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KAUNAS UNIVERSITY OF TECHNOLOGY
SCHOOL OF ECONOMICS AND BUSINESS

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KNOWLEDGE SHARING MODEL FOR
IT SMALL AND MEDIUM ENTERPRISES: THE CASE OF INDIAN
COMPANIES

MASTER'S THESIS

Supervisor Lect. Dr. Vestina Vainauskienė

KAUNAS, 2016

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STRATEGIC LEADERSHIP (621N20034)

MASTER'S THESIS

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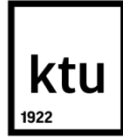
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Strategic Leadership (621N20034)

Knowledge Sharing Model for

IT Small and Medium Enterprises: The Case of Indian Companies

DECLARATION OF ACADEMIC INTEGRITY

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Kaunas

I, **Banupriya Senguttuvan**, hereby confirm that Master's Thesis entitled *Knowledge Sharing Model for IT Small and Medium Enterprises: The Case of Indian Companies* is solely my own work and all the data and research findings presented are true and obtained fairly. None of the thesis parts contain plagiarized material from printed or internet sources, all direct or indirect quotes of other sources are fully and properly acknowledged. I have not made illegal payments for this work to anyone.

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SUMMARY

Knowledge Management is an activity in which, today's environment of business wedges the role organization play. Knowledge is a source of competitive advantage. This may aid competitive advantage by knowledge sharing. Knowledge management processes helps in increasing productivity, effectiveness and efficiency of the organization by means of people, processes and technology by means of sharing knowledge. In order to manage knowledge resources, most of the organizations are implementing KM processes for their improved performance of the organization's results. The success of KM initiatives depends on knowledge sharing activities.

The factors which influences the knowledge sharing activities may involves SMEs rather than the bigger companies. However, small and medium companies involves some particular factors which affects the outcomes of knowledge sharing behavior. Also, when developing or constructing knowledge sharing programs in the SMEs some problems and issues may arise, for example, lack of trust, lack of time and lack of tools and technical resources.

In India, over half of the private workforces work for small companies. SMEs, which we define as firms from 100 to 300 people. They face different difficulties according to the culture and the factors that impact the knowledge sharing activity which is compared to larger firms.

This proposed research was conducted in Indian small and medium IT enterprises (SMEs). These companies were intended to develop and formulate the knowledge sharing practices. However it faces different problems and issues to implement this practices in the organization. Some individuals agree that the knowledge sharing activity is the important task in order to ensure the competitiveness and to increase the organizational performances.

The empirical research showed that, the main factors and categories which are analyzed from the results data from the research questions. In which, the Knowledge Sharing Model has constructed with the factors mentioned in it will be suitable for the IT SMEs. Not all, but some of the factors are found and the content has been analyzed. Knowledge sharing in SMEs are related with the factors that are includes *Intention to share knowledge, Management system support, Communication factors, IT technological factors and motivational factors* which has been used by the IT SMEs are presented.

Among the factors that are highly appreciated for the selected employees are: team /group collaboration systems with the management support. Also the tools and techniques such as communication centers, forums, training session, and brainstorming and discussion rooms are the techniques or methods and motivational factors such as intrinsic motivation, extrinsic motivation can be used for the selected SMEs.

Keywords: Knowledge Sharing, Factors, Knowledge Sharing Behavior, Knowledge Transfer, Indian SMEs, Information Technology

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INTRODUCTION

Today's environment of business wedges the role organization play with Knowledge Management (KM). Knowledge is a source of competitive advantage. This may aid competitive advantage by knowledge sharing. This is the responsibility of every organization must poses with Human Resources Management (HRM). HRM team manages the most valuable resources, such that the people, who are considered to be a most treasure of the knowledge individual in the organization. Knowledge management processes helps in increasing productivity, effectiveness and efficiency of the organization by means of people, processes and technology by means of sharing knowledge. In order to manage knowledge resources, most of the organizations are implementing KM processes for their improved performance of the organization's results. The success of KM initiatives depends on knowledge sharing.

Knowledge is a critical organizational resource which provides sustainable competitive advantage and dynamic economy if the knowledge organized and managed in a effective way. The processes of KM offers in improving efficiency and organizational learning and innovation has been cited as a key resource of the competitive advantage (MacKinnon et al., 2002). As one of the knowledge-activity, knowledge sharing is the fundamental process through which the employees can contribute to the innovation, knowledge application, creation of new knowledge and ultimately the competitive advantage of the organization. Knowledge sharing between employees and within teams allows organizations to reach its goals effectively.

Small to medium-sized enterprises (SMEs) are a vital part of any national economy. It is widely accepted that the small and medium sized companies in all the developed countries have implementing the KM system in order to get positive impact on the organizational outcomes. Knowledge Sharing (KS) refers to the process by which team members share ideas and that are task-related, data/ information, improvements as well as the suggestions with one another.

Therefore, KM has become an important factor to gain and sustain SMEs competitive advantage. As such, a major management issue is the method used to convert individual knowledge into organizational knowledge. So, we can say that, organizational knowledge is essentially created and resides in individuals in the SMEs. By implementing knowledge sharing

activities in the small company and in the medium company, the SMEs can attain its goals effectively. One of the key success factors of KM is the communication among individuals, in particular when sharing of knowledge. It depends on the certain factors of the knowledge sharing behavior. Effective knowledge sharing requires tools and technologies, which can act as a facilitator of the KS for formal or informal communication.

A practical knowledge sharing model is crucial to support the management system for the SMEs. To facilitate knowledge sharing, this research has identified and listed the factors which enhancing the KS behavior. The proposed model for KS based on SMEs, to facilitate and enhance KS behavior among employees in a team in the selected Indian SMEs. ***The problem of the research is identified as follows:*** *What are the motivational factors, organizational factors and IT factors? How the main factors influence knowledge sharing behavior in the SMEs?*

The significance of managerial support, employee behavior, attitude and intention to share knowledge and the motivational factors which are considered to be the main factors that impact the KS behavior in the SMEs. Small and Medium Enterprises (SMEs) are one most vibrant and sensitive sectors in Indian economy (Lahiri, 2012). SMEs represents a higher percentage of all businesses in India. They are essentially the drivers of the Indian economy even though some of them are hardly noticed. Their contribution to economic growth, income and reducing unemployment rate is therefore not in doubt. Though, there are many studies about social research, which relies on SMEs in India, but about knowledge sharing perspective, it has to develop this system in order to gain effectiveness on organizational performance and to sustain competitive advantage which enhances the growth of the businesses in Indian market.

THE AIM OF THE RESEARCH

The aim of the research is to explore the factors which enhance and influence knowledge sharing behavior of small and medium enterprises.

THE OBJECTIVES OF THE RESEARCH

1. To examine the assumptions of knowledge sharing behavior behind knowledge management.
2. To identify factors in the organizational level to determine knowledge sharing behavior.

3. To formulate the effective knowledge sharing model for SMEs to explore the positive organizational outcome. To identify the opinion of participants from Indian SMEs to explore realistic knowledge sharing behavior.

RESEARCH METHODOLOGY

The study is based on the primary data collected by the information provided from small and medium enterprises. A qualitative research was selected for the empirical study. Survey were done at selected companies based in India and particularly, interviews were conducted from various IT professionals. Specifically, in total 12 participants from 4 companies.

STRUCTURE OF THE THESIS

The thesis consists of four main parts. In the first part, the problem of the research topic is analyzed and it shows the necessity of finding theoretical solutions and conducting empirical research. In the second part, the scientific literature review on the topic related knowledge sharing from the perspective of small and medium enterprises. Also, this part represents the purpose and value of knowledge sharing process in KM perspective, which SMEs and large organizations can adapt. The importance of the knowledge sharing process from the cycles and models of KM are discussed in detail. In the third part the research methodology provides the main objectives and the research designs and strategies for the empirical research. In the fourth part, the main findings of the empirical study of knowledge sharing practices and the main factors at the selected SMEs in India are interpreted. Research findings and the discussions deliver the conclusions of the research and recommendations to the future research finally.

LIMITATIONS OF THE RESEARCH

The sample for this study is based on IT sector and SMEs of software companies. It is suggested that future studies enlarge the scope to include the SMEs in the multi-sector. We can say that, it is only a pilot study of the selected SMEs in the Indian Market Economy. In order to encourage knowledge sharing within SMEs, firms need to ensure that both the technical and social elements are addressed. Hence, a *socio-technical approach* needs to be adopted to ensure the effectiveness of the knowledge management strategies formulated by the overall SMEs.

