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ROLES OF NON-FACE –TO- FACE TOOLS IN INTERPERSONAL LEVEL TACIT KNOWLEDGE SHARING

Master's Thesis in

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ABSTRACT

Interpersonal interactions among employees during the course of ongoing organisational routines- such as meetings, e-mails, telephone calls, projects, and informal encounters- is the primary mechanism through which knowledge is shared. Due to the dispersed operations, non-face-to-face tools have been quite appropriate to share general ideas, personal beliefs without necessarily meeting person face-to-face.

The purpose of this thesis is to explore whether non-face-to-face tools like emails and telephone impact development of social capital that facilitate interpersonal level tacit knowledge sharing. This study, thus, aimed to explore whether such tools facilitate or inhibit the development of different social capital which are assumed to assure effectiveness of interpersonal tacit knowledge sharing. Since, such sharing of ideas and personal beliefs would be affected with lots of factors; the study is delimited to explore different dimensions of social capital theory. But some mediating or contextual factors like face-to-face meetings, time and distances are taken into consideration while building up the theoretical framework of the study.

This study uses single in-depth case study. Further, the findings are based on 10 semi-structured interviews which provided the empirical basis for the case study.

It was found that such non-face-to-face tools do support different social capital factors. Though, it might not assist building up social capital from scratch but it proved to support the existing ties providing opportunity to interact with people despite of time and spatial distance. On the contrary, such tools had minimal effect on the development of shared cognitive grounds as well as trust unless people have met face-to-face or have known each other in due course of time.

KEY WORDS: Non-face-to-face tools, Interpersonal level knowledge sharing, Social capital

1. INTRODUCTION

This chapter includes discussions about the background of the study, consider the problem area, explore the research questions as well as outline the basis structure of the study.

1.1.   Background of the study

During last two decades, organizations have tried using varieties of technologies to facilitate the knowledge management strategy. These technologies range from simple e-mails to complex Knowledge Management Systems, Enterprise Information Portals etc. It is because of the enormous size, diversification and distribution of today's companies and other networks that sharing and communicating knowledge must be technology supported.

Even though, it has always been challenge for the organizations to coordinate and integrate knowledge across different locations and cultures. Such knowledge flows at different level. As Mäkelä (2006) embarks most of the organizational knowledge flows at interpersonal level among employees interacting on a daily basis. Her study tends to focus on the deeper understanding of knowledge sharing at an interpersonal level. Interpersonal level knowledge sharing brings lots of benefits to the firm. Firstly, it provides access to the knowledge or access to the new sources of knowledge that would have been difficult to obtain otherwise (Borgatti & Cross 2003). Secondly, they could facilitate the creation of new combination of knowledge when two previously disconnected knowledge bases and frames of knowing come into interaction (Mäkelä 2006:76).

As stated above, Companies could make best use of their available technologies to facilitate interpersonal level knowledge sharing. It is common for firms to have several non-face-to-face tools like e-mails, chats, faxes, telephones at their disposal. In addition to that, there is no doubt today that among its many function internet fulfils a powerful social role. Perceived as a social meeting

place, it provides opportunities for the development of new modes of interpersonal relationship (Parks & Floyd, 1996). For present employees internet based emails; traditional face-to-face interaction has been complemented by a technology that creates new social genres of interpersonal transactions, and new configuerment of group work.

Hence, it seems relevant to explore the impacts of such non-face-to-face tools in facilitating the interpersonal level tacit knowledge sharing. In short, this study looks the aspects of non-face-to-face tools such as emails and telephones that organizations use intensively in day to day activities. The core of the study is thus, exploring the scenario of non-face-to-face tools in enhancing social capital that are presumed to facilitate interpersonal level knowledge sharing.

1.2.   Problem Area of the Study

The problem area of the study could be summarized as: theoretical and practical. Theoretically, there is still relatively little research regarding interpersonal knowledge sharing in general (Kildurff & Tsai, 2003) and in particular across borders within the MNC context (Foss & Pedersen, 2004) with some exceptions (Mäkelä 2006; Uzzi & Lancaster 2003).

In addition to that, Huysman et. al (2006) embark that the technology would keep on getting better and more sophisticated. However, determining factors for the essential outcome will most likely be the social and economic forces. It generates the need for further exploration of the research topic using socio technical perspective. But, the extant literature has treated information technologies impact for knowledge management mechanisms and social capital separately. Thus, it is believed that exploring the linkages between these two parallel streams of work offers promising avenues for research and practice. Moreover, being a relatively novel phenomenon, there are aspects like non-face-to-face interactions and their impacts on knowledge sharing are not covered well in the research.

Practically, it is still questionable whether firms can rely on communication technologies for effective knowledge sharing purposes (Kalling 2003). In recent years, we have witnessed an explosion of IS/IT solutions claiming to provide support for knowledge management mechanisms. Still, the results show that firms are unsuccessful in utilizing those technologies for optimum knowledge sharing purposes. Most of times, the technicalities or individual motivations are blamed though there are various social factors that play a part in effectiveness of interpersonal knowledge sharing. Non-face-to-face tools have provided substantial possibilities to interact as well as to share personal beliefs, opinions or ideas among individuals despite of time and spatial distance. But, are such tools appropriate for the effectiveness of interpersonal tacit knowledge sharing? This seems to be an overwhelming question that sorts for an urgent answer, since it is truth that almost all the organizations use non-face-to-face tools for sharing information as well as knowledge in day to day business operations.

1.3.   Purpose and Contribution of the Thesis

The objective of this master's thesis is to examine the impacts of non-face-to-face tools on interpersonal level tacit knowledge sharing among employees working at different units of a company.

Thus, the research questions could be summarized as follows:

1. How do non-face-to-face tools impact interpersonal level tacit knowledge sharing?

The study seeks to answer this research question by looking at different non-face-to-face tools that are being used by employees in the case company for the purpose of sharing tacit knowledge. Here, tacit knowledge refers to those ideas, experiences or personal beliefs that are not easily shared among other. Especially, the focus would be to find the impact of emails and telephones on the interpersonal level sharing of tacit knowledge i.e. ideas, clues, advices etc. (Nanoka 1994).

2. To what extent do non-face-to-face tools facilitate the development of the social capital necessary for effective knowledge sharing?

Since non-face-to-face tools could affect lots of associated factors, the researcher delimit the research around social capital factors (Naphiet & Ghoshal, 1998), though some mediating factors would be taken into consideration. Social capital constitutes of many aspects of social context; social interaction in the network ties of relationships, shared values and understanding among actors that constitute the network and trust engendered in the network through which network actors gain information, power, control and solidarity benefits (Adler & Kwon, 2002). The study would thus, sought answer whether social capital develops within the non-face-to-face environment, considered by some as a "cold medium" i.e. alienating and lacking the warmth of intonations, inflections, gestures, and body language characterizing face-to-face interactions (Parks & Floyd, 1996).

Hence, the present thesis is intended to contribute to the research on knowledge sharing through non-face-to-face interactions using social capital theory as lens to examine the context. Though there has been extensive list of research done on Knowledge Management Systems (Davenport & Prusak 2000, Huysman et.al 2005), this study would rather add some layer of scientific research considering simple non-face-to-face tools.

To sum up, the basic contribution of the thesis would be to increase our understanding of how non-face-to-face tools are being used in corporate firms focusing their usages in tacit knowledge sharing among employees at interpersonal level. In additions to that, the study would explore whether those tools provide the basic requirements for knowledge sharing with focus on various social capital dimensions.

1.4. Overview of the Thesis

The thesis is structured in five chapters as indicated in Figure 1. The first Chapter of the study is an introduction to the research. It discusses the general

background of the study, consider the problem area, explore the research questions as well as outline the basis structure of the study.

Chapter 2 provides the theoretical perspective of the study. In this chapter the main theories, concepts as well as terms are discussed. It examines current state of the literature on interpersonal level knowledge sharing. It also presents the social capital theory and their impacts on the effectiveness of knowledge sharing. In addition, it presents the conceptual framework of the study that emerged from the literature review of the research.

Meanwhile, the methodological approach and research strategy used in this study can be found in chapter 3. It demonstrates the research methods and the process of the data collection as well as analysis of the empirical data. It also includes specific information about the case company.

Subsequently, Chapter 4 presents the results and findings of the research study. It includes the analysis of the empirical data collected from semi-structured interviews as well as different other sources. The main findings of the study are presented in two phases viz. Non-face-to-face tools & Interpersonal level tacit knowledge sharing and Non-face-to-face tools & Development of social capital keeping in track with the two research questions. In addition, it also includes various mediating or contextual factors that seem to impact the role of non-face-to-face tools in development of social capital.

Finally, Chapter 5, discuses the main research results and contributions of the thesis. It also takes the notion of limitations of the study as well as contribution to the working ambient and the discipline. Below is a diagrammatic representation of the contents of the study showing different chapters as well as important themes discussed along those chapters.
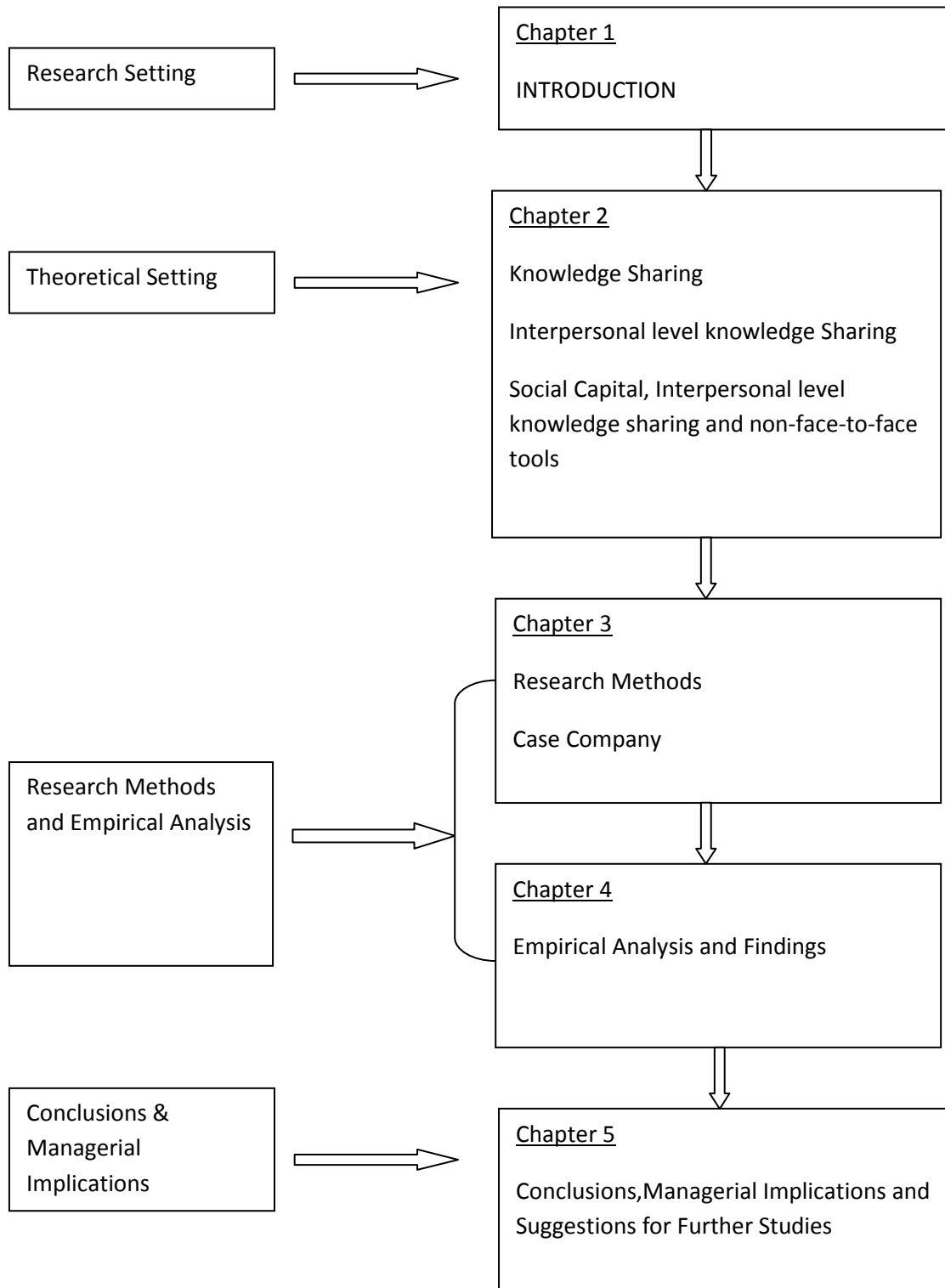
Figure 1. Structure of the Study.

2. LITERATURE REVIEW

This chapter includes the theoretical perspective of the study. The concept of knowledge is discussed and various understanding of it is reviewed along with existing research in relation to knowledge sharing at interpersonal level. If we break the phenomenon of non-face-to-face tools impacts on interpersonal knowledge sharing among employees' into constituent parts, we can identify several potentially influential aspects. Firstly, there is knowledge, i.e. properties of knowledge being shared; secondly, there are non-face-to-face tools available at firms and realistic usage of them for sharing information and knowledge. Thirdly, there are individuals concerned which interact and exchange knowledge through non-face-to-face interactions. Finally, there is some differentiated element of a case company. The researcher would attempt to build a theoretical framework for the thesis on the ground of previous literature concerning the research subject.

