology and ICT, there is a significant difference between China (M=4.29, SD=1.15) and Finland (M=3.88, SD=1.16); $t(153)=2.21$, $p=.03$ (two-tailed). The magnitude of the difference in means (mean difference=.41, 95% CI: .04 to .78) is small (eta squared=.03).

Supplementary Information of KMP Comparison

During the analysis of data, some facts are observed from the respondents' answers, this gives supplementary information for KM practice comparison, either common or different points in knowledge management practices are found, which are listed below.

- (1) In China and Finland, the perceptions of knowledge as a strategic resource and as a key element in strategic planning are higher than scores of "having a clear strategy" and "a written KM policy". This indicates a lack of explicit KM strategy or plan in both countries.
- (2) In knowledge management culture, the recognition of openness, trust and flexibility in Finnish organizations are much higher valued than

other cultural factors. However, Chinese companies give higher scores to the acceptance of mistakes and the willingness to share unsuccessful lessons than other culture factors. This shows the different emphasis of two countries in KM culture building.

- (3) In knowledge management leadership, the top managers are more responsible for KM activities than middle managers and employees in both countries. At the same time, the scores for a dedicated KM officer or department are ranked much lower in both countries; this means this kind of leadership of KM is still weak in both China and Finland.
- (4) Observation concentrates on incentive policy inside HRM. For knowledge creation, Chinese companies use more tangible incentives than intangible incentives, on the other hand, Finnish companies use more intangible incentives than tangible incentives. For knowledge sharing, both Chinese and Finnish companies prefer to use more intangible than tangible incentives.
- (5) About organizational structures, both China and Finland highly value and encourage “learning by doing”. However, the grades are much lower in providing a working environment in which different people can learn with each other by sharing experience, observation and imitation.
- (6) In using technology and ICT, knowledge management software is less popular than the use of normal ICT tools in both countries.

To summarize, China and Finland have significant differences in three of the total six knowledge management practices studied in this research, they are KM HRM, organizational structure and the use of Technology and ICT. Chinese companies use these practices more frequently than Finnish companies.

7.4.3 Comparison of knowledge management performance and perceptions

Knowledge management performance

In knowledge management performance, there is significant difference between China ($M=4.13$, $SD=1.25$) and Finland ($M=3.55$, $SD=1.15$); $t(137)=2.87$, $p=.01$ (two-tailed). The magnitude of the difference in means (mean difference=.59, 95% CI: .18 to .00) is moderate ($\eta^2=.06$).

Four kinds of performance are measured in this scale. From observation, it is found that KM performance in innovativeness is ranked as the highest in both countries. At the same time, Finnish companies also rank KM performance in time saving as high as KM performance in innovativeness. Figure 18 shows the KM performance in four aspects in these two countries.

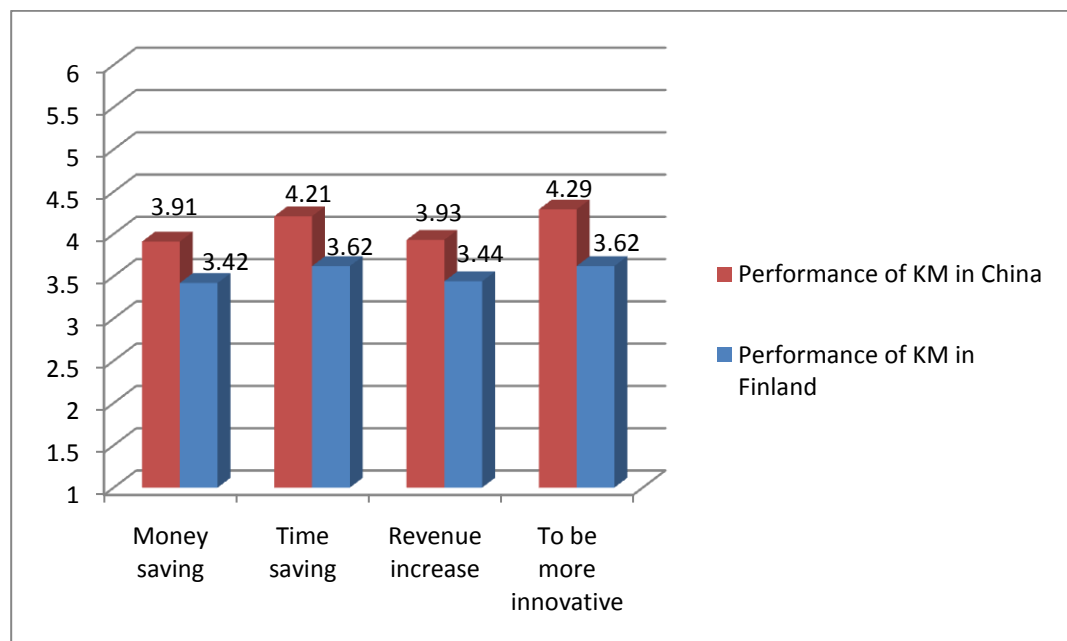


Figure 18 Comparison of KM performance between China and in Finland

The popularity of the term “Knowledge Management”

The use of the term “knowledge management” is high in both countries. 64% of Finnish companies and 48% of Chinese companies use this term to label

their KM related activities. Among those who do not use this term, the mostly mentioned terms from both countries are “study” and “training”. In Finland, some other terms used are “utilization of knowledge” and “development of knowledge”.

Challenges of KM faced by Chinese Companies

In the earlier section, KM challenges faced by each country were introduced. In comparison, there are two challenges that exist in both China and Finland: lack of time and lack of management support.

Among all answers, Finnish respondents mentioned more challenges than Chinese respondents. At the same time, Finnish respondents give a strong emphasis on the challenges in KM related HRM. Main concerns in HRM from the Finnish side include: employee retention, knowledge storage of experienced and retired employees. Sharing and application of tacit knowledge and knowledge acquisition from clients were also mentioned by Finnish respondents.

Dedicated KM budget and Expectation for future Budget

Currently, only 37% and 36% of respondents companies have dedicated KM budget in both countries. This indicates that the current KM in both countries does not have special allocation of funds. The situation may be either due to the lack of attention to KM or comes from the financial crisis in the past two years. However, when asking about expectations of future KM spending, 58% of Chinese respondents and 43% of Finnish respondents expect their company to have a dedicated budget for KM. Meanwhile, most of these respondents want to have this budget increased in the next two years. This shows great a desire for KM itself as well as a demand for financial support for KM activities in companies in China and Finland.

