Shu-Te University

College of Informatics

Graduate School of Information Management

Master Thesis

Affecting Factors on Knowledge Transfer in a Company

Student：Ngo Ba Nhat

Advisor：Dr. To Chang

June 2010

A Study on Affecting Factors on Knowledge Transfer in a Company

Student: Ngo Ba Nhat
Advisor: Dr. To Chang

A Thesis
Submitted to the
Graduate School of Information Management
College of Informatics
Shu-Te University
In Partial Fulfillment of the Requirements
For the Degree of
Master of Science
in
Information Management

June 2010
Yan Chao, Kaohsiung, Taiwan, Republic of China

樹德科技大學博碩士論文授權書

本授權書所授權之論文為授權人 __吳霸一__ 在樹德科技大學 __資訊__ 學院 __資管__ 系所 ___ 組 __98__ 學年度第 __二__ 學期取得 □博士 □碩士 學位之論文。

論文名稱：__Affecting factors on Knowledge Transfer in a Company__

指導教授：__張鐸__

授權事項：

壹、授權人（研究生）及共同授權人（指導教授），以下簡稱授權人等。

貳、電子全文公開存取之時間及授權方式

    一、校內：授權人等同意無償授權樹德科技大學（請勾選下列一個選項，若未勾選任何選項，則視為立即公開）：

        ☑ 立即公開　　□ 一年後公開　　□ 二年後公開

    二、校外：

      1. 請勾選下列一個選項（若未勾選任何選項，則視為立即公開）

        ☑ 立即公開　　□ 一年後公開　　□ 二年後公開　　□ 不公開

      2. 若勾選以上任意一個公開選項，請勾選下列授權方式（若未勾選任何選項，則視為無償授權）：

        □ 有償授權　　☑ 無償授權

        （若勾選有償授權，則權利金捐贈學校。）

參、若授權人等同意論文電子全文公開，亦即同意樹德科技大學將上列論文全文資料以微縮、數位化或其他方式進行重製收錄於資料庫，並以電子形式透過單機、網際網路、無線網路或其他傳輸方式進行檢索、瀏覽、下載、傳輸、列印等。樹德科技大學在上述範圍內得再授權第三人進行重製。

肆、以上之所有授權均為非專屬授權，授權人仍擁有上述授權著作之著作權。授權人擔保本著作為授權人所創作之著作，有權依本授權書內容進行各項授權，且未侵害任何第三人之智慧財產權。如有侵害他人權益及觸犯法律之情事，授權人願自行負責一切法律責任，被授權人一概無涉。

伍、若發生本授權書與論文系統授權項目不符時，授權人等同意樹德科技大學依本授權書修改論文系統之授權資料，以符合本授權書之初衷。

授權人簽名：　　　　　　　　　　共同授權人簽名：

（研究生）　__吳霸一__　　　　　（指導教授）　__張鐸__

中華民國　99 年 06 月 09 日

樹德科技大學碩士班研究生

指導教授推薦書

本校資訊管理研究所 吳霸一 君所提之論文

Affecting Factors on Knowledge Transfer in a Company

係由本人指導撰述，同意提付審查。

指導教授：

99 年6月9日

樹德科技大學碩士班研究生
學位考試審定書

九十八學年度第二學期

資訊管理研究所吳霸一 君所提之論文

題目：Affecting Factors on Knowledge Transfer in a Company

經本學位考試委員會審議，認為符合碩士資格標準。

召 集 人	馬維銘	委　　員	
委　　員	林振	委　　員	
委　　員	張鐸	委　　員	
委　　員		委　　員	
指導教授	張鐸	系所主管	張鐸

中華民國　　99 年　　06 月　　09 日

A Study on Affecting Factors on Knowledge Transfer in a Company

Student：Ngo Ba Nhat   Advisor：Dr. To Chang

Graduate School of Information Management

College of Informatics

Shu-Te University

ABSTRACT

The management practice literature is replete with reports of practices being used to motivate a firm's knowledge workers to transfer knowledge. Unfortunately, little is known with any certainty about which of factors affect these practices, under which conditions. It appears that in many cases the practices are ill suited for the particular situations where they are employed, with unknown but perhaps sizeable losses in opportunities foregone because valuable knowledge is not as fully or completely transferred as is possible. In addition, it seems that some of these practices are likely to be interfering with the effectiveness of other practices, just as some drugs interfere with the potentially positive effects of other drugs. About these matters, our knowledge is exceeded by our ignorance. The study identifies some factors associated with knowledge transfer, and articulates some of the most important issues associated with these factors. This study would enable organizations to be more effective in their transfer of knowledge.

Keywords: knowledge, knowledge transfer, tacit knowledge, explicit knowledge, factors related to knowledge transfer

A C K N O W L E D G E M E N T

Table of Contents

List of Tables

List of Figures

Chapter 1 Introduction

Knowledge is a broad and abstract notion that has defined epistemological debate in western philosophy since the classical Greek era. In the past few years, however, there has been a growing interest in treating knowledge as a significant organizational resource. Consistent with the interest in organizational knowledge and knowledge management (KM), IS researchers have begun promoting a class of information systems, referred to as knowledge management systems (KMS). The objective of KMS is to support creation, transfer, and application of knowledge in organizations. Knowledge and knowledge management are complex and multi-faceted concepts. Thus, effective development and implementation of KMS requires a foundation in several rich literatures.

An important process in knowledge management is that of knowledge transfer. Transfer occurs at various levels: transfer of knowledge between individuals, from individuals to explicit sources, from individuals to groups, between groups, across groups, and from the group to the organization.

In recent years, the shift to more distributed forms of organizations and the prevalence of inter-organizational relationships has presented new challenges to knowledge transfer (Baum and Greve 2001; Powell et al. 1996). Knowledge is
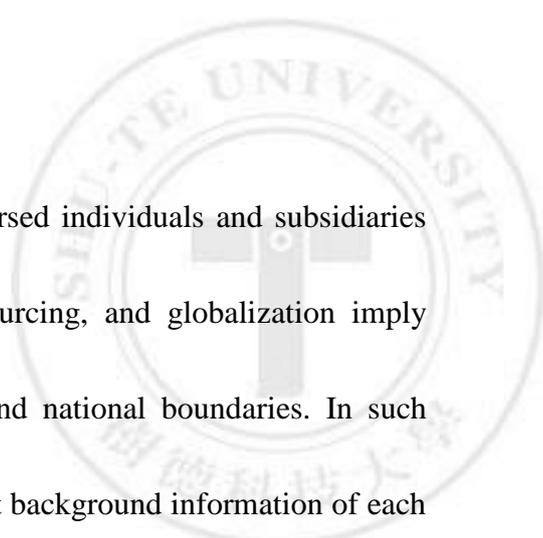
increasingly transferred between geographically dispersed individuals and subsidiaries of multiunit organizations. Strategic alliances, outsourcing, and globalization imply knowledge transfer across organizational, cultural, and national boundaries. In such knowledge transfer, participants often have insufficient background information of each other and lack a shared language and common interests, which significantly limits their ability to assess and share knowledge (Carlile 2004).

1.1. Research Background

Knowledge transfer activity, which was mostly centred in universities, now involves public and private laboratories, including those operated and managed by the research councils. Regional development agencies and the devolved administrations have the remit to encourage local technology transfer by putting science and innovation at the heart of their economic strategies. The growing importance of knowledge transfer has also given rise to private companies and investment funds that exist solely to commercialize the results of research and to promote innovation.

The transfer of knowledge from research to innovative products and services can be achieved in many ways. As well as the most obvious examples – licensing to new ventures or established companies – knowledge transfer can involve the use of research in the development of new instruments and techniques, the creation of knowledge to
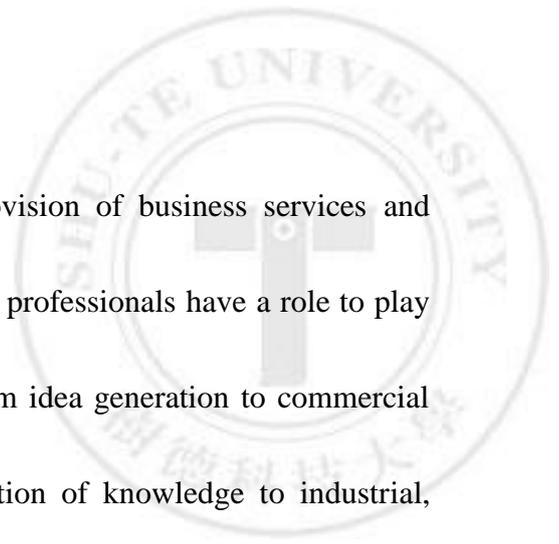
enhance our capacity to solve problems, or the provision of business services and support for regional development. Knowledge transfer professionals have a role to play in supporting all stages of the innovation process from idea generation to commercial exploitation. Their aim is to maximize the contribution of knowledge to industrial, regional and social development.

Knowledge transfer within organizations and between nations also raises ethical considerations particularly where there is an imbalance in power relationships e.g. employer and employee or in the levels of relative need for knowledge resources e.g. developed and developing worlds (Harman C. & Brelade S. 2003).

Knowledge transfer in an organization should take place at the individual level. Darr and Kurtzberg (2000); Tsai and Tsai (2005) stated that knowledge transfer implies individuals within one organization advising individuals from another organization on certain problems and procedure. Because individuals have a great contribution in an organization, it is necessary to understand how knowledge could be transferred between individuals and recognize the methods of knowledge transfer.

Although knowledge transfer is very important in an organization, Jacob and Ebrahimpur (2001) believe that the actual transfer of knowledge within organizations still remains a problematic issue for managers. Organizations should identify where

tacit and explicit knowledge resides when designing strategies, in order to ensure that knowledge is created and transferred to the rights individuals.

Knowledge transfer requires the willingness of a group or an individual to work with each others. Without sharing, it is almost impossible for knowledge to be transferred to other person. According to Davenport and Prusak (1998), knowledge transfer involves two actions which are transmission -the process of sending knowledge to a potential recipient- and absorption by that person or group.

In past studies, many papers discussed intra-or inter-organizational knowledge transfer. Gupta and Govindarajan (2000) studied knowledge flows within multinational corporations. Simonin (1999) studied the process of knowledge transfer between strategic alliance partners. Lyles and Salk (1996) focused on knowledge acquisition from foreign partners in international joint ventures. Griffith et al. (2001) analyzed knowledge transfer as a means for relationship development under international joint ventures. Tsai (2001) utilized the unit centrality in the network and the absorptive capacity to discuss intra-organizational knowledge transfer.

However, there is little literature that deals with how to improve knowledge transfer in a company. Based on many previous studies, this study explores what really

happen inside a company and identifies some factors that impact on knowledge within a company.

The structure of this paper is as follows. In the chapter 2, Literature Review, some definitions that concern with knowledge are presented. In the chapter 3 we will show the affecting factors on knowledge in a company and explain how they affect. In the chapter 4, we interview 5 persons, show the interview result and analysis. Finally, in the chapter 5, the conclusions and some suggestions will be shared.

Chapter 2 Literature Review

2.1. Knowledge

According to Davenport & Prusak (1998), knowledge is the result of problem solving or decision-making experiences, and is usually embedded in the capability of selecting, organizing, or manipulating information for specific tasks. In organizations, knowledge usually takes the form of rules, guidelines or procedures.

In addition, we can use the definition of knowledge in the information systems context. As per this definition, knowledge is part of the hierarchy made up of data, information and knowledge (figure 1). Data are raw facts. Information is data with context and perspective. Knowledge is information with guidance for action based upon insight and experience (ITIL.com, 2004).

Data	Information	Knowledge

Unstructured	Structured
Isolated	Embedded
Context-independent	Context-dependent
Low behavioural control	High behavioural control
Signs	Cognitive behavioural patterns
Distinction	Mastery/Capability
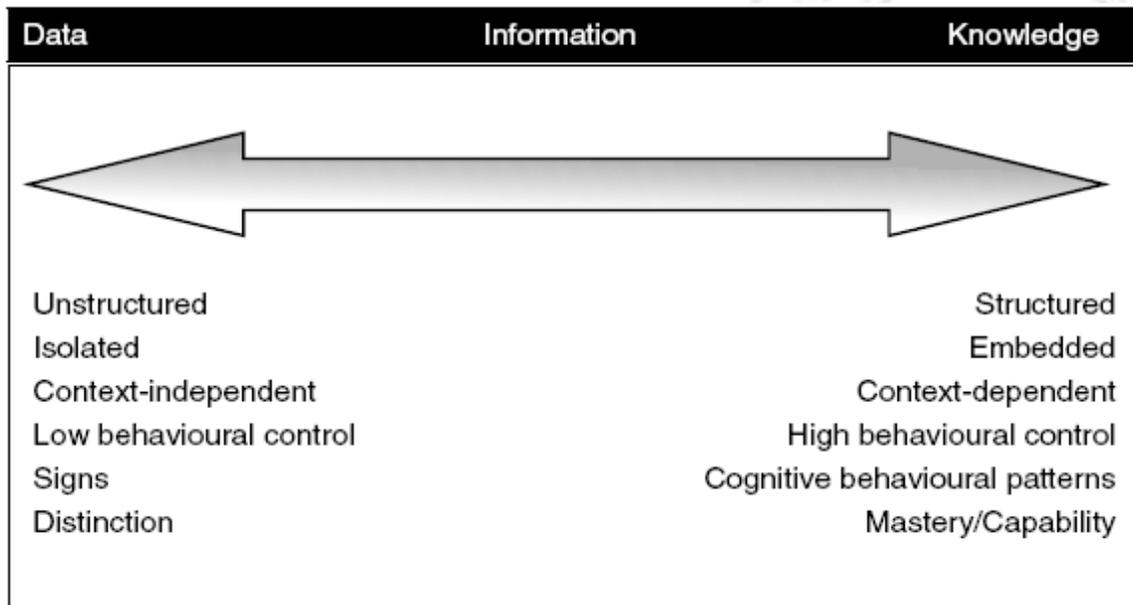
Figure 1. The continuum of data – information – knowledge

Source: Based on Probst, Raub and Romhardt (1999, p. 38).

A classification distinguishes between specific and general knowledge or divide knowledge into the three aspects (Hedlund 1994, p. 75):

1. Cognitive knowledge

2. Skills

3. Knowledge embodied in artifacts, e.g. products

Cognitive knowledge comes in the form of mental constructs. It resides in the minds of people and is also denominated 'brainware' (Bennett and Gabriel 1999, p. 216).
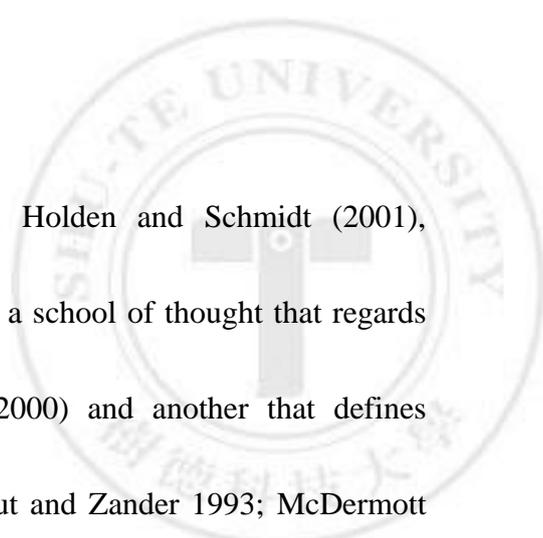
Skills are competences and capabilities. Shin, Holden and Schmidt (2001), however, suggests that we should distinguish between a school of thought that regards knowledge as an object (cf. Zack 1999; Tenkasi 2000) and another that defines knowledge as an application-related process (cf. Kogut and Zander 1993; McDermott and O'Dell 2001).