1. PROBLEM ANALYSIS

In order to explain the essence of the research problem, first the theme and definition of the SMEs is explored. Then, the substantiation problems and the challenges SMEs pursue is compared with the larger companies in a culture level are briefly explained. These challenges and difficulties limit the opportunities of the SMEs to raise the growth along with the competitors in the market and to manage the knowledge resources and/or knowledge assets which is available in the organization.

Definition of SMEs in different countries:

It should be intuitively evident that Small and medium-sized enterprises (SMEs) are of special importance to private sector growth. SMEs are more efficient at creating quality jobs, are more innovative, or grow faster than larger firms.

Financial assets are also used to define SMEs. The most commonly used statistical definition for an SME among participating countries is the one used in the European Union. SMEs are non-subsidiary, independent firms which employ less than a given number of employees. This number of employees varies across countries. The most frequent upper limit designating an SME is 250 employees, as in the European Union. However, some countries set the limit at 200 employees, while the United States considers SMEs to include firms with fewer than 500 employees. Small firms are generally those with fewer than 50 employees, while micro-enterprises have less than 10, or in some cases 5, workers (Organization for Economic Cooperation and Development [OECD], 2015). The new definition provides for an increase in the financial ceilings: the turnover of medium-sized enterprises (50<250 Employees) should not exceed EUR 50 million; that of small enterprises (10<50 employees) should not exceed EUR 10 million while that of micro firms (<10) should not exceed EUR 2 million. Alternatively, balance sheets for medium, small and micro enterprises should not exceed EUR 43 million, EUR 10 million and EUR 2 million, respectively (Organization for Economic Cooperation and Development,2005).

Gibson and Vaart (2008) state that a discussion of SMEs among officials of the multilateral development institutions, each thinking within the context of the official definition of his or her own, as represented below is the maximum size criteria for SMEs (Table 1).

Table 1. SMEs Definitions used by Multilateral Institutions
Source: Gibson and Vaart (2008)

Institution	Maximum # of Employees	Maximum Revenues or Turnover ($)	Maximum Assets ($)
World Bank	300	15,000,000	15,000,000
MIF - IADB	100	3,000,000	(none)
African Development Bank	50	(none)	(none)
Asian Development Bank	No official Definition. Uses only definitions of Individual national governments		
UNDP	200	(none)	(none)

As Table 1 shows, the World Bank definition includes businesses three times larger by employees and five times larger by turnover or assets than the largest SME under the MIF definition.

The vast majority of the enterprises in the economic sectors examined employed less than 250 persons and had an annual turnover of not more than 50 million Euro in 2013. Thus they belonged to the SMEs. This was true for 99.3% of the total of 2.2 million enterprises. The greater majority of them, namely 1.8 million enterprises, were so-called micro-enterprises which employed not more than nine persons and whose annual turnover did not exceed 2 million Euro. Only some 16.000 enterprises were assigned to the category of large enterprises.

SMEs play an important role as regards employment. More than 60% of the total of about 26.5 million persons employed in the economic sectors covered worked in SMEs. The proportion of persons employed in micro-enterprises amounted to 18%, while 22% worked in small and 19% in medium-sized enterprises. The following figure can describe it in figure as follows.

Percentage shares by enterprise size classes
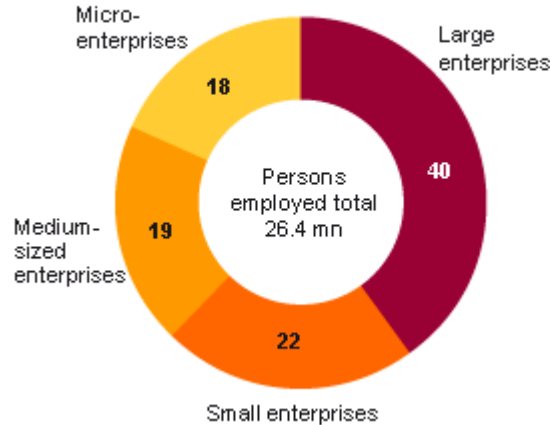
Figure 1. National Economy of SMEs
Source : Destatis, Statistisches Bundesamt, Wiesbaden, 2015

So, there are different definitions of SMEs in different countries based on the legal bases of the country and / or based on structure based on the revenues / turnover, manpower employed, capital employed etc. Normally the SMEs are defined based on non-agriculture activities. It should be in middle of three sizes between the micro and large enterprises SMEs can be defined based on sales, employees employed, capital, turnover, legal aspects.

Definition of SMEs in India:

According to Small And Medium Business Development Chamber of India (2015), "Indian SMEs represent the model Government socio-economic policies of Government, which emphasizes job creation at all levels of income stratum and diffusion of economic power in the hands of few thereby discouraging monopolistic practices of production and marketing; and in all prospects contributing to growth of economy and foreign exchange earning with low import-intensive operations".

Indian SMEs also play a significant role in Nation development through high contribution to domestic production, significant export earnings, low investment requirements, operational flexibility, location wise mobility, low intensive imports, capacities to develop appropriate indigenous technology, import substitution, contribution towards defense production, technology-oriented industries, competitiveness in domestic and export markets thereby generating new entrepreneurs by providing knowledge and training. The definition of India SMEs is as below.

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Table 2. Definition of SMEs
Source: Small and Medium Business Development Chamber of India, (2015)

Manufacturing Enterprises – Investment in Plant & Machinery		
Description	INR	USD($)
Micro Enterprises	upto Rs. 25 Lakh	upto $ 62,500
Small Enterprises	above Rs. 25 Lakh & upto Rs. 5 Crore	above $ 62,500 & upto $ 1.25 million
Medium Enterprises	above Rs. 5 Crore & upto Rs. 10 Crore	above $ 1.25 million & upto $ 2.5 million

Service Enterprises – Investment in Equipment's		
Description	INR	USD($)
Micro Enterprises	upto Rs. 10Lakh	upto $ 25,000
Small Enterprises	above Rs. 10 Lakh & upto Rs. 2 Crore	above $ 25,000 & upto $ 0.5 million
Medium Enterprises	above Rs. 2 Crore & upto Rs. 5 Crore	above $ 0.5 million & upto $ 1.5 million

The small and medium-sized enterprises are defined according to their staff headcount and annual balance-sheet total. The SMEs face challenges for not attention paid to the role the strategic human resource management (SHRM) practices of SMEs play in their ability to be valued and trusted strategic partners in the value chain of big businesses. The knowledge management to have a good insight into the knowledge gap in order to close it in the correct places. This activity is strongly strategically driven. The determination of the knowledge gap can be achieved with the mentioned Indian SMEs.

The main problem consider in SMEs that they don't have the opportunity to establish the processes of knowledge management in the enterprises. Knowledge fertilization in SMEs is increasingly crucial in supporting the network of collaboration and the competitiveness of the whole system. Nevertheless, there is an abundance of studies describing how large companies are successfully exploiting knowledge management (KM) practices, while SMEs show poor use of KM practices.

Although, there are many studies that analyze the processes of dissemination of knowledge and highlight the adoption of KM in large companies, as in SMEs, the framework of

knowledge is still fragmented. Moreover, the degree of adoption of practices and KM is not homogeneous and there still profound differences among various industries.

Several researches highlight the factors preventing the adoption of practices and strategies of knowledge management by SMEs are, directly and/or indirectly, connected to the most common aspects. Even though, the aspects seem to explain the factors, it should emphasize that the Information and Communication Technologies (ICTs) are increasingly offering SMEs new tools.

To summarize, increasingly, SMEs are seen to have an important role in economy, indeed it would seem that both national and local economies are largely constituted of smaller enterprises, with the addition of minority of larger enterprise. The number of papers regarding knowledge management includes KM processes in IT SMEs, which is increasing, further research efforts are still needed. A lot of studies have been already done about KM in SMEs. Very few studies have been conducted so far on knowledge sharing in Indian SMEs. There were no in depth studies conducted as far as related with the Knowledge Sharing model. So, the literature in the next section proves that Knowledge sharing is an important process of KM. Then the finding of results from Indian SMEs have been analyzed by using research methodologies. Hence, the objectives can be obtained in this way in further research section.

2. THEORETICAL ASPECTS OF KNOWLEDGE SHARING

This part will investigate the literature that is relevant to get to know the knowledge sharing activity and interpret the results of this convergent study. Firstly, it presents what is Knowledge management, definition and features of knowledge management. Secondly, it shows the characteristics of the processes, model and cycle of some of the models of Knowledge Management (KM) theory which are suitable for both large and small enterprises. Finally, it represents the theoretical aspects of knowledge sharing and its conceptualization. Furthermore, the characteristics of knowledge sharing and tools and techniques which used to promote knowledge sharing have been criticized.