8. CONCLUSIONS

This chapter is the closing chapter of this study. Summary and conclusions are drawn in section 8.1. A few interesting issues related to this study are discussed in section 8.2. Last but not the least, some limitations of this research and future research directions are mentioned in section 8.3.

8.1 Summary and conclusion

This study was a cross-country comparison of knowledge management between China and Finland. The aim is to provide a holistic view of contemporary KM in China and Finland, as well as a systematic comparison of KM between these two countries.

To achieve this, a well-structured questionnaire tool was developed based on previous researches and from the fresh ideas of an international research team. In the questionnaire, five knowledge processes, six knowledge management practices, and knowledge performance and perceptions were measured by a series of specially designed questions. Of all effective respondents, 73 came from China and 84 came from Finland. In both countries, detailed insights of all knowledge process, knowledge management practices, KM performance and perceptions are studied.

In China, knowledge storage and documentation is ranked first in all knowledge processes. Technology and ICT is the best used KM practices.

KM performance is best expressed in the form of improved innovativeness. Almost half (48%) of the Chinese respondent companies use the term “knowledge management” to label their knowledge related activities and most of them want to have dedicated budget for KM in their organizations in the coming future.

In Finland, knowledge acquisition is ranked as the highest knowledge process. In six knowledge management practices, KM culture reached the highest score than the other practices. About KM performance, both improved innovativeness and time saving are highest valued. Over 60% of Finnish companies already use the term “knowledge management” in their KM activities and there is a huge expectation from Finnish respondents for dedicated and increased KM budget in the coming future.

After a comparison between Chinese and Finnish KM, some conclusions are drawn concerning knowledge process, knowledge management practices, and knowledge management performance and perceptions.

- (1) In knowledge processes, Chinese companies act significantly stronger than Finnish companies in knowledge acquisition, knowledge creation, knowledge sharing and knowledge storage and documentation. In knowledge application, China and Finland do not have a significant difference.
- (2) In knowledge management practices, Chinese companies act significantly stronger than Finnish companies in knowledge management HRM, organizational structure and Technology and ICT. In KM strategy, KM culture and KM leadership, Chinese companies and Finnish companies did not differ significantly.
- (3) In knowledge management performance, improved innovativeness is valued the highest by both China and Finland. This indicates that the role of KM is very important in improving innovativeness for both countries. About perceptions of KM, nowadays the term of “knowledge management” is well accepted by a large amount of companies (48% of Chinese companies and 64% of Finnish companies) of two countries. The expectation and desire for dedicated future KM budget is strong

from both countries. The common challenges faced by two countries are: the lack of time and the lack of management support

8.2 Discussions

Higher scores from China

From the results of the study, it is seen that China has higher scores in almost every scale in knowledge process and KM practices. While respecting the data collected during the research, it is interesting to think about the reasons of this.

In my opinion, three possible reasons may cause this. The first reason is that the data collection process was cooperated with the Knowledge Management Centre in China; therefore, most of respondents are members of the KM online community. This particularity of Chinese samples may partly caused the higher scores from Chinese respondents.

The second reason for the higher Chinese scores may come from the fact that, while most of respondents come from more economically developed areas in China, 27 of total 73 respondents (equals to 37%) come from joint-venture or wholly foreign-owned enterprises. Since the management of these kinds of companies is very modern and is influenced by their headquarters overseas, respondents from these companies naturally gave higher scores when they were filling in the questionnaire. Since almost 40% of respondents come from these kinds of companies, their ratings may brought the overall scores higher in the whole respondent pool. It is also a hint that current Chinese KM is heavily influenced by foreign companies.

The third reason is also related with the demographic background. The number of employee from the Chinese respondents is much bigger than

those of Finnish respondents. This is inevitable in a country of with over 1.5 billion population. The average number of employees number in Chinese companies is 33,855, and the median number of employees is 700. These numbers for Finnish companies are 7337 and 134. So it is possible that in bigger companies, there may exist more complicated organizational structure and more intensive management. Therefore, people in bigger companies feel knowledge process stronger and use KM practices more frequently or intensively.

Even though China received higher scores in this research, we cannot conclude China is doing better at KM than Finland. These scores only show the extent of implementation of each process or practice of China or Finland. The efficiency and results of KM need to be measured by another set of criteria. My concentration was to compare and find something common or different, and then give advice that may be used by KM researchers or practitioners. Next, I'd like to give some comments from another way of thinking, regardless of comparisons of scores between two countries.

Towards a balanced KM

In this section, brief research results on knowledge processes and KM practices are presented another round, which gives space for more discussion.

When observing the overall knowledge processes of the two countries together (see figure 19), we can see that in China, knowledge acquisition is far behind other knowledge processes; and in Finland, the level knowledge sharing and knowledge storage and documentation are obviously lower than other knowledge processes. These lower rated knowledge processes show the potential weak points in the whole set of knowledge processes of each country.