2.1. Concept of Knowledge

Knowledge has been one of the most popular metaphors for the scholars during the past centuries. One of the most common ways to define knowledge is by differentiating it from what it is not by using the components of data, information and knowledge. Data is considered to include numbers, images, words and sounds that are derived from observation or measurement and are not analyzed. Similarly, information is perceived as data that has been analyzed and arranged in a meaningful pattern, which in a way reflect that some intellectual input has been added to the raw data. Knowledge, is thus, considered to be information that has interpretation and meaning attached to it, adding a further layer of intellectual analysis. This means that knowledge '*provides the means to analyze and understand data/information provides beliefs about the causality of events/actions and provides basis to guide meaningful thought/action*' (Hislop 2005:13). Figure 2. clarifies the complexities among data, information and knowledge.
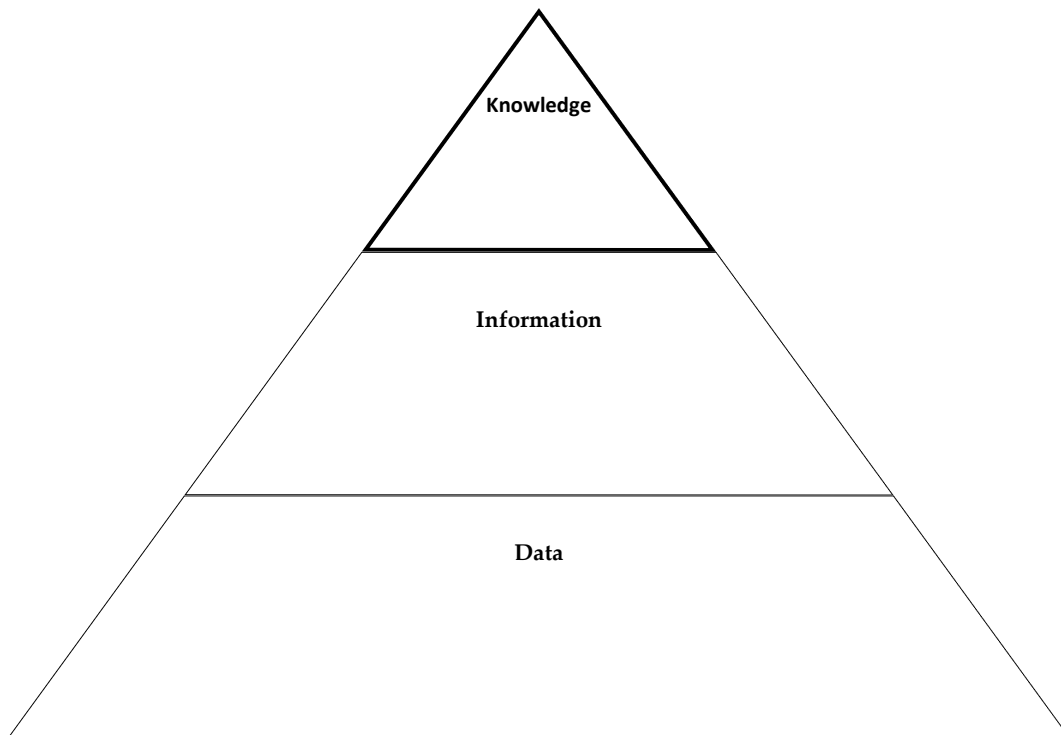
Figure 2. Data, Information and Knowledge.

Davenport et. al (1999: 89) defines knowledge as 'information combined with experience, context, interpretation, and reflection. It is a high value form of information that is ready to apply to decisions and actions'. His definition sees knowledge as outcome of information interpreted by the receiver or sender considering the context and own personal experience.

Scholars view range from the positivist and rationalist epistemology of knowledge as 'justified true belief' that assumes separateness of objective knowledge and the holder of this knowledge. On the contrary, Knowledge is viewed from a more pluralistic epistemological perspective (Lam 2000) in which knowledge within MNC is created through the formation of new combinations of existing knowledge by individuals and groups (Kogut &

Zander, 1992, 1993) regardless of whether it is considered objective or subjective.

In the similar vein, Empson (2001) suggests that the knowledge management literature makes use of two major, complementary conceptual models. First there is a model which conceives of knowledge as assets, i.e. as 'objectively definable commodities' that can be used to created competitive advantage. This perspective can be referred to as the knowledge based view of the firms because the firm or organization is seen as a bundle of competencies and capabilities that can be used to create competitive advantage (Grant 1996). In this view, firm or organization is characterized on the basis of its inner processes and its capacity to adopt external resources (Foss, 1996a, B). The other Conceptual model conceives of knowledge as process, as an outcome of socially constructed beliefs about what proper knowledge is. This view can be referred to as the knowledge management perspective in which the use of knowledge resources, the management of knowledge, is examined (Duguid 2000). Below is the table showing the alternative perspective on knowledge in organization.

Table 1. Alternative perspective on knowledge in organization (Adapted from Empson 2001:813).

	Knowledge as an assets	**Knowledge as a process**
Purpose of research	Normative, To identify valuable knowledge and to develop effective mechanisms for managing that knowledge within organizations	Descriptive, To understand how knowledge is created, articulated, disseminated and legitimized within organizations
Epistemological assumptions	Knowledge as an objectively definable commodity	Knowledge as a social construct
Models of knowledge transmission	Exchange of knowledge among individuals is governed by an implicit internal market within organizations	Knowledge is disseminated and legitimated within organizations through an ongoing process of interaction among individuals

Further, the knowledge literature extensively features the classification of the tacit and explicit knowledge. Explicit knowledge is systematic and easily communicated in the form of hard data or codified procedures. Explicit knowledge can be expressed in words and numbers and shared in the form of data, scientific, manuals, and universal principles. This kind of knowledge can be readily transmitted across individuals formally and systematically. It can be easily be processed by a computer, transmitted electronically or stored in databases.

On the other hand, tacit knowledge is highly personal and hard to formalize, thus making it difficult to communicate or share with others subjective insights, intuitions, and hunches fall into this category of knowledge. The subjective and intuitive nature of tacit knowledge makes it difficult to process or transmit the acquired knowledge in any systematic or logical manner. This involves intangible factors embedded in personal beliefs, experiences and values.

As Nonaka (1994) defined the typology of knowledge in the form of iceberg. The peak of iceberg which is above the water level is explained as explicit knowledge that is visible and can be expressed and transferred from one resource to another. The beneath part of iceberg is regarded as tacit knowledge that is difficult to visualize and therefore difficult to transmit. The figure 3. below explicates the tacit and explicit knowledge.
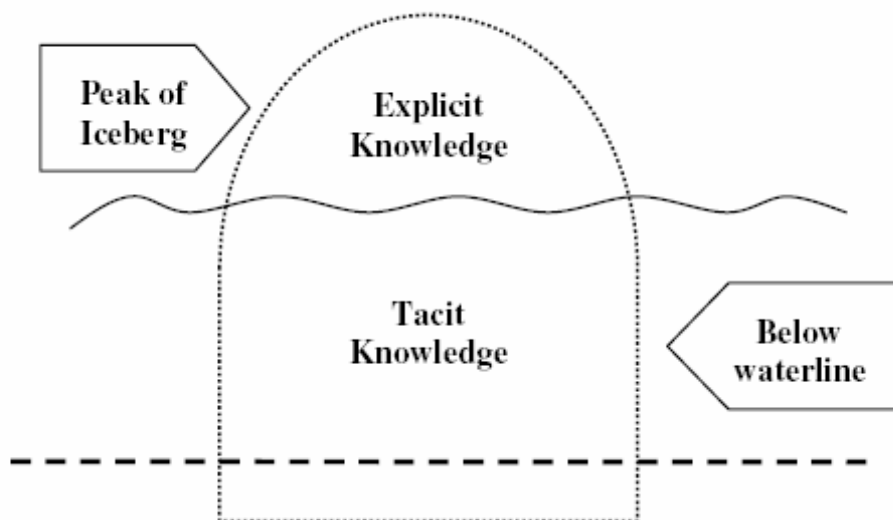
Figure 3. Tacit knowledge and Explicit Knowledge (Adapted from Nanoka (1994).

In short, Explicit knowledge refers to knowledge that 'is transmittable in formal, systematic language' (Nonaka, 1994:16) i.e. that can be expressed in words or numbers whereas tacit knowledge refers to knowledge that is difficult

to articulate, and 'embedded and embodied in everyday practices' (Scharmer, 2000:37). The table below summarises the specific characteristics of the tacit and explicit knowledge.

Table 2. Characteristics of tacit and explicit knowledge (Hislop, 2005:19).

Tacit Knowledge	Explicit Knowledge
Inexpressible in a codifiable form	Codifiable
Subjective	Objective
Personal	Impersonal
Context Specific	Context independent
Difficult to share	Easy to Share

This research is inclined towards looking tacit knowledge sharing. Since, tacit knowledge constitutes the difficult part of the knowledge. Moreover, the study would carry more practical value if the complexity of sharing tacit knowledge could be explored and understood properly.

The research study would follow the conceptualization with relevant to Nonaka & Takeuchi (1994) definition of tacit knowledge as 'a non linguistic, non numerical form of knowledge that is highly personal and context specific and deeply rooted in individual experiences, ideas, values and emotions.' Since, his definition of tacit knowledge represents the most characteristics of tacit knowledge being residing in human minds and hard to convert to explicit knowledge.

2.2. Knowledge Sharing

The knowledge literature highlights firms could be viewed as differentiated network characterized by flows of knowledge, capital and products in which the capacity to share knowledge is seen as fundamental organizational capability. (Barlett & Ghoshal, 1989: Ghoshal & Bartlett, 1990: Nohria & Ghoshal, 1997). Knowledge literature summons various concepts that range from knowledge management, knowledge life cycle, knowledge management systems etc. Hence, it would perhaps be more appropriate to discuss the concept of knowledge sharing alongside with other relevant concepts like knowledge management and knowledge transfer.

2.2.1. Defining Knowledge Sharing

Knowledge management is a concept in which an enterprise gathers, organizes, shares, and analyzes its knowledge in terms of resources, documents, and people skills. One of the central aims with Knowledge Management in the organization is to leverage the knowledge of individuals and teams so that this knowledge becomes available as a resource for the entire organization and supports the organization in becoming more competitive (Davenport & Prusak, 1998).Similarly, knowledge generation, codification and sharing and knowledge application constitute the basic knowledge life cycle. Below is a diagram showing knowledge management cycle. This framework follows knowledge through the stages of its life cycle from creation to application (Ruggles 1997).
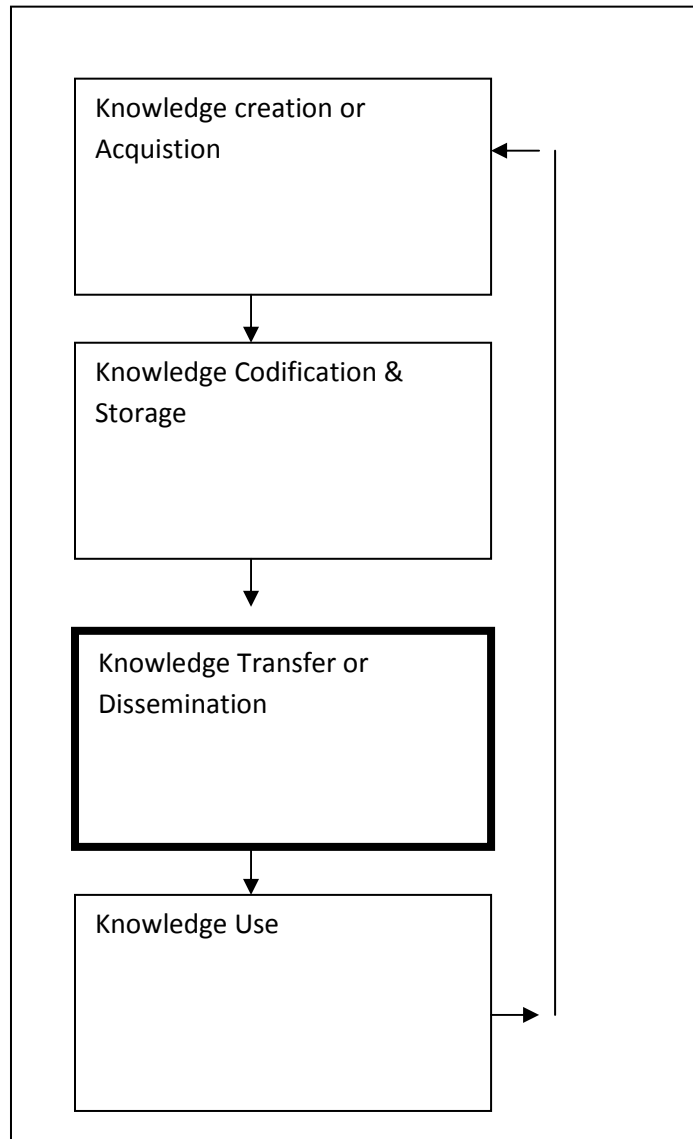
Figure 4. Knowledge Life Cycle Framework (Adapted from Ruggles 1997)

The figure above clearly indicates the four different stages that constitute the knowledge management mechanism. Firstly, knowledge is stored in repositories in different forms: individual memory, personal relationships, databases, work processes and support systems as well as different products and services. Once the knowledge is created and stored, sharing occurs in multiple ways, communicating directly or through archives. There are preferably two strategies for knowledge flows among individuals: the codification strategy and the personalisation strategy (King 2006). The purpose of codification strategy is to put knowledge into a form that anyone can access,

understand and can be used by anyone in the firm. The personalization strategy, on the other hand, is focused on linking people and forming networks to that tacit knowledge can be efficiently shared (Ribiere & Roman 2006). The focus of our study is on knowledge sharing and on issues such as enabling and stimulating the process of knowledge sharing. It is indicated in the figure above with black dashes simply to pin-point the focus area of the study.

The study follows the concept of knowledge sharing as referring to formal and informal knowledge exchanges that could take place at different levels within the organisation. This is thus, differentiated from the often interchangeably used term knowledge transfer. Since, the term knowledge transfer is quite intentional and deliberate process of sharing knowledge and in most cases bi-product of the planned activity (Szulanski, 2000), whereas knowledge sharing occurs naturally in interpersonal interaction and may or may not be planned or even intentional. Such sharing of knowledge occurs constantly during the course of the everyday work of mangers within formal and informal face-to-face meetings, over the telephone or via-email, as well as in informal encounters such as popping into someone's office or chatting at the coffee room (Mäkelä 2006:20).

This study follows the concept of knowledge sharing as defined by Helmstadter (2003). Since the definition is much more appropriate in looking knowledge sharing as the outcome of interactions among employees working at different units of the company.

Helmstadter (2003:26) defines knowledge sharing in terms of " voluntary interactions between human actors through a framework of shared institutions, including law, ethical norms, behavioural regularities, customs and so on…the subject matter of the interactions between the participating actors is knowledge. Such an interaction itself may be called sharing of knowledge.'' His definition of knowledge sharing highlights the role of social interactions which lends support to the theory of social capital where participation in groups and the deliberate construction of sociability is a prerequisite for the purpose of creating knowledge resource.