The literature review familiarize the reader with KM model used in different practices. The most important attention is paid to one of the process of KM cycle, Knowledge Sharing. Knowledge sharing is one of the building blocks for an organization's success and acts as a survival strategy in this knowledge era (Witherspoon et al., 2013).

2.1. Definition of Knowledge, Knowledge Management

It is not easy to define the term "knowledge" as it has different meanings depending on context. Knowledge is a data or information with a further layer of intellectual analysis added, where it is interpreted, meaning attached structured and linked with the existing systems of beliefs and bodies of knowledge (Hislop, 2005). Actually, simply knowledge can be described as the value of linking data and information which are collected or gathered in the same field. Generally, we can define Knowledge as a product of human effort, for example, skills acquired through education or experience and to digest and gain control of information.

Knowledge is therefore a body of information shared by a group of individuals. Simply put, it is the information given meaning and integrated with other contexts of understanding (William O, 2010). Knowledge is a facts/Data, information, and the theoretical or practical understanding of a subject. Data is nothing but content that is directly observable or verifiable or simply a fact, Information is a content that represents analyzed data.(Dalkir, 2013) Data is often in the form of facts. Information is the collected facts and data about a particular subject. The theory of knowledge is called epistemology and it deals with such questions as how much knowledge comes from experience; whether knowledge needs to be believed or can simply be

used; and how knowledge changes as new ideas about the same set of facts arise. The figure 2 presents the process of KM. Some authors refer to this as the Knowledge Life Cycle.
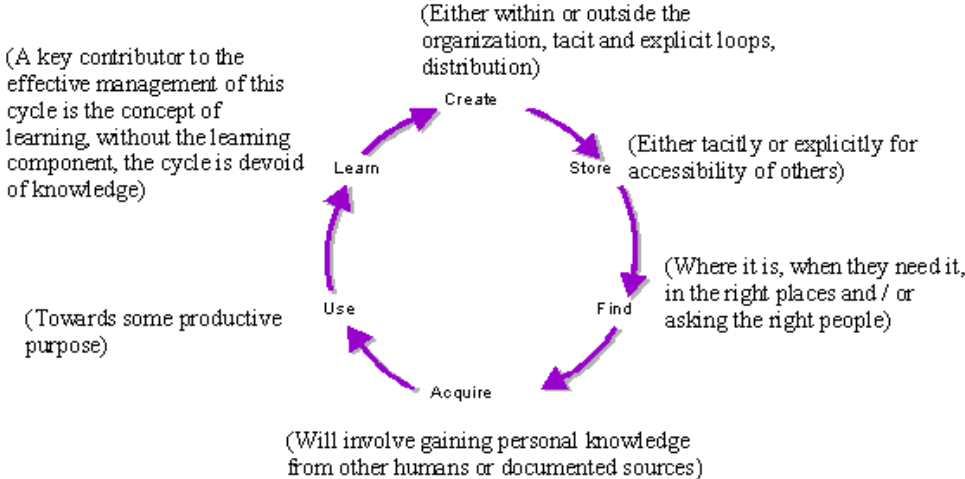
Figure 2. Knowledge Life Cycle
Source: William O. Ogara, J.W. Jalang'o, O.J. Othieno, 2010

By considering a dynamic and circular relationship between 'data', 'information', 'knowledge' with 'human activity' in the centre, this view is suggested by Knox (2007): "Data, information and knowledge are not separate entities there is a dynamic and circular interaction between them which places the human element at the centre. Knowledge can generate new data and this is a recurring process" (Knox, 2007).
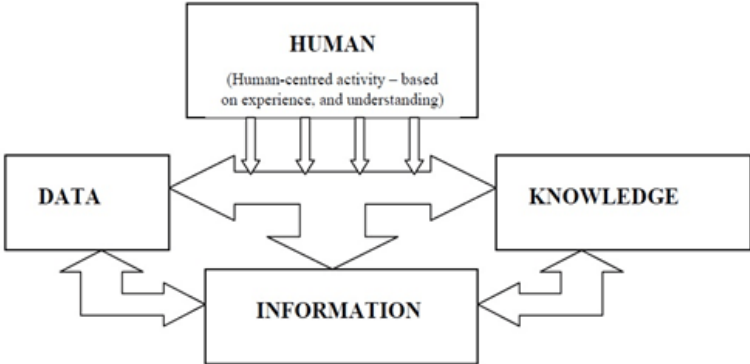
Figure 3. Data, Information and Knowledge
Source: Dynamic Relationship between data, information, knowledge & humans (Knox, 2007)

Types of Knowledge

There are two types of knowledge, (i) Explicit knowledge and (ii) Tacit Knowledge. Explicit knowledge can be expressed in formal language and it can be shared in the form of data, scientific specifications, documents, records and such like. It can be processed, stored and transmitted easily. In contrast, tacit knowledge is hard to formalize. For example, subjective insights and intuitions fall into this category of knowledge. Tacit knowledge is deeply rooted in action, procedures, ideals, values and emotions. So, it is difficult to communicate tacit knowledge to others.

In broader sense, Knowledge Management (KM) strategy hit different perspective of various levels: Individual/personal level, group/team or communities level, organizational level, inter-organization level and global knowledge. Knowledge resources at different levels described below:

Individual level: Personal, often tacit knowledge/know-how. It can also be explicit but only in individual nature.

**Group level**: Knowledge held in groups but not shared with other groups. For example, companies usually consist of communities which created formally or informally. These communities may share common values, *know-how*. So that, they are the *repository* of tacit and explicit knowledge.

Organizational level: The definition of organizational knowledge is a concept that shows individual knowledge must be shared with groups/communities in the organization.

Hatch (2010) defines it as, "*When group knowledge from several subunits or groups is combined and used to create new knowledge, the resulting tacit and explicit knowledge can be called organizational knowledge.*" Others present a broader perspective, "*individual knowledge, shared knowledge, and objectified knowledge are different aspects or views of organizational knowledge*" (Ekinge & Lennartsson 2000).

Also, groups share know-how knowledge with the subgroups in the organization. KM at organizational level leads to Organizational Learning (OL). The knowledge repository developed then by reusing knowledge, new knowledge can be created. All the knowledge

resources within an organization that can be realistically tapped by that organization. It can therefore reside in individuals and groups, or exist at the organizational level.

Knowledge Management (KM) involves processes that enable the development of organizational knowledge. According to Serrat (2009), Knowledge management can be defined as the explicit and systematic management of processes that enable vital individual and collective knowledge resources to be identified, created, stored, shared, and used for benefit. Its practical expression is the fusion of information management and organizational learning.

Knowledge management (KM) may simply be defined as *doing what is needed to get the most out of knowledge resources.* Although KM can be applied to individuals, it has recently attracted the attention of organizations. KM is viewed as an increasingly important discipline that promotes the creation, sharing, and leveraging of the corporation's knowledge (Fernandez & Sabherwal, 2014).

Knowledge management is a concept in which an organization that gathers, identifies, organizes, shares and analyzes the knowledge of individuals and groups across the organization or a firm in ways that directly improve its performance. Therefore, it is a process through which organizations generate value from their knowledge resources and intellectual and knowledge-based assets.

The practice used to describe how to manage knowledge effectively in the organizationss is called knowledge management (KM). Data, Information, Knowledge and Knowledge management have been defined by various authors in different views below see table 3.

Table 3. Taxonomy of Definitions of Knowledge and Knowledge Management

Author/s	Definition	Perspectives
Ekinge & Lennartsson (2000)	........"*individual knowledge, shared knowledge, and objectified knowledge are different aspects or views of organizational knowledge*"	Aspects of Organizational knowledge
Hislop	......"*defines Knowledge is a data or information with a further layer of intellectual analysis added, where it*	Organizational

(2005)	*is interpreted, meaning attached structured and linked with the existing systems of beliefs and bodies of knowledge"*	Knowledge, Management: Historical view
Knox (2007)	*...... "defines Data, information and knowledge are not separate entities there is a dynamic and circular interaction between them which places the human element at the centre. Knowledge can generate new data and this is a recurring process"*	Organizational behavior, Individual involvement, Human & knowledge resources
Serrat (2009)	*......."Knowledge management can be defined as the explicit and systematic management of processes that enable vital individual and collective knowledge resources to be identified, created, stored, shared, and used for benefit"*	KM processes, Human resources : individual & group levels
William et al., (2010)	*......"defines knowledge is the information given meaning and integrated with other contexts of understanding"*	Integrated Knowledge, Context
Hatch (2010)	*....."defines When group knowledge from several subunits or groups is combined and used to create new knowledge, the resulting tacit and explicit knowledge can be called organizational knowledge"*	Combined group Knowledge sharing, create new knowledge
Dalkir (2013)	*..... "defines Data is nothing but content that is directly observable or verifiable or simply a fact, Information is a content that represents analyzed data"*	Valuable Commodity, Intellectual asset
Fernandez & Sabherwal, (2014)	*......" defines KM is viewed as an increasingly important discipline that promotes the creation, sharing, and leveraging of the corporation's knowledge"*	Description of KM processes

To summarize, a Knowledge asset or resources in the organization must know, know-what and know-how skills. Management teams like HR can help to improve individual's capabilities as well as organization's development by making the interactive, collaborative and communicative community/group in the organization. The main thing of KM function operates KM processes to improve efficiency of the organization. It involves people. If the people are highly motivated to share knowledge with others in the organization, it will become learning organization.