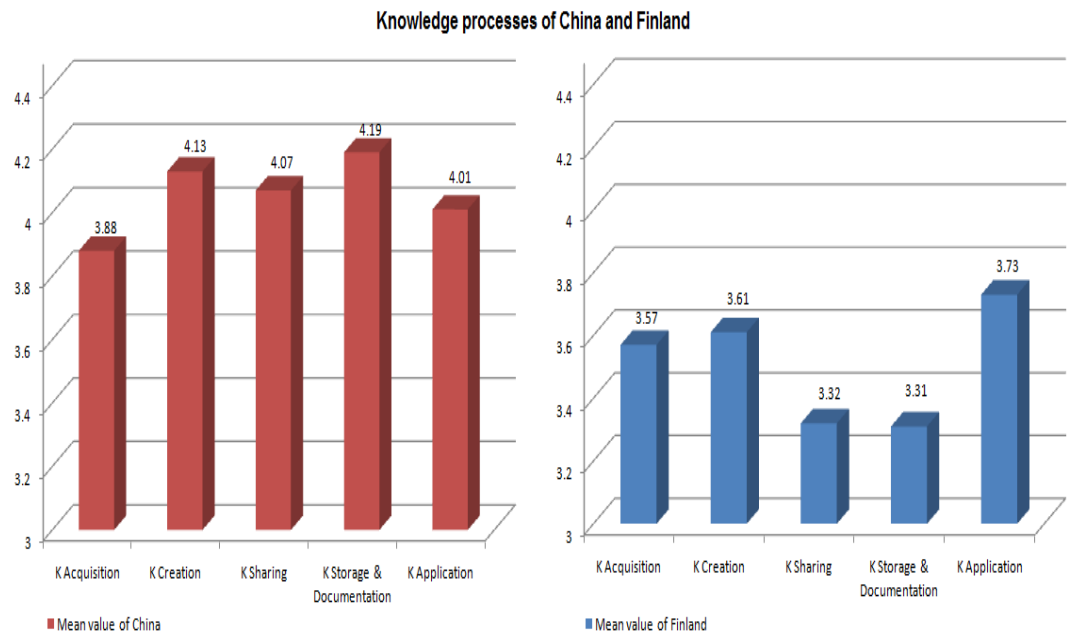


Figure 19 Knowledge processes of China and Finland

Looking at the figure 20, the same observation is done when overall KM practices of two countries were put together. The point is that in KM practices, Finland has a more balanced use whole set of KM practices, but China, two KM practices are relatively less used than others, which are KM leadership and HRM. So KM practitioners of China need to pay special attention to this if they want to reach a balanced use of all KM practices.

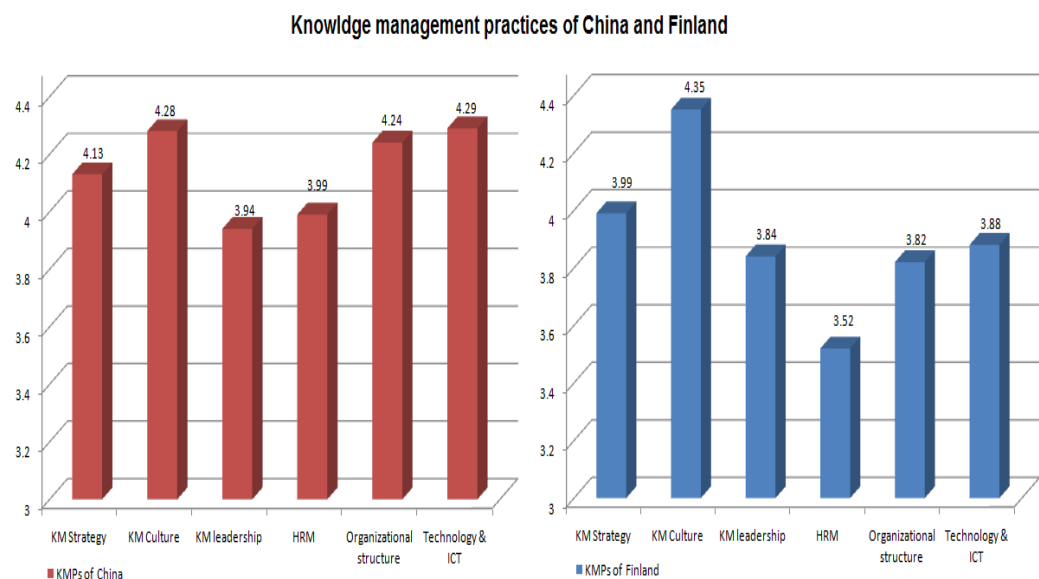


Figure 20 KM practices of China and Finland

Chinese or Finnish way of KM?

In the third and fourth chapters of this study, some the characteristics of Chinese and Finnish KM were partly discussed. It is highly interesting to know if there exists a Chinese way of KM, or a Finnish way of KM. From the results of this study, it is seem that some figures are closely in accordance with the descriptions of KM of each country in previous researches. For example: ICT and KM culture was highest scored KM practices in China, these facts verified previous researches. Knowledge sharing was graded lowest by Finnish companies, this fact also follows the findings from previous researches that Finns are introvert and independent, it is not easy for them to share knowledge with others.

In my opinion, KM in each country is heavily influenced by the local culture and local management practice. It is hard to define KM based on a national style. When trying to define KM in this national-style way, more qualitative and quantitative data are needed, at the same time, a good understanding of the national history and culture is highly required. The data collected in this research is not able to support drawing these definitions; however, the data of this research verified some characteristics of Chinese and Finnish KM revealed by previous studies, as mentioned in the last paragraph.

8.3 Theoretical and managerial contributions

Theoretical Contributions

As we mentioned in the introduction chapter, literature in KM about China is relatively limited. While the KM literature about China is emerging at a faster speed after mid-2000s, there are few articles provide a holistic view of contemporary KM situation of China. Inthe theoretical field, this research is an explorative research that investigates the contemporary knowledge management status of not only China, but also Finland. For those KM researchers who are interested in the development of KM in either China or in Finland, this research provides them with very valuable information.

First of all, this research reviews the brief history of KM research and practice of China and Finland. Secondly, the up-to-date KM situations are revealed by a well-designed cross-country KM survey, which covers detailed information about knowledge process, knowledge management practices, knowledge performance and perceptions. The results of this information are presented for each country. Furthermore, the comparison of KM in these key areas added more value to this study, from which researchers can have an understanding about the differences and some common points in the KM of two countries. This kind of information is also valuable in conducting further researches.

Managerial contributions

This research not only contributes to the theoretical field by adding KM research about China and Finland, at the same time, the information of this research is useful to KM practitioners in Chinese and Finnish companies. The managerial contribution of this study can be listed below:

- (1) The questionnaire tool developed for this study can be used as a KM measurement tool for companies to help them understand more details about their own KM holistically.
- (2) The KM survey result of each country can be used as a reference for Chinese or Finnish KM practitioners to compare their own KM with the average scores of their own country. In this way, they can see in which knowledge process and knowledge management practice they are behind in, on par with, or ahead of average levels of their country.
- (3) For either Chinese or Finnish companies who are operating or are going to operate business in the other country of these two, the results of this study can help them understand the KM situation in the other country and may help them prepare their future KM actions better.

- (4) Especially for KM business consulting companies, the results of this study can be valuable for them to explain the KM situation in these two countries.