2.2.2. Interpersonal level knowledge Sharing

Knowledge sharing could occur at any level within the organization viz. individual, interpersonal, unit as well as cross boundaries level. Previous literature is moreover concerned in examining the transfer or sharing of knowledge within subsidiaries and headquarters, intra- organizational units etc. (Foss & Pedersen, 2002; Gupta & Govinradajan 2000, Szulanksi 2000). As King (2006) embarked, knowledge can be shared between and among individuals, within and among teams and organisational units and among organisations. Below is the diagram showing the different levels on which knowledge flows in and among organizations.

Table 3. Showing various levels at which knowledge sharing could occur.

Inter-national level (Cross boundaries)
Inter –unit level (Within national boundaries among various units of organization)
Interpersonal-level (Among individuals who share the same kind of vision and maintain relationship through interaction)
Individual level (Single individuals motivated to share knowledge)

Since the focus of the study is on interpersonal level of knowledge sharing, the next paragraphs look at the previous literature relevant to the interpersonal level of knowledge sharing.

Mäkelä (2006:31) urges that though the importance of interpersonal level to the mobilization of knowledge within the firms has been recognized by several prominent scholars (e.g. Doz et. al 2001, Nohria & Ghoshal, 1997, Nonaka & Takeuchi 1995, Tsai & Ghoshal 1998) has provoked increasingly interest (Foss & Pederson 2004, Welch & Welch 1993) empirical work on interpersonal knowledge exchange is scare. Subsequently, Mäkelä (2006:32-33) claims to put efforts to deal with interpersonal level knowledge sharing incorporating it into aggregate level measures of unit level interaction including measures such as the number of inter unit meetings and visits, teams or training (e.g. Björkman et. al 2004, Ghoshal et. al 1994, Subramaniam & Venkatraman, 2001), rather than focusing on interpersonal interaction in its own right.

It is argued that interpersonal knowledge sharing typically occurs as a natural product of interpersonal interaction and is not always planned or even intentional, it nevertheless requires motivation from individual managers to engage in interaction. Since, Knowledge is not like a commodity that can be passed around freely, it is tied to a knowing subject. To learn something from someone else, i.e. to share his or her knowledge, and act of interaction is needed. It takes interaction to acquire knowledge; knowledge sharing presumes a relation between at least two parties, one that posse's knowledge and other that acquires knowledge.

Meanwhile, this study follows Mäkelä (2006:33) conceptualization of interpersonal interaction as *'consisting of both formal and informal interface, and includes both non-face-to-face and face-to-face means of communication, which can occur both one to one and within groups'.* Simultaneously, the study acknowledges (Mäkelä 2006:112) conceptualization of interpersonal knowledge sharing as *'business related knowledge exchange among the individuals occurring through interpersonal interaction'. Since, the definition embraces the basic assumption of the research study of sharing knowledge through non-face-to-face interactions.'*

Then next section would focus on the different non-face-to-face tools and their affect on the interpersonal knowledge sharing.

2.2.3. Non-face-to-face tools for Knowledge Sharing

Mäkelä (2006:64) puts down that there are various ways in which interpersonal interaction could take place, including e-mails, various net based tools, telephones and face-to-face meetings and each can be used for different purposes.

Hansen (1999) classified the support of such tools into the use of proper repository for storing and sharing knowledge and the use of communication medium for communicating and transporting knowledge among individuals.

Similarly, Alavi & Tiwana (2005:110) identified network model after considering the different possible modes of knowledge sharing in an organization. Such model focuses on facilitating person to person transfer of knowledge via electronic communication channels. Meanwhile, some tools enable synchronous exchange of messages among the communicating parties while others enable only asynchronous (time-delayed) message exchange. The synchronous tools include online chat, audio and video conferencing whereas asynchronous tools for knowledge sharing consist of emails, voice mail, and computer conferencing.

It is argued that the use of communication medium or the network model of knowledge management systems is an extension of the stream of computer mediated electronic communication methods (Fulk et. al 1995). Further, such non-face-to-face tools are used to support interactions, direct communications, and contact among individuals which are essential for the effectiveness of interpersonal level knowledge sharing.

Abdallah (2003:41) argues that the degree of interactivity, importance of errand and type of situation seems to decide which non-face-to-face tools to use. He then follows the description of the various tools as follows:

- **Email** is not synchronous in the communication, but has a high degree of interactivity. It is regarded as less formal than regular mail, but follows

certain "social codes" (netiquettes). It is also used for the purpose of documentation in the work process.

- **Chat** messages have a high degree of being synchronous in the communication and have lesser expectations of netiquettes than emails. It gives the sender and the receiver a feeling of closeness and has a high speed in the communication.

- **Fax** is rarely used, and only for the purpose of confirmation and documentation in work.

- **Phones** have a high degree of interactivity and are used for the need of speed in communication, but this is dependent on the situation and the character of the errand.

This gives an idea of different varieties of non-face-to-face tools that the companies are using in daily activities. Focusing on the subject of the study, Electronic mail (e-mail) is an integral part of doing business today and has replaced a large number of telephone calls, memos and letters. It has been widely used means of communicating between individuals who are physically distant from one another or even who are working in a same building.

It is though, true that non-face-to-face tools can enable people to transcend distance and time barriers through the use of tools such as emails and group support systems, and it cannot motivate people to share knowledge. Since knowledge originates in the minds of individuals and hence one must realize that unless members of the organization are motivated to share, no IT solution can deliver desired goals. In the similar vein, Kiesler & Sproull (1992) claimed that in comparison with face-to-face meetings, the relationships established via online communication are more hostile, divisive and uninhibited. However, if the limitations of time are removed and long term process are observed, online social groups report levels of commitment and affiliation similar to face-to-face groups.

2.3. Social Capital Theory

Social capital is a theoretical umbrella that has been used in a variety of ways in a number of research fields, including both individual social capital as well as social capital of groups, organizations or even nations.

Thus, the definition of social capital ranges from seeing it as a private good of an individual or a group (e.g. Lin et. al 2001) to considering it to a public asset of a social entity (e.g. Coleman 1998, Putnam 1995). On the other hand, the different approaches to social capital include the 'bonding' and 'bridging' school (Adler & Kwon 2002).

Table 4. Different exemplary definitions on Social Capital.

External Vs. Internal	Authors	Definitions of Social Capital
External Bonding	Bourdieu	'the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance or recognition' (Bourdieu 1986, p. 248).
	Burt	'friends, colleagues, and more general contacts through whom you receive opportunities to use your financial and human capital' (Burt 1992, p. 9).
Internal Bonding	Coleman	'friends, colleagues, and more general contacts through whom you receive opportunities to use your financial and human capital' (Burt 1992, p. 9).
	Putnam	'friends, colleagues, and more general contacts through whom you receive opportunities to use your financial and human capital' (Burt 1992, p. 9).
Both types	Nahapiet & Ghoshal	'the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit. Social capital thus comprises both the network and the assets that may be mobilized through that network' (Nahapiet and Ghoshal 1998, p. 243).

In table 4. above the external definitions are those that focus primarily on the relations as actors maintain with other actors; the internal are those that focus on the structure of relations among actors within a collectivity and both types of linkages (Adler and Kwon 2002).

On the other hand, Coleman (1988) argued that social capital is a public good, however Fukuyama posited that it is in fact a private good (Fukuyama 2001). Fukuyama (2001) suggested that social capital is not a public good but a private good that produces extensive positive and negative externalities. This is supported by Dasgupta (1999, p. 325) who stated that 'social capital is a private good that is nonetheless pervaded by externalities, both positive and negative'.

Since this study is concerned with interaction between individual employees, the researcher presumes to apply the private good view of social capital. However, it is recognized however that individual social capital may contribute to the social capital of groups or organisations. (Brass et. al 2004, Kostova & Roth 2003).

Meanwhile, this study follows the Nahapiet and Ghoshal (1998) conceptualisation of Social Capital. Since it could be observed that their definition of social capital is more constructive as they relate to both bridging and bonding elements. The next section would elaborate the Nahapiet and Ghoshal (1998) dimensions of social capital and their applications for examining knowledge sharing.

2.3.1 Social Capital Theory and Knowledge Sharing

Social Capital Theory has been recently popular among the knowledge management scholars in examining the knowledge sharing mechanism (Nahapiet & Ghoshal 1998, Tsai 2000).

As earlier pointed out, the study would delimit the social capital according to Nahapiet & Ghoshal work. Nahapiet & Ghoshal (1998:244), in their effort to

clarify the dimensions of social capital in the context of business firms, distinguish between three interrelated overlapping and different dimensions of social capital: the structural, the relational and the cognitive. Below is the diagram showing three dimensions of social capital:
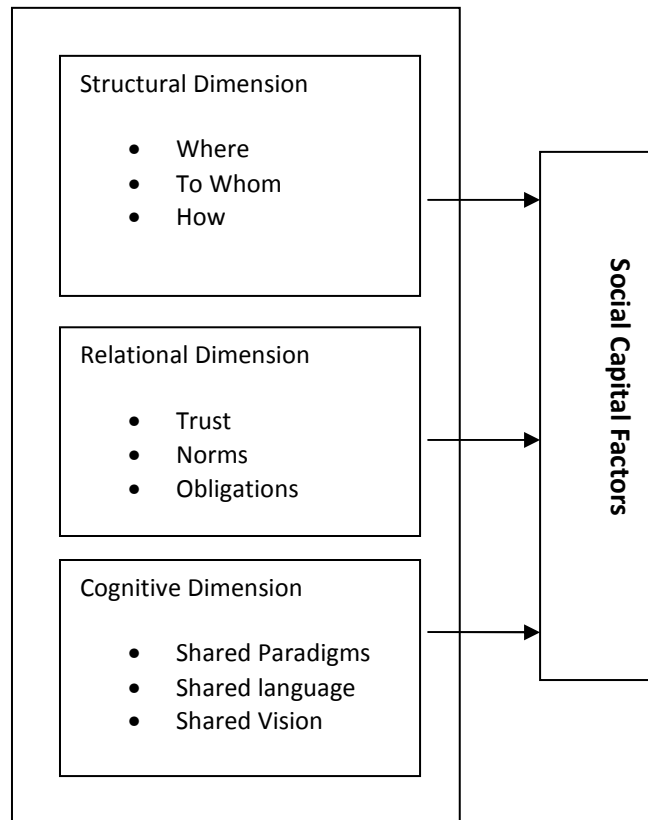
Figure 5. A three dimensional Framework of Social Capital (adapted from Nahapiet & Ghoshal, 1998).

Meanwhile, the structural dimension is mainly concerned with the impersonal linkages between people or units, such as e.g. existence of network ties between actors; the pattern of ties in terms of e.g. density, connectivity or hierarchy; and the existence of networks created for one purpose that may be used for another organization.

Similarly, The relational dimension focuses on those personal relationships, friendships and relations of mutual respect individuals have developed through a history or interactions, and so includes such concepts as trust and trustworthiness, norms and sanctions, obligations and expectations, and identify and identification.

Finally, cognitive dimension encompasses organizational phenomena such as shared representations, interpretations, language, codes, narratives, and system of meaning among parties. The three social dimensions give us a general outlook of different factors that both facilitate and inhibit the knowledge sharing process. Since, our research problem is much concerned with impacts of non-face-to-face tools, the researcher tend to dilute the social capital framework in technology based knowledge sharing mechanism.

It could be observed that Nahapiet & Ghoshal's (1998) classification of social dimensions are popular among researcher for examining knowledge sharing. Below is the table summarising few exemplary research work that used social capital theory in examining the effectiveness in knowledge sharing.

Table 5. Some exemplary works using Nahapiet & Ghoshal's (1998) Social Capital Dimensions.

Author	Core of the Study
Mäkelä(2006)	Interpersonal interaction affects social capital that impact smooth sharing of information and know-how at interpersonal level at MNC.
Li Li(2004)	Influence of the social capital variables on knowledge transfer in dyadic relationships among different subsidiaries as well as headquarters.
Rasmussen(2003)	Knowledge Sharing in multinational corporations, with particular focus on role of language, identity and feedback seeking behaviour, from a social capital perspective.
Van den et.al(2004)	Social capital impacts on knowledge sharing tend to have 'collectiveness bias', focuses largely on willingness to share knowledge.
Wulff et. al(2004)	Explore the social capital paradigm as a theoretical framework of knowledge sharing in organisations from an information science perspective.

2.3.2. Social Capital development through Non-face-to-face tools

Putnam (1995) examines the potential impact of the Internet in the light of social capital. In his analysis, he is less sure about its general effect. On the one hand, it can function to isolate people in the same way as that TV does. On the other hand, it can assist persons in their development of communities of interest.

Similarly, Sproull & kiesler (1991) urged that non face to face tools would restore community social capital by providing a meeting space for people with common interests and overcoming limitations of space and time. It has become clear that most relationships formed in cyberspace continue in physical space, leading to new forms of community characterized by a mixture of online and offline interactions (Rheingold, 2000). Moreover, online interactions fill communication gaps between face-to-face meetings. The Internet thus enhances the tendency for many ties to be non-local, connected by cars, planes, phones, and now computer networks (Wellman, 2001).

Wellman et. al (2001) found that non-face-to-face tools use supplements network capital by extending existing levels of face-to-face contacts. More contacts are with those people who are closer in proximity. Further, they suggest that such non-face-to-face tools are increasing interpersonal connectivity and organizational involvement. They also found that, if people use such tools to communicate and coordinate with friends, relatives and organisations- near and far- then it is tool for building and maintaining social capital.

As sproull and Kiesler (1994) made distinction viz. first-level and second-level effects of non-face-to-face tools, second-level effects relate to the social structure of the organisation: changes in the communication structures in and between organisations as a result of usages of such tools.

In general, it is perceived that there are some non-face-to-face tools that have potential to augment social capital among human actors by providing the infra-

structure for establishing, maintaining or intensifying relationship in communities (Huysman et. al 2006).

In the following paragraphs, non-face-to-face knowledge sharing tools are discussed with regard to the different aspects of social capital they could support.