Knowledge is different from everyone's perspective but if it is managed in a right way, the organization surely get benefits. In each and every organization has knowledge resources. This section provides definition of KM in various perspectives, in which, organizational knowledge in group level and HR level follows KM processes to develop effective knowledge organization. In the above section, several KM definitions are there. But, the definition of organizational knowledge is the most important and it has been taken into the consideration. In the forthcoming section, we will discuss about the main KM processes and analysis of those processes in the perspective of organization to ensure knowledge sharing.

2.2. Overview of Knowledge Sharing from Knowledge Management Models, Processes and Cycles

Knowledge Management is the planning, organizing, motivating and controlling of people, processes and technologies in the organization to ensure the organization's knowledge-related assets are improved and effectively employed.

"We know more than we can tell"

- Polanyi (1966)

The processes of KM involve knowledge acquisition, creation, refinement, storage, transfer, sharing and utilization. These are mentioned as a figure of Knowledge life cycle above. In the organization, the KM function operates these processes and motivates people to participate in them.

A little knowledge that acts is worth infinitely more than much knowledge that is idle.

- Kahil Gibran (1883 - 1931)

The major phases involved in the knowledge management cycle of processes within organization are elaborated below. The major approaches to KM cycle and KM model are presented from Nonaka-Takeuchi Model (1995), Botha KM process Model (2008), Lai & Graham (2009), Knowledge Management Cycle (KMC) Model (2014). This part concludes with a discussion and arguments and the summary of the KM processes which says the importance of KM for the organization level and proves Knowledge Sharing is an important process among KM processes. Nonaka and Takeuchi's Knowledge conversion processes of spiral model elaborated below:

2.2.1. Nonaka-Takeuchi Model

Ikujiro Nonaka and *Hirotaka Takeuchi* are the two business experts, they were the first to fix the success of Japanese companies to create new knowledge with their ability and to use it to produce successful technologies. The Nonaka and Takeuchi model of KM has its roots in a holistic model of new knowledge creation and the management of 'serendipity'(Nonaka, 1995).

Bratianu explains, the essence of this model consists of three layers of the knowledge creation process. (i) the process of knowledge creation through socialization-externalization-combination-internalization (SECI), which is the knowledge conversion process between tacit and explicit knowledge in the individual, group and organizational levels, (ii) *Ba* the platform for knowledge creation, (iii) Knowledge assets. Also, knowledge is created through interactions between tacit and explicit knowledge.

The interaction between tacit and explicit knowledge is amplified through the four modes of knowledge conversion process. It is important because, it is a dynamic process and it starts at the individual level and expanding as it moves through communities of interaction of organizational boundaries. See figure 4, this is an interactive spiral process and the knowledge is transferred beyond organizational boundaries (Nonaka, 2000). The phases of SECI-model are as follows and the context described below:

Socialization: Sharing tacit knowledge through face-to-face communication or like shared experience.
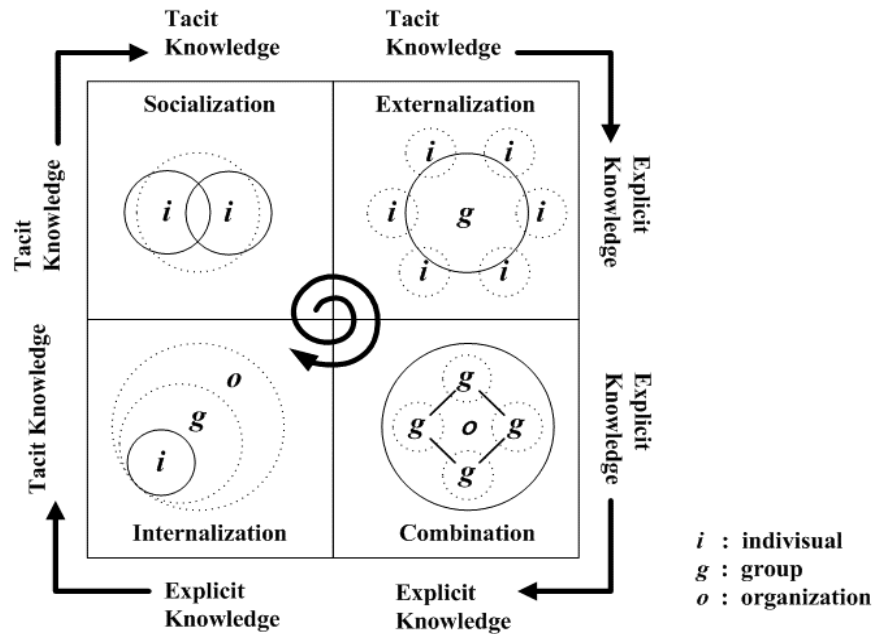
Figure 4. The Knowledge Conversion processes in a Knowledge Creation Perspective.
Source: SECI Model, Nonaka & Konno (1998), p.43

Externalization: Developing concepts, which embed the tacit knowledge. And which enables communication of individuals into a group.

Combination: Combination of various elements of explicit knowledge. Conversion of explicit knowledge in different groups in the organization.

Internalization: The explicit knowledge becomes part of the individual's knowledge base and it becomes an asset to the organization. It shows learning organization.

The foundation of these four processes is *Ba,* it is a difficult concept and it can be defined "as a context in which knowledge is shared, created, and utilized, in recognition of the fact that knowledge needs a context in order to exist" (Nonaka, Toyama & Byosiere, 2001).

This context can be tangible, intangible elements. Toyama and Byosiere (2001) consider that "*Ba* as an interaction means that *Ba* itself is knowledge rather than a physical space containing knowledge or individuals who have knowledge. Nonaka and Konno (1998) introduced the concept of *ba* to the KM field. Actually, *Ba* is a physical or virtual collaborative space, where participants feel safe and exchange insights.

Ba can be generated by organizational effort. Usually, the knowledge is concentrated in it depends on the situation and strategy of a company. There are four types of *Ba* that

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correspond to the four stages of the SECI model. Each category describes a *Ba* especially suited to each of the knowledge converting phases (Nonaka & Konno, 1998).

These *Ba* offer a particular area for specific steps in the knowledge spiral process. The combinations of processes are shown in the figure below.

The four types are *Ba* are: Originating *Ba*, Dialoguing *Ba*, Systemizing *Ba*, Exercising *Ba* (Nonaka, Toyama and Konno, 2000). The four types of *Ba* and the characteristics of *Ba* showed in the figure 5, See below:
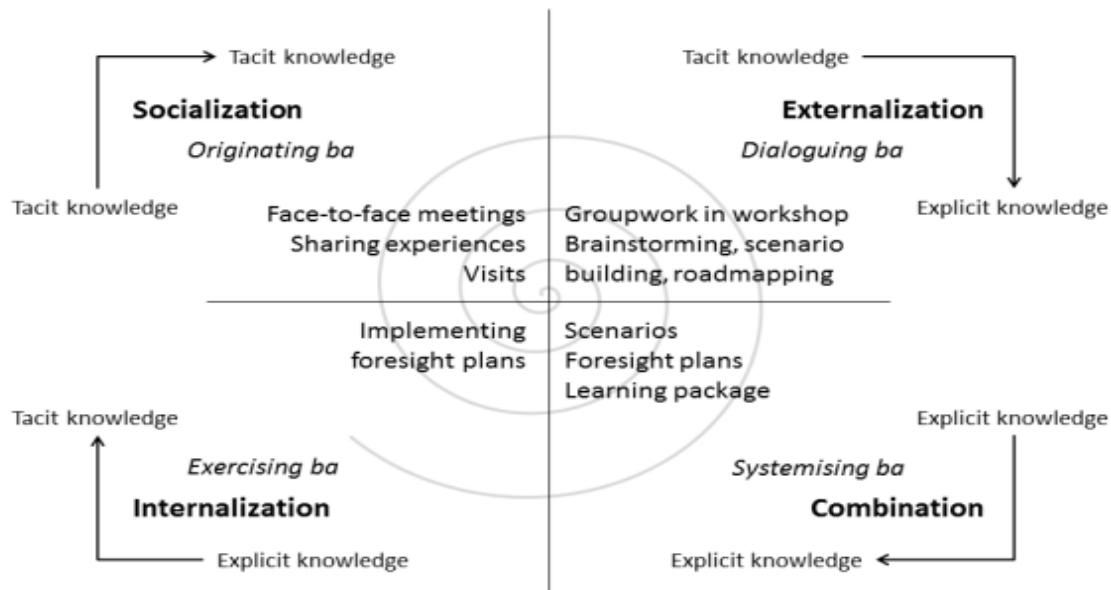
Figure 5. The Four Characteristic of *Ba* in a KM processes
Source: Nonaka, Toyama and Konno (2000)