8.4 Limitations and suggestions for future research

This study still has some limitations and therefore in future work, some research is recommended to be done by researchers. First of all, the respondents from two countries are from different industry branches. On the one hand, this gives us a broader range of samples to understand the overall KM situation of each country; on the other hand, when readers use the results from this research, they should keep in mind that the results of this study are derived from responses from a broad range of industries rather than their own. So a first suggestion for future research is that similar KM survey in specific industries can be conducted in these two countries, to have a more precise data about KM or a more precise KM comparison for specific industry. Secondly, this study concentrates on presenting the general situations of KM in China and Finland, and in which knowledge processes or KM practices these two countries have significant difference. However, due to the design of the questionnaire, this research only partly describes how these two countries act similarly or differently in some knowledge processes or KM practices. So future research can be conducted in comparison of some specific knowledge processes or knowledge practices. In addition, the effects of knowledge management practices to knowledge processes can be compared between China and Finland.

Finally, this research compares the KM between China and Finland. So, in the future, comparative KM researches can be done between any two countries as there is a desire to have such kinds of comparative information. I believe cross-country comparative KM research can provide valuable information for both researcher and practitioners to open their view and help them in making their KM work better.

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APPENDIX 1 KM questionnaire with introduction (1/17)

Introduction of the questionnaire

While China is going towards a knowledge economy, more and more people realize the role of knowledge in the success. However, how knowledge is managed in your organization? And how is knowledge managed overall in China if compare with that of another country? This survey will answer these questions by comparing knowledge management between China and Finland.

In this questionnaire, “knowledge” means all useful information, technique, skills, experiences and other stored knowhow in your organization. “Knowledge management” means all activities related to knowledge acquisition, creation, sharing, storage and application.

When you answer the questions, please assume a company that you know most deeply (e.g. the company you worked before or the one you are working at). If your company is a big group, then please use the branch that you work for. This questionnaire consists of four parts: basic company information, knowledge process, knowledge management practices, and performance and perceptions of knowledge management. This survey is anonymous, all data collected will be keep confidential and used only for data analysis. It takes about 20 minutes to finish this questionnaire.

We can send the summary of this survey to those who are interested to know the results. If need, please leave your contact information at the end of the questionnaire.

Thank you very much for your participation!

Best regards,

Xing Shi

March 2010, Finland

APPENDIX 1 KM questionnaire with introduction (2/17)

Respondent information

01 What is your position in your organization?

Senior manager ☐ Middle level manager ☐ Specialist ☐ Other ☐
(Please, specify) _____

02 For how long you have been working for this organization?

Less than 1 year ☐ 1-3 years ☐ 4-10 years ☐ 11-20 years ☐ More than 20 years ☐

03 In which part of the organization do you work? If your organization has only one location, please select the option "Headquarters".

Headquarters ☐ A domestic subsidiary ☐ A foreign subsidiary ☐ Some other location (please, state what) ☐

Section 1. General information about the company

This section concerns general information about your company

1.1. Basic facts

111 When your company was founded? (please, indicate year)

112 What is the industry / business field your company belongs to:

- ☐ Agriculture, hunting and forestry,
- ☐ Chemical industry
- ☐ Construction
- ☐ Electricity, gas and water supply,
- ☐ Food industry
- ☐ Hotels and restaurants
- ☐ Manufacture of basic metals and fabricated metal products (except machinery and equipment)
- ☐ Manufacture of electrical equipment
- ☐ Manufacture of machinery and equipment
- ☐ Manufacture of other non-metallic mineral products
- ☐ Manufacture of rubber and plastic products
- ☐ Manufacture of wood and wood products
- ☐ Oil and coking
- ☐ Paper and packaging materials
- ☐ Real estate, renting and business activities,

APPENDIX 1 KM questionnaire with introduction (3/17)

- ☐ Repair of motor vehicles, motorcycles and personal and household goods,
☐ Retail trade;
☐ Transport instrument manufacturing
☐ Transport, storage and communication
☐ Waste recycling industry
☐ Other (please, specify – in words, and if you know your industry code in governmental statistics, please, mention it as well) -
-

1131 What was the number of employees in your company in 2009 (including all subsidiaries)? _____

1132 If your company has operations in many countries, please, also indicate what was the number of employees in 2009 in Russian/Finnish/Chinese subsidiaries only?

114 Please, provide your estimations for the following issue (thinking of total as 100%):

On average, our turnover in 2006-2009 comprised the sales of products _____ % and services _____ %

115 Our company has

- ☐ 100% domestic (Russian/Finnish/Chinese) capital
☐ some foreign capital
☐ 100% foreign capital

1161 What is the number of countries in which your organization operates (has assets, including the country of origin)? _____

1162 In 2009, the share of foreign investment in total new investment was _____ %

☐ I don't know

Please evaluate the following statements concerning your organisation. (1 = totally disagree, 6 = totally agree)

No	Item	1 4	2 5	3 6	I don't know
117	We have a strong reputation of technological excellence.	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>
118	Knowledge intensity is characteristic of our business.	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>
119	There is a strong knowledge component in our products and services.	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>
1120	The value-added produced by our company is mainly intangible	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>

APPENDIX 1 KM questionnaire with introduction (4/17)

1.2 Strategy

We are interested in your perceptions of your division or firm strategy as a whole. Note that each strategic type described below is a legitimate strategy. None is inherently "good" or "bad." Which of these four types resembles your company most? Please, choose only one out of four.

No	Item	Our company is closest to the following type:
Type 1:	This type of company locates and maintains a 'niche' in a relatively stable product area. Generally, this company is not at the forefront of new product or market development, but concentrates instead on a limited range of products--doing the best job possible through quality, superior service, low prices, and so forth.	<input type="checkbox"/>
Type 2:	This type of company makes relatively frequent changes in, and additions to, its range of products. By responding rapidly to early signals of market needs or opportunities, this company tries to be 'first in' in new product and market areas--although it may not maintain market strength in all of the areas it enters.	<input type="checkbox"/>
Type 3:	This type of company maintains a stable, limited line of products and simultaneously moves to follow a selected, promising set of new product developments in other areas. This company is seldom "first in" with new products, but instead may be "second in" with a more cost effective or better conceived product.	<input type="checkbox"/>
Type 4:	This type of company does not appear to have a consistent product-market orientation. Unlike competitors, it is not aggressive in maintaining established products and markets, nor is it willing to take many risks. This company changes its product offering when and where it is forced to by environmental pressures	<input type="checkbox"/>

[illegible]

APPENDIX 1 KM questionnaire with introduction (6/17)

142 What is the trend of your company's annual revenues during the last several years?

	Significantly increased (>15%)	Increased ($\leq 15\%$)	Remained stable	Decreased ($\leq 15\%$)	Significantly decreased (>15%)	I don't know
<i>Before the crisis (2004 – 2007)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>During and after the crisis (2008 – 2009)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