Embodied knowledge: is action oriented and consists of contextual practices. It is more of a social acquisition; as how individuals interact in and interpret their environment creates this non-explicit type of knowledge.

Knowledge is a dominant feature in our post-industrial society, and knowledge-workers comprise an enterprise. If knowledge is the basis for all that we do these days, then gaining an understanding of what types of knowledge exist within an organization may allow us to foster internal social structures that will facilitate and support learning in all organizational domains. Blackler (1995) expands on a categorization of knowledge types that were suggested by Collins (1993), being: embrained, embodied, encultured, embedded and encoded. It is important to note that these knowledge types could be indicative of any organization, not just those that are knowledge-based heavy.
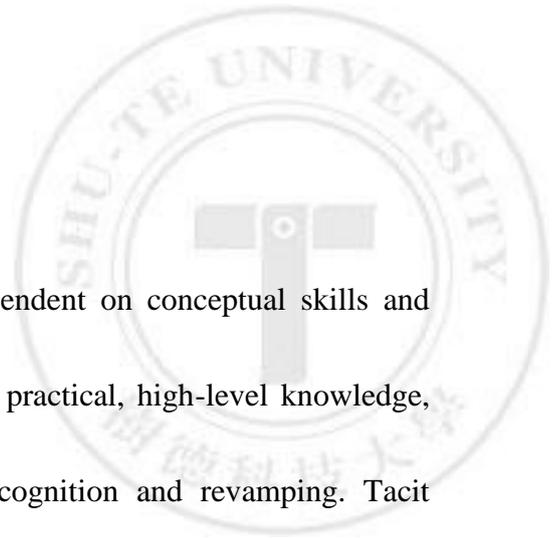
2.1.1. Embrained knowledge

Embrained knowledge is that which is dependent on conceptual skills and cognitive abilities. We could consider this to be practical, high-level knowledge, where objectives are met through perpetual recognition and revamping. Tacit knowledge may also be embrained, even though it is mainly subconscious.

2.1.2. Embodied knowledge

Embodied knowledge is action oriented and consists of contextual practices. It is more of a social acquisition; as how individuals interact in and interpret their environment creates this non-explicit type of knowledge.

2.1.3. Encultured knowledge

Encultured knowledge is the process of achieving shared understandings through socialization and acculturation. Language and negotiation become the discourse of this type of knowledge in an enterprise.

2.1.4. Embedded knowledge

Embedded knowledge is explicit and resides within systematic routines. It relates to the relationships between roles, technologies, formal procedures and emergent routines within a complex system.
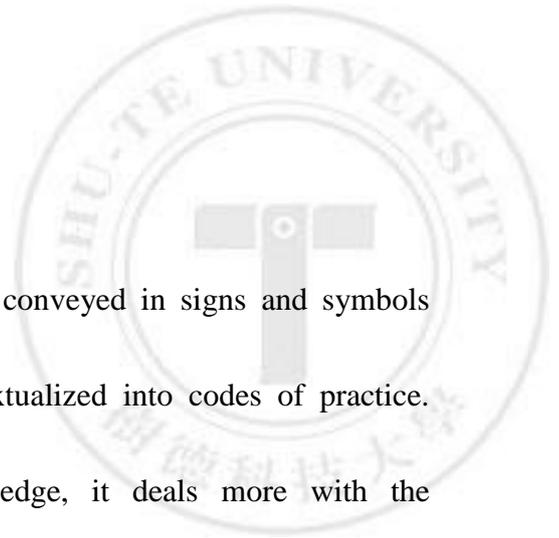
2.1.5. Encoded knowledge

Encoded knowledge is information that is conveyed in signs and symbols (books, manuals, data bases, etc.) and decontextualized into codes of practice. Rather than being a specific type of knowledge, it deals more with the transmission, storage and interrogation of knowledge.

2.2. Explicit and Tacit Knowledge

Knowledge is generally distinguished along two dimensions which go back to the philosopher Michael Polanyi (1966), who wished to criticize positivist science. The distinction refers to the kind of knowledge, and differentiates between explicit or articulated and tacit or implicit knowledge. Polanyi observed that skills could be exercised without the performer being able to fully account for their cognitive basis. He elaborated a theory according to which all actions included tacit and explicit elements of knowledge and that it was especially hard to articulate the tacit elements, and consequently to pass them on to others. Today, most researchers base their theories on this distinction of tacit and explicit knowledge. Table 1 shows the basic differences between tacit and explicit knowledge.

Table 1. Tacit and explicit knowledge

Tacit knowledge (Subjective)	Explicit Knowledge (Objective)
Knowledge of experience (body)	Knowledge of rationality (mind)
Simultaneous knowledge (here and now)	Sequential knowledge (there and then)
Analogue knowledge (practice)	Digital knowledge (theory)

Source: Based on Nonaka and Takeuchi (1995, p. 36).

2.2.1. Tacit Knowledge

The concept of tacit knowing comes from scientist and philosopher Michael Polanyi. It is important to understand that he wrote about a process (hence tacit knowing) and not a form of knowledge. However, his phrase has been taken up to name a form of knowledge that is apparently wholly or partly inexplicable.

With tacit knowledge, people are not often aware of the knowledge they possess or how it can be valuable to others. Tacit knowledge is considered more valuable because it provides context for people, places, ideas, and experiences. Effective transfer of tacit knowledge generally requires extensive personal contact and trust.

Tacit knowledge is not easily shared. One of Polanyi's famous aphorisms is: "We know more than we can tell." Tacit knowledge consists often of habits and
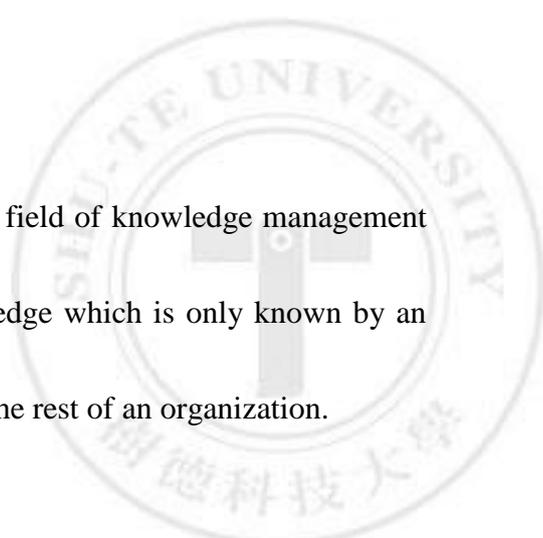
culture that we do not recognize ourselves. In the field of knowledge management

the concept of tacit knowledge refers to a knowledge which is only known by an

individual and that is difficult to communicate to the rest of an organization.

2.2.2. Explicit Knowledge

Knowledge that is easy to communicate is called explicit knowledge.

According to Koskinen (2004), explicit knowledge, unlike tacit knowledge,

can be embodied in a code or a language, and, as a consequence, it can be

communicated easily. The code may be words, numbers, or symbols like

grammatical statements, mathematical expressions, specifications, manuals, and so

forth.

Explicit knowledge consists of some systematic language and is codified

through words, numbers and codes (Hedlund 1994). This codification makes it

amenable to transfer (Riesenberger 1998).

2.3. Externalization

The process of transforming tacit knowledge into explicit knowledge is known as

codification or articulation (Birkinshaw, 2001).

According to Nonaka, Takeuchi and Umemoto (1996), the conversion from tacit

knowledge to explicit knowledge is termed as externalization.
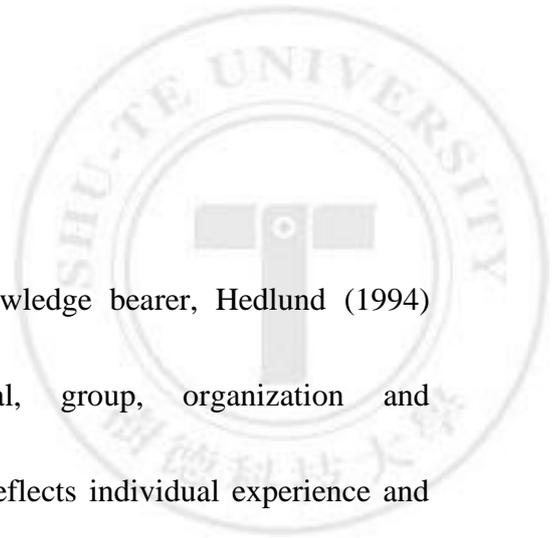
2.4. Organizational and individual knowledge

According to the ontological level of the knowledge bearer, Hedlund (1994) distinguishes among the levels of individual, group, organization and inter-organizational domains. Individual knowledge reflects individual experience and constitutes the basis for the development of organizational knowledge. Organizational knowledge is embedded knowledge and comprises belief systems, collective memories, references and values. It 'resides in the relations between individuals, and is therefore more than the sum of individual knowledge bases' (Kriwet 1997, p. 83). The inter-organizational domain comprises suppliers and customers (Hedlund 1994). Seen from an even broader perspective, the term "social knowledge" addresses knowledge residing within groups of people.

The tension between individual and organizational knowledge is especially critical to the firm as a knowledge integrating institution. As such, knowledge has to be managed as resource.

2.5. Knowledge Management

Apart from any interest in knowledge for economic theory building, there is the question of how to manage knowledge in organizations. A multitude of definitions for
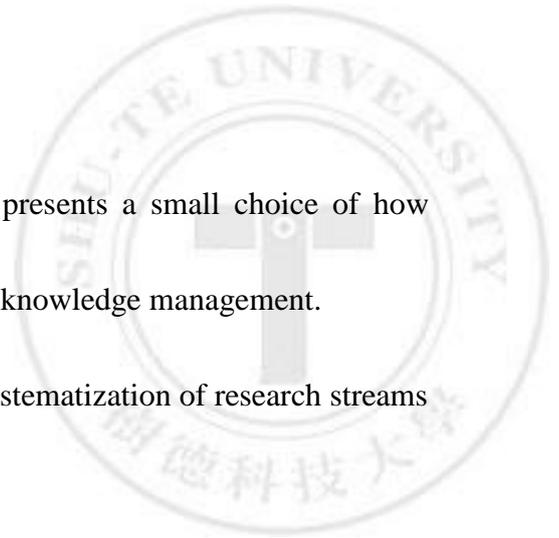
knowledge management can be found, and Table 2 presents a small choice of how

prominent researchers in the field have conceptualized knowledge management.

Von Krogh and Venzin (1995) suggest a useful systematization of research streams

in knowledge management:

1. Knowledge management models

2. Knowledge, conversation, cooperation

3. Measurement and assessment of knowledge

4. Knowledge transfer

5. Knowledge structures

6. Epistemology

7. Knowledge and information technology

8. Knowledge and power

9. Knowledge, networks, and innovation

Table 2. Definitions of knowledge management

Source	Definition
Birkinshaw (2001, p. 12)	Knowledge management can be seen as a set of techniques and practices that facilitates the flow of knowledge into and within the firm.

Buckley and Carter (1999, p. 82)	Knowledge management contains 'the internal mechanisms for coordination, that is, for pooling the key information garnered by managers whose task it is to monitor external volatility and discover new opportunities'.
Davenport etal. (2001, p. 117)	Knowledge management is 'the capability to aggregate, analyze, and use data to make informed decisions that lead to action and generate real business value'.
Demarest (1997, p. 379)	Knowledge management is the systematic underpinning, observation, instrumentalization, and optimization of the firm's knowledge economies.
Leonard-Barton (1995, p. xiii)	The primary engine for the creation and growth and of technological capabilities is the development of new products and processes, and it is within this development context that we shall explore knowledge management . . . The management of knowledge, therefore, is a skill, like financial acumen, and managers who understand and develop it will dominate competitively.
Malhotra (1998, p. 59)	Essentially, it embodies organizational processes that seek synergistic combination of data and information processing capacity of information technologies, and the creative and innovative capacity of human beings.
Stewart et al. (2000, p. 42)	The premise is that knowledge assets, like other corporate assets, have to be managed in order to ensure that enterprises

	derive value from their investment in knowledge assets.
Tsoukas and Vladimirou (1996, p. 973)	Knowledge management 'is the dynamic process of turning an unreflective practice into a reflective one by elucidating the rules guiding the activity of the practice, by helping give a particular shape to collective understandings, and by facilitating the emergence of heuristic knowledge'.

2.6. Knowledge transfer

Knowledge transfer in the fields of organizational development and organizational learning is the practical problem of transferring knowledge from one part of the organization to another (or all other) parts of the organization. Like Knowledge Management, Knowledge transfer seeks to organize, create, capture or distribute knowledge and ensure its availability for future users. It is considered to be more than just a communication problem. If it were merely that, then a memorandum, an e-mail or a meeting would accomplish the knowledge transfer. Knowledge transfer is more complex because (1) knowledge resides in organizational members, tools, tasks, and their sub-networks (Argote & Ingram, 2000) and (2) much knowledge in organizations is tacit or hard to articulate (Nonaka & Takeuchi, 1995). The subject has been taken up under the title of Knowledge Management since the 1990s.

Argote & Ingram (2000) define knowledge transfer as "the process through which
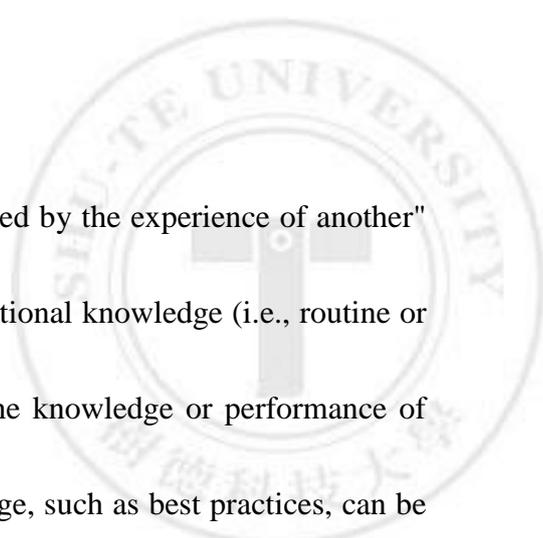
one unit (e.g., group, department, or division) is affected by the experience of another"

(p 151). They further point out the transfer of organizational knowledge (i.e., routine or

best practices) can be observed through changes in the knowledge or performance of

recipient units. The transfer of organizational knowledge, such as best practices, can be

quite difficult to achieve.

It has already been pointed out that the knowledge transfer process is quite

complex in itself, and on a broad level, two general approaches can be distinguished:

the communication model and the knowledge spiral model (Inkpen and Dinur 1998).