Originating Ba: Originating *ba* is defined by individual and face-to-face interactions and meetings. It is a place where individuals share experiences, feelings, emotions and mental models. It mainly offers a context for *socialization*, since an individual face-to-face interaction is the only way to capture the full range of physical senses and psycho-emotional reactions, such as ease or discomfort, which are important elements in ***sharing tacit knowledge***. It is the basis for knowledge conversion among individuals (Nonaka et al., 2000).

Dialoguing Ba: It is defined as collective and face-to-face interaction, where individual's mental models and abilities are shared and converted into common terms and concepts. It gives a context for *externalization,* where individual's tacit knowledge is ***shared*** and articulated

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through dialogues amongst participants. This type of *Ba* is more consciously constructed than originating *Ba*.

Systemizing Ba: It can be defined as collective and virtual interactions. It offers a context for the *combination* of existing explicit knowledge, as an explicit knowledge, it can be relatively easy to **transmit** to a large number of people in written form. IT, groupware, documentation, offer a collaborative environment for the creation of *systemizing Ba.*

Exercising Ba: It is defined as individual and virtual interactions; overall it offers a context for *internalization*. Here, individuals represent explicit knowledge that is communicated through virtual media, such as written manuals or simulation programs. *Exercising ba* synthesizes the transcendence and reflection through action.

To Nonaka, Toyama and Konno (2000) "*ba* must be energized to offer energy and quality to the SECI process". So, this model of KM framework shows the processes of knowledge conversion in the organizational level and the concept of *Ba.* The following model of KM attempts to offer a more realistic overview of the KM process.

2.2.2. The Knowledge Management Process Model by Botha (2008)

Knowledge is a key to success. KM is one of the most important activities that an organization has to adapt. KM requires strong guidance, decision making, change implementation and so on. KM efforts requires a clear vision (Botha et al, 2008).
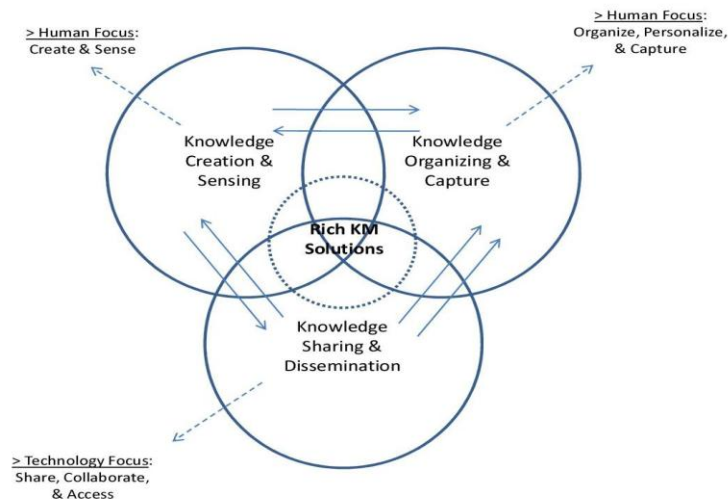

Figure 6. The KM process model by Botha
Source: Botha et al, 2008

This model presents more realistic overview of the KM processes. The three broad categories overlap and interact with one another. This model further shows which of the three categories are more people oriented and that are technology focused. Whether or not knowledge sharing should be largely technology focused is certainly debatable. However, for better or for worse, this is largely how organizations tend to approach the issue. The figure 6 shows the KM process model of Botha (2008).

Knowledge Creation & Sensing. It is a creation of new knowledge which did not exist in the organization. Identifying and recognizing the knowledge talents/employees in the organization. The different types of knowledge requires a different type of knowledge environment and learning infrastructure. In this case, leaders need a new type of knowledge that allows them to sense, tune into and actualize emerging business opportunities. It is a human focused process of knowledge management (Scharmer, 2001). To create knowledge through learning and research. Knowledge workers do conversion of knowledge and create knowledge as it showed in Nonaka model and the organization becomes learning organization.

Knowledge Organizing & Capture. It is identifying relevant knowledge and absorbing this knowledge in specific organizational contexts. Finding of knowledge resources in the organization. Organizing knowledge is something to structure and streamline knowledge to facilitate easy availability. Organizing knowledge incorporates extensive revisions reflecting the increasing shift towards a networked and digital information environment, and its impact on documents, information, knowledge, users and managers. Understanding the relationship between the way we organize knowledge in each area of the personal knowledge systems, and the way of developing motivations, which is the step in taking charge of learning (Smith, 2012). Understanding knowledge as an organized structure of information makes learning new skills easier. People's brain use the natural leaning process to organize knowledge in a meaningful way.

Knowledge Sharing & Dissemination. The utilization of knowledge which already exist in the organization. A number of organizations believe that by focusing exclusively on people, technologies, or techniques, they can manage knowledge. However, that exclusive focus on people, technologies, or techniques does not enable a firm to sustain its competitive advantage. It is, rather the interaction between technology, techniques and people that allow an

organization to manage its knowledge effectively. By creating a "learning-by-doing" kind of environment, an organization can sustain its competitive advantages (Ganesh, 2001). Dissemination is nothing but communicate and deploy knowledge to people, processes, operations, products and services.

Coordination of these activities is very important to establish procedure and coordinate of knowledge within the organization. *Tacit knowledge* is obtained by internal individual processes and stored in human beings. Such knowledge is sometimes described as Experience, Reflection, Internalization or Individual Talent. *Explicit knowledge* is stored in a technological device, such as documents or databases and reports. This knowledge would be more useful if it could be shared and uses among the groups/community that works together using collaborative technology at anytime, anyplace and anywhere. KM processes overlooks the process of knowledge seeking. In the following section Lai & Graham's KM framework is presented.

2.2.3. Lai & Graham KM Cycle Model

This KM model investigates the theoretical status of knowledge seeking process in extent KM models and frameworks. Knowledge-seeking is traced in a number of KM models and frameworks with a specific focus on Han Lai & Margaret Graham's adapted KM cycle model, which separates knowledge seeking from knowledge sharing. It is critiqued on the adapted KM cycle model of Lai and Graham. It identified some of the key features of knowledge seeking practices. It showed that knowledge seeking and sharing are human-centric actions and that seeking knowledge uses trust and loyalty as its basis. It also showed that one cannot separate knowledge seeking from *knowledge sharing*. Six KM processes that KM models and frameworks use most frequently. They are create, identify, share, acquire, use and store. However terms like, searching, locating, gathering and sourcing in the six main categories come closest to the idea of knowledge seeking.

Previously, Nonaka's SECI model and Botha model shows the KM processes but there is no sustained focus on knowledge-seeking behavior. In the year of 2005, some authors found that *knowledge seeking is as an aspect of knowledge sharing* in the same way that knowledge contribution is an aspect of knowledge sharing. Lai and Graham argue that knowledge seeking is essentially a learning process and a crucial part of KM. knowledge seeking is about people in the workplace who construct knowledge through problem solving and experiential learning.