143 What is the trend of your company's annual market share during the last several years?

	Significantly increased (>15%)	Increased ($\leq 15\%$)	Remained stable	Decreased ($\leq 15\%$)	Significantly decreased (>15%)	I don't know
<i>Before the crisis (2004 – 2007)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>During and after the crisis (2008 – 2009)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

144 Competitive positions

Please, compare your organization to your key competitors along the following statements: (1 = totally disagree, 6 = totally agree)

	Compared to our key competitors	1	2	3	4	5	6	I don't know
1441	We are more successful.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1442	We have a greater market share.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1443	We are growing faster.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1444	We are more profitable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1445	We are more innovative	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1446	We have lower costs level	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

145 Innovation intensity

Here innovation refers to any NEW IDEA that your organization adopts for its products/services, production processes, managerial / administrative and marketing activities that directly or indirectly ADD VALUE to your organization.

Please, think of the innovative activities your organization has undertaken during the PAST THREE YEARS. Please, circle the number which corresponds to the degree of innovation for each of the following statements:

Section 2. Knowledge processes

This section is about internal processes in your organization that are related to acquisition, creation, sharing, documentation and usage of different types of information, knowledge and know-how in your organization.

[illegible]

APPENDIX 1 KM questionnaire with introduction (9/17)

226	Our organisation develops new ideas and innovations in collaboration with external partners.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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2.3. Knowledge sharing

Please evaluate the following statements concerning your organisation.

(1 = totally disagree, 6 = totally agree)

No	Item	1 6	2	3	4	5	I don't know
231	In our organisation information and knowledge are actively shared within the units.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
232	Different units of our organisation actively share information and knowledge among each other.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
233	In our organisation employees and managers exchange a lot of information and knowledge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
234	Our organisation shares a lot of knowledge and information with strategic partners.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
235	Our organisation shares knowledge with competitors (through industrial associations, directly, etc.).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
236	In our organisation, previously made solutions and documents are easily available.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
237	In our organisation, much knowledge is distributed in informal ways (in the corridors, break rooms, water coolers, etc.).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2.4. Knowledge storage and documentation

Please evaluate the following statements concerning your organisation.

(1 = totally disagree, 6 = totally agree)

No	Item	1 5	2 6	3	4	I don't know
241	Our organisation does a lot of work to refine, organize and store the knowledge collected.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
242	The information sources, manuals and databases at our organisation's disposal are up-to-date.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

APPENDIX 1 KM questionnaire with introduction (10/17)

243	Our employees are systematically informed of changes in procedures, instructions and regulations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
244	Our organisation has much information in the form of documents, databases, and patents.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
245	Our organisation possesses many useful patents and licenses.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
246	In our organisation, we are used to documenting in writing the things that are learnt in practice.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
247	In our organization we make sure that the most important experiences gained are documented	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2.5. Knowledge application

Please evaluate the following statements concerning your organisation.

(1 = totally disagree, 6 = totally agree)

<i>No</i>	<i>Item</i>	1 5	2 6	3	4	I don't know
251	Our organisation uses existing know-how in a creative manner for new applications.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
252	Our organisation is able to use the employees' knowledge in various business activities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
253	Our organisation responds to changes in our customers' product or service needs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
254	Our organisation achieved major product or process improvements as a result of analysing and applying knowledge from external parties.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
255	Different departments of our organization frequently apply knowledge that was shared by other departments.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
256	Many new ideas that our organisation develops are brought into reality.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
257	Our organisation's databases and documented knowledge are frequently used by employees.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

[illegible]

APPENDIX 1 KM questionnaire with introduction (12/17)

322	Flexibility and a desire to innovate are valued in our organisation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
323	Employees, who take initiative of their own learning, are highly valued in our organisation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
324	Willingness to share lessons learned is valued in our organisation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
325	In our organisation, lessons learned, both successful and unsuccessful, are considered valuable.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
326	In our organisation, various units are encouraged to collaborate with each other.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3.3. Knowledge & leadership

Please evaluate the following statements concerning your organisation.

(1 = totally disagree, 6 = totally agree)

<i>No</i>	<i>Item</i>	1	2	3	4	5	6	I don't know
331	In our organisation, ensuring that knowledge resources of our company are created, shared and used in the best possible way is a responsibility of <i>top-managers</i> .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
332	In our organisation, ensuring that knowledge resources of our company are created, shared and used in the best possible way is a responsibility of <i>middle managers</i> .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
333	In our organisation, ensuring that knowledge resources of our company are created, shared and used in the best possible way is a responsibility of <i>every employee</i> .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
334	In our organisation, ensuring that knowledge resources of our company are created, shared and used in the best possible way is a responsibility of <i>specialty dedicated specialist or unit</i> (e.g. knowledge officer or knowledge management unit).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3.4. HRM practices

Please evaluate the following statements concerning your organisation.

(1 = totally disagree, 6 = totally agree)

APPENDIX 1 KM questionnaire with introduction (13/17)

[illegible]

3.5 Organizational structure

Please evaluate the following statements concerning your organisation.

(1 = totally disagree, 6 = totally agree)

[illegible]

APPENDIX 1 KM questionnaire with introduction (14/17)

[illegible]

3.6. Technology tools and ICT

Please evaluate the following statements concerning your organisation.

(1 = totally disagree, 6 = totally agree)

[illegible]

APPENDIX 1 KM questionnaire with introduction (15/17)

Session 4. Perceptions and performance of knowledge management

The last section is about “knowledge management” as a practice in your organization. In some organizations they do not call it “knowledge management”, but still they have some processes and practices that are directly or indirectly aimed at managing the knowledge (for example, some of the practices mentioned in the Section 3 of this survey). We are interested to learn what your organization does in this area irrespectively of how you call it there.

4.1. Knowledge management as a practice

This section contains some open questions as it is aimed to enrich our understanding of the real practices in your organization. We would highly appreciate if you could answer at least some of them. However, if this is not possible, please give us just “yes” or “no” answers.