2.6.1. Knowledge transfer as a communication model

The classical communication model (Shannon and Weaver 1957) depicts

messages' flow from a sender to a recipient. While parts of the message are likely

to be transformed or even destroyed by 'noise', it is important that the core of the

message arrives at the sender. Two critical stages are the encoding phase, when the

sender packages the message to fit the media, and the decoding phase, when the

receiver has to decipher it again. A simplified model depicting only the building

blocks of the Shannon and Weaver (1957) theory is shown in Figure 2.

Szulanski (1996) was among the first to introduce this concept into the

knowledge management literature, conceptualizing knowledge transfer as a
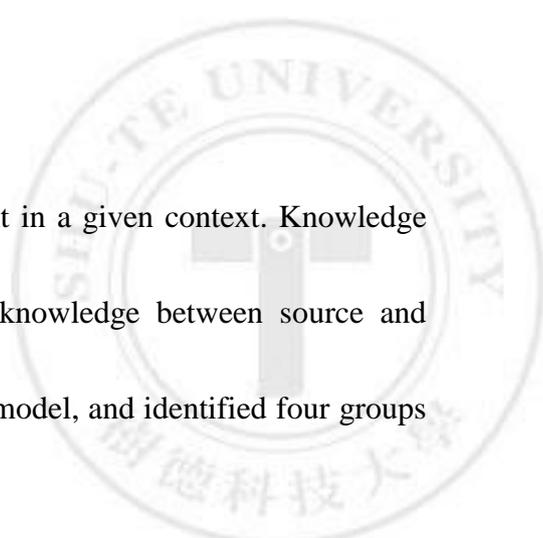
message transmission from a source to a recipient in a given context. Knowledge

transfer is thus seen as a dyadic exchange of knowledge between source and

recipient. Inkpen and Dinur (1998) extended this model, and identified four groups

of related factors:

1. Source-related factors

2. Recipient-related factors

3. Factors relating to the relationship and distance between the two units

4. Factors related to the nature of the knowledge transferred.

Four stages are then necessary for the transfer process:

a) Initiation: transferred knowledge is recognized.

b) Adaptation: knowledge is changed at the source location to the perceived

needs of the recipient.

c) Translation: alterations occur at the recipient unit as a part of the general

problem solving process of adaptation to the new context.

d) Implementation: knowledge is institutionalized to become an integral part of

the recipient unit.
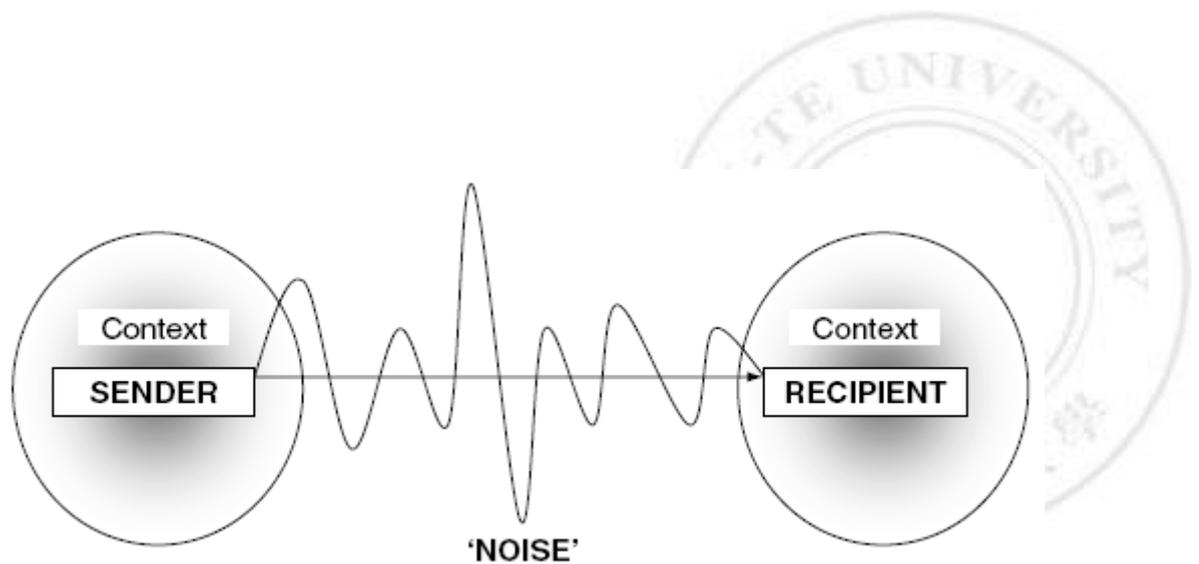
Figure 2. A simplified communication model

Source: Based on Shannon and Weaver (1957)

Although this process is quite easy to understand at first glance, it becomes

quite complex at the organizational level when eligible senders and recipients have

to be defined. To shed some light on this issue, Sveiby (2001, p. 349) identified

nine different knowledge transfers, which are depicted in Figure 3.
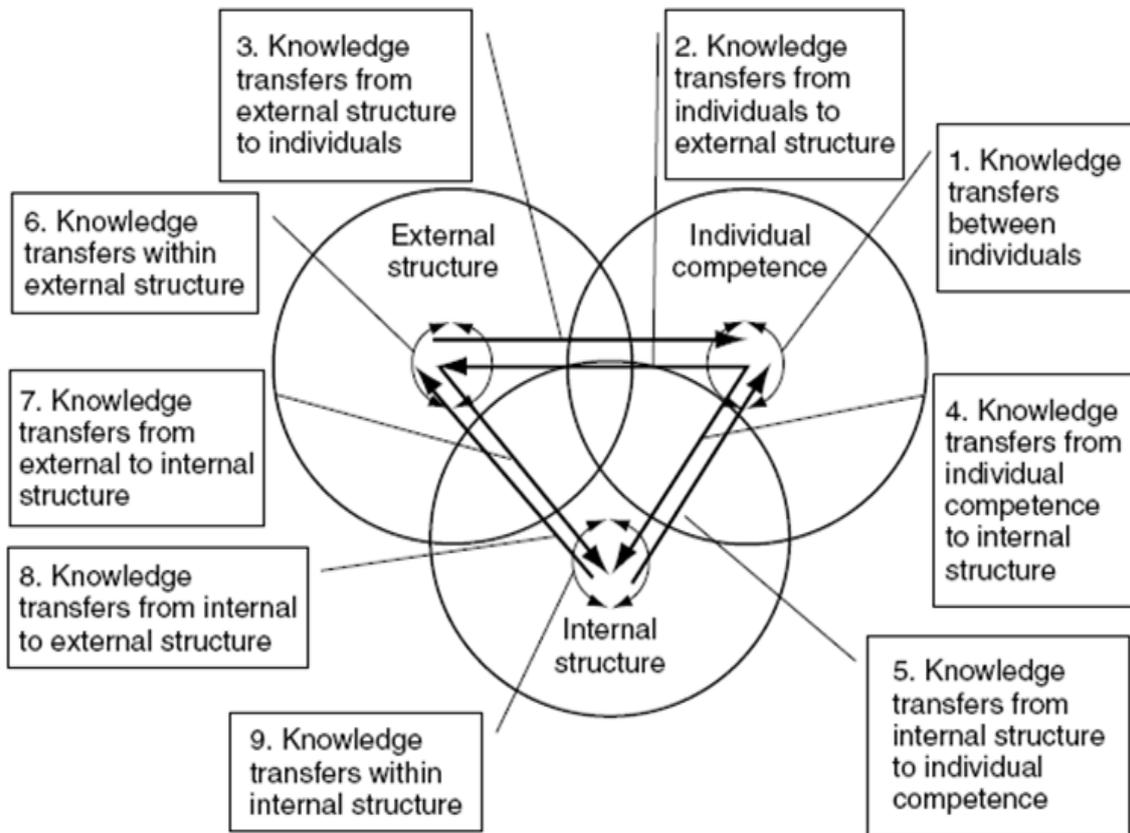
Figure 3. Nine knowledge transfers

Source: Sveiby (2001, p. 349)

2.6.2. The spiral of knowledge

Nonaka and Takeuchi (1995) attribute the success of Japanese companies to their effectiveness in creating knowledge. In their pioneering work the authors propose a model of knowledge creation – the spiral of knowledge (Figure 4). They build on the epistemological dimension of explicit and tacit knowledge and on the ontological dimension which symbolizes the number of people involved in the process.
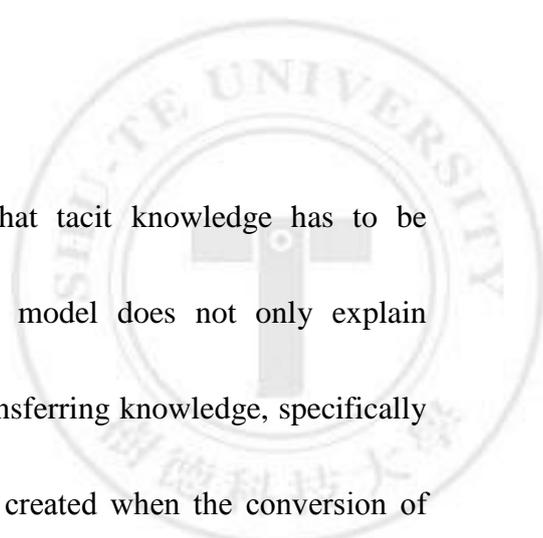
The core assumption of this model is that tacit knowledge has to be mobilized and converted. This means that the model does not only explain knowledge creation but describes processes of transferring knowledge, specifically the so-called 'conversion' processes. A spiral is created when the conversion of tacit and explicit knowledge results in higher epistemological and ontological levels. Nonaka and Takeuchi (1995) identify four specific conversion processes:

1. Socialization (tacit to tacit): Individuals exchange tacit knowledge without codifying it during the transfer phase, e.g. shared mental models, technical skills.

2. Externalization (tacit to explicit): In this process, tacit knowledge is made explicit by codifying it in the form of metaphors, analogies, hypotheses, models, etc. Through such a transformation personal knowledge can be made available on a corporate-wide basis. Externalization is thus the most important process for knowledge creation.

3. Combination (explicit to explicit): Through combination, concepts are systematized within a knowledge system. Existing elements of knowledge are combined in order to create new explicit knowledge. Several media support combination, e.g. documents, meetings, phone calls.

4. Internalization (explicit to tacit): The conversion of explicit into tacit knowledge is called 'internalization', meaning that incoming knowledge is integrated into an individual's knowledge base.

Tacit knowledge   *To*   **Explicit knowledge**

	Tacit knowledge	Explicit knowledge
Tacit knowledge	**Socialization** (Sympathized knowledge)	**Externalization** (Conceptual knowledge)
Explicit knowledge	**Internalization** (Operational knowledge)	**Combination** (Systemic knowledge)

From
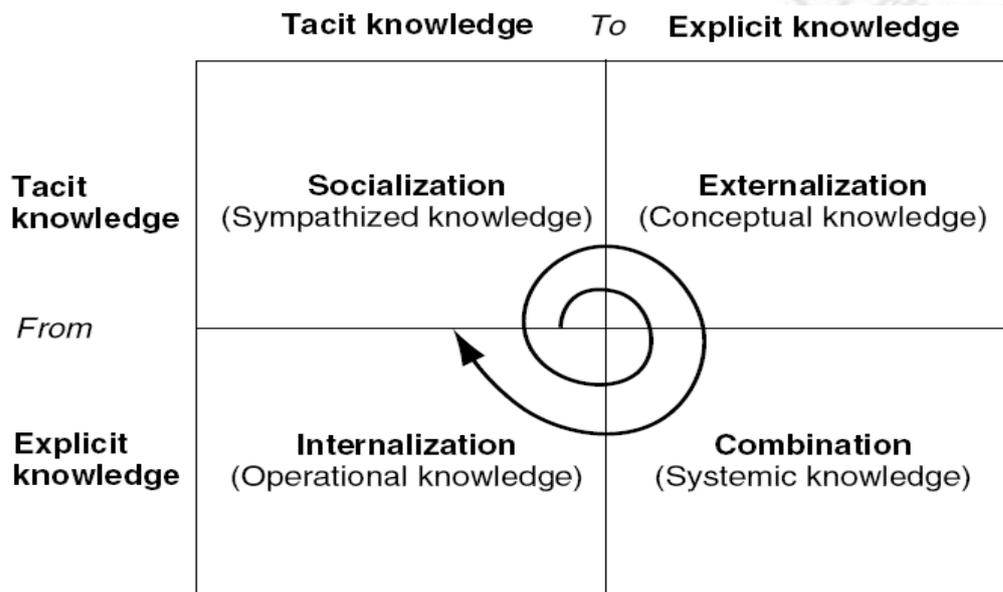
Figure 4. The knowledge spiral

Source: Nonaka and Takeuchi (1995, p. 62)

By combining these two models – the communication model and the knowledge spiral – the four knowledge conversion processes can also be seen as singular transfers between a sender and a recipient. This leads to the conclusion that every sending and every receiving unit has to engage in some of these processes in order to process the in-flowing or out-flowing knowledge. As

described in the communication model, it has to be remembered that no knowledge

transfer is context-free.

The idea of adapting the communication model to explain knowledge

transfers not only between individuals but also between entities in global

organizations is extremely useful for the development of the conceptual model in

this study, and will be taken up later.

Chapter 3 Methodology

3.1. Four Knowledge Transfers inside a Company

For this study, four of nine knowledge transfer processes are relevant (figure 5). It is important to note that a critical feature of modern knowledge management is the time-lag between sender and recipient. While Shannon and Weaver's (1957) communication model builds on a nearly simultaneous transfer, the knowledge transfer process can be interrupted and knowledge can be stored in the meantime. From a conceptual point of view, however, it is clear that every medium represents an intermediate storage device, so the approach is not that revolutionary:

1. Transfers between individuals: How can we improve the transfer of knowledge between people in our organization? This kind of transfer takes place in communication between employees, and here, the simplified model of communication can be applied. Issues such as trust and exposure to different kinds of expertise in the company are important.

2. Transfers from individual competence to internal structure: How can we improve the conversion of individually held competence to systems, tools and templates? When knowledge of individual competences is stored in repositories, it becomes accessible in the organization's structure and can be
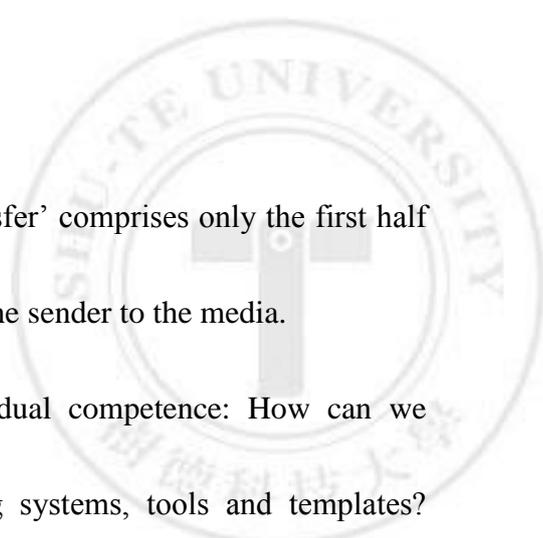
shared by everyone. This definition of 'transfer' comprises only the first half

of the communication model, namely from the sender to the media.

3. Transfers from internal structure to individual competence: How can we

improve individuals' competence by using systems, tools and templates?