Huysman et. al (2006) argues most of the functionality of non-face-to-face tools developed so far is primarily focused on the structural aspect of the social capital. Such functionalities provide a technological infrastructure to allow employees to find, communicate and cooperate with each other. They offer structural opportunity to share knowledge through network ties. Non-face-to-face tools also can promote social capital through overcoming spatial or temporal distance by making users aware of each other or of artefacts others have created. Also, non-face-to-face tools contribute beyond just supporting pure communication by offering virtual spaces that allow the creation, development and storage of topic centred materials. Hence, employees could strengthen existing social ties, or build up new ones.

Similarly, Huysman et. al (2006) argue that non-face-to-face tools could develop the ability of human actors to cognitively connect with each other to understand what the other is referring to when communicating. Non-face-to-face tools are perceived to provide discussions on shared materials through representing the history of interaction. Such thread of interaction makes it perceivable for those who communicate with each other quite often. It is truth that an appropriate representation of the history of communicative activities may be helpful since it allows employees better understand and refer to past interactions.

Finally, non-face-to-face tools could facilitate the relational dimension of social capital which is based on socially attributed characteristics of the relationship, such as trust, mutual respect and generalized reciprocity. It is presumed that non-face-to-face tools provide the infrastructure and environment to be intrinsically motivated to share knowledge with each other for contributing to the relationship.

It is reasonable that non-face-to-face tools and applications provide a standardized technological tool or platform for enabling flow of information as well as knowledge. The basic assumption of the study is that non-face-to-face tools initiate the non-face-to-face interaction among the employees that come from different units. Non-face-to-face tools like emails and telephones support various dimensions of social capital factors that act as facilitating factor for smooth knowledge sharing. Apart from Nahapiet and Ghoshal (1998), Adler and Kwon (2002) in their review article introduce a three dimensional framework namely, opportunity, ability and motivation. The table below attempt to show the conditions for knowledge sharing and knowledge requirement criteria using both theories.

Table 6. Showing the basic conditions for knowledge sharing (Adapted from Huysman et. al (2006).

Social Capital Dimenisons(Nahapiet & Ghoshal, 1998)	Strucutral Dimension	Cognitive Dimension	Relational Dimension
Social Capital Sources (Adler & Kwon, 2002)	Opporutnity	Abilty	Motivation
Contents	Network ties, configuration, organization	Shared codes, language, stories	Trust, norms, obligation, identification, generalized reciprocity
Conditions for knowledge Sharing	*Structural opportunity to share knowledge*	*Cognitive ability to share knowledge*	*Relation based motivation to share knowledge*

As Brava et. al (2007:34) elaborate non-face-to-face tools as creating sense of continuity in interaction through a long term perspective could enhance the desired information exchange behaviour among the employees. Furthermore, they concluded that when ppersonnel engage in short term knowledge sharing interactions, the outcome realized are inefficient, both from individual and organizational standpoint. Similarly, when the personnel perceive interactions to continue without a foreseeable end, there is room for co-operation and reciprocation, which benefits both workgroups and the organizations.

2.4. Mediating Factors for Knowledge Sharing

The major argument is that we cannot always blame the non-face-to-face tools for the lack of knowledge sharing. Previous research examines a lot of such mediating factors that facilitate and inhibit the basic knowledge sharing mechanism.

Firstly, Argote et. al (2003); Szulanski (2000) examine how different characteristics of exchange situations influence the effectiveness of knowledge transfer, whether it is the properties of knowledge, the properties of the sender the receiver or the properties of transmission channel, or characteristics of knowledge as a whole.

Secondly, Kostova & Roth (2002) examines how the institutional context of the knowledge receipt influences the success of knowledge sharing. They found out that the institutional profile of the host country had a significant effect on the adoption of organizational practices.

Thirdly, cultural theory embarks culture to be playing a major role in affecting the knowledge sharing process. Furthermore, there are organizational culture and national culture which have immense effect on the effectiveness of knowledge sharing. Meanwhile, a sharing climate would undoubtedly enhance knowledge sharing mechanisms. Mc Gill et. al (1992) put sharing climate as mobilized by the firms for sharing and learning that enables employees to

acquire knowledge and skills, and to replenish creativity, imagination, exploration, discovery and international risk taking.

It is thus, clear that there are certain factors which could be termed as mediating or contextual factors. Such factors have direct or indirect impact on the knowledge sharing mechanism. The study however, uses Riusala & Sutari (2004:751) conceptualization of various contextual factors that are supposed to impact the international knowledge transfer. Their framework together various stickiness factors and embraces various context in examining the effect on the knowledge being transferred or shared. The characteristics of knowledge embrace codifiablity, teachabiltity and complexity of the knowledge. Social context on the other hand constitute of regulatory, normative and cognitive factors which is the main factors the study will consider in examining the research question. In addition to that, aborptive capacity, practice specific brings the organizational context whereas trust, power, dependence, commitment and shared identity which constitute relationship context would certainly impact knowledge sharing.

Additionally, mutual trust throughout an organization is the most important factor, as trust among individuals enables people to more freehandedly share and acquire knowledge and retrieve specific resources. (Tyanan 1999). If there is no trust, there is neither communication, nor harmonious collaboration nor sharing amongst staff.

Further, time and distance impact the effectiveness of knowledge being shared among employees working at different units of the company. Perhaps, employees' initiations as well as comfort ness towards use of non-face-to-face tools of knowledge sharing greatly affects the knowledge sharing process.

Hence, an overview of the mediating or contextual factors provided abundant elements like time and distance, personal preferences, face to face meetings, relational context etc. However, taking into consideration the time and resource limitations of the scope of the study, only few yet more essential factors are chosen to examine their role in the outcome of research problem.

Thus, the study would consider all of these mediating or contextual factors along with the social capital factors in examining the interpersonal level knowledge sharing through non-face-to-face tools. Summarising all of the above, the study concludes the mediating factors or contextual factors as:

Table 7. Mediating or Contextual Factors.

Mediating or Contextual Factors
1. Characteristics of Knowledge   2. Relational Context   3. Organisational Context   4. Time and Distance   5. Comfort of Using Non-face-to-face tools

2.5.   Theoretical Framework

The researcher presumes that the initial understanding of the constituent parts of the research question has been substantially done. Thus, there is viability for the researcher to and develop a frame of reference alongside come up with a theoretical framework to explore the research problem.

As stated earlier, the research question of the study has been divided into two categories. Firstly, how non-face-to-face tools facilitate interpersonal level knowledge sharing. Secondly, to what extent such tools support social capital factors facilitating interpersonal knowledge sharing. The theoretical framework is built to address both research questions along with considering the various mediating and contextual factors that could affect the core consequences of the research study. Below is the theoretical framework of the study:

| Employee A | Non-face-to-face interactions | Employee B |

Mediating factors

Structural opportunity for tacit knowledge sharing

Relational motivation for tacit knowledge sharing

Cognitive ability for tacit knowledge sharing
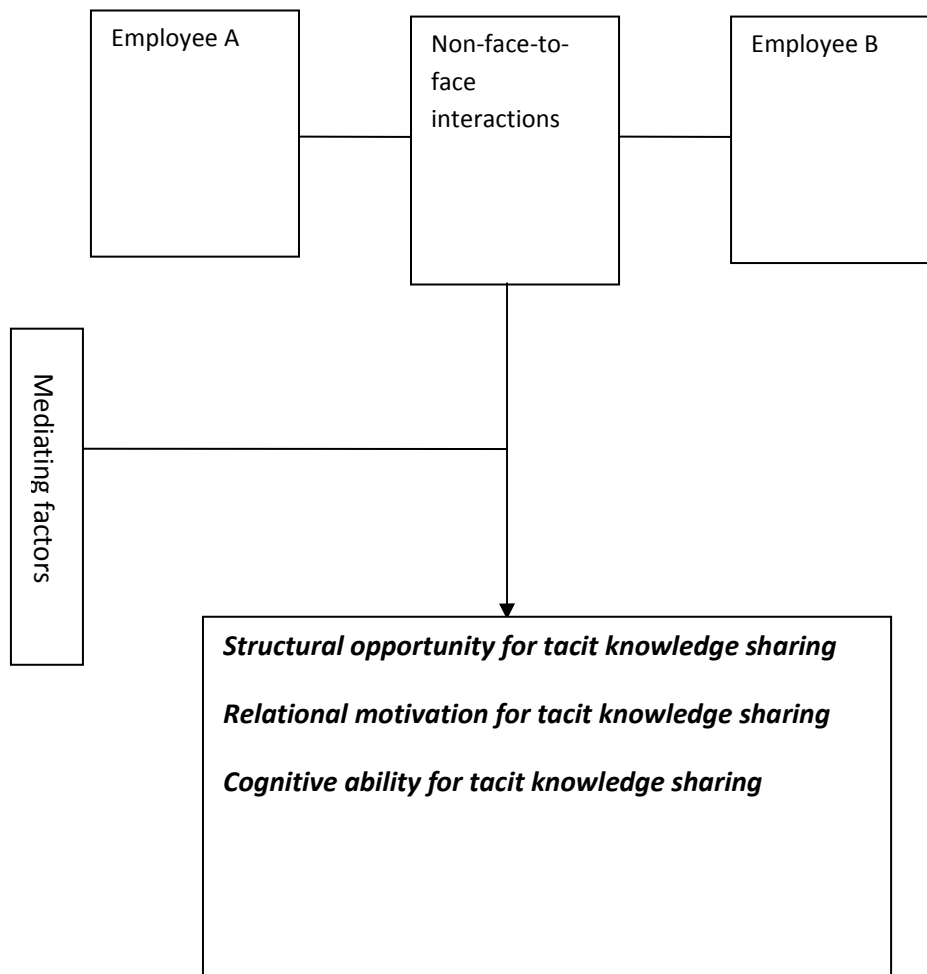
Figure 6. Theoretical Framework of the Study.

As shown in the above figure, knowledge is supposed to flow at interpersonal level through non-face-to-face tools especially emails or telephones. These employees represent different units where they operate, and this could be different restaurant managers or administrative staffs working for case company. As stated above, there are different contextual factors that interplay the consequences of non-face-to-face tools on the effectiveness of knowledge sharing. In addition to that, study also looks the extent to which such non-face-to-face tools enhance social capital dimensions facilitating the interpersonal level knowledge sharing. Meanwhile, the next paragraphs would summarise

the contents of the section as well as highlighting different research gaps uncovered during the literature review of the study.

Summing up, in this section, the researcher initiated the literature review concerning the vary aspect of knowledge and their types. Knowledge was found to be defined in various ways and classified in multiple categories. The tacit knowledge was highlighted though comparing explicit knowledge simultaneously. The discussion then followed the knowledge sharing at various levels as well as pin-pointing the specific field of knowledge sharing being studied. It was found that substantial amount of knowledge flows among individuals through interpersonal interaction.

Then, different non-face-to-face tools were explored and were dealt with to identify their impacts on interpersonal level tacit knowledge sharing. Since the study is delimited to telephone calls and emails, other Information and Communication Technologies (ICT) were not explored in depth. The section then followed the literature on different definitions of social capital and pin pointed few exemplary studies using the Social capital theory for the research. Meanwhile, the researcher looked at the potential role of non-face-to-face tools in development of social capital that are expected to effect interpersonal level knowledge sharing. Finally, Social capital theory and non-face-to-face interaction were discussed simultaneously to come up with the framework of the research study.

Though, the literature on the topic of subject has been very scant, substantial theoretical framework has been built considering information systems as well as knowledge management based literature. It was uncovered from examining the previous literature that phenomenon of impact of non-face-to-face tools have not still been studied with consideration to its role in effectiveness of knowledge sharing.

However, there had been quite close contributions from Mäkelä (2006) as well as Hyusman et.al (2005) on the similar subject of the research study. These studies provided the basic foundations for the literature on the topic of research

along with the classical contributions from Nahapiet & Ghoshal(1998); Nanoka(1994) on the field of tacit knowledge sharing as well as social capital theory.

Summing up, this section was primarily relevant to review of literature from more than one specialisation field of academic literature. It is assumed that developed theoretical framework of the study represent the true picture of the current status of the research problem.

3. METHODOLOGY

This chapter first presents the general research approach applied in this thesis. It then goes to describe in more detail the particular methods used for gathering data that make the empirical base of the thesis. Finally, the chapter include methodological discussions that contribute to the credibility of this thesis. Furthermore, the purpose of this chapter is to explicate the research methods further and to pinpoint the research approach for facilitating readers to position the work within the research designs.

3.1. Research Methodology

Methodology is the science of research decisions. It provides rules and norms for the researchers to evaluate the decisions for chosen approach and implement them in the research (Hessler 1992). This section is divided into three sub-section viz, research approach, data collection and data analysis. Firstly, the scientific approach chosen for the study would be discussed. Likewise, data collection and data analysis will explicate the basic methodological characteristics, types of data used as well as different methods used for appropriate analysis of the data.

3.1.1. Research Approach

The approach used in this study could be considered as mixed form of inductive and deductive approach. The study intends to grasp the inner meaning of a phenomenon, tacit knowledge sharing among employees at interpersonal level within a company, based on pre-understanding of the problem. Subsequently, it is intended to confirm or reconfirm the initial model by analyzing the empirical data. In such case, this study appears to be combination of some form of both induction and deduction. The chosen approach seems appropriate because the study can not be measured without theory (form of deductive approach) or without empirical testing (form of inductive approach).

The choice of most appropriate research method was influenced by the explorative nature of the research study. Hence, when considering the research problem and the research questions as well as limited previous research on the subject of the thesis, the most suitable research method was the single case study method.

According to Yin (1994: 23) a case study is an empirical inquiry that:
- Investigates a contemporary phenomenon within its real- life context; when
- The boundaries between phenomenon and context are not clearly evident; and in which
- Multiple sources of evidence are used.

Case study method is especially suitable for studying real life events such as organizational and managerial processes (Yin. 1994: 14). In the similar vein, this study attempts to look the impact of non-face-to-face tools on interpersonal level knowledge sharing whereby, interactions form the basis of sharing ideas, beliefs and personal experiences etc.

The in-depth case study method was used to provide rich contextual data, and to enable the examination of non-face-to-face interactions and their impact on the interpersonal knowledge sharing practices. In addition to that, the case study method has a distinct advantage over many other methods when 'how' questions are being posed (Yin 2003a), such as in this study.