<i>No</i>	<i>Item</i>
411	<p>In our organisation, we use term “knowledge management” to label the activities related to more efficient usage of knowledge as our resource (for example, for activities described in the section 3 of this questionnaire). Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>If NO, could you please specify the terms that you use in your organisation to label these activities? _____</p>
412	<p>In our organisation knowledge is considered as an important resource. Yes <input type="checkbox"/> No <input type="checkbox"/> If NO, go to 404.</p> <p>If YES, what are the reasons that make knowledge an important resource for your organisation? _____</p>
413	<p>What types of knowledge have strategic importance for your organisation? _____</p>
414	<p>Our organisation has had concrete benefits from knowledge management practices. Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>If YES, please describe these benefits. _____</p>

APPENDIX 1 KM questionnaire with introduction (16/17)

<p>415</p>	<p>Our organisation recognises challenges related to dealing with knowledge resources.</p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>If YES, please describe the challenges.</p> <hr/>
<p>416</p>	<p>Our organisation takes into account knowledge in our strategy and strategic planning.</p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>If YES, please describe how knowledge resources as taken into account in strategy development?</p> <hr/>

4.2 Investments in knowledge management

Please evaluate the following statements concerning your organisation.

No	Item	Choices	I don't know
421	Do the knowledge management practices currently in use in your organisation have now dedicated budgets or spending?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/>
422	In the next 24 months, do you anticipate the knowledge management practices' share of the budget to:	<input type="checkbox"/> Increase <input type="checkbox"/> Decrease <input type="checkbox"/> Stay the same	<input type="checkbox"/>
423	In the next 24 months, do you expect knowledge management practices to have dedicated budgets or spending:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/>

4.3. Results of knowledge management practices

Please evaluate the following statements concerning your organisation. (1 = totally disagree, 6 = totally agree)

[illegible]

APPENDIX 1 KM questionnaire with introduction (17/17)

432	Our organisation saved a lot <i>in terms of time</i> by various efforts, aimed to better creation, sharing and application of our knowledge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
433	Our organisation increased <i>revenue</i> significantly by various efforts, aimed to better creation, sharing and application of our knowledge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
434	Our organization increased <i>its innovativeness</i> by various efforts, aimed to better creation, sharing and application of our knowledge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

-END-

Thank you for your participation!

APPENDIX 2 Demographic information of respondents (1/7)

No.	Country	Job position	Working time	Capital structure of the organization
1	China	Specialist	4 to 10 years	Some foreign capital
2	China	Specialist	4 to 10 years	100% domestic capital
3	China	Middle level manager	4 to 10 years	Some foreign capital
4	China	Middle level manager	1 to 3 years	Some foreign capital
5	China	Specialist	1 to 3 years	100% domestic capital
6	China	Specialist	4 to 10 years	100% domestic capital
7	China	Specialist	4 to 10 years	Some foreign capital
8	China	Specialist	1 to 3 years	100% foreign capital
9	China	Specialist	1 to 3 years	100% domestic capital
10	China	Specialist	4 to 10 years	100% foreign capital
11	China	Senior manager	1 to 3 years	100% domestic capital
12	China	Senior manager	Less than 1 year	100% foreign capital
13	China	Specialist	Less than 1 year	100% foreign capital
14	China	Specialist	Less than 1 year	100% foreign capital
15	China	Specialist	1 to 3 years	100% foreign capital
16	China	Middle level manager	1 to 3 years	100% domestic capital
17	China	Middle level manager	1 to 3 years	100% foreign capital
18	China	Specialist	4 to 10 years	100% domestic capital
19	China	Middle level manager	11 to 20 years	Some foreign capital
20	China	Specialist	4 to 10 years	100% domestic capital
21	China	Specialist	4 to 10 years	100% foreign capital
22	China	Middle level manager	4 to 10 years	100% domestic capital
23	China	Specialist	More than 20 years	100% domestic capital
24	China	Specialist	4 to 10 years	100% domestic capital
25	China	Specialist	4 to 10 years	100% domestic capital
26	China	Middle level manager	4 to 10 years	100% foreign capital

APPENDIX 2 Demographic information of respondents (2/7)

27	China	Specialist	Less than 1 year	100% foreign capital
28	China	Other	4 to 10 years	100% foreign capital
29	China	Specialist	4 to 10 years	Some foreign capital
30	China	Middle level manager	4 to 10 years	100% domestic capital
31	China	Middle level manager	4 to 10 years	100% domestic capital
32	China	Senior manager	11 to 20 years	100% domestic capital
33	China	Middle level manager	4 to 10 years	100% foreign capital
34	China	Middle level manager	1 to 3 years	Some foreign capital
35	China	Middle level manager	1 to 3 years	100% domestic capital
36	China	Senior manager	4 to 10 years	100% domestic capital
37	China	Senior manager	11 to 20 years	100% domestic capital
38	China	Specialist	Less than 1 year	100% domestic capital
39	China	Specialist	4 to 10 years	100% domestic capital
40	China	Senior manager	4 to 10 years	100% foreign capital
41	China	Middle level manager	More than 20 years	100% domestic capital
42	China	Specialist	4 to 10 years	100% domestic capital
43	China	Middle level manager	1 to 3 years	100% domestic capital
44	China	Specialist	1 to 3 years	100% domestic capital
45	China	Senior manager	4 to 10 years	100% domestic capital
46	China	Senior manager	4 to 10 years	100% domestic capital
47	China	Specialist	11 to 20 years	100% domestic capital
48	China	Specialist	1 to 3 years	100% domestic capital
49	China	Specialist	More than 20 years	100% domestic capital
50	China	Middle level manager	1 to 3 years	100% domestic capital
51	China	Specialist	11 to 20 years	100% domestic capital
52	China	Middle level manager	1 to 3 years	Some foreign capital

APPENDIX 2 Demographic information of respondents (3/7)

53	China	Middle level manager	4 to 10 years	Some foreign capital
54	China	Other	4 to 10 years	100% foreign capital
55	China	Specialist	4 to 10 years	100% domestic capital
56	China	Specialist	1 to 3 years	100% domestic capital
57	China	Middle level manager	4 to 10 years	100% domestic capital
58	China	Specialist	1 to 3 years	100% domestic capital
59	China	Senior manager	1 to 3 years	Some foreign capital
60	China	Specialist	4 to 10 years	100% domestic capital
61	China	Middle level manager	4 to 10 years	100% domestic capital
62	China	Middle level manager	4 to 10 years	100% domestic capital
63	China	Senior manager	4 to 10 years	100% domestic capital
64	China	Senior manager	4 to 10 years	100% domestic capital
65	China	Senior manager	4 to 10 years	100% domestic capital
66	China	Senior manager	4 to 10 years	100% foreign capital
67	China	Middle level manager	More than 20 years	100% domestic capital
68	China	Specialist	4 to 10 years	100% foreign capital
69	China	Middle level manager	4 to 10 years	100% domestic capital
70	China	Senior manager	4 to 10 years	100% domestic capital
71	China	Middle level manager	4 to 10 years	100% domestic capital
72	China	Senior manager	4 to 10 years	100% domestic capital
73	China	Senior manager	4 to 10 years	Some foreign capital
74	Finland	Specialist	1 to 3 years	100% domestic capital
75	Finland	Specialist	4 to 10 years	100% foreign capital
76	Finland	Middle level manager	4 to 10 years	100% domestic capital
77	Finland	Senior manager	11 to 20 years	100% domestic capital
78	Finland	Specialist	1 to 3 years	100% foreign capital
79	Finland	Middle level manager	More than 20 years	Some foreign capital