Employees' capacity to act should be improved by knowledge accessible in

the internal system. An important issue at this stage of transfer is the interface

between humans and knowledge storage systems. Here, the second half of the

communication process is depicted, the transition from the media to the

recipient.

4. Transfers within the internal structure: The strategic question is how the

organizations' systems, tools and processes can be integrated effectively.

All transfer processes involving external senders or recipients are excluded from

this study. The idea of adapting the communication model to explain knowledge

transfers not only between individuals but also between entities in global organizations

is extremely useful for the development of the conceptual model in this study.
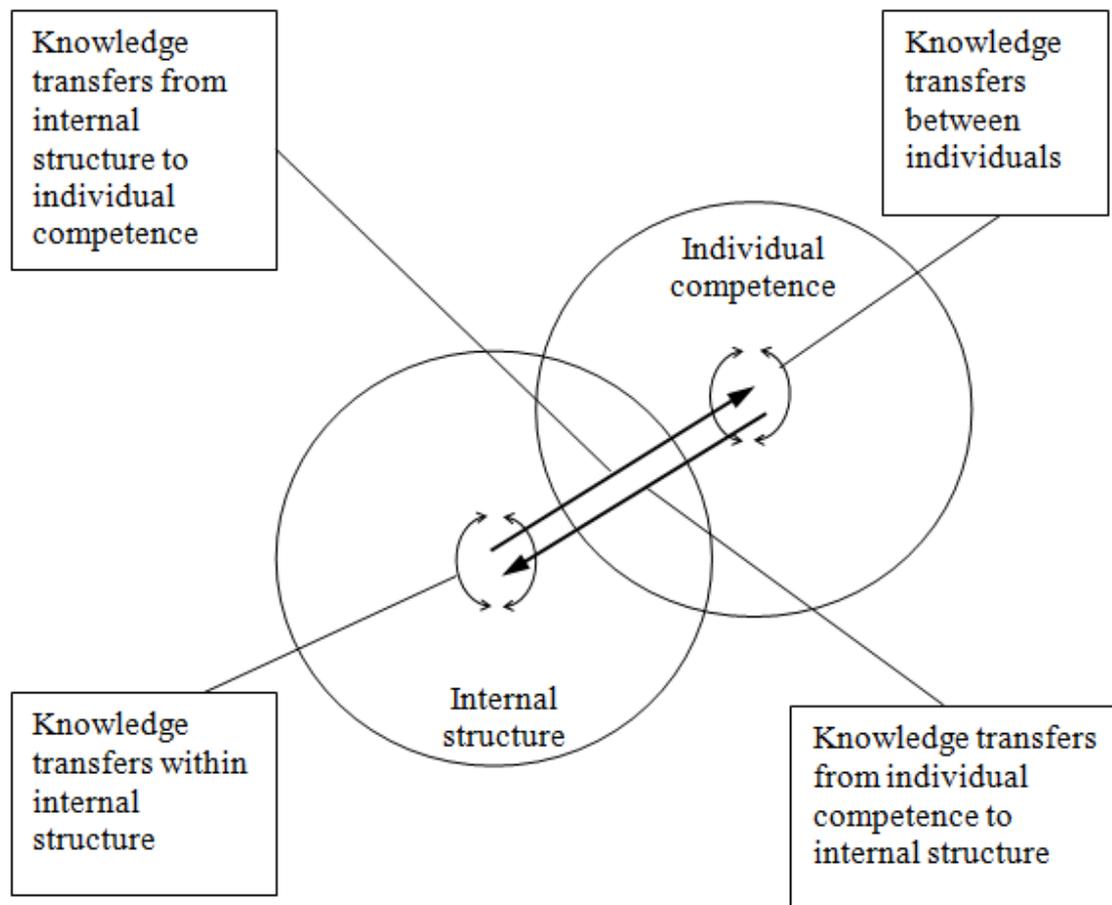
Figure 5. Knowledge transfer within a company

3.2. Factors Related to the Sender

3.2.1. Motivation of the sender

The sender is the most important factor in the process of transfer knowledge;

so, he has the aptitude to transmit the message and his desire to share it (Szulanski,

1996). Likewise, Prusak and Cohen (2001) asset that "strong relationships are the

grease of an organization", as they strongly increase people's intrinsic motivation

to cooperate (Osterloh and Frey, 2000). This intrinsic motivation and relationship
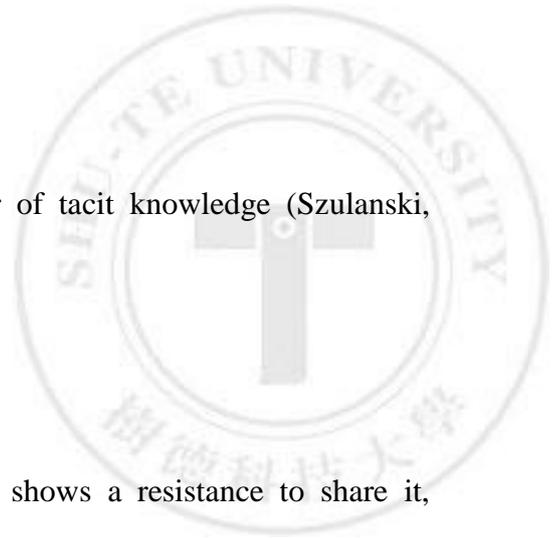
quality are especially important for the transfer of tacit knowledge (Szulanski, 1996).

3.2.2. Resistance of the Sender

Sometimes the owners of the knowledge shows a resistance to share it, which can owe to the fear of losing their property, a position of privilege or superiority (Davenport et al., 1998), or for lack of disposition to dedicate time and resources. In this sense Hansen (1999) explained that the absence of will and of aptitude to carry out can cause that the sender does not want to share his knowledge.

3.2.3. Reliability of the Sender

The difficulties in the process of the transfer knowledge can be due to the absence of perceived reliability of the sender. According to Szulanski (1996, 2000), when the sender is not perceived as reliable, is not seen as trustworthy or knowledgeable, initiating a transfer from that sender will be more difficult and his advice and example are likely to be challenged and resisted. Alternatively, if the knowledge is not perceived to be useful or does not have a proven record of usefulness, it also will be difficult to motivate the recipient to transfer (Szulanski, 2000; Wasko and Faraj, 2000).
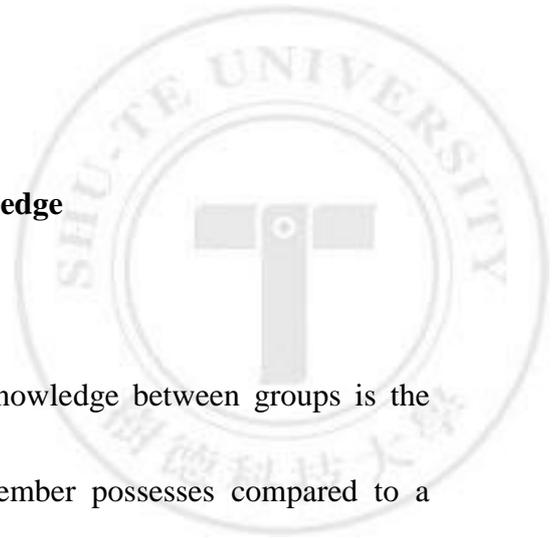
3.3. Factors Related to the Characteristics of Knowledge

3.3.1. Knowledge quality

A factor likely to affect the transfer of knowledge between groups is the relative quality of the knowledge a rotating member possesses compared to a group's existing knowledge. Although a recipient group's decision to accept a rotating member's knowledge might be affected by many factors, such as newcomer accommodation or conflict avoidance, we expected task-performing groups to be especially likely to accept and implement routines that they perceive to be superior to their current ones.

3.3.2. Codification

As soon as the knowledge transfer is compromised, the sender will have to investigate which are the needs for the recipient unit and which are his problems in order to be able to transfer the suitable components of the required knowledge, and give the necessary support during the initial stage of his use and his codification (Szulanski, 1996). The codification is the process by which the knowledge is represented in a code that could be transferred (Ruggles, 1997).

3.3.3. Tacitness
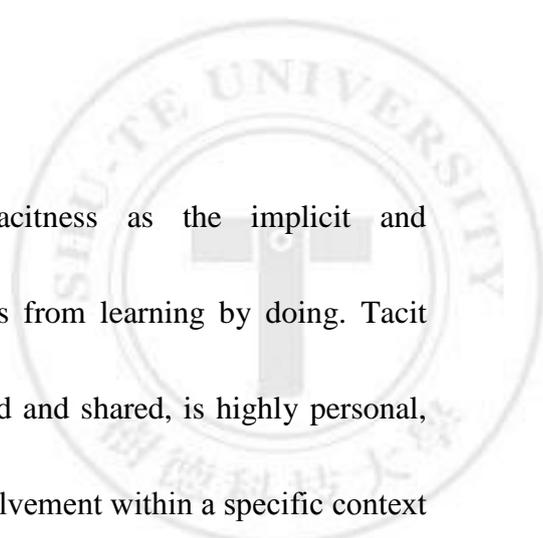
Reed and DeFillippi (1990) define tacitness as the implicit and noncodificable accumulation of skills that results from learning by doing. Tacit knowledge, which cannot be easily communicated and shared, is highly personal, deeply rooted in action and in an individual's involvement within a specific context (Nonaka, 1994). The collective tacit knowledge typically resides in top management schemes, organizational consensus on past collaborative experiences, firm routines, firm culture, and professional culture (Nelson and Winter, 1982; Nonaka and Takeuchi, 1995).

3.3.4. Complexity

Complexity refers to the number of interdependent technologies, routines, individuals, and resources linked to a particular knowledge or asset (Simonin, 1999). As Reed and DeFillippi (1990) argued more complex human or technological systems produce higher levels of ambiguity and, therefore, restrain imitation. The full information spectrum of a particular competence may span across numerous individuals and departments so that the totality of the knowledge cannot be easily integrated or understood by many individuals (Simonin, 1999). According to Mosakowski (1997), there is a causal ambiguity due to the

interdependences that exist between the units organizational. When the knowledge is

independent, the transference happens without problems (Hansen, 1999).

3.4. Factors Related to the Characteristics of the Recipient

3.4.1. Motivation of the recipient

Not only is the grade of interest of the source a very important variable of

the knowledge transfer, but also the motivation of the recipient. As Szulanski

(1996) argued, the motivation of the recipient to accept knowledge proceeding

from an external source, and to commit itself in the achievement of the activities, it

can be a critical in the success of the transference. Lack of motivation may result in

foot dragging, passivity, feigned acceptance, hidden sabotage, or outright rejection

in the implementation and use of new knowledge.

3.4.2. Absorptive capacity

Absorptive capacity was defined by Cohen and Levinthal (1990) as "the

ability of a firm to recognize the value of new information, assimilate it, and apply

it to commercial ends". There are at least two reasons why absorptive capacity may

differ across organization: first, the extent of prior related knowledge, and, second,

the extent of inter-unit homophily of receiving unit regarding the sending unit.

Prior related knowledge is important because it shapes the filters through which the
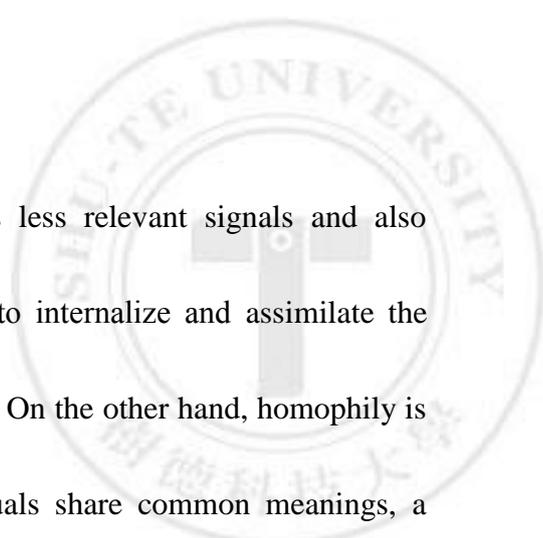
organization differentiates between more versus less relevant signals and also because it determines the organization's ability to internalize and assimilate the more valued signals (Cohen and Levinthal, 1990). On the other hand, homophily is important because when the interacting individuals share common meanings, a mutual sub-cultural language, and are alike in personal and social characteristics, the communication of new ideas is likely to have greater effects in terms of knowledge gain, attitude formation and overt behavior change (Rogers, 1995).

3.4.3. Generational differences

Due to the aging of the U.S. workforce and to the clearly differentiated characteristics of the generations that comprise it (veterans; baby-boomers ;…), more attention is being paid to how workers of different generations and ages work together. Work teams have become increasingly age diverse and it is more likely today than in years past that an older employee will report to a younger supervisor. A recent survey conducted by the Society for Human Resource Management found that in organizations with 500 or more employees, 58% of HR professionals reported conflict between younger and older workers, largely due to their different perceptions of work ethics and work/life balance. What are the implications of an increasingly age diverse workplace for how teams and individuals (peers,
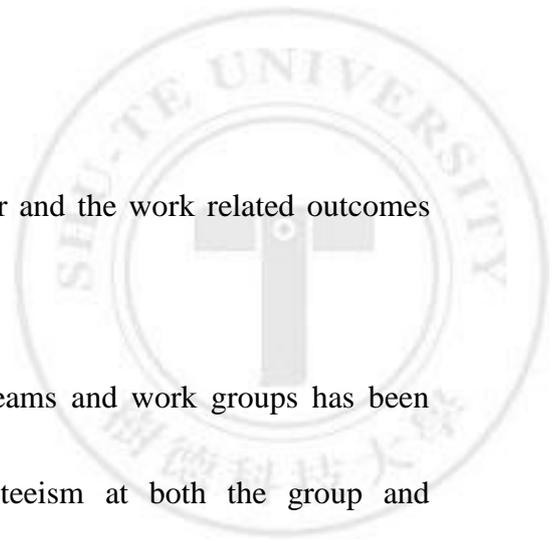
supervisors and their subordinates) work together and the work related outcomes they produce?

While age diversity in top management teams and work groups has been shown to reliably predict turnover and absenteeism at both the group and individual-within-group levels (Cummings, Zhou, & Oldham, 1993; Jackson et al., 1991; O'Reilly et al., 1989; Riordan, 2000; Tsui, Egan and O'Reilly, 1992; Wagner et al., 1984; Wiersema & Bird, 1993; Williams & O'Reilly, 1998), there is little evidence that it influences group performance (Webber & Donahue, 2001; Williams & O'Reilly, 1998).   Additionally, there is mixed evidence that a group's age diversity influences group processes such as communication, conflict, and cohesion (e.g., O'Reilly, Caldwell, and Barnett, 1989; Pelled, Eisenhardt, & Xin, 1999; Webber & Donahue, 2001).   As a result, we understand little about the processes by which group level diversity impacts group level outcomes.