3.1.2. Data Collection

An in-depth semi structured open interview was chosen to be the most suitable method for data collection as they allow for large quantities of information to be passed on in a relatively short period of time(Marshall & Rossman 1999:108). In a semi structured interview, it is possible to change the order of questions and clarify the given answers. Instant clarifications and explanations can be made face to face, thus greatly diminishing the potential for misunderstandings to

occur (Marshall & Rossman 1999:110). In this study, the subject is somewhat abstract and the previous research on the specific field is very scant.

The data collection for the qualitative analysis was conducted during 5 months period between June to October 2007. The case managers worked within franchised restaurants, headquarters, and were involved in using non-face-to-face tools for interacting and sharing knowledge in daily working operations. The majority of them were restaurant managers, two field managers, marketing and communication manager as well as one director of operation. The data collection was exploratory and inductive in nature.

Semi structured interviews were the primary sources of data, but were used in conjunctions with several other sources. The interviews were 30 to 40 minutes on average. It is fact to note that, the first two interviews were pilot interviews where follow up questions were asked at the end of the interviews. The pilot interviews were quite productive in the sense that allowed appropriate wordings and consecutive ordering of the question. Some minimal changes were made with words and follow up questions were formulated to get better responses. All the interviews were carried out in English and were recorded and transcribed as soon as possible after the interview. Below is the table summarizing different interview themes used in the interview conducted for the study though the real interview questions are attached as annexure at the end of the study.

Table 8. Different interview themes illustrating the type of information requested from the interviewees.

Interview themes	Type of information requested
Behavioral intentions	Kinds of knowledge required to work, Activities for knowledge sharing
Non-face-to-face tools	Kinds of non-face-to-face tools, Different situations of usage for knowledge sharing
Effectiveness of Knowledge Sharing through non-face-to-face tools	Non-face-to-face tools effectiveness in interaction, interpersonal relationship, communication, Overall impact on the conditions and requirement for knowledge sharing
Non-face-to-face tools impact on the support of social capital factors	Non-face-to-face tools helping or hindering in developing or supporting social capital factors

Finally, it is fact to note that data collection also included a wide range of written materials: annual reports, product manuals, newsletters, web sites, personnel and customer magazines at all organizational levels.

3.1.3 Data Analysis

Data analysis is working with data, organizing it, breaking it into manageable units, synthesizing it, searching for patterns, discovering what is important and what is to be learned, and deciding what you will tell others.

The interview data was analyzed using replication logic, following Eisenhardt (1989) and Yin (2003a). All interviews were taped and transcribed, and a record was created for each case. Simultaneously, the interview data was first carefully re-read and reflected on several times to allow deep familiarization with it and analyze with respect to the literature review. The interview transcripts were

supported with respondent's sketches, lists, etc. and earlier e-mail conversations with the respondents.

Wherever possible, relevant literature was examined to get proper understanding of the interviewee responses. It was coded after several times of careful reading of the data. The reflection from reading of the data as well ad insights arising during that process obviously impacted the data analysis process.

3.2. Validity & Reliability

The three aspects of validity namely construct validity, internal validity and external validity as well as reliability of the study (Bryman & Bell 2003, Yin 2003a) would be discussed in this section.

Validity refers to the question of whether the study measures or records what is it intended to measure or record. While, reliability is concerned with whether, the studies results are repeatable (Bryman et.al 2003).

Meanwhile, Bryman et. al (2003:33) define construct validity as 'the question of whether a measure that is devised of a concept really does reflect the concept that is supposed to be denoting' and refers to the establishment of correct operational measures for the concepts under study (Yin, 2003a). With regard to that, all the constructs were deduced from theory while keeping in track validation of results with previous research. Simultaneously, the interview questions were built following closely the previous key work on similar research subject (Nahapiet & Ghoshal 1998, Mäkelä 2006). In addition to that, multiple sources of evidence including interviews, internal and public documents as well as internet and intranets data were used (Yin, 2003a). Pilot interviews were taken in order to assess the relevance of the conceptual foundation being laid for the research outcome. Additionally, a chain of evidence was established that included recorded interviews following an

interview guide and notebook where by insights arising during the research process were jotted down.

Similarly, internal validity refers to the issue of causality i.e. whether a suggested causal relationship holds (Bryman et.al 2003). Such issues were taken special care during the interpretation. Data re-read, analyzed and presentation was done following established procedures (Yin 2003a). External validity, on the other hand, refers to the question of whether the findings of the study can be generalized beyond a particular research context (Bryman et.al 2003). The theoretical generalization was applied i.e. findings, explanations and conclusions were used to frame relevant questions in the qualitative part of the study.

On the other hand, reliability refers to the repeatability of the results of the study, and includes issues related to the stability of the investigation and the internal consistency of the measures (Bryman et. al 2003). Such issues were addressed through a careful research design (Yin, 2003a). This included i) selection of the focal case organization ii) selection of the case individuals iii) careful planning of the fieldwork, including site visits and data collection methods; and iv)design and testing of the interview guide so as to ensure that all the relevant themes were covered in each interview.

The data collection through semi structured interviews allowed researcher to ensure the respondent had clear understanding of the questions. The meaning of the interview questions were clarified when necessary. Simultaneously, case study protocol and interview guide were taken special consideration along the data collection as well as data analysis phase.

3.3. Generalization & Objectivity

Generalization exists when the findings of the study can be applied to the other cases or the whole population (Lundahl & Skärvad 1999). In qualitative

research it is more important to analyze degree of generalization, as demands on reliability vary with the problems investigated. The study is not intended to generalize the findings to the larger extent, though this study can be interesting and contributing to the varieties of organization and for the companies using non-face-to-face tools for the knowledge sharing purposes.

Similarly, Objectivity of the study implies that no subjective views of the researcher influenced the study and all data is presented correctly. (Lundahl & Skärvad 1999). The study strived to reach the high level of objectivity since the conclusions are examined number of times comparing along with the responses from interviewees.

3.4. Case Company

McDonalds is a global company that serves hamburgers and french-fries. It was initiated by Ray Kroc in 1955 from Illinois, USA. In fiscal year 2006, the company operated 31,667 fast food restaurants in over 119 countries in the following geographic segments: US; Europe; Asia Pacific, Middle East and Africa (APMEA); Latin America and Canada (Data monitor 2007). That's the brief story behind McDonalds' becoming the world's largest quick service restaurant organization.

It seems McDonalds' phenomenal growth came in leaps and bounds. However, the credit goes to Mr. Kroc's dedication to strict standards and promise to provide customers with consistent quality, service, cleanliness and value which are the cornerstones of the company.

The first McDonalds in Finland was opened in 1984 at Tampere. The first restaurant in Helsinki was opened in 1985. Presently, there are 83 restaurants all over Finland whereby 80% are privately owned restaurants. McDonald employees approximately 3200 employees in Finland. There are around 40 employees working in different units, viz. marketing, finance, operations etc.

Though, most of them spend substantial time at different stores cooperating with own operators, operation consultants and restaurant managers.

Though a global leader, McDonalds is second largest food chain in Finland after Hesburger[1]. McDonalds in Finland serve salads, drinks and desserts along with the popular range of hamburgers and french-fries.

McDonalds has always benefited from the knowledge sharing and innovation from its franchisees. As for example, the Egg McMuffin was invented by a McDonalds' franchisee as was Big Mac[2].

McDonald personnel use emails and telephones for non-face-to-face interaction. Though some high officials use video or call conferencing to interact with other colleagues based on different regions, mainly on international level. The overall interaction seems to be undertaken basically through talks and sharing factual as well as ideas, opinions through emails and telephones.

McDonalds has a tradition of conducting face-to-face meetings at particular interval of time. Such meetings are arranged once a week at a managerial level. Meanwhile, operation consultant, training personnel and different other staffs meet once a week. Similarly, restaurant managers working at different parts of Finland are ought to meet once in a quarter of a year. These meetings are the platforms where basic decisions are clarified and planning for the next period are discussed and approved through consent of all the involved personnel. McDonalds has a corporate intranet viz. 'Mitranet', which contains most of the

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1 TV1 Kuningaskuluttaja Website http://kuningaskuluttaja.yle.fi/node/1096

[2] Mcdonald's Websitehttp://www.mcdonalds.com/corp/about/mcd_history_pg1/mcd_history_pg3.html.

explicit knowledge ranging from campaign information to small details relating to technical aspects of handling grills or managing relations with the restaurant crew members. Though the intranet is quite appropriate for sharing of ideas and there is discussion forums designed for such activities. Employees regret not getting used to sharing ideas and beliefs on intranet due to personal preferences and viability of other easier and comfortable tools like emails and mobile phones.

It could be argued that employees prefer telephones and emails since such tools are quite easier and appropriate to share ideas or beliefs. It might depend on the personal preferences of using definite tools for activities like sharing tacit knowledge through non-face-to-face interactions.

From the above discussion, it is quite clear that most of the administrative as well as operational staffs are done through non-face-to-face interaction. Employees rely on telephone and email for such interaction. Employees rely on telephone and email for such interaction wherever meeting relevant person face-to-face is not possible. Obviously, the non-face-to-face tools at disposal allow employees with freedom of sharing ideas, beliefs among others working at different restaurants or department departments at head office.

The users would share information, express opinions, make promises, solicit advices or offer help through such non-face-to-face tools. On most occasions, the discussions on non-face-to-face tools were related with practical problems related to the operation of restaurant. Meanwhile, rules and regulation issue, quality consideration as well as problem solving tricks were primary issues discussed on non-face-to-face tools.

In addition to that, McDonalds have allotted each employee their own email address. That is normally firstname.lastname@fi.mcd.com which is recently updated. The recent update have made possible for the employees to check the personal emails anywhere as well as get access to some of the sensitive data. This obviously seems to make possible for the employees to get updated with the current restaurant sales report, campaigns etc. Also, the case company have

come up with a simple e-mail project with objective to manage the overload of e-mails. Hence, it has been decided that all the important information as well as decisions would be forwarded to the administrative staff, which will filter the contents of the e-mails and send it to the relevant stores or personnel. This has certainly managed the information overload and duplication of similar information.

Meanwhile, everyone is allotted personal telephones. It is sort of strange that almost everyone prefer 'Nokia Communicator' for the official use. Telephones seem to be quite natural tool for interaction and discussion. Actually, there were more respondent who felt preferring to telephone as one and only means of sharing tacit knowledge with compared to using computers and other means of non-face-to-face tools.

4. RESULTS AND ANALYIS

This Chapter would explicate the findings and analyze them with regard to the theoretical framework of the research study. The discussion follows the theoretical framework build to examine the two research questions. 'How non-face-to-face tools impact effectiveness of knowledge sharing? The second research question embark to dig deeper for understanding 'to what extent, such tools facilitate development of different social factors facilitating interpersonal level knowledge sharing?' The purpose of this Chapter is to discuss the findings and analyze those findings with regard to the research questions of the study.

4.1. Non-face-to-face tools impact on interpersonal level knowledge sharing

It would perhaps make a sense to explicit the impression of respondents towards sharing tacit knowledge among other colleagues at an interpersonal level. The respondents feel that interpersonal level knowledge sharing is precious. Such knowledge sharing is basically part of the day to day organizational routine and they are often unnatural. The company has tradition of arranging timely face-to-face meeting whereby important themes are discussed and things are planned for the future. But those meetings were held in definite period of time. Obviously, due to the diverse nature of its operation, respondent assume that non-face-to-face tools are very effective tools for sharing information, advices, experiences and mostly useful for sorting out job related problems. Sharing knowledge at interpersonal level was obviously meaningful for different reasons. As some of the respondent highlighted the common reasons like:

'They can help change my opinion, or say something differently, it comes even better than I say. There can always be possibility of doing things in a different way, there are friends who would say, this is still good but it can even work better if you do this way'.

'I don't want to do anything stupid. Sharing my ideas with other helps make me sure the better way of doing things'.

It highlights the fact that sharing of ideas or experiences among other colleagues might be the outcome of different reasons but it indeed is a fruitful and worthy activity. Knowledge sharing facilitates better solutions and most of the time creates better alternatives of doing something (Hislop 2005). Also, sharing ensures that ideas are practical and realistic given the organisational as well as environmental pressure.

Generally speaking, non-face-to-face tools especially telephones and e-mails were used for sharing of concrete information and sometimes sensitive ideas or experiences etc. Such tools were used normally for sharing information but there has been quite evident that they were also used to ask opinions, solicit advices, share feelings and mostly for asking ideas and ways to solve the job related problems(Mäkelä 2006). Below are responses that support the argument of usage of non-face-to-face tools for sharing of different tacit knowledge:

'*There has been coming like new equipments, everybody does not know how to use them. I call other restaurant manager and ask you have been using this machine in your restaurant like last six months, do you know what should I do*'.

'*I often call X[3] or other consultants while I am doing FOR (Final Operation Review). It's necessary for me to ask from other colleagues if they see the same thing differently or most of the time in better way. I needn't to be face to face, you know I can call them or write email, in less than hour I have their opinions and suggestions.*'

Well, dispersed operation, time and distance always make it impossible for individuals to meet face to face and discuss the problems. Though, tools like e-mails and telephones are quite appropriate that not necessarily replace face to face meetings but provides individuals with chance to share ideas, solutions to the problems and ask for personal beliefs etc.

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[3] The real names are depicted to maintain anonymity of the interviewees.

Since telephones and e-mails impact on tacit knowledge sharing was found a bit different, they are discussed subsequently. Telephones have been quite impressive means of communication for decades. The respondents were making 10 to 20 calls on average normal working day. Such calls were made to administrative staffs, managers working in other stores as well as some personal working friends.

Telephones have been cornerstone of communication since last few decades. It is thought to be more personal and near to face to face conversations. Since conversation on telephone do not loose so much of gestures, tones etc. (Chidambaram et.al 1993). As one of the respondents urged that telephone embark to get very close interaction and smooth sharing of tacit knowledge as face-to-face conversations. As quoted from the interview:

'When we talk on the phone, somebody talk and somebody listen, you have to listen what exactly other is talking about, sometimes you have to concentrate to understand 100% what he say, what he mean to say.'

'I can hear the tone. I know if he is excited or not so happy to get going on... I don't know, but I feel, communicating through phone is natural just like talking to somebody face-to-face. Also, if you know person well, you can feel his gestures and willingness, enthusiam and interest about sharing ideas or help in solving some problems'

It sound realistic in the sense that telephones compel both parties to concentrate and hear what other says. In a way, it's sometimes fruitful than face-to-face conversations since most cases somebody is not listening to what other is intending to share.