APPENDIX 2 Demographic information of respondents (4/7)

80	Finland	Senior manager	4 to 10 years	100% domestic capital
81	Finland	Senior manager	More than 20 years	100% domestic capital
82	Finland	Other	4 to 10 years	100% domestic capital
83	Finland	Specialist	4 to 10 years	100% domestic capital
84	Finland	Middle level manager	More than 20 years	100% foreign capital
85	Finland	Senior manager	More than 20 years	100% foreign capital
86	Finland	Senior manager	4 to 10 years	100% domestic capital
87	Finland	Senior manager	4 to 10 years	100% domestic capital
88	Finland	Senior manager	0	100% domestic capital
89	Finland	Middle level manager	1 to 3 years	100% domestic capital
90	Finland	Senior manager	1 to 3 years	100% domestic capital
91	Finland	Senior manager	1 to 3 years	100% domestic capital
92	Finland	Senior manager	11 to 20 years	100% domestic capital
93	Finland	Specialist	4 to 10 years	Some foreign capital
94	Finland	0	0	Some foreign capital
95	Finland	Middle level manager	More than 20 years	100% domestic capital
96	Finland	Senior manager	11 to 20 years	100% domestic capital
97	Finland	Middle level manager	11 to 20 years	100% domestic capital
98	Finland	Middle level manager	4 to 10 years	100% domestic capital
99	Finland	Middle level manager	4 to 10 years	100% foreign capital
100	Finland	Senior manager	Less than 1 year	Some foreign capital
101	Finland	Middle level manager	4 to 10 years	100% domestic capital
102	Finland	Specialist	4 to 10 years	100% domestic capital
103	Finland	Middle level manager	4 to 10 years	100% domestic capital
104	Finland	Middle level manager	11 to 20 years	100% domestic capital

APPENDIX 2 Demographic information of effective respondents (5/7)

105	Finland	Specialist	More than 20 years	100% domestic capital
106	Finland	Other	4 to 10 years	100% domestic capital
107	Finland	Senior manager	4 to 10 years	Some foreign capital
108	Finland	Middle level manager	4 to 10 years	100% domestic capital
109	Finland	Senior manager	4 to 10 years	100% domestic capital
110	Finland	Senior manager	4 to 10 years	100% domestic capital
111	Finland	Senior manager	More than 20 years	100% domestic capital
112	Finland	Senior manager	11 to 20 years	100% domestic capital
113	Finland	Senior manager	4 to 10 years	100% domestic capital
114	Finland	Specialist	4 to 10 years	100% domestic capital
115	Finland	Senior manager	More than 20 years	100% domestic capital
116	Finland	Specialist	11 to 20 years	100% domestic capital
117	Finland	Senior manager	1 to 3 years	100% foreign capital
118	Finland	Senior manager	11 to 20 years	100% domestic capital
119	Finland	Senior manager	1 to 3 years	100% domestic capital
120	Finland	Middle level manager	4 to 10 years	100% domestic capital
121	Finland	Senior manager	1 to 3 years	100% domestic capital
122	Finland	Senior manager	More than 20 years	100% domestic capital
123	Finland	Middle level manager	1 to 3 years	100% domestic capital
124	Finland	Middle level manager	Less than 1 year	100% domestic capital
125	Finland	Specialist	4 to 10 years	100% domestic capital
126	Finland	Specialist	4 to 10 years	100% domestic capital
127	Finland	Specialist	11 to 20 years	100% domestic capital
128	Finland	Specialist	11 to 20 years	Some foreign capital
129	Finland	Senior manager	More than 20 years	Some foreign capital
130	Finland	Specialist	4 to 10 years	Some foreign capital
131	Finland	Senior manager	4 to 10 years	Some foreign capital

APPENDIX 2 Demographic information of respondents (6/7)

132	Finland	Middle level manager	4 to 10 years	0
133	Finland	Specialist	1 to 3 years	Some foreign capital
134	Finland	Senior manager	11 to 20 years	100% foreign capital
135	Finland	Middle level manager	More than 20 years	100% domestic capital
136	Finland	Other	1 to 3 years	Some foreign capital
137	Finland	Senior manager	More than 20 years	100% domestic capital
138	Finland	Other	11 to 20 years	Some foreign capital
139	Finland	Senior manager	4 to 10 years	100% domestic capital
140	Finland	Senior manager	1 to 3 years	100% domestic capital
141	Finland	Specialist	More than 20 years	100% domestic capital
142	Finland	Senior manager	11 to 20 years	100% domestic capital
143	Finland	Senior manager	More than 20 years	100% domestic capital
144	Finland	Senior manager	1 to 3 years	100% domestic capital
145	Finland	Other	More than 20 years	100% foreign capital
146	Finland	Middle level manager	11 to 20 years	100% domestic capital
147	Finland	Senior manager	1 to 3 years	100% domestic capital
148	Finland	Middle level manager	1 to 3 years	100% domestic capital
149	Finland	Specialist	11 to 20 years	100% domestic capital
150	Finland	Specialist	1 to 3 years	100% domestic capital
151	Finland	Specialist	More than 20 years	100% domestic capital
152	Finland	Middle level manager	4 to 10 years	100% domestic capital
153	Finland	Senior manager	More than 20 years	100% foreign capital
154	Finland	Senior manager	Less than 1 year	100% foreign capital
155	Finland	Senior manager	More than 20 years	100% domestic capital

APPENDIX 2 Demographic information of respondents (7/7)

156	Finland	Senior manager	More than 20 years	100% foreign capital
157	Finland	Senior manager	Less than 1 year	100% domestic capital