Additionally, there is little consistent evidence that age similarity between supervisors and subordinates positively influences interpersonal liking and performance measures (Liden et al., 1996; Shore, Cleveland, & Goldberg, 2003; Tsui & O'Reilly, 1989; Vecchio, 1993). However, there is some evidence that certain age differences (those that violate social norms or status associated with
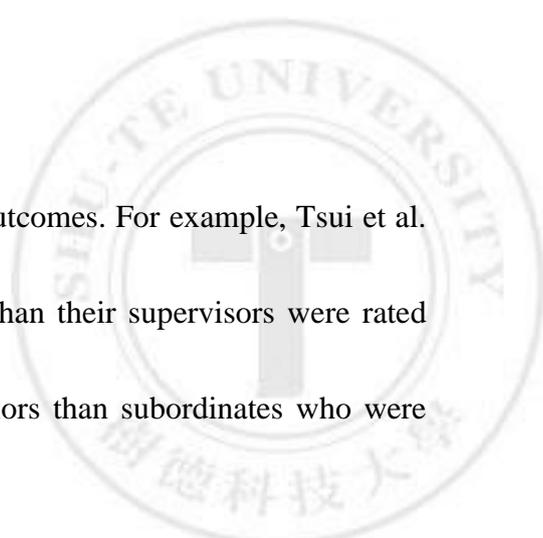
age) have negative implications for subordinate outcomes. For example, Tsui et al. (2002) found that subordinates who were older than their supervisors were rated lower on task performance and extra role behaviors than subordinates who were younger or similar in age to their supervisors.

Age diverse groups are more likely to experience turnover and absenteeism. This is likely to have negative implications for knowledge transfer between group members and will pose difficulties for managers who oversee age diverse teams and work groups.

Managers will need training to understand the role that demographic differences play in how they manage their relationships with their subordinates. Older subordinates should be made aware of their own reactions to supervisors who are younger than they are.

3.5. Factors Related to the Characteristics of the Context

3.5.1. Cultural distance

Culture distance is an important obstacle in the processing of knowledge transfer. According to Meschi (1997), most of the problems encountered in international joint ventures can be traced back to culture factors. From the alliance's inception onward, the partner's national and organizational cultures have the

potential to affect in depth all aspects of collaboration, including the process of knowledge management. Mowery et al. (1996) point to distance and culture differences between partners as key obstacles to inter-firm knowledge transfer.

3.5.2. The geographical distance

The fact that the parts are geographically near facilitates the knowledge transfer (Godkin, 1988). In this line, Epple et al. (1996) suggest that the geographical proximity influences positively the process of the transfer. This way, a major geographical proximity between the organizational units can suppose a major facility in the process of transference because it will be possible to establish a major number of personal contacts (Santoro and Gopalakrishman, 2000; Ojewale et al., 2001).

3.5.3. Trust

Trust is a very complex construct, with multiple levels, bases, and determinants (Rousseau, Sitkin, Burt & Camerer, 1998). The word is well known, and is frequently believed to be understood. Yet, throughout the years, trust has been defined in many different ways (e.g., Williamson, 1993; Zucker, 1986; Rotter, 1967). For instance, trust has been defined in terms of a personality trait (e.g., the propensity to trust; Rotter, 1967) but also has been defined as a behavior (e.g.,

trusting behavior; Mayer, Davis & Schoorman, 1995). Therefore, it is inappropriate

to solely use the term "trust" and to assume its meaning is fully and properly

understood.

The most commonly discussed knowledge management process with respect

to trust is knowledge transfer (i.e., knowledge sharing). It is frequently commented

that in order for people to be willing to share their knowledge, they must have trust

(e.g., Davenport & Prusak, 1998; Podolny & Baron, 1997; Kramer, 1999). It has

even been commented, "trust is, after all, the single most important precondition

for knowledge exchange" (Rolland & Chauvel, 2000, p.239). More specifically,

trust has been discussed as a prerequisite for tacit knowledge sharing (e.g., Roberts,

2000; Rolland & Chauvel, 2000).

The relationship between the source and the recipient is likely to influence

the individual's cooperation and willingness to transfer knowledge. Hansen (1999);

Levin and Cross (2004) demonstrated that strong ties are needed between the

transfer participants for complex knowledge to be exchanged effectively. Transfer

of knowledge, especially complex knowledge; require numerous exchanges, which

in turn, depend on ease of communication and the intimacy of the overall

relationship between the partners. An arduous relationship may create additional
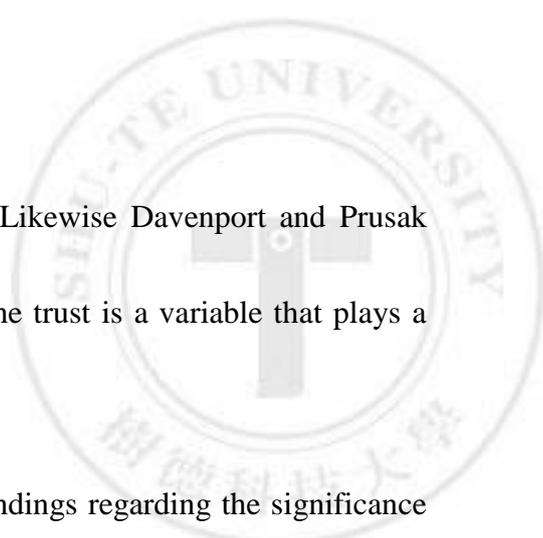
hardship in the transfer (Szulanski, 1996, 2000).Likewise Davenport and Prusak

(1998); Levin and Cross (2004) mentioned that the trust is a variable that plays a

very important role inside the relation.

However, the relevance of trust (and the findings regarding the significance

of the presence of trust) may be limited because of the uncertainty surrounding

causal direction, as it has also been noted that the sharing of information also

increases the level of trust (Bowles, 1999). In other words, as one shares

information and knowledge with another individual, the perceived trust increases

between these individuals. This implies that as people start sharing their knowledge

because the company dictates it (and censures opportunistic behaviors), they will

then start to feel interpersonal trust with those whom they share the information

and knowledge. Therefore, interpersonal trust may not be required (as commonly

believed) for the start of knowledge sharing, but it may develop as a result of

knowledge sharing.

Sharing knowledge (and in particular tacit knowledge) is a risky behavior, as

the individual does not know for certain how the knowledge will be used.

Furthermore, the individual does not know for certain that the value that is

associated with the knowledge will be transferred to the trustee. Therefore, to share
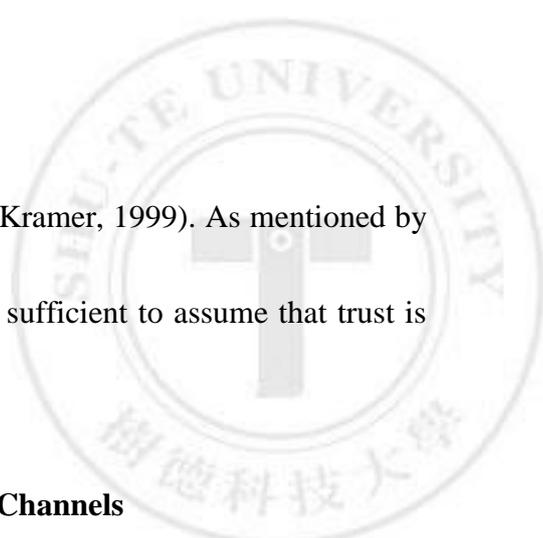
knowledge is to assume risk by both parties (e.g., Kramer, 1999). As mentioned by

Mayer et al. (1995), the assumption of risk is not sufficient to assume that trust is

required.

3.6. Factors Related with Richness of Transmission Channels

3.6.1. Communication face to face

Communication is the process of giving and receiving information (Tsang,

2002). The grade of codification of the knowledge transfer is a critical factor when

deciding the type of mechanism that is going to be used in the transference.

Richer transmission channels improve communication between transfer

partners, resulting in greater success in knowledge transfer. This may be achieved

by establishing corporate socialization mechanisms (Gupta and Govindarajan,

2000), as previously stated, and by using implementation strategies such as

managing personnel selection, pre-transfer training, and higher quality of

documentation (Galbraith, 1990).

In this line, Van Den Hooff and de Ridder (2004); Moffett et al. (2003);

Zarraga and García - Falcon (2003), mentioned that the communication face to face

is the most important factor to transfer the knowledge. On the other hand, the

explicit knowledge can be transferred across mechanisms more centred on the

technology, structured processes and systems of information; therefore, there will

be a minor interaction between the sender and the recipient.

3.6.2. Information and Communication Technology (ICT)

One of the most powerful forms of informal networks is the new ICT. Their

employment in the company allows the communication between all the persons.

The technologies have the potential to eliminate significant barriers to the

communication. The barriers of time and space can be overcome as well as the

organizational barriers due to the hierarchy or the departments. The influence of the

ICT in knowledge transfer has been investigated very much lately by many

researchers, such as Moffett et al. (2003); Roberts (2000); Cabrera et al. (2006);

Albino (2004). In this context, Kwan and Cheung (2006) mentioned that the

technological hardware is applicable for supporters of the knowledge transfer,

because the efficacy of the transference of the knowledge can be improved to

increase the transfer and diminish the costs due the time and at the distance (Albino

et al., 2004).

Researchers may have no doubts about the ability and efficiency of ICT in

facilitating explicit knowledge transfer, but they may debate on the transferability

of tacit knowledge through ICT.
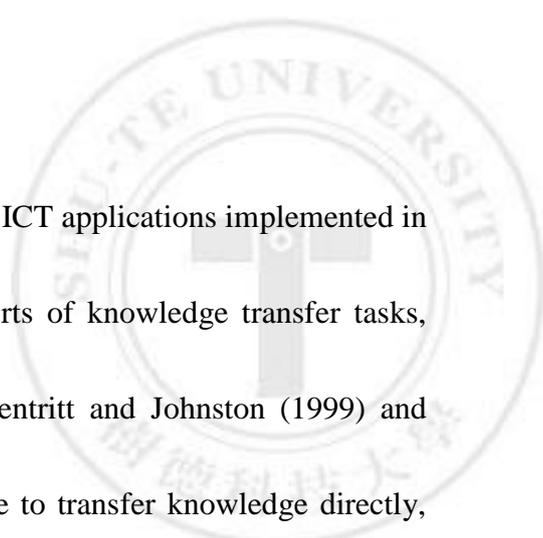
Bolisani and Scarso (1999) studied cases of ICT applications implemented in Italy and argued that ICT can accomplish all sorts of knowledge transfer tasks, including the transfer of tacit knowledge. Blumentritt and Johnston (1999) and Boutellier et al. (1998) argue that ICT is not able to transfer knowledge directly, but can assist the transfer process. They believe that ICT actually transfers the information but information will be decoded into knowledge by the receiver. Empirical evidence from ICT supported international virtual NPD projects by, Cummings and Teng (2003) led them to argue that ICT is effective at facilitating codified knowledge transfer but could not transfer related 'sensory information', such as feelings, intuition, and non-verbal communications. Roberts (2000) predicts that future advanced ICT may provide the context at the same as richness of face-to-face contact, which may really see the 'death of distance'.

In the context of studying ICT supported knowledge transfer, it is argued that importance needs to be attached to both information and communication. From one perspective the knowledge transfer process could be regarded as the process of communication (Shin, 2001). Furthermore, communication is fundamental to knowledge transfer (Riusala and Suutari, 2004) and to all knowledge management process (Quintas, 2002). The theoretical basis of communication study should
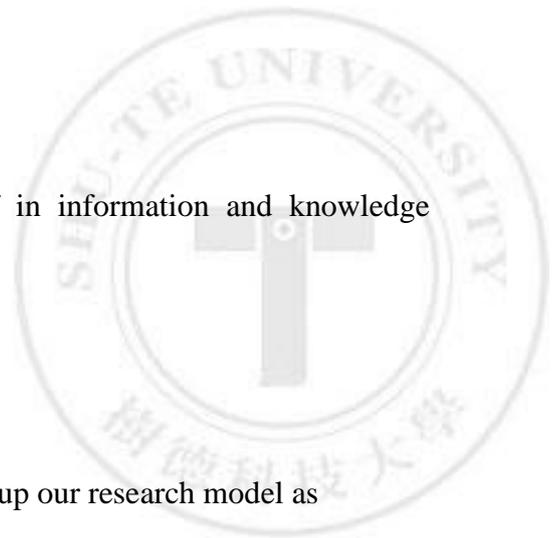
therefore not be undervalued in the context of in information and knowledge

management.

3.7. Research Model

Based on above theoretical background, we come up our research model as

following (Figure 6). Our model has 15 factors related to knowledge transfer in a

company divided into 5 groups.
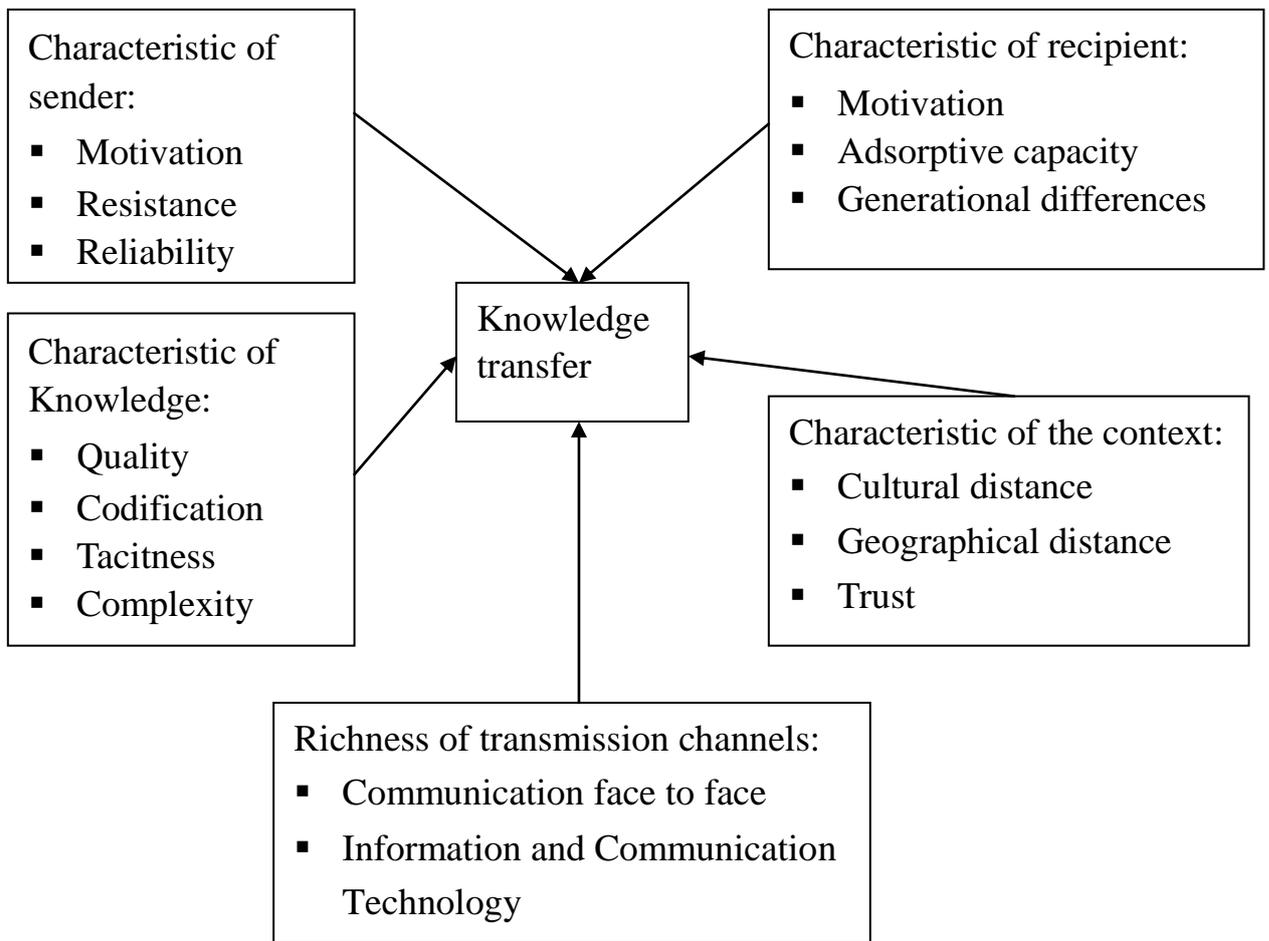
Figure 6. Research Model
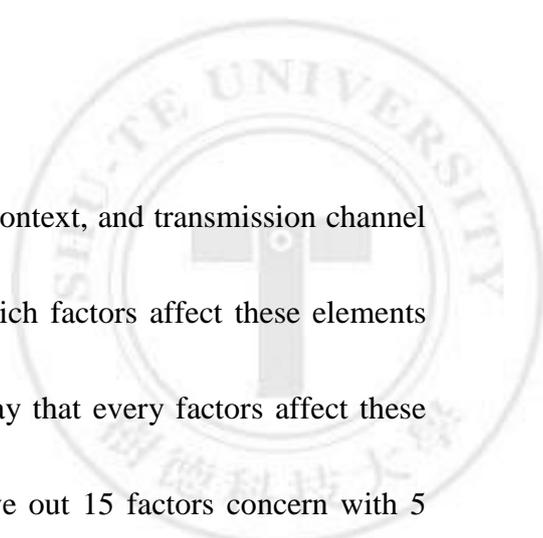
We know that sender, recipient, knowledge, the context, and transmission channel are elements of knowledge transfer. It means that which factors affect these elements also affects knowledge transfer. It is not true if we say that every factors affect these factors will impact on knowledge transfer. So we give out 15 factors concern with 5 elements and do the research. We do qualitative research to analyze how they affect knowledge. Then we give out some suggestion to improve knowledge in a company.