Emails, on the other hand, were preferred over telephones in various cases. Firstly, if the persons searching for ideas or opinions have enough time to wait for the other's opinions or decisons about some problems or personal ideas. Secondly, if somebody wish record of some sensitive issues and documentation of the conversation. E-mails proved quite appropriate tool since it provided the conversations to be documented. Such documentation were additional proof

over the spoken agreements among individual colleagues. Below are few quotations that support the argument:

'I do use emails wherever I think I ought to have the discussion documented. Most of the times, you have emails that you could use as proof for something that could be really serious matter as contracts or personal decisions to your problems.'

'It depends on situation. If i can wait for a day or two. I mean if i am not in a hurry to get instant feedback or somebody's opinion. It's better that i send email to the person. He can check the mail in his free time and send me the reply'.

So, e-mails apart from asynchorous tool is quite appropriate tool for documenting text, pictures in addition to sharing of ideas.Also, emails are very good tools for sharing ideas and best practices that were relevant to more than one persons(Fulk et.al 1995). Like one of the respondent told:

'If I want to tell same thing to my six stores or ask opinions about some decisions i want to make, then I write email or even you know if there are some changes in doing things. It is more efficient, press send and everybody will receive it.'

But respondents also uncovered different issue regarding the complementary use of both telephone and e-mails for sharing of ideas. Sending e-mails were problem along with necessary information beforehand calling someone provided better chances of smooth conversation and sharing of clear ideas. Similar to the study, carried out by Quan- Hasse and Wellman(2006:299), telephones and emails were found to be serving different purposes, often working in synergy and not in competition with one another. Most of the respondent had the similar view on telephones sometimes being complementary to the emails, which together enhanced the quality of knowledge shared. Below is one of the respondents quotations:

'Mobile phone is addition to email. So it can be I am using once in a while, I can send an email and then say when you have time read this, in 15 minutes call me. So, I have better chances to get more concrete ideas or opinions about the problem because the person could make up a clear ideas once he/she reads the mail.'

As perceived by the respondent, complementary usage of telephone and e-mails undoubtedly give better chances of sharing of concrete ideas, experiences. The involved personnels have better insights and picture of the discussion providing chances for better solutions.

From the above discussion, it is clear that usuage of different non-face-to-face tools are effective in sharing tacit knowledge among other colleagues. The usuages of such tools depend on the situation and urgency of the problem to be solved. It brought the synchronous and asynchronous nature of the different non-face-to-face tools. However, they could be very effective if they are used with enough skills or most of the time as complementary to each other. The table 9. below is a summary of the findings specific to the effectiveness of non-face-to-face tools in sharing tacit knowledge.

Table 9. Impacts of non-face-to-face on tacit knowledge sharing.

Non-face-to-face tools	Impact on tacit knowledge sharing	Justifying remarks from interview responses
Telephone	More personal; Smooth conversation;	'You know one has to listen....... to get 100% of discussion' 'I can listen if the other party is happy.. or this is the right time to talk.. it's easier to express though it might be hard to express face-to-face sometimes.'
E-mails	Documentation; Written confirmation;	'I can be sure that other party have the same idea of what you are discussing about'. 'sometimes I could have discussion documented alongside sharing of specific and complex tacit ideas'
Both telephone and e-mails	Complementary benefit; Effective sharing of tacit knowledge to a greater context	'I send an e-mail and call sometimes after. the discussion is smooth.. both have idea and lot more to contribute.. effective and effecient.'

The next section would discuss whether such non-face-to-face tools provide the basic requirements and conditions for sharing knowledge.

4.2. Development of Social Capital Factors through Non-face-to-face tools

The theoretical framework of the study considered the possibility of non-face-to-face tools in augmenting social capital among human actors by providing an infrastructure for establishing, maintaining or intensifying relationship among individuals. Since, the different dimensions of social capital are inter-related and similar to each other, the discussion might overlap. Hence, special consideration will be taken and discussion will follow the similar patterns as explicated in the theoretical framework of the study.

4.2.1. Structural opportunity to share knowledge

Non-face-to-face tools have functionalities that provide users different technological infrastructure for finding, communicating and cooperating with other employees. It offers opportunities and infrastructure to share ideas, beliefs through network ties.

The discussion would compromise all the realities of such tools in finding definite people. Similarly, the discussion will embrace if such tools impact the general level of communication. Meanwhile, an insight will be made if such tools provide opportunities to co-operating with other colleagues.

E-mails could be genuine tool. One can send same messages to a list of people asking for the concern. There would be substantial possibilities that somebody with specialization or experienced with the problem might help in solving a problem. As one of the respondent suggest:

'I have done it many times. I write down my problems and send it to a list of people whom I think could help me with the problem. Most of the times, it's somebody who has already came across a problem similar to my problem. It makes things easy to handle'.

Apart from that, non-face-to-face tools are quite effective tools of communication. Such tools have ease communicating with lots of people within

limited time frame and other environmental pressures. As one of the respondent remarked:

'Technologies have eased talking with other persons; I mean a lot of persons. You can call 10 friends within 2 minutes no matter where they are. You get solution to your problem as they are just a dial away'.

Similarly, such tools have ensured co-ordinating activities among individuals working in far or less similar working environment. The technologies at the disposal make possible for individuals to carry out co-ordination activities like sharing of ideas or carrying out mutual projects despite of time and spatial distances. One of the respondents urged:

'We were four different restaurants locating at different places but we did a great job in that project. I am quite sure, if we had not telephones, we would not have even thought about working together on that project.'

In a way, non-face-to-face tools enhance communication and co-ordinations that could enable the adhocracy to work more effectively. This creates abundant chances to build networks among employees with diverse knowledge and skills from different parts of the organisation (Malone et.al 1991). In addition to that, such tools assist to strengthen existing ties; maintain weak ties or even initiate a new relationship. As one of the respondent provoked to have initiated such working relationship:

'It started in spring, when one person from Germany started to contact me and ask about raw buns. I answered her, a few weeks after, I had to ask some opinions related with german products, so, of course, I contacted the same person. I have not met this person ever, but we have been sending so much emails, and interacting, we have developed a friendly relationship'.

This is a very good supporting argument that emails and telephones have removed the spatial boundaries and has made possible to interact with people we have never met before or never thought about. It sounded very normal when the repsondent argued about the role of non-face-to-face tools in strengthing and maintaing their existing ties. Below are the respondent repondent quotations:

'I have lots of friends. The tool to communicate with them is mostly emails. We often write to each other and call to each other and ask how is going on, is there any problem, how you plan for the next year and lots of other personal stuffs'.

It was obvious that density of networks were high. People were spending more time interacting through non-face-to-face tools in various situations. Some repondent argued that non-face-to-face tools are quite effective in building weak ties. As one of the repsondent quoted:

'I have friends which were earlier my friend's friends. This new friend is doing things very much similar to what I do here. I feel quite easy to call to him and ask his opinion or some tactics that I could use to find solution to my problem.'

Summing up, the above discussion provoke that non-face-to-face tools facilitate the structural opportunity to share tacit knowledge. But, at the same time, as Walther (1996) urged, non-face-to-face tools assist widening of networks and subsequently strengthen ties. Strong ties, though, constrains the ability of networks to expand. Since, as ties strengthen, matching individuals are less likely to possess independent social circles. Emails or telephones made it quite easy and convenient to interact among colleagues in a timely basis. Hence, non-face-to-face tools are quite effective in initiating new ties, maintaining weak ties as well as strengthening existing ties.

4.2.2. Cognitive ability to share knowledge

It is quite tricky to explicate how non-face-to-face tools increase the cognitive ability among individuals. Since cognitive ability fosters through accumulation of previous experiences, interactions among other individuals, own personal background etc. But it is argued that individuals can share information, express opinions, make promises, solicit advice or offer help etc. Even though individuals do not meet face to face, they can still convey a range of emotions from happiness and affection to anger and hostility using a variety of emotions and formatting techniques (Rice & Lover 987).

Non-face-to-face tools like email helps fostering the cognitive dimension of social capital, as appropriate representation of the history of communicative activities may be possible which allows users to better understand referring to the past interactions (Hyusman et. al 2006). Below is one of the respondent's quotations:

'I can check the previous email, in case I forget the intention or context of the sender; checking old mails from that person easily helps to draw a picture out of the message in the email. Apart from that, interacting with the similar people over a long period of time helps to develop the instinct to understand and get to know the behaviour of other person.'

It was kind of obvious that interaction was all time higher due to the availability of non-face-to-face tools. Though experiences were built during the several years of practicalities, almost all respondent embarked that non-face-to-face tools facilitated a lot in broadening personal insights, ways of doing things, attaining business tricks etc. As one of the respondent said:

'Person gets ideas through study or through practices. Sometime you get it easily from other friends. You might have confusion but you can get the work done calling and making sure that your idea is relevant.'

Apart from that, non-face-to-face tools facilitate interactions binding different people working at different places for the same company with the same goal (Van den et. al 2004). The observation pointed out that interaction among other colleagues enhanced sharing of ideas and cooperative task among each other in day to day activities. As one of the respondent said:

'We are working for the team, in many cases; there are problems, which are already solved by the others. We are working in the same business, we have the same happenings. The only thing I might have to do is to think of whom to call or write a short email'.

Similarly, the respondent pointed out that the non-face-to-face interactions works as good as face-to-face interactions. Though, it cannot be expected that individuals would receive all the gestures and tones as in face-to-face

interactions. Since the conversation is smooth and persons have convenience to gain similar understandings. As one of the respondent said:

'I ask on the phone, do you understand what I mean. Or if the other person is sounding like, you know doubtful, then I say…… am I not clear or is there something that you are not understanding... and the conversation goes on.'

It explicates that conversation on telephone is very much like in face-to-face meetings. In case we are familiar with the other persons, it is lot easier since we can expect certain cognitive grounds on the basis of previous interactions with the concerned individuals (Chidambaram et.al 1993).

On the contrary, findings also highlight the other side of the impact of non-face-to-face tools on development of cognitive ability. As mentioned above, cognitive ability is accumulated through series of interactions complemented with individual own personal background, attitude etc. The basic argument is that non-face-to-face tools alone do not impact the broadening of cognitive ability. Also, it is not quite obvious that such tools always ensure similar mutual goals as most respondents hinted that they had their won reason to approach distinct individuals or group of people.

Summing up, non-face-to-face tools provide infrastructure and opportunity to interact and share ideas among other colleagues. The increased interaction with different people from different background enhances one's personal insights, way of doing things, personal hunches etc. Hence, non-face-to-face tools can be used or interacting over time with other sharing the same practice and whereby one could develop unintentionally skills, knowledge, specialized discourse, and norms of practice. Interacting through such tools could provide insights into how other colleagues have face and resolved problems. (Brown & Duguid 1991).Additionally, users could convey a range of emotions from happiness and affection to anger and hostility using a variety of emotions (Rice & Love 1987).

4.2.3. Relational Motivation to Share Knowledge

Non-face-to-face tools assist individuals engage in interaction with one another, residuals emerge from the dynamics of interaction that could be used to facilitate exchanges of ideas, personal beliefs or experiences. Actually, such residuals form the social capital that frequently take the form of conventions of reciprocity, enforceable norms, information networks, and interpersonal trust (Coleman, 1988).

It is explored whether non-face-to-face tools facilitate relational capital which exists when members have a strong identification, trust others perceive obligation to help others. Simply, identifying oneself to be a part of a group or organisation provides impetus for mutual sharing of ideas, personal expertise (Tsai et.al 1998). Such tools facilitate strong identification since such tools ensure co-ordinating task among individuals working in different units. Strong identification was highlighted in several responses. Identification was basically about all the employees working for McDonalds. McDonalds is a global company; I am McDonald kind of person. As one of the respondents quoted:

'The good thing about working in McDonald is that it is a global company. There are other thousands of people like me working for McDonald in different part of the world. I am a McDonald kind of person so are others; we all thrive to improve McDonald all the time'.

Similarly, non-face-to-face tools enhanced trust among those interacting often via non-face-to-face tools. It ought to be clarified different circumstances. Trust was built faster in cases where individuals had met once or twice somewhere in conventions or official meetings. Subsequently, it took a definite period of time for generating the level of trust in cases where individuals have never met before. Hence, most of the time, the basic trust developed through the outcome of previous interactions. As respondents quoted:

'I have some friends that I have met once of twice in my life time. I met them in conventions, shared the business cards and at sometime started sharing ideas and asking opinions. For some reasons, I have trust in them; perhaps the outcome has always been positive for me'.

'I have been working with X for a time being. I feel we have quite good working relationship. We interact on daily basis and may be I feel so easy to ask advices for a job related problem or share some stupid ideas, too.'

Apart from that, some respondent pointed out that non-face-to-face tools helps them to fulfil their responsibilities and obligations rather than favouring some specific relationships. Such tools act as pushing tools to reply to someone's mail or to talk on the phone. One has to react to the phone calls or has to respond to the mail if they are urgent. The sender would wait for the mail thinking that the sender would most probably do his duty helping him/her in solving some issues. As one of the respondent quoted:

'It's true that you try to get things done if somebody who has been helpful for you in the past ask for it... but if I don't know the person personally, its might not be big priority. Though, it is very convenient to reply somebody's email or receive a phone call.'

However, other responses uncover the scenario that non-face-to-face tools do not necessarily help individuals build trust. Trust would be perceived among those individuals who have met once or twice. Similarly, respondents hesitated to tell that sometimes such tools were quite effective in ignoring or prolonging the discussion about a problem.

Summing up, non-face-to-face tools initiated obligation on different parties to react to the situation and weight of the queries. Non-face-to-face tools were very effective in generating minimum level of trust through interaction and history of past outcomes. Meanwhile, the research also indicated that the sharing knowledge through non-face-to-face tools is also facilitated by a strong sense of reciprocity- favours given and received (Mäkelä 2006).

Hence, the findings support the pre assumption of the study that when individuals engage in interaction with each other, whether in meeting or non-face-to-face environment, residuals emerge from the dynamics of interaction. Such residuals, jointly known as social capital, frequently take the form of conventions of reciprocity, enforceable norms, information networks, and interpersonal trust (Coleman, 1988).