This happens when people encounter problems in the workplace that trigger the learning process. Using these ideas, Lai and Graham group the KM processes of creation, acquisition and utilisation under knowledge seeking. They group transfer, sharing, storage and refinement with information management. Their model splits into two blocks: knowledge seeking & information management presented in the figure below:
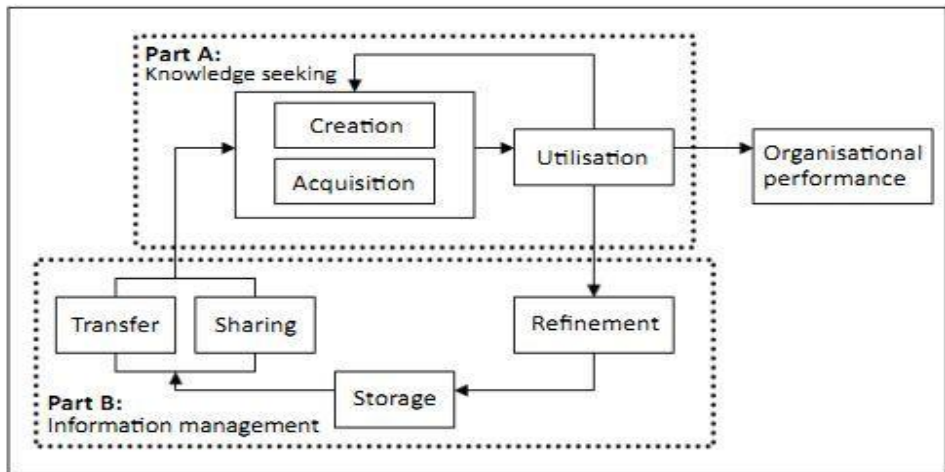
Figure 7. Lai and Graham's (2009) adapted knowledge management cycle model.
Source: Lottering, F. & Dick, A.L., 2012

In the above model: (i) refinement is an activity that selects, codifies or reduces knowledge to information; (ii) storage is actually a database, a book or an object that stores this information; (iii) transfer is actually information transfer.

Lai & Graham admit that their model is illustrative but not definitive. However, it does provide a way forward to understanding the important processes of knowledge seeking and its effect on organizational performance. In the Lai and Graham's adapted KM cycle model, the separation of knowledge seeking from knowledge sharing suggests that sharing is only about externalized or explicit knowledge.

Even though the argument for their choice is convincing, other approaches may be equally applicable despite their own shortcomings. In other words, there should be room for more theoretical approaches to the study of knowledge seeking in KM. Another limitation is the model's focus on people as knowledge seekers. KM implies that entities, like organizations and

companies, can also 'know' in the sense that people do. Knowledge seekers, seeking knowledge from inside of the organization also, seeking knowledge from outside of organization.
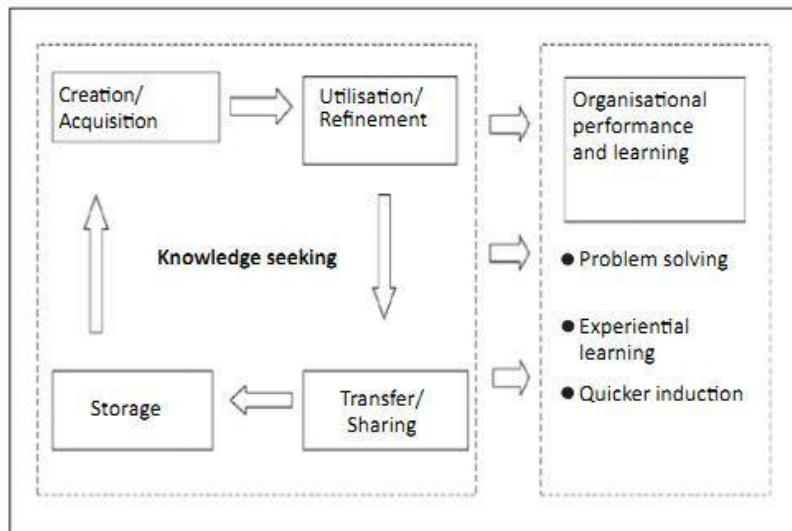
Figure 8. Knowledge seeking model based on knowledge management.

Source: Lottering, F. & Dick, A.L., 2012

Therefore, companies can also seek knowledge, solve problems and learn. So, the Lai and Graham model is too individualistic. Based on the features of knowledge seeking and the benefits and limitations of the Lai & Graham model, the researchers can propose *a modified knowledge seeking knowledge-based KM model.* Figure 8 demonstrates the knowledge seeking model based on KM. This is the core of the model. One can understand knowledge seeking using the concepts of knowledge construction, learning theories, learning styles and problem solving. Knowledge seeking is a generic and special kind of process that interacts with other KM processes in ways that still have to be investigated.

Creation and acquisition. Most knowledge seekers acquire knowledge from colleagues to solve problems. This shows that knowledge seeking is closely interrelated with knowledge creation and acquisition, and that learning from colleagues involves human-centric and trust relationships as important qualities in workplace problem solving.

Utilization and refinement. The demand to solve problems will drive knowledge seekers to look for and use sources outside their companies. Learning continues through the utilisation and refinement processes when knowledge seekers select and use information sources outside their companies and refine them into useful knowledge to make sense of, and solve, problems. In

doing so, knowledge seekers undergo experiential learning and they can share these experiences with colleagues.

Transfer and sharing. Most knowledge seekers share their knowledge socially with colleagues. The two processes are closely integrated and hard to separate in practice. When people seek knowledge, they will also share it. The practical implication is that organizations can successfully build repositories using the knowledge that knowledge seekers acquire.

Storage. Organizations need to store knowledge for reuse because they cannot afford to lose already created and acquired knowledge.

Organizational Performance and Learning. Integrating knowledge seeking as a KM process in a KM model or framework will improve organizational performance and organizational learning in a number of ways:

•organizations will resolve problems more effectively.

•recognizing experiential and other learning methods as ways of solving problems will improve personal and company growth.

2.2.4. The Knowledge Management Cycle Model

The Knowledge Management Cycle (KMC) model advanced in Evans, Dalkir, and Bidian (2014) contains seven phases: identify, store, share, use, learn, improve, and create, which demonstrated below: see figure 9. A list of sample knowledge management initiatives and technologies may be found here.

A knowledge request may be triggered for numerous reasons, some of which include strategic and/or operational problem solving, decision making, knowledge gap analysis, or innovation. When searching/identifying for a particular knowledge, either it needs to be created or acquired. That is why, these phases are interrelated and grouped together in the KMC model.

Identify. The *identify* stage involves eliciting codified and encapsulated knowledge assets (For example: documents in a knowledge repository and/or live demonstrations and observations of artifacts). This stage also identifies tacit knowledge (McElroy, 2003; Dalkir, 2011) through brainstorming sessions. This will be interrelated with the *store* phase. The *identify* stage of the KMC model is most similar to *build* (Wiig, 1993), *acquisition* (Meyer and Zack, 1999), *get* (Bukowitz and williams, 1999), *claim* (McElroy, 2003), *capture* (Dalkir, 2005), and *identify* (Evans and Ali, 2013).
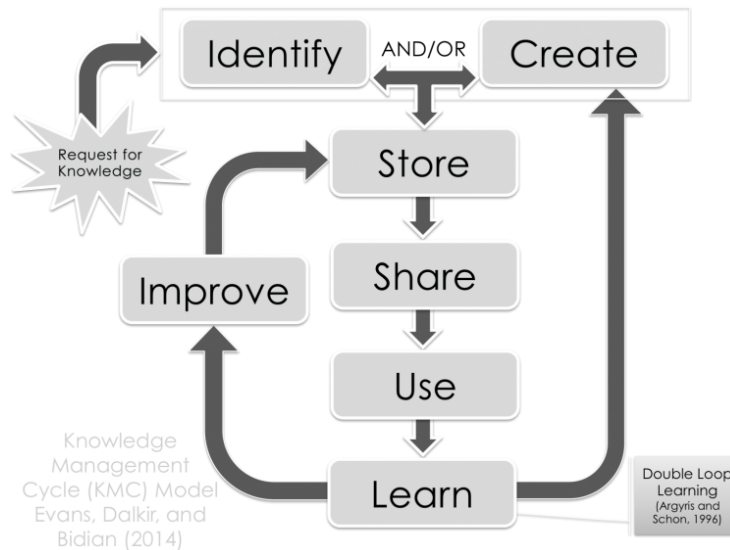
Figure 9. The Knowledge Management Cycle (KMC) Model
Source: Evans, Dalkir, and Bidian (2014)

Create. The knowledge request may trigger the need for new knowledge assets to be created, if none are found during the *identify* stage. If the existing knowledge doesn't exists or only partially satisfy the knowledge needs, then new knowledge may also need to be created. An example of technology that can be used in this phase is idea management software. The *create* stage of the KMC model is most similar to the *create* stage in Evans and Ali (2013) and both *contextualize and create* in Dalkir (2005).