Chapter 4 Interview Results

We design 10 questions based on the model from chapter 3. We just design 10 questions to conduct the research because I could analyze more than one factor from their result. These questions are:

1. Are you willing to share your knowledge with others? Please explain the reason why you answer "Yes" or "No". (Motivation of the Sender)

2. When you share knowledge with somebody, what are you afraid of? (Resistance of the Sender)

3. Will you learn from newcomer? Please explain your answer. (Knowledge Quality)

4. After deciding to share with others, what do you prepare? (Codification)

5. Could you finish your job with the knowledge you learnt from your work place only? (Tacitness)

6. In your opinion, what difficulties will you have when you start a new job? (Complexity, Cultural distance)

7. Are you willing to learn from the others? Please explain your answer. (Motivation of the Recipient)
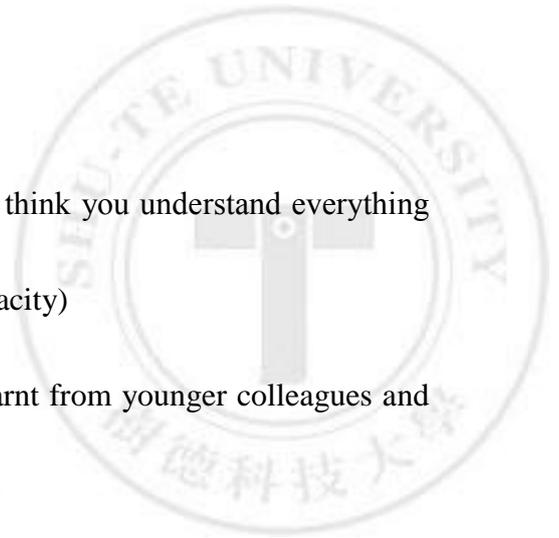
If your answer is "Yes", please tell me you think you understand everything

they share with you or not? (Absorptive Capacity)

8. What difficulties did you have when you learnt from younger colleagues and

older colleagues? (Generational Differences)

9. Who are you willing to share knowledge inside your company? (Trust, The

geographical distance)

10. How do you get knowledge from the others? (Transmission Channels)

We use these questions to interview five people who have had experience in work.

They are: Ngo Trung Bo, Phan Quoc Hieu, Nguyen Van Chung, Ha Huy Hung, Nguyen

Thi Vui. And their opinions in knowledge transfer in a company are as following:

4.1. Are you willing to share your knowledge with others? Please explain the

reason why you answer "Yes" or "No".

Mr. Bo: I am willing to share my knowledge related to my job to my colleagues

because I believe that my knowledge should help others to perform their job better and

boost their outcome.

Mr. Chung: Yes, I am. Because this help me have more close friends, close

colleagues.

Mr. Hung: I am willing to share my knowledge with everybody in my company.

Sharing my knowledge, not only the others can learn from me but also I can learn many things from them, too.

Mr. Hieu: Yes, I am. Once I share my knowledge with others, especially with my friends, I feel that everybody will understand me more, and our friendship will be warmer, better.

Miss Vui: Yes, I am. Because when I share my knowledge, I can check my knowledge is right or wrong; I also learn more knowledge.

All interviewees want to share their knowledge because they think that their knowledge not only help themselves but also help the others. Certainly, everybody suppose that they will receive something once they share their knowledge. This proves that "motivation" factor affect knowledge transfer.

4.2. When you share knowledge with somebody, what are you afraid of?

Mr. Bo: I never worry about sharing my knowledge to others. Somebody think that once they share their knowledge to others, they maybe competed but in my opinion, when I share to them I also receive knowledge from them. A good manager not only needs good skills and knowledge but also needs a good personality.

Mr. Chung: I am not afraid of anything when I share my knowledge to others.

Mr. Hung: when I share my knowledge to others, I am afraid that my knowledge is
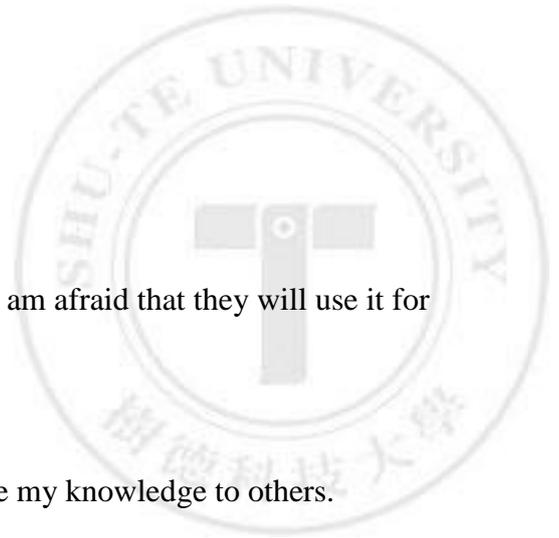
not actually accurate.

Mr. Hieu: when I share my knowledge to others, I am afraid that they will use it for bad purpose (for example: distorting…)

Miss Vui: I am not afraid of anything when I share my knowledge to others.

According to Hung and Hieu, there are resistance and reliability factors of the sender in knowledge transfer.

4.3. Will you learn from newcomer? Please explain your answer.

Mr. Bo: Yes, of course. I've experienced with this issue. Every people have two sides: strengths and weaknesses. New employees have their own strengths. I always look for their strengths to learn and help them overcome their weaknesses.

Mr. Chung: Yes, I will. Everybody have their own strengths, especially in their major. Furthermore, I can learn many other things from them.

Mr. Hung: Everyone have their own strengths. We could learn good things, new knowledge from them.

Mr. Hieu: I am willing. In my opinion, newcomers have their own new knowledge that I should learn.

Miss Vui: Yes, everyone have their own strengths. We could learn something from them, certainly.
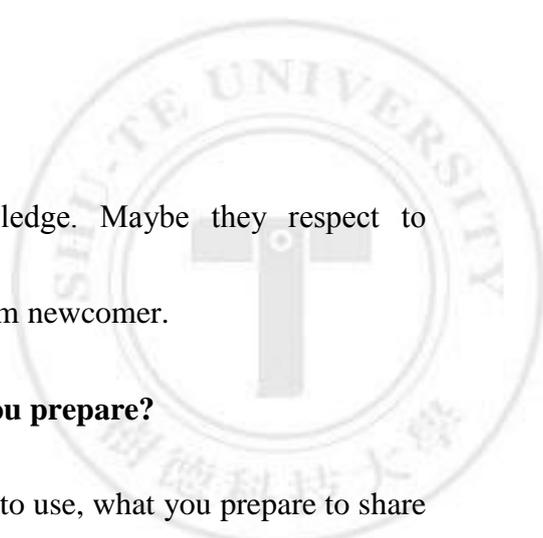
All interviewees accept new member's knowledge. Maybe they respect to newcomer, but they only learn selective knowledge from newcomer.

4.4. After deciding to share with others, what will you prepare?

Mr. Bo: No matter with what methods you intend to use, what you prepare to share with them. For me, I am willing to share my knowledge and try my best to share to them in the honest way.

Mr. Chung: I will prepare specific examples to tell the recipients

Mr. Hung: First, I prepare the content. Second, I find out the easiest way for the recipient to understand.

Mr. Hieu: Words are the best tool to share our knowledge; therefore, I will prepare the best sentences and communication styles which are suitable for each situation. Grammar is also the food for thought!

Miss Vui: I will prepare my communication and narration skills.

Once transfer knowledge happens, the senders always want to choose the best way for the recipient to understand easily and fast. They have to think what recipient's needs are, what troubles they may meet.

4.5. Could you finish your job with the knowledge you learnt from your work place only?

Mr. Bo: How can we define the word "completion"? I want to refer to the level and the effectiveness of your "completion". With my view, I don't believe that I can complete my work effectiveness just with the knowledge I learnt from my company. I need more knowledge and information from friends, experts, and especially from my colleagues. So knowledge sharing seem play an important role for job performance.

Mr. Chung: No, because every kind of jobs have their own ways to solve.

Mr. Hung: It depends on each particular job. However, knowledge from work place is not enough.

Mr. Hieu: With the knowledge I got from my company, I will be able to finish my job well. However, each job and situation has its own characteristics, so learning knowledge beyond the company's bolder also has a strong impact on my working ability.

Miss Vui: No, in my opinion, the knowledge I learn from the company is not enough to have my work perfectly done.

We know that everyone have their own tacit knowledge. The task of knowledge transfer is to make it explicit. Because tacit knowledge cannot be easily communicated

and share; exploiting it is not an easy task of manager.

4.6. In your opinion, what difficulties will you have when you start a new job?

Mr. Bo: I don't hesitate to answer that new skills and new knowledge of new job. This difficulty makes me very confused.

Mr. Chung: I need time to learn new things from new job.

Mr. Hung: I worry if I have enough knowledge and ability for my job.

Mr. Hieu: In my viewpoint, the biggest problem is the company's culture. Each company has its own culture for example; a manufacturing company is different from a school.

Miss Vui: Because of working in a new environment, I don't know much about what I am going to do.

In their opinion, the most difficult problem is new environment, unclear information about what they have to face. They are not afraid of the more complex human or technological systems. Hieu is afraid of company's culture. In fact, cultural distance is a problem of knowledge transfer.

4.7. Are you willing to learn from the others? Please explain your answer.

Mr. Bo: I am willing to learn new knowledge and skills from others. This helps me better in solving the problems and performing my works.
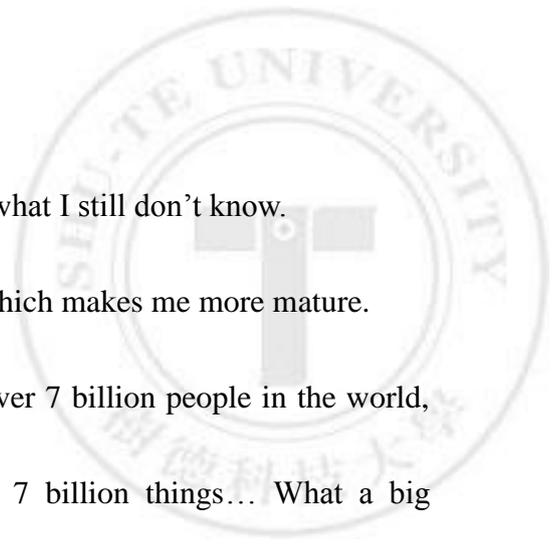
Mr. Chung: I am willing to learn from the others what I still don't know.

Mr. Hung: It is a necessity to learn from others, which makes me more mature.

Mr. Hieu: Yes, I am. Let us consider, there are over 7 billion people in the world, from each person I learn 1 thing; therefore, I gain 7 billion things… What a big treasure!

Miss Vui: Of course, by earning knowledge from other people, I will enlarge my knowledge and be able to serve my job better and easier.

All interviewees want to learn from the others because they think that they will improve their performance from new knowledge. This explain what motivate employees try to learn many thing as much as possible.

4.8. What difficulties did you have when you learnt from younger colleagues and older colleagues?

Mr. Bo: The manner, absolutely. If I do not pay attention to my manner in sharing knowledge I should make the negative effects. They may think that you try to convince your abilities, your knowledge more superior than them.

Mr. Chung: I have some difficulties when I share knowledge with older colleague.

Mr. Hung: There is not any difficulty to share knowledge with younger colleagues. However with the older, the main point is embarrassment, so I have to find the most
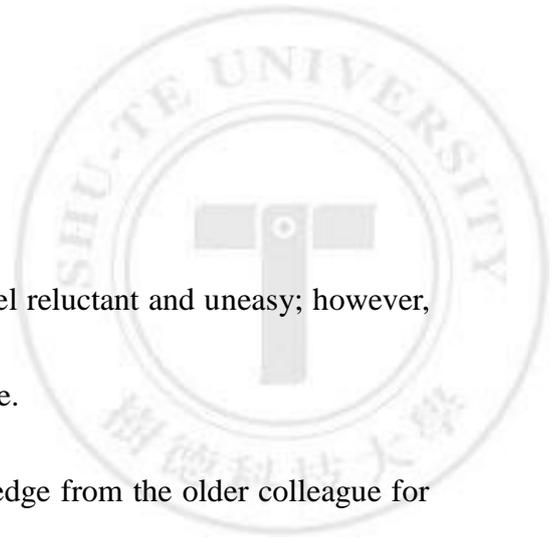
suitable way.

Mr. Hieu: Sharing knowledge with the older, I feel reluctant and uneasy; however, with the younger, I feel more confident and comfortable.

Miss Vui: I just find it difficult to ask for knowledge from the older colleague for fear of being a trouble maker.

Generational differences are always a trouble in knowledge transfer. Indeed, employees usually feel difficult when they communicate with older colleagues.

4.9. Who are you willing to share knowledge inside your company?

Mr. Bo: I am willing to share what I know to everyone who want and need my knowledge.

Mr. Chung: With everybody concerned.

Mr. Hung: I am always prepared to share knowledge with my colleagues.

Mr. Hieu: In my company, I am always ready to share knowledge with the colleagues in the same department as mine.

Miss Vui: With those who I think credible and want to share knowledge with me.