It is examined that non-face-to-face tools impact different social capital elements in various ways. Below is the figure 7. explicating various dimensions of social capital affected through the usage of non-face-to-face tools for sharing tacit knowledge at an interpersonal level. It attempts to pinpoint the kinds of influence non-face-to-face tools could make on the various elements of social capital. Hence, +,- and +/- signs have been used to represent if non-face-to-face tools have either positive or negative impact on the development or support of the relevant social capital element. Meanwhile, in cases, where it was not very clear whether non-face-to-face tools would impact greatly, it is pointed with netural sign.

The diagram should explicate the impact of non-face-to-face tools on different social elements. Though, it is not argued to be 'hard and fast rule', assigning the signs are solely based on the intitution and observation from the findings of the research study.

Structural Opportunity

+ Find people

+Ease Communication

+Strengthen ties

+/- Build weak ties

Cognitive ability

+ Broaden cognitive abilities

+/- Shared objectives

+ Similar Understanding

Relational Motivation

+ Existing relationship

+/- Trust

+/- Obligations
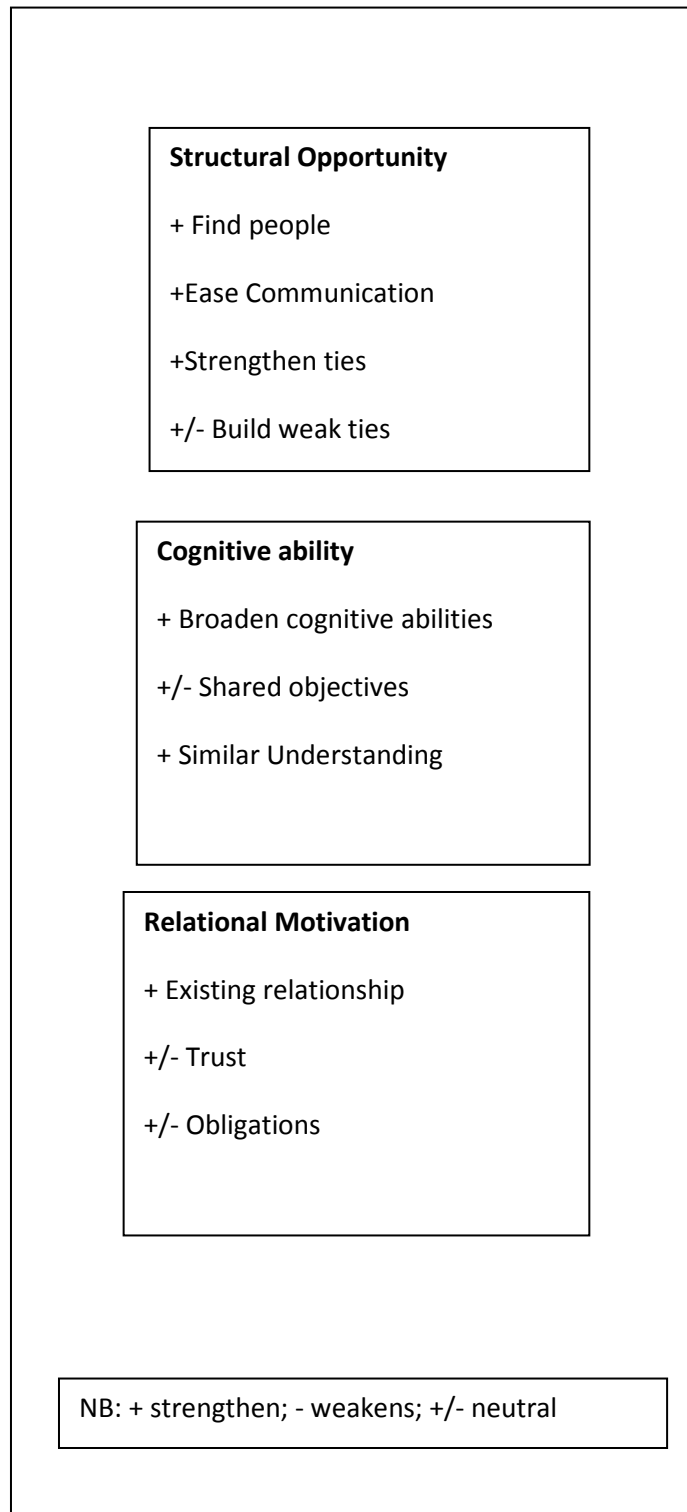
NB: + strengthen; - weakens; +/- neutral

Figure 7. Showing Non-face-to-face tools impact on Social Capital elements.

4.2.4 Mediating or Contextual Factors

As thought of during the theoretical review of the research topic, various mediating or contextual factors seem to impact the interpersonal level knowledge sharing.

It was **time and distance** factor that affected individuals choosing non-face-to-face tools for interacting and sharing of tacit knowledge. The respondent had personal responsibilities and was based on different stores and offices. Since, it was impossible for them to meet face-to-face all the time, non-face-to-face tools were quite appropriate for sharing of ideas and experiences. The following response supports the argument:

'We are busy almost all times as we all have specific responsibilities, for me at least is not possible to visit other managers face-to-face. I would rather call them or write e-mail asking for their ideas for my problem.'

'If I am in need to sort out problem urgently, I call if that is all possible, and when it is not possible like in rush hours, I put an email or send SMS to call me back.'

Time played similar role in affecting the effectiveness of non-face-to-face tools in sharing of tacit knowledge. Such tools are best options if problems need to be solved urgently within a limited time frame.

Similarly, **Face-to-face** meetings are thought to initiate the basic foundations of social capital. Since it is uncovered that non-face-to-face tools rarely assist development of social capital from scratch. One or two face-to-face meeting followed by interaction through non-face-to-face tools had obviously positive impact on the development of the social capital among employees at an interpersonal level. Also, non-face-to-face tools were used quite proportionately with those who were meeting face-to-face quite often. As one of the respondent quoted:

'I would like to meet persons at least once. It is quite necessary to have face-to-face conversation. Then you get to know the people to a greater extent. I feel that I trust them more and seek advices or opinions if they are right person to do so.'

The other factor that came strongly during the research was the **comfortness of individuals** using non-face-to-face tools. Personals used non-face-to-face tools as it was comfortable. Such tools are quite convenient and are easier to handle. The respondent had sort of adaptation to using such tools for sharing ideas and beliefs. As one of the respondent quoted:

'Me and my computer are friends. I have been using computer at home since my childhood and now I have been using at work. I like computers, I am kind of computer fan'.

It could be observed that the empirical evidence didnot highlight all the mediating factors that came up during the literature review of the mediating or contextual factors. The respondent didnot feel that factors like organisational context, hierarchy, characteristics of knowledge have strong impact on the development of social capital. It was surprising though, factors like organisational silos didnot obstruct the interpersonal level tacit knowledge sharing. Regarding the definite characteristics of the knowledge, respondents argued that usage of non-face-to-face tools had been a natural activity, thus, creating no differences in the types of knowledge being shared. In addition to that, only few mediating factors came strongly to make great impacts on the outcome of the research study. Those mediating or contextual factors were basically face-to-face meetings, time and distance as well as comfortness of individuals in using non-face-to-face tools for sharing tacit knowledge.

Summing up,face-to-face meetings were most crucial mediating factor for the effectiveness of knowledge sharing through non-face-to-face tools. Meanwhile, time and distance and adaptation to using such tools affected the usage of tools for different purposes in various situation. The next paragraph would now position the findings of the study along with other previous studies done in the similar field of the study. The idea is not to compare the findings, but simply to position the findings of the study. The discussion in sections 4.1 and 4.2

brought various insights to the research questions. It uncovered various aspects of social capital that were affected through the usage of non-face-to-face tools.

Now, analysising the findings, it seems that the findings follow the pattern of previous contributors like Wakso et.al(2003), Huysman et.al(2005). The present findings provided empirical evidence to the Hyusman et. al(2005) model of 'ICT impacts on the requirement and conditions for knowledge sharing' as well as Mäkelä(2006) contribution to interpersonal level knowledge sharing. Comparing to Mäkelä(2006) study, these findings have provided additional insights to the field of interpersonal level knowledge sharing. Although, most findings follow the pattern but contrary to her argument, this study found out that non-face-to-face tools might sometime hamper or hinder network ties, create environment of less trust compared to face-to-face interactions. In the similar vein, given the strong relationship among individuals, non-face-to-face tools were as effective as face-to-face meetings for sharing tacit knowledge and not just only factual information.

5. CONCLUSIONS

This Chapter would summaries the findings, highlights the implications for managers and organizations. Additionally, the chapter would pin point the limitations of the study as well as offer some concluding remarks and suggestions for the further research.

5.1. Summary

The first chapter initiated the discussion regarding the problem and scope of the study. The problem area of the study was discussed looking various theoretical and practical aspects of the research problem. A well defined problem of whether 'Non-face-to-face tools impact effectiveness of interpersonal level tacit knowledge sharing' was expected to be uncovered with two different research questions:

1) *How do non-face-to-face tools impact interpersonal level tacit knowledge sharing?*

2) *To what extent do non-face-to-face tools facilitate the development of the social capital necessary for effective knowledge sharing?*

The topic of the study lacking direct contributions from the scholars created necessity to look for the combined literature review of Knowledge Management, Information Systems and Social Capital theories. Finally, deep review of the relevant literature provided a more concrete picture of the research problem. It also helped to come up with the theoretical framework of the study mainly based on Hyusman et. al(2006) contribution on IT and Social Capital themes.

A single in-depth case study method was felt most appropriate to get the empirical evidence for the study. In addition, different secondary sources like Company's website, field visits, Corporate intranets, 10 semi-structured interviews were undertaken to get the practical view of the research problem. The empirical part was done in two parts following the colse yet different nature of the two research questions. An intensive discussion and analysis of

the qualitative data provided clear picture of the research problem. As thought of earlier, lots of theories tend to fit to the original theortical framework of the study with some minimal changes.

The first thing uncovered was that the usage of non-face-to-face tools was quite natural.It was used naturally and most of the times unintentionally for sharing of factual information, asking somebody's opinion, managerial clues, business tricks or even sharing job related problems. Such tools were also used for the privatization of the leisure time. Most respondent believed non-face-to-face tools especially telephones and e-mails to be quite comfortable and easier as they had been using for sorting out day to day business activities and to interact among other collegues on various topics.

It could be urged that impact of non-face-to-face tools on structural dimension of social capital was clearer and was repeating lots of time in the research. Though, non-face-to-face tools help broaden the cognitive ability, foster strong relationship, it was explored to impact in due course of time. Similarly, communicating and interacting through non-face-to-face tools help to develop similar mutual goals that facilitated interpersonal tacit knowledge sharing.

It is found that non-face-to-face interactions through telephones or emails provide the different infrastructures and opportunity to share ideas, experiences and personal beliefs among certain colleagues. The interaction happens more often with those colleagues that are part of individual independent circle and among those who have some kind of interpersonal relationship or shared understanding. Also, non-face-to-face tools were more effective in sharing of tacit knowledge among colleagues who were interacting more often and in most cases working on stores or offices near to ones. Hence, most of the time such interpersonal relationship needs least face-to-face meetings or other different mediating factors, non-face-to-face tools do initiate a social bond. Simultaneously, there are different mediating or contextual factors which in a way around affect the impact of non-face-to-face tools itself. Some mediating factors that showed strong impact on the effectiveness of tacit

knowledge sharing were face-to-face meetings, time and distance barriers as well as comfort of using tools etc.

The figure below summaries the findings of the study. This figure represents the final model of the research study. As compared to the original theoretical framework of the study, this model urges that the empirical evidence do follow the pattern of the framework. Though, not all mediating factors seem to have impact on the outcome of the research study. As well as, non-face-to-face tools impact were different and sometimes bi-directional on the support and development of the social capital.
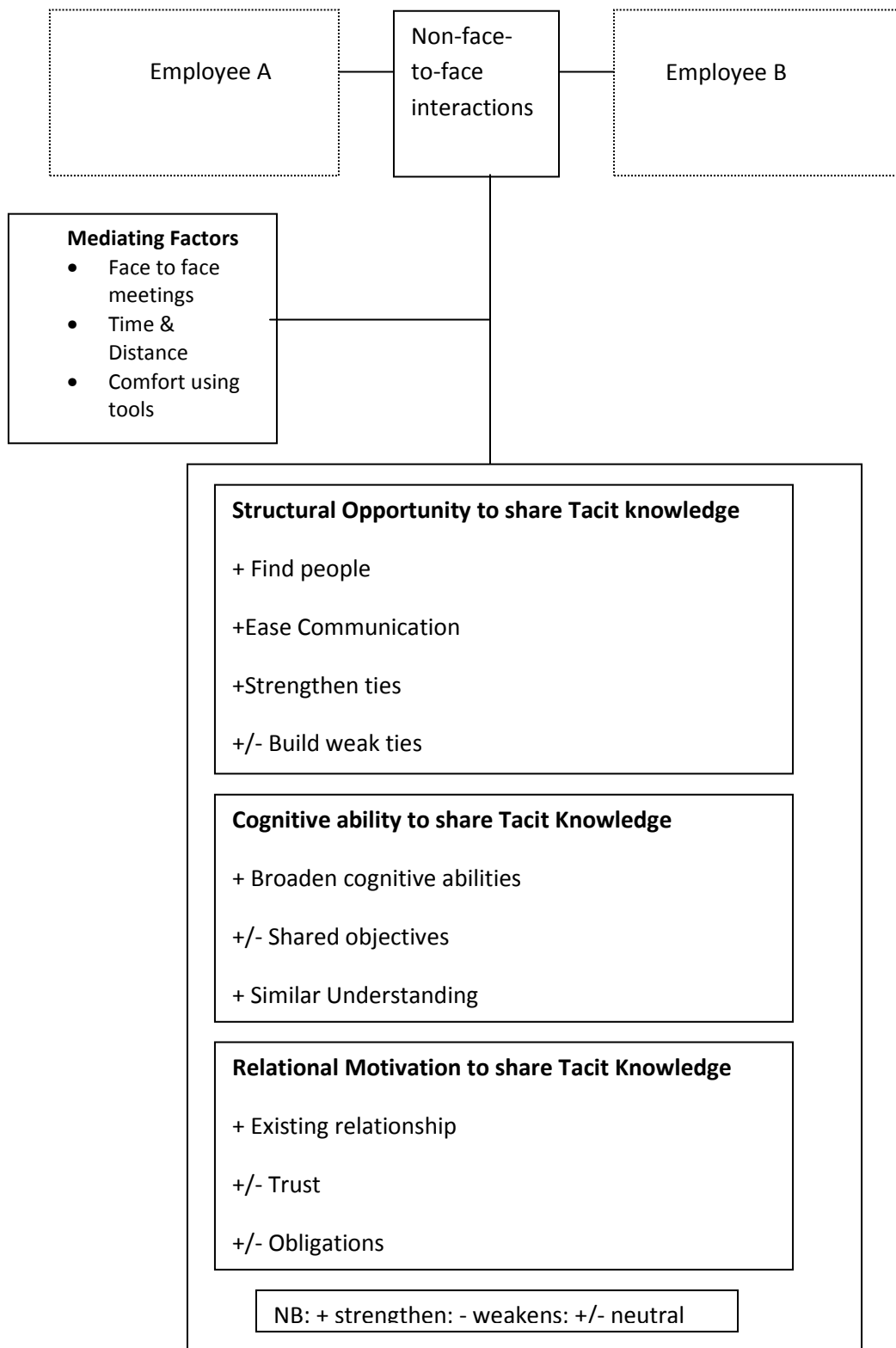
Figure 8. Graphical Synthesis of the final framework of the study.