APPENDIX 3 Means and standard deviations of key elements (1/2)

Knowledge processes of China

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Knowledge acquisition	72	1	6	3.88	1.047
Knowledge creation	73	1	6	4.13	1.235
Knowledge sharing	73	1	6	4.07	1.163
Knowledge storage and documentation	73	1	6	4.19	1.213
Knowledge application	73	2	6	4.01	.984
Valid N (listwise)	72				

Knowledge management practices of China

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
KM strategy	72	1	6	4.13	1.185
KM culture	73	1	6	4.28	1.347
KM leadership	71	1	6	3.94	1.388
HRM	73	1	6	3.99	1.125
Organizational structure	72	1	6	4.24	1.077
Technology and ICT	72	1	6	4.29	1.156
Valid N (listwise)	70				

Knowledge processes of Finland

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
KAQ	84	1	6	3.57	.996
KC	83	1	6	3.61	1.077
KS	84	2	5	3.32	.784
KSD	84	1	6	3.31	.969
KA	83	1	6	3.73	.946
Valid N (listwise)	82				

APPENDIX 3 Means and standard deviations of key elements (2/2)

Knowledge management practices of Finland

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
KM strategy	83	1	6	3.99	1.034
KM culture	83	2	6	4.35	1.124
KM leadership	83	1	6	3.84	.996
HRM	84	2	6	3.52	.962
Organizational structure	83	2	6	3.82	.903
Technology and ICT	83	1	6	3.88	1.159
Valid N (listwise)	80				

APPENDIX 4 Independent samples T-tests (1/4)

Group Statistics

	Country	N	Mean	Std. Deviation	Std. Error Mean
Knowledge acquisition	China	73	4.01	.984	.115
	Finland	84	3.57	.996	.109

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Knowledge acquisition	Equal variances assumed	.470	.494	2.772	155	.006	.439	.158	.126	.752
	Equal variances not assumed			2.774	152.430	.006	.439	.158	.126	.752

Group Statistics

	Country	N	Mean	Std. Deviation	Std. Error Mean
Knowledge creation	China	73	4.13	1.235	.145
	Finland	83	3.61	1.077	.118

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Knowledge creation	Equal variances assumed	.680	.411	2.805	154	.006	.519	.185	.154	.885
	Equal variances not assumed			2.781	143.995	.006	.519	.187	.150	.889

Group Statistics

	Country	N	Mean	Std. Deviation	Std. Error Mean
Knowledge sharing	China	73	4.07	1.163	.136
	Finland	84	3.32	.784	.086

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Knowledge sharing	Equal variances assumed	7.475	.007	4.832	155	.000	.757	.157	.447	1.066
	Equal variances not assumed			4.706	123.366	.000	.757	.161	.438	1.075

APPENDIX 4 Independent samples T-tests (2/4)

Group Statistics

	Country	N	Mean	Std. Deviation	Std. Error Mean
Knowledge storage and documentation	China	73	4.19	1.213	.142
	Finland	84	3.31	.969	.106

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Knowledge storage and documentation	Equal variances assumed	1.920	.168	5.031	155	.000	.877	.174	.533	1.221
	Equal variances not assumed			4.953	137.347	.000	.877	.177	.527	1.227

Group Statistics

	Country	N	Mean	Std. Deviation	Std. Error Mean
Knowledge application	China	73	4.04	1.126	.132
	Finland	83	3.73	.946	.104

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Knowledge application	Equal variances assumed	1.313	.254	1.847	154	.067	.307	.166	-.021	.634
	Equal variances not assumed			1.827	141.303	.070	.307	.168	-.025	.638

Group Statistics

	Country	N	Mean	Std. Deviation	Std. Error Mean
KM strategy	China	72	4.13	1.185	.140
	Finland	83	3.99	1.034	.113

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
KM strategy	Equal variances assumed	1.898	.170	.781	153	.436	.139	.178	-.213	.491
	Equal variances not assumed			.774	142.072	.440	.139	.180	-.216	.495

APPENDIX 4 Independent samples T-tests (3/4)

Group Statistics

	Country	N	Mean	Std. Deviation	Std. Error Mean
KM culture	China	73	4.28	1.347	.158
	Finland	83	4.35	1.124	.123

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
KM culture	Equal variances assumed	2.670	.104	-.351	154	.726	-.070	.198	-.460	.321
	Equal variances not assumed			-.347	140.843	.729	-.070	.200	-.465	.326

Group Statistics

	Country	N	Mean	Std. Deviation	Std. Error Mean
KM leadership	China	71	3.94	1.388	.165
	Finland	83	3.84	.996	.109

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
KM leadership	Equal variances assumed	10.537	.001	.531	152	.596	.102	.193	-.278	.483
	Equal variances not assumed			.518	124.612	.606	.102	.198	-.289	.493

Group Statistics

	Country	N	Mean	Std. Deviation	Std. Error Mean
HRM	China	73	3.99	1.125	.132
	Finland	84	3.52	.962	.105

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
HRM	Equal variances assumed	2.784	.097	2.833	155	.005	.472	.167	.143	.801
	Equal variances not assumed			2.802	142.599	.006	.472	.168	.139	.805

APPENDIX 4 Independent samples T-tests (4/4)

Group Statistics

	Country	N	Mean	Std. Deviation	Std. Error Mean
Organizational structure	China	72	4.24	1.077	.127
	Finland	83	3.82	.903	.099

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Organizational structure	Equal variances assumed	.413	.522	2.694	153	.008	.428	.159	.114	.742
	Equal variances not assumed			2.660	139.155	.009	.428	.161	.110	.747

Group Statistics

	Country	N	Mean	Std. Deviation	Std. Error Mean
Technology and ICT	China	72	4.29	1.156	.136
	Finland	83	3.88	1.159	.127

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Technology and ICT	Equal variances assumed	.017	.896	2.210	153	.029	.412	.186	.044	.780
	Equal variances not assumed			2.211	150.030	.029	.412	.186	.044	.780

Group Statistics

	Country	N	Mean	Std. Deviation	Std. Error Mean
KM performance	China	63	4.13	1.252	.158
	Finland	76	3.55	1.151	.132

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
KM performance	Equal variances assumed	.081	.776	2.866	137	.005	.585	.204	.181	.988
	Equal variances not assumed			2.843	127.534	.005	.585	.206	.178	.992