This question we design to check "Trust" factor in knowledge transfer. At the beginning, we think that employees only share knowledge with persons who they trust, believe. We suppose that "motivation of the sender" factor affects employees who want

to share knowledge. This factor encourages them to share knowledge without trust.

These answers do not support "the geographical distance" factor clearly. In our opinion, there are two reasons: first, the question does not go into detail; second, the interviewees just share their knowledge with their colleagues, not outside recipients.

4.10. How do you get knowledge from the others?

Mr. Bo: I am trained new skills and new knowledge need for my job by my company. I try to learn from the colleagues and self-study.

Mr. Chung: By communicating, observing, and reading books.

Mr. Hung: By learning from my job, asking others, reading books and magazines.

Mr. Hieu: Observing is the fastest and most effective way to gain knowledge.

Miss Vui: By observing and learning from my colleagues.

Communication face to face is the most important to knowledge transfer. Everybody try to observe others and learn from them. In our opinion, Information and Communication Technology is also an important way to transfer knowledge. But in this study, the interview result does not support this idea. Maybe the interviewees do not experience this way.

According to interview results, we conclude that the model we give out is suitable for companies to apply. Many interviewees agree with those factors. However the level

of their agreement is different from factors. This difference is not important because it proves that those factors actually impact on knowledge transfer inside a company. As a manager, we cannot ignore this; otherwise we will lose the competitive ability of our company.
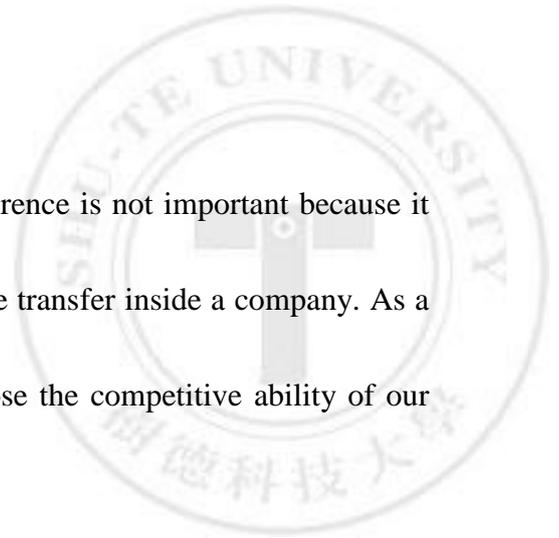
Chapter 5 Conclusions and Discussion

5.1. Conclusions

Through literature research and theoretical analysis, this paper shows four knowledge transfers inside company. Basing on these knowledge transfers, this paper suggests fifteen affecting factors on knowledge transfer in a company with five separate groups. We interview to collect ideas. Then we analyze whether these factors affect knowledge transfer.

Identifying the factors that affect knowledge transfer is one of the most important processes in a company to transfer or share common knowledge of the organization. For this reason, this research will be very helpful for every organization and persons who interest in knowledge transfer. Depend on this study, they can broad the topic and find out the most suitable solution for their problem.

5.2. Limitations

This study shows many factors that affect knowledge transfer in a company but this paper did not mention the kind of company that the author did the research; who were the objects in detail. The number of interviewees is limited, this is also a limitation.

5.3. Discussion

In the further research, we will do the empirical research. We will design

hypotheses. Data will be collected through a questionnaire survey from organizations.

The questionnaires will be sent to employees. We will use SPSS to test the hypotheses.

In general, the success of a company depends on the succession in their knowledge

transfer. The company has to learn to exploit its specific resources acquired inside the

company. On the other hand, these companies cannot forget that the source of a

competitive advantage is in the variety of skills and the diversity of knowledge.

References
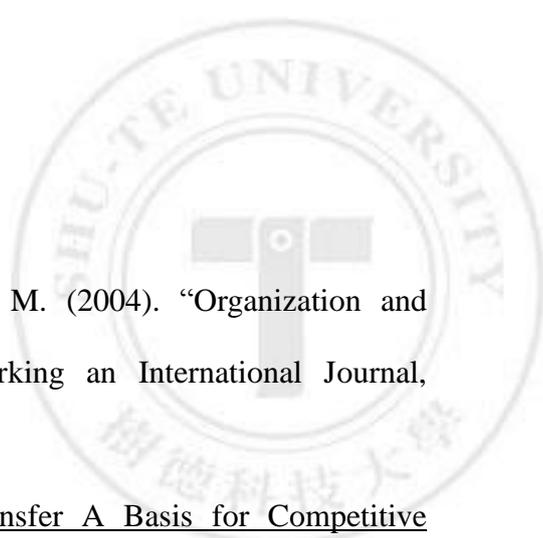
[1]   Albino, V; Garavelli, A. C. and Gorgogline, M. (2004). "Organization and technology in knowledge transfer". Benchmarking an International Journal, Volume 11, Number 6.

[2]   Argote, L., P. Ingram (2000). Knowledge transfer A Basis for Competitive Advantage in Firms. Organizational Behavior and Human Decision Processes 82(1): 150-169.

[3]   Baum, J. A. C., and Greve, H. R. (Eds.), (2001). Multiunit Organizations and Multiunit Strategy: Advances in Strategic Management. Elsevier, Oxford, UK.

[4]   Bennett, R. and H. Gabriel (1999). "Organisational factors and knowledge management within large marketing departments: an empirical study". Journal of Knowledge Management, 3(3), 212–25.

[5]   Birkinshaw, J. (2001). "Why is knowledge management so difficult?" Business Strategy Review, 12(1), 11–18.

[6]   Blackler, F. (1995). "Knowledge, Knowledge Work and Organizations: An Overview and Interpretation". Organization Studies (6), 1021-1046.

[7]   Blumentritt, R. and Johnston R. (1999). Towards a Strategy for Knowledge Management. Technology Analysis & Strategic Management Vol. 11, No. 3: 287-300.

[8]   Bolisani, E. and Scarso E. (1999). Information technology management: a knowledge-based perspective. Technovation(19): 209-217.
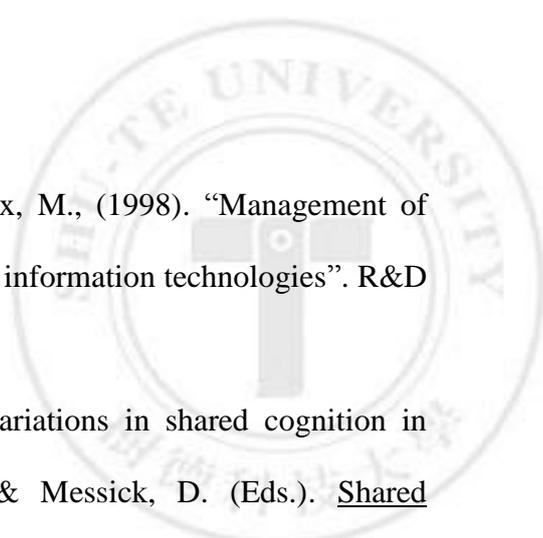
[9] Boutellier, R., Grassmann, O., Macho, H., Roux, M., (1998). "Management of dispersed product development teams: the role of information technologies". R&D Management 28: 13-25.

[10] Bowles, T. (1999). Chapter 14: Themes and variations in shared cognition in organizations. In Thompson, L., Levine, J. & Messick, D. (Eds.). <u>Shared Cognition in Organizations: The Management of Knowledge</u>. Lawrence Erlbaum Assoc. Publishers, Mahwah, NJ, 328-348.

[11] Buckley, P. J. and M. J. Carter (1999). "Managing cross-border complementary knowledge". International Studies of Management & Organization, 29(1), 80–104.

[12] Cabrera, Á. William,C.C. and Salgado,J.F. (2006). "Determinants of individual engagement in Knowledge sharing". International Journal of Human Resource Management, Volume17, Number 2.

[13] Carlile, P., September/October (2004). "Transferring, Translating and transforming: An Integrative Framework for Managing Knowledge across Boundaries". Organization Science (15), pp. 555-568.

[14] Cohen, W. M. and Levinthal, D. (1990). "Absorptive capacity: a new perspective on learning and innovation". Administrative Science Quarterly, Volume 35.

[15] Cummings, A., Zhou, J., & Oldham, G. (1993). "Demographic differences and employee work outcomes: Effects of multiple comparison groups". Paper presented at the Annual Meeting of the Academy of Management, Atlanta, GA.
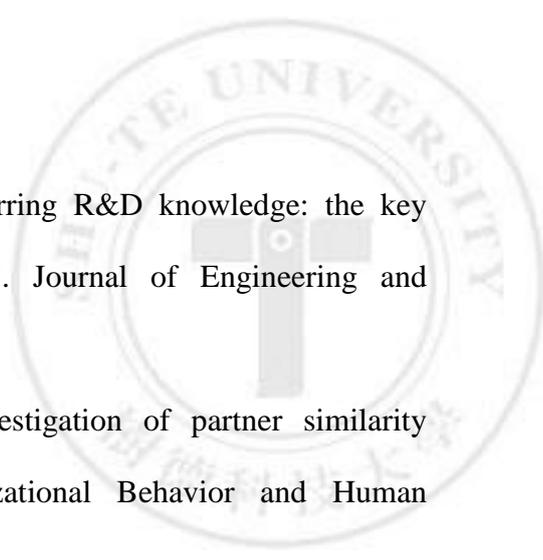
[16] Cummings, J. and Teng B.S. (2003). "Transferring R&D knowledge: the key factors affecting knowledge transfer success". Journal of Engineering and Technology Management(20): 39-68

[17] Darr, E.D. ,Kurtzberg, T.R. (2000). "An investigation of partner similarity dimensions on knowledge transfer". Organizational Behavior and Human Decision Processes, Vol. 82

[18] Davenport, T. H. and L. Prusak (1998). <u>Working Knowledge</u>. Cambridge, MA: Harvard Business School Press.

[19] Davenport, T. H., J. G. Harris, D. W. De Long and A. L. Jacobson (2001). "Data to knowledge to results: building analytic capability". California Management Review, 43(2), 17–38.

[20] Demarest, M. (1997). "Understanding knowledge management". Long Range Planning, 30(3), 374–384.

[21] Epple, D.; Argote, L. and Murphy, K. (1996). "Empirical investigation of the micro structure of knowledge acquisition and transfer through learning by doing". Operation Research, Volume 44, Number1.

[22] Galbraith, C. S. (1990). "Transferring core manufacturing technologies in high tech firms". California Management Review, Number 32.

[23] Godkin, L. (1998). "Problems and practicalities of technology transfer: a survey of literature". International Journal of Technology Management Journal, Volume15.

[24] Griffith, D. A.; Zeybek, A.Y. and O'Brien, M. (2001). "Knowledge transfer as a means for relationships development: a Kazakhstan-foreign international joint venture illustration". Journal of international Marketing, Volume 9, Number 2.
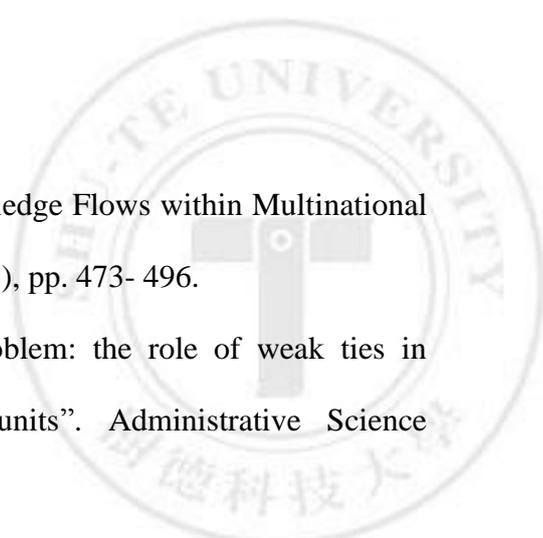
[25] Gupta, A., and Govindarajan, V., (2000). "Knowledge Flows within Multinational Corporations". Strategic Management Journal (21), pp. 473- 496.

[26] Hansen, M.T. (1999). "The search transfer problem: the role of weak ties in sharing knowledge across organizations subunits". Administrative Science Quarterly, Volume 44.

[27] Harman, C. and Brelade, S., (2003). "Doing the Right Thing in a Knowledge Transfer". Knowledge Management Review Vol 6 Issue 1 pp 28-31, Melcrum Publishing.

[28] Hedlund, G. (1994). "A model of knowledge management and the N-form corporation". Strategic Management Journal, 15, 73–90.

[29] Inkpen, A. C. and A. Dinur (1998). "The transfer and management of knowledge in the multinational corporation: considering context". Carnegie Bosch Institute Working Paper.

[30] Jackson, S.E., Brett, J.F., Sessa, V.I., Cooper, D.M., Julin, J.A., & Peyronnin, K. (1991). "Some differences make a difference: Individual dissimilarity and group heterogeneity as correlates of recruitment, promotions, and turnover". Journal of Applied Psychology, 76, 675-689.

[31] Jacob, M. and Ebrahimpur, G. (2001). "Experience vs expertise: the role of implicit understanding of knowledge in determining the nature of knowledge transfer in two companies". Journal of intellectual capital, Volume 2, Number 1.

[32] Kogut, B. and U. Zander (1995). "Knowledge, market failure and multinational enterprise: a reply". Journal of International Business Studies, 26(2), 417–424.
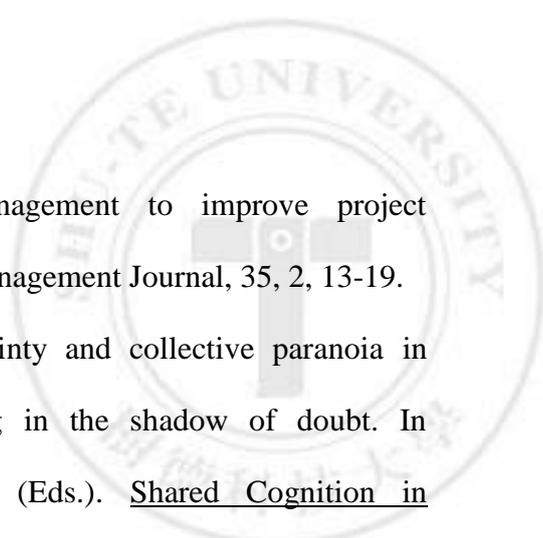
[33] Koskinen, K. U. (2004). "Knowledge Management to improve project communication and implementation". Project Management Journal, 35, 2, 13-19.

[34] Kramer, R. (1999). Chapter 8: Social uncertainty and collective paranoia in knowledge communities: Thinking and acting in the shadow of doubt. In Thompson, L., Levine, J. & Messick, D. (Eds.). Shared Cognition in Organizations: The Management of Knowledge. Lawrence Erlbaum Assoc. Publishers, Mahwah, NJ, 163-191.

[35] Kriwet, C. K. (1997). Inter- and Intra-organizational Knowledge Transfer. University St. Gallen: Bamberg.

[36] Krogh, G. von and M. Venzin (1995), "Anhaltende Wettbewerbsvorteile durch Wissensmanagement", Die Unternehmung 52(6), 417–436.

[37] Kwan, M.M. and Cheung, P.M. (2006), "The knowledge transfer process: From field studies to technology development", Journal of Database Management, Volume 17, Number 1.

[38] Leonard-Barton, D. (1995), Wellsprings of Knowledge, Boston: Harvard Business School Press.