As shown in the figure above, the empirical studies of the research subject provided a multifaceted view of effectiveness of non-face-to-face tools in generating or supporting different dimensions of social capital. Finally, it could be urged that such non-face-to-face tools do support different social capital factors. Though, it might not assist building up social capital from scratch but it proved to support the existing ties providing opportunity to interact with people despite of time and spatial distance. On the contrary, such tools had minimal effect on the development of shared cognitive grounds as well as trust unless people have met face-to-face or have known each other in due course of time.

5.2. Implication to the Individual Managers and Organizations

Since this study attempt to uncover the interpersonal level knowledge sharing issues, the findings are primarily precious for individual managers.

Interpersonal knowledge sharing typically occurs as a natural product of interpersonal interaction and is not always planned or even intentional. Nevertheless, it requires motivation from individual mangers to engage in interaction. It's the individual itself, that has to come up with such motivation. Since sharing knowledge among other colleagues help to gain both individual and organisational achievements.

Everybody doesn't have ideas and opinions for everything. To build expertise, one should indulge himself/herself in the never ending process of interactive discussions, dialogues etc. Non-face-to-face tools make it possible since it makes possible for anyone to interact with more people without meeting face-to-face in a very less period of time. Though, it is necessary for the knowledge seeker to get to know a right person which could make an influence. But such things could probably happen if somebody know what other people do and what they are expertise of through interactions and personal contacts. Non-face-to-face tools at the disposal are most appropriate tools that could be used for such tasks.

Similarly, Knowledge is power. But knowledge could only be attained through the act of sharing and acquiring knowledge from others. Non-face-to-face tools make it possible for everyone to assess the right people and better surrounding for sharing of ideas, opinions and personal experiences.

Additionally, organizations have unique advantage of creating knowledge since they could provide an institutional environment conducive to the development of social capital. Such institutional environment could be supported through non-face-to-face tools like emails and telephones which would create and sustain a platform of different social capital factors facilitating interpersonal level tacit knowledge sharing.

The organizational benefits of such sharing of ideas and opinions reach beyond the indirect benefits of individual managers being able to seek and share knowledge more effectively. Since, it is truth that non-face-to-face tools do provide paths through which ideas can disseminate and blend. But such communicated ideas reside in the head of relevant managers only. Organizations could come up with creative thoughts of how to manage and exploit those kinds of knowledge. Since, such knowledge could be the primary source of innovation and even contribute to the competitive advantage of the firm.

Additionally, organization could perhaps provide every employee with more sort of interactive tools and technology which create favourable environment for sharing of ideas building social ties and ensure conducive scenario for tacit knowledge sharing. Organizations thus, might consider different social capital factors along with mediating factors while introducing or implementing newer knowledge management technologies.

5.3. Limitations of the Study

This research study is not free without limitations. It is thought perhaps to look the limitations as theoretical limitations as well as practical limitations related to the methodology of the study. The study embraces the following general limitations associated with different external and internal factors of the study.

It is often cited that social capital theory has been used as umbrella term. It is argued by most people to be sometimes vague embracing all different concepts. Additionally, there are numerous arguments that social capital theory literature follows the positive relation on studies of role or impact on certain dependent variables. Hence, this study might have perhaps affected by the positivity of the impact of social capital theory on facilitating interpersonal level knowledge sharing.

Since the study was a single in-depth case study. Only 10 interviews were taken for the data collection purpose. Though, careful considerations were made using multiple sources of evidence like company annual reports, websites, intranets etc. Obviously, multiple case studies might have provided the better picture of the research agenda. Given the time and resource barrier, it was not possible to use mixed research method. A mixed method of both quantitative as well as qualitative approach could have certainly provided more concrete and clearer results.

Finally, similar with the other case studies, this study lacks generality. The results might have more worth in case the sample of the data was high or might have multiple case companies. Also, the results of the study might have got influenced by the unique context of the case company.

5.4. Suggestions for the Further Study

The present study contributed to the socio technical perspective of looking the scenario of IT effects on development of social capital factors. Such social capital

factors though abound, the study restricted to uncover very few of them. The study was based on single in-depth case study which lacks the value of generabiltiy. Though the findings of this study should be very much helpful to the other researcher, such researcher could dig dipper for the broad understanding of the research topic through multiple case studies or using quantitative method of studies.

The study intended to look after various conditions and requirements of knowledge sharing (Hysman et. al 2005) is thought to pave the way for the further research. Since, the study highlighted several other mediating or contextual factors that came to play an impact on the interpersonal level knowledge sharing.

This study did not attempt to uncover the scenario or consider comparing face-to-face and non-face-to-face tools simultaneously. This research provides the avenue for further research where the two different methods of interactions could be compared and studied in relation to the sharing of interpersonal knowledge.

Though this study brought findings examining only telephones or emails which are very few among numerous ICT's available at present firms at their disposal. The future research could use the findings for building a new theoretical framework for their study concerned with other varieties of ICT or knowledge management systems.

Meanwhile, the future researcher could examine other theories like social network theory, organizational cultural theory or institutional theory embarking various factors facilitating interpersonal level knowledge sharing.

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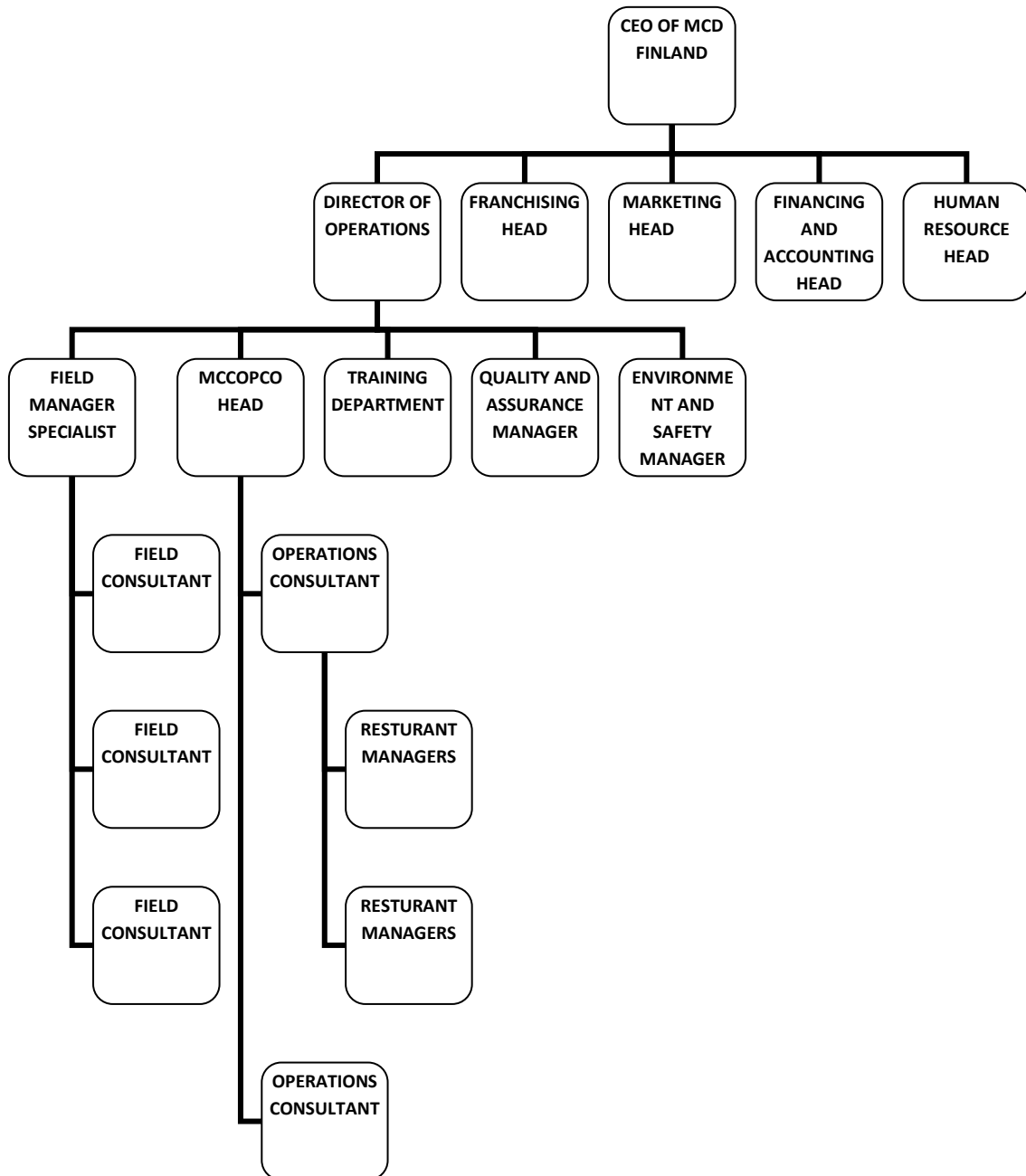Putnam R.D (1995). Bowling Alone: America's Declining Social Capital. *Journal of Democracy*. 6, 65-78.

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Appendix 1: Organisational Structure of the Case Company

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                              ┌─────────────┐
                              │ CEO OF MCD  │
                              │  FINLAND    │
                              └──────┬──────┘
        ┌───────────┬──────────┬─────┴──────┬──────────────┐
┌───────────┐ ┌──────────┐ ┌─────────┐ ┌──────────┐ ┌──────────┐
│DIRECTOR OF│ │FRANCHISING│ │MARKETING│ │ FINANCING │ │  HUMAN   │
│OPERATIONS │ │   HEAD    │ │  HEAD   │ │   AND     │ │ RESOURCE │
└─────┬─────┘ └──────────┘ └─────────┘ │ACCOUNTING │ │   HEAD   │
      │                                │   HEAD    │ └──────────┘
      │                                └──────────┘
 ┌────┬──────────┬──────────┬──────────┐
┌────────┐ ┌────────┐ ┌─────────┐ ┌──────────┐ ┌──────────┐
│ FIELD  │ │MCCOPCO │ │TRAINING │ │QUALITY AND│ │ENVIRONME │
│MANAGER │ │ HEAD   │ │DEPARTMENT│ │ASSURANCE │ │NT AND    │
│SPECIALIST│ └───┬────┘ └─────────┘ │ MANAGER  │ │SAFETY    │
└───┬────┘     │                    └──────────┘ │MANAGER   │
    │          │                                 └──────────┘
    │      ┌──────────┐
    ├──┐   │OPERATIONS│
    │  │   │CONSULTANT│
    │ ┌────────┐ └───┬──────┐
    │ │ FIELD  │     │
    │ │CONSULTANT│   │  ┌──────────┐
    │ └────────┘   ├──│RESTURANT │
    │              │  │MANAGERS  │
    │ ┌────────┐   │  └──────────┘
    ├─│ FIELD  │   │
    │ │CONSULTANT│  │  ┌──────────┐
    │ └────────┘   └──│RESTURANT │
    │                 │MANAGERS  │
    │ ┌────────┐      └──────────┘
    └─│ FIELD  │
      │CONSULTANT│
      └────────┘
          ┌──────────┐
          │OPERATIONS│
          │CONSULTANT│
          └──────────┘
```

Appendix 2: Interview Guide

Interview date and time :

Place :

Name:

Job Title:

Organisation Level:

Job Description :

Contacts for Further Clarification:

Appendix 3: Interview Format

Dear Respondent,

I am a Master's degree student at the University of Vaasa. This interview is intended to be a part of an in-depth case study of McDonalds Oy which would constitute the empirical part of my Master's thesis. I am interested to know how you use non-face-to-face tools like emails and telephone for sharing ideas, advice or experience etc. among your colleagues in other units in Finland and elsewhere. The interview will last about 60 to 90 minutes. It is assured that your response would be kept confidential .In addition to that, special precautions would be taken for not disclosing your personal identity while using your responses

Please, provide me practical examples wherever possible.

1. What are the typical ways in which you communicate with your colleague?
   a. Who do you talk to outside your own unit? Why? How?
   b. Can you give examples of different ways?
   c. Is it difficult or easy? When is it easy/difficult? Why? What do you do if it is difficult?

2. When you need information or advice for a job related problem, what do you do?
   a. What different sources do you use?
   b. Who do you go to?
   c. Who do you talk to?
   d. Why that particular person?

3. What sorts of ideas or advices have you got from your colleagues? Could you give some examples?
   a. How did you receive those?

4. What different tools do you use to communicate with your colleague?
   a. How often you use them?
   b. What are the different situations when you use them?
   c. How would you use them? Why those?

5. How usage of emails or telephone has affected your network ties?
   a. Interaction among your colleague
   b. Web of your personal ties

6. What things motivate you to share ideas or experiences with your colleague?
   a. Relationship(Friendship/ Personal ties)
   b. Obligation (Part of your work/Responsibility)
   c. Is that same when you share ideas using emails or telephones?

7. How much similarities among your colleagues affect sharing of ideas using emails or telephone?
   a. Language
   b. Culture
   c. Similar job
   d. Similar vision

8. What other things affect how you share ideas and with whom?