Store. Once the knowledge has been deemed valuable to the organization, based on the analysis and assessment of *identify* and *create* phases, it is stored as an active component of the organizational memory. More tacit forms of knowledge may be stored in the form of knowledge audits, maps, models, and taxonomies. However, the repository represents the individual and collective value. Beyond their intrinsic value, knowledge assets must be stored in a structured way that allows them to be efficiently manipulated, retrieved, and eventually shared. Some common related activities include, classifying, archiving, linking and optimizing search and retrieval. These activities extend Meyer and Zack's (1999) labelling, indexing and cross-referencing. The *store* stage of the KMC model is similar to *hold* (Wiig, 1993), *storage/retrieval* (Meyer and Zack, 1999), *build and sustain* (Bukowitz and Williams, 1999), *access* (Dalkir, 2005), and *organize and store* (Evans and Ali, 2013).

Share. Knowledge assets are retrieved from the organizational memory, to be *shared* (disseminated/communicated) both internally and externally. The process through which knowledge is shared is important, as employees are seldom aware of its existence, particularly when new knowledge is created and stored. Having an explicit, dynamic, and flexible (Wiig, 1993; Meyer and Zack, 1999) network of expertise (for example, Communities of Practice) fosers collaboration. The sharing of more tacit forms of knowledge may be encouraged through coaching, mentoring and apprenticeships programs as well as through storytelling. It is also important to choose the optimum mix of technologies and dissemination channels, as various communication media have their own strengths and weaknesses (Dalkir, 2011). Some of the more common technologies used to share knowledge assets include communication and collaboration technologies and many current customer relationship, supply chain management, and decision support systems. It should also be noted that the share phase of the KMC model can be seen as a bridge between the upstream knowledge 'hunting and gathering' and the downstream putting knowledge into practice (exploitation and exploration). The share stage of the KMC model is most similar to *pool* (Wiig, 1993), *distribution* (Meyer and Zack, 1999), *contribute* (Bukowitz and Williams, 1999), *integration* (McElroy, 2003), *share/disseminate* (Dalkir, 2005), and *share* (Evans and Ali, 2013).

Use. Once shared, knowledge assets can be activated (put to use) – their value can be extracted and applied throughout the organization, to solve problems, make decisions, improve efficiency, or promote innovative thinking. Knowledge assets can be used in encapsulated form (Wiig, 1993), but there will always be some degree of tacit knowledge that is applied. Therefore, the intervention of an expert may be required to apply the knowledge correctly and efficiently. The use stage is also key to internalizing tacit forms of knowledge. Some of the more common activities that assist in the use stage include developing communities of practice, workshops, and tutorials. The technologies employed in these activities include, for example, expert systems, and communication and collaboration technologies. It is important to note that unless this phase is accomplished successfully, "all of the KM efforts have been in vain, for KM can only succeed if the knowledge is used" (Dalkir, 2011, p. 183). The use stage of the KMC model is most similar to *apply* (Wiig, 1993), *presentation/use* (Meyer & Zack, 1999), *contribute*

(Bukowitz & Williams, 1999), *integration* (McElroy, 2003), *apply/use* (Dalkir, 2005), and *apply* (Evans & Ali, 2013).

Learn. The use of knowledge, particularly in situations where experts provide contextual understanding, leads to employees gaining experience, as they interpret the impact of knowledge on their work environment (Evans & Ali, 2013). If knowledge assets are judged insufficient, the knowledge searcher returns to *identify and/or create* phase where additional knowledge assets are found, identified or created based on the gaps found. The iterative process of reflecting on the value and applicability of knowledge assets constitutes double-loop learning (McElroy, 2003) in the KMC model. Some of the more common activities that assist in the *learn* stage include benchmarking, best practices and lessons learned, and knowledge gap analyses. The technologies employed in these activities include, for example, *learning management* and help desk systems. The learn stage of the KMC model is most similar to *apply* (Wiig, 1993), *integration* (Meyer & Zack, 1999), *contextualize* (Dalkir, 2005), and *evaluate and teach* (Evans & Ali, 2013).

Improve. The learning that takes place in the previous phase leads to further refinement of the knowledge assets. New value is either identified or created from them and additions or updates are made to keep them current in the organizational memory and applicable to the organizational context. Knowledge can be stored in the form of tacit knowledge, so that their value may be effectively leveraged in the future. In the KMC model, *improve* is the decision point for knowledge assets to be archived, retired, or transferred outside the organization for future use. Some of the more common activities that assist in the *improve* stage include after action reviews, reflection time, and adapting lessons learned. Technologies that assist in these activities include, for example, learning management and workflow technologies. The *improve* stage of the KMC model is most similar to *refinement* (Meyer & Zack, 1999), *assess and divest* (Bukowitz & Williams, 1999), and *update* (Dalkir, 2005).

KM Models are the approaches which used by the organization to collect, store, analyze, and use knowledge to build the advantages over their competitors. The reason to represent a holistic approach is, to develop a knowledge management effective processes (comprehensive and take into consideration people, process, organization, & technology dimensions). The above mentioned processes of KM models & cycles represents how valuable individual, group and

organizational knowledge is captured, created, codified, shared, accessed, applied and reused throughout the KM system. The following table summarizes the important factors of above discussed process models of KM.

Table 4. Summary of KM process models and knowledge life cycle phases

CYCLE	MAIN PROCESSES - LIFE CYCLE PHASES					
KMC Model	Identify/Create	Store	Share	Use	Learn	Improve
Wiig, 1993	Build	Hold	Pool	Apply		--
Meyer & Zack, 1999	Acquisition	Storage/Retrieval	Distribution	Presentation/Use	--	Refinement
Bukowitz & Williams, 1999	Get	Build/Sustain	Contribute		--	Access and Divest
McElroy, 2003	Claim	--	Integration			--
Dalkir, 2005	Create/Capture Contextualize	Assess	Share/Disseminate	Apply/Use	Contextualize	Update
Botha et al , 2008	Create& sense, Capture	Organize/Access	Share/Disseminate	Collaboration	--	Access
Lai & Garaham's knowledge seeking model based on KM. 2009	Creation/Acquisition	Storage	Transfer/Sharing	Utilization/Refinement	Experiential Learning	--
Evans & Ali, 2013	Identify	Organize and Store	Share	Apply	Evaluate and Learn	--

To summarize, knowledge management consists of a wide range of process models and cycles which describes different kinds of processes in each model. Above, it has been shown that the KM processes elaborated in the spiral model, KM process model, KM cycle model and KMC model. If we analyze each model and narrowing it means, the integrated KM process consists of three main processes: Knowledge-creation, Knowledge-sharing and knowledge

application. It is not possible to manage knowledge assets in the organization without one of the mentioned processes here.

In the section of KM processes we could see that, KM models and cycles explains the same set of processes of KM. Hence, we could derive that KM cycle is also the process of KM. So, it can be named as the characteristics of KM. Therefore, KM is cyclic. It is also iterative process. KM model cycle describes this in details.

KM processes includes the major process step as knowledge sharing or dissemination, we have seen the features of all the process steps of KM above, in which if we look carefully, we can get that without knowledge sharing, knowledge cannot be created and the LO is not possible at all. So, for all the organizations which is functional or innovative, the implementation of knowledge sharing is very important attribute.

This paper develops knowledge-sharing model/framework. The following section presents what is Knowledge Sharing (KS), the importance of Knowledge sharing and the attributes, positive outcomes of knowledge sharing and the tools and techniques used for knowledge sharing to make an effective knowledge organizations. It collectively named as factors of KM which influences Knowledge Sharing practices or activities.

2.3. Knowledge Sharing Model for IT Small and Medium Enterprises

In this part, firstly, the factors which are influencing knowledge sharing behavior in the perspective of small and medium enterprises have been conceptualized. Then, secondly, the formation/creation of knowledge sharing model is developed and the specific factors are described for the selected cases of small and medium organizations.

2.3.1. Knowledge Sharing Conceptualization in the Context of SMEs Perspective

The key to knowledge management lies in sharing of knowledge. Many organizations are using knowledge management systems (KMSs) to facilitate knowledge sharing. Sharing the knowledge increases the innovation and improves the overall quality of work. The heart of KM is sharing knowledge, making connections, and generating new ideas through collaboration and interaction. Facilitating knowledge sharing behavior among employees has become an important agenda for KM and HR practitioners. Thus, proper knowledge management helps

organizations in developing the skill set of employees and improving their overall efficiency at work.

Wickramasinghe and Widyaratne(2012) defined knowledge sharing as the act of knowledge provider making knowledge available to others within the organization. Wang and Noe (2010) proposed a more detailed definition of knowledge sharing. KS refers to the provision of task information and know-how to help others and to collaborate with others to improve policies and procedures. Knowledge sharing is a physical movement of knowledge and information; personal interactions between individuals that involve dialogue and exchange; a two-way process.

So far, the topic framed with general perspective. Henceforth, we will consider knowledge sharing in the context of small-medium enterprises (SMEs). Knowledge is the most important thing for small and medium enterprises (Wiklund & Shepherd, 2003). To make the knowledge necessary to rely on what individuals know.

We can define knowledge sharing in different ways, for example, in the above section, we have seen Nonaka's SECI model which is a very effective knowledge conversion model and the concept of *Ba* which enables knowledge transfer by means of communication. The nature of knowledge is mostly tacit (Cohen and Kaimnekais, 2007). In the SMEs, tacit knowledge is difficult to transfer or to be copied, also poses a challenge. In general, SMEs are characterized by more resilience, entrepreneurial orientation inherent in the owner's way of doing business, organizational environment more supportive for the cohesiveness of employees (Bagnia, 2013).

Knowledge Sharing Behavior. Different patterns of knowledge sharing behavior are mentioned here. Knowledge sharing involves communication between individuals; also includes a process of people contributing; Knowledge to the repositories and using the knowledge from these repositories. Knowledge sharing is the process where individuals mutually exchange their (implicit and explicit) knowledge and jointly create new knowledge. Knowledge technology enables knowledge transfer by extending an individual's reach beyond formal lines of communication. The roles of computer networks, electronic bulletin boards and discussion groups in enabling electronic contacts for those seeking innovative ideas and knowledge, cannot be overemphasized (Eze et al. 2013).

Knowledge sharing and management can have several benefits for medium-sized enterprises, including improved human resources, direct market effects, and optimal use of intellectual capital of the firms (Edvardsson, 2006). Knowledge sharing can also assist SMEs in developing a sustainable competitive advantage by enhancing innovation and productivity in the firms (Vajjhala & Rojba, 2012).

Eze et al (2013) examines, the perspectives of SMEs on the knowledge sharing, in which the dynamics of SMEs in terms of organizational culture, structure and technology makes them different from the large firms. Hence, it is necessary to understand the factors influencing knowledge sharing activities in SMEs. Also, he examines the knowledge sharing behavior among employees of SMEs, the study would benefit SMEs in identifying the key factors that could affect knowledge sharing, which could be used by the SMEs to encourage and motivate employees to share ideas and build an effective knowledge sharing culture in the firms. Also, he would also contribute to the growing corpus of knowledge on KM and SMEs through the findings of knowledge sharing activities in SMEs in his research area. In his social research, the particular attention is given to the key factors influencing knowledge sharing behavior in SMEs.

The study of knowledge sharing, which is the means by which an organization obtains access to its own and other organizations' knowledge, has emerged as a key research area from a broad and deep field of study on technology transfer and innovation, and more recently from the field of strategic management (Cummings, 2003).

Knowledge sharing behavior is a set of individual behaviors involving sharing work-related knowledge and expertise that can contribute to the effectiveness of the organization with other members within an organization. Tacit knowledge is considered a strategic resource because of its intrinsic value. Consequently, SMEs have a great opportunity to expand their business networks and grow their capabilities, when they effectively manage employee's expertise and experiences. Large firms are becoming very effective in this regard. SMEs, however, should tap into this aspect of their business to gain and remain competitive in the market (Eze et al., 2013).

Knowledge sharing in SMEs, sometimes, could be a challenging process that requires a delicate balancing act of the technological and social factors including other elements within the

firms. As indicated in the research studies, knowledge is dynamic in nature and is dependent on the social relationships among individuals for the effective knowledge transfer and use. High levels of motivation and trust between employees are necessary to facilitate the cultivation of an effective knowledge sharing culture in SMEs.

Eze et al (2013) describes SMEs' employees' attitude and intention to share knowledge. The identification of knowledge technology as the most important determinant of knowledge sharing attitude among employees of SMEs. Also, his research could serve as a guide to practitioners with regards to factors that affect knowledge sharing attitudes in SMEs, and could also be a context that supports on knowledge sharing among employees in SMEs.

In the above, we have been go through the scientific literature which strongly reveals that some factors are influencing KS behavior in SMEs. Furthermore, a study by American Productivity and Quality Center (APQC, 2014) surveyed 418 members of their knowledge management audience to identify key priorities for organization in 2014. Their survey yielded the following key insights: Organizations have placed cross boundary collaboration at the top of their agenda; Leverage reward and recognition components to drive engagement; More than half of all respondents felt that capturing and leveraging tacit knowledge was a top priority.
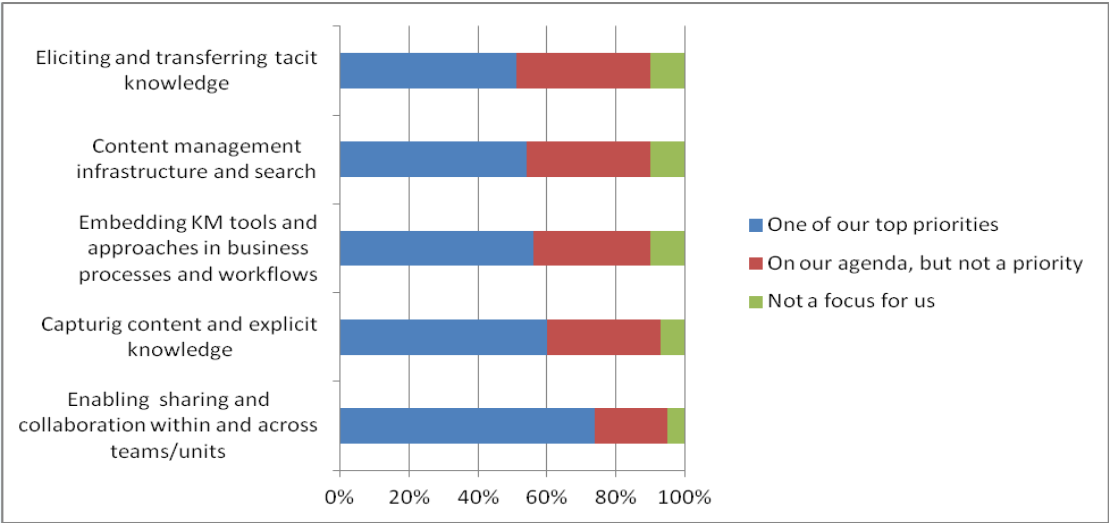

Figure 10. Knowledge Management Survey (Partnered with KM world)

Source: APQC, 2014

In the chart, we could see it clearly that, most of the respondents priority is, *enabling sharing and collaboration within and across teams/units*. So, it is important success factor for

the organization (O'Neill & Evans, 2014). Knowledge Sharing is the activity of transferring or disseminating both explicit and tacit knowledge between people, groups, or organizations (Lee, 2001). It has been proved that the responsiveness of SMEs is likely to augment if they strongly develop capabilities in knowledge dissemination (Matusik & Heeley, 2005). Such features may facilitate communication and knowledge propagation comparatively to larger organizations.

Knowledge Sharing Outcomes and Attributes. Knowledge sharing has numerous positive outcomes such as organization *effectiveness*, organization *innovation capability*, improve *productivity* and work quality. The following figure depicts the knowledge sharing practices influence employee's ***adaptability, learning commitments, decision-making and problem solving efficiency***.

Knowledge sharing has been associated with numerous positive outcomes in the past such as organization effectiveness (Yang, 2007), organization innovation capability (Yesil and Dereli, 2013), improve productivity (Noaman and Fouad, 2014) and team task performance (Cheng and Li, 2011). In addition, knowledge sharing also is advantageous to the individual employees. Knowledge Sharing is considered an important factor related to the ability of both employees and organizations to respond quickly to a changing business environment (Almahamid and McAdams, 2010). The researcher found some of the factors which involving HRM and organizational performances on the SMEs, the author suggests, Human capital development refers to processes that relate to training, education and other professional initiatives directed to increase the levels of knowledge, skills, abilities, values and social assets of an employee, which will lead to the *employee's satisfaction and performance*, and eventually to *firm performance* (Ogunyomi & Bruning, 2015). KS helps organizations improve performance and achieve competitive advantage, because of employees' faster learning from successes and failures, efficient decision making, improved capabilities, and better exploration of new opportunities. It is essential for employee's learning, developing new ideas, communicating success practices, creating positive organization's image within and outside the organization.