[39] Levin, D.Z. and Cross, R. (2004), "The strength of weak ties you can trust: the mediating role of trust in effective knowledge transfer", Management Science, Volume 50, Number 11.

[40] Liden, R.C., Stilwell, D., & Ferris, G.R. (1996), "The effects of supervisor and subordinate age on objective performance and subjective performance ratings", Human Relations, 49, 327-347.
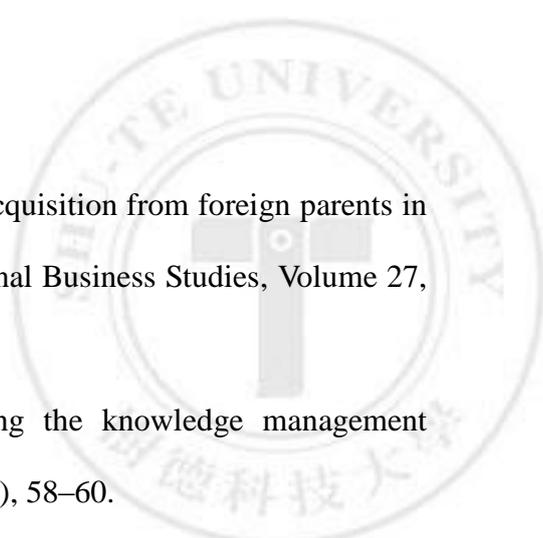
[41] Lyles, M.A. and Salk, J.E (1996), "Knowledge acquisition from foreign parents in international joint venture", Journal of International Business Studies, Volume 27, Number 5.

[42] Malhotra, Y. (1998), "Tools@work: deciphering the knowledge management hype", Journal for Quality and Participation, 21(4), 58–60.

[43] Mayer, R., Davis, J. & Schoorman, F. (1995), "An integrative model of organizational trust", The Academy of Management Review, 20(3), 709-734.

[44] McDermott, R. and C. O'Dell (2001), "Overcoming cultural barriers to sharing knowledge", Journal of Knowledge Management, 5(1), 76–85.

[45] Meschi P.X., (1997), "Longevity and cultural differences of international joint ventures: Toward time based cultural management", Human Relations, Vol 50, No. 2, pp211-227.

[46] Moffett, S.; McAdam, R. and Parkinson, S. (2003), "An empirical analysis of knowledge management applications", Journal of Knowledge Management, Volume 7, Number 3.

[47] Mosakowski, E. (1997), "Strategic making under causal ambiguity: conceptual issues and empirical evidence", Organization Science, Volume 8, Number 4.

[48] Mowery, D.C.; Oxley, J. E. and Silverman, B.S. (1996), "Strategic alliances and interfirm knowledge transfer", Strategic Management Journal, Volume17, Winter Special Issue.

[49] Nelson, R. and Winter, S. (1982), An evolutionary theory of economic change, Massachusetts: Harvard Business Press.

[50] Nonaka, I and Takeuchi, H. (1995), <u>The Knowledge creating company: How Japanese companies create the dynamics of innovation</u>, New York: Oxford University Press.

[51] Nonaka, I. (1994), "A dynamic theory of organizational knowledge creation", Organization Science, Volume 5, Number 1.

[52] Nonaka, I., Takeuchi, H. and Umemoto, K. (1996), "A theory of organizational knowledge creation", International Journal of Technology Management, 11, 7/8, 833-845.

[53] O'Reilly, C.A., Caldwell, D.F., & Barnett, W.P. (1989), "Work group demography, social integration, and turnover", Administrative Science Quarterly, 34, 21-37.

[54] Ojewale, B, A.; Ilori, M.O.; Oyebisi, T.O. and Akinwumi, I.O. (2001), "Industry academic relation: utilization of idle capabilities in polytechnics, universities and research organizations by entrepreneurs in Nigeria", Technovation, Volume 21.

[55] Osterloh, M. and Frey, B, S. (2000), "Motivation, knowledge transfer, and organizational forms", Organization Science, Volume 11, Number 5.

[56] Pelled, L.H., Eisenhardt, K.M., & Xin, K.R. (1999), "Exploring the black box: An analysis of work group diversity, conflict, and performance", Administrative Science Quarterly, 44, 1-28.

[57] Podolny, J.M. & Baron, J.N., (1997), "Resources and relationships: Social networks and mobility in the workplace", American Sociological Review, 62, 673-693.

[58] Polanyi, (1966), <u>The tacit dimension</u>, Anchor Day. New York.
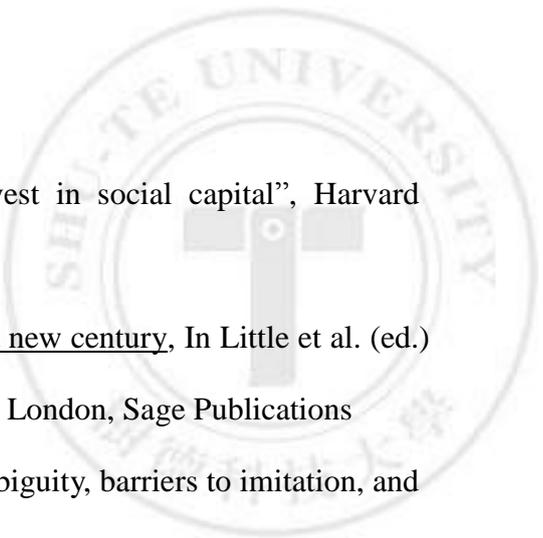
[59] Prusak, L and Cohen, D. (2001), "How to invest in social capital", Harvard Business Review, June.

[60] Quintas, P., Ed. (2002), <u>Managing knowledge in a new century</u>, In Little et al. (ed.) Managing knowledge. An essential reader, ppl-14. London, Sage Publications

[61] Reed, R. and R. J. DeFillippi. (1990), "Causal ambiguity, barriers to imitation, and sustainable competitive advantage", Academy of Management Review, Volume15.

[62] Riesenberger, J. R. (1998). "Knowledge – the source of sustainable competitive advantage". Journal of International Marketing, 6(3), 94–107.

[63] Riordan, C.M. (2000), <u>Relational demography within groups: Past developments, contradictions, and new directions</u>, Research in Personnel and Human Resources Management, 19, 131-173.

[64] Riusala, K. and Suutari V. (2004), "International Knowledge Transfers through Expatriates", Thunderbird International Business Review Vol. 46 (6): 743-770.

[65] Roberts, J (2000), "From Know-how to show- how? Questioning the role of information and communication technologies in knowledge transfer", Technology Analysis Strategic Management, Volume12, Number 4.

[66] Rogers, E. R. (1995), <u>Diffusion of Innovations</u>, Freee Press, New York.

[67] Rolland, N. & Chauvel, D. (2000). Knowledge transfer in strategic alliances. In Despres, C. & Chauvel, D. (Eds.), <u>Knowledge Horizons: The Present and the Promise of Knowledge Management</u>, Butterworth Heinemann, Boston, MA, 225-236.

[68] Rotter, J. (1967). "A new scale for the measurement of interpersonal trust". Journal of Personality, 35, 651-665.
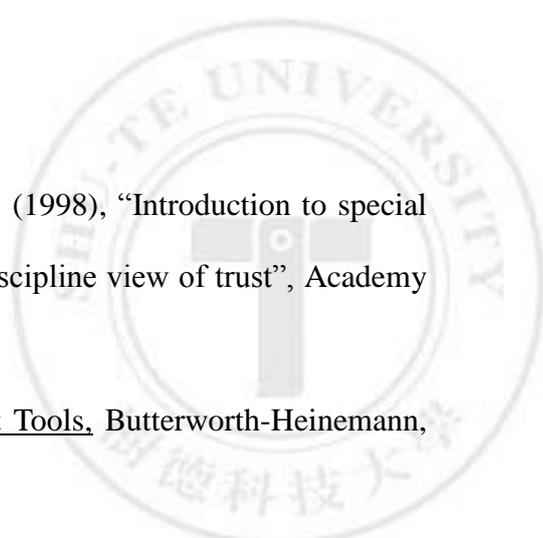
[69] Rousseau, D., Sitkin, S., Burt, R. & Camerer, C. (1998), "Introduction to special topic forum. Not so different after all: A cross-discipline view of trust", Academy of Management Review, 23(3), 393-404.

[70] Ruggles, R. L. (1997), <u>Knowledge Management Tools,</u> Butterworth-Heinemann, Boston, MA.

[71] Santoro, M. D. and Gopalakrishman, S. (2000), "The institutionalization of knowledge transfer activities within industry-university ventures", Journal of Engineering and Technology Management, Volume 17.

[72] Shannon, C. E. and W. Weaver (1957), <u>Mathematical Theory of Communication,</u> Chicago: University of Illinois Press.

[73] Shin, M., T. Holden and R. A. Schmidt (2001), "From knowledge theory to management practice: towards an integrated approach", Information Processing & Management, 37(2), 335–355.

[74] Shore, L.M., Cleveland, J.N., & Goldberg, C.B. (2003), "Work attitudes and decisions as a function of manager age and employee age", Journal of Applied Psychology, 88, 529-537.

[75] Simonin, B. L. (1999), "Ambiguity and the process of knowledge transfer in alliances strategic", Strategic Management Journal, Volume 20.

[76] Stewart, K. A., R. Baskerville, V. C. Storey, A. Raven and C. Long (2000), "Confronting the assumptions underlying the management of knowledge and investigating knowledge management", The Data Base for Advances in Information Systems, 31(4), 41–53.

[77] Sveiby, K.-E. (2001), "A knowledge-based theory of the firm to guide in strategy formulation", Journal of Intellectual Capital, 2(4), 344–58.
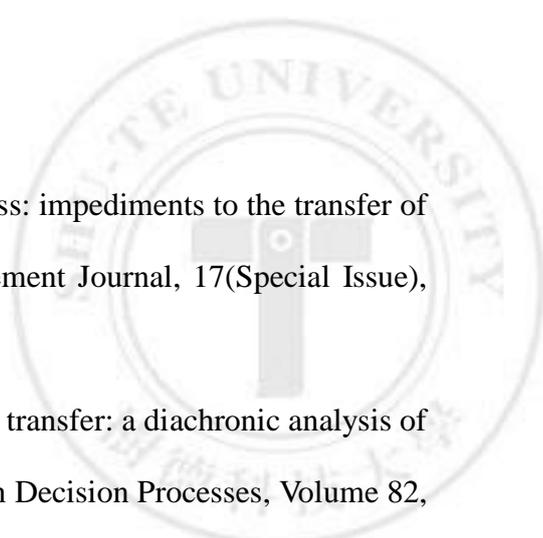
[78] Szulanski, G. (1996), "Exploring internal stickiness: impediments to the transfer of best practice within the firm", Strategic Management Journal, 17(Special Issue), 27–43.

[79] Szulanski, G. (2000), "The process of Knowledge transfer: a diachronic analysis of stickiness", Organizational Behaviour and Human Decision Processes, Volume 82, Number 1.

[80] Tenkasi, R. V. (2000). "The dynamics of cultural knowledge and learning in creating viable theories of global change and action". Organization Development Journal, 18(2), 74–90.

[81] Tsai, M.T. and Tsai, L.L. (2005), "An empirical study of the knowledge transfer methods used by clinical instructors", Internal Journal of Management, Volume 22, Number 2.

[82] Tsai, W. (2001), "Knowledge transfer in intra-organizational networks: effects of networks position and absorptive capacity on business innovation and performance", Academy of Management Journal, Volume 44, Number 5.

[83] Tsang, E. (2002), "Learning from overseas venturing experience; the case of Chinese family businesses", Journal of Business Venturing, Volume17, Number 1.

[84] Tsoukas, H. and E. Vladimirou (1996), "The firm as a distributed knowledge system: a constructionist approach", Strategic Management Journal, 17 (Winter Special Issue), 11–25.

[85] Tsui, A.S., & O'Reilly, C.A. (1989), "Beyond simple demographic effects: The importance of relational demography in superior-subordinate dyads", Academy of Management Journal, 32, 402-423.
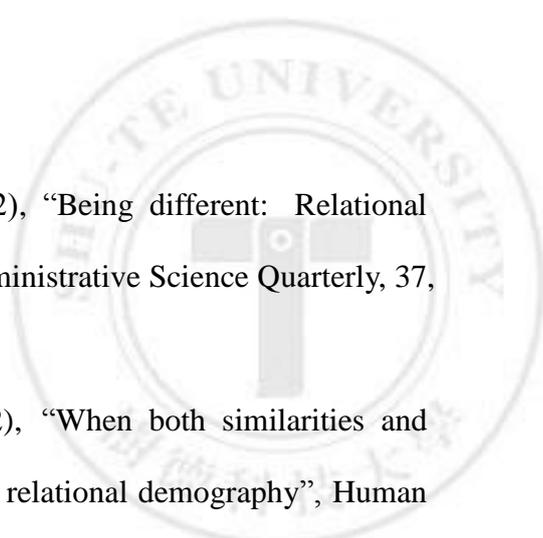
[86] Tsui, A.S., Egan, T.D., & O'Reilly, C.A. (1992), "Being different: Relational demography and organizational attachment", Administrative Science Quarterly, 37, 547-579.

[87] Tsui, A.S., Porter, L.W., & Egan, T.D. (2002), "When both similarities and dissimilarities matter: Extending the concept of relational demography", Human Relations, 55, 899-929.

[88] Van den Hooff, B, and De Ridder, J, A. (2004), "Knowledge sharing in context: the influence of organizational commitment, communication climate and CMC use on knowledge sharing", Journal of knowledge Management, Volume 8, Number 6.

[89] Vecchio, R.P. (1993), "The impact of differences in subordinate and supervisor age on attitudes and performance", Psychology and Aging, 8, 112-119.

[90] Wagner, W.G., Pfeffer, J., & O'Reilly, C.A. (1984), "Organizational demography and turnover in top management groups", Administrative Science Quarterly, 29, 74-92.

[91] Wasko, M.M, and Faraj, S. (2000), "It is what one does: why people participate and help others in electronic communities of practice", Journal of Strategic Information Systems, Volume 9, Number 2-3.

[92] Webber, S.S., & Donahue, L.M. (2001), "Impact of highly and less job-related diversity on work group cohesion and performance: A meta-analysis", Journal of Management, 27, 141-162.

[93] Wiersema, M.F., & Bird, A. (1993), "Organizational demography in Japanese firms: Group heterogeneity, individual dissimilarity, and top management team turnover", Academy of Management Journal, 36, 996-1025.

[94] Williams, K.Y., & O'Reilly, C.A. (1998), "Demography and diversity in organizations: A review of 40 years of research", Research in Organizational Behavior, 20, 77-140.

[95] Williamson, O. (1993), "Calculativeness, trust and economic organization", Journal of Law and Economics, 34, 453-502.

[96] Zack, M. H. (1999), "Managing codified knowledge", Sloan Management Review, Summer, 45–58.

[97] Zárraga, C.; García – Falcón, J.M. (2003), "Factors favoring knowledge management in work teams", Journal of Knowledge Management, Volume 7, Number 2.

[98] Zucker, L. (1986). Production of trust: Institutional sources of economic structure, 1840- 1920. In Straw, B. & Cummings, L. (Eds.), Research in Organizational Behavior, vol.8. JAI Press, Greenwich, CT, 53-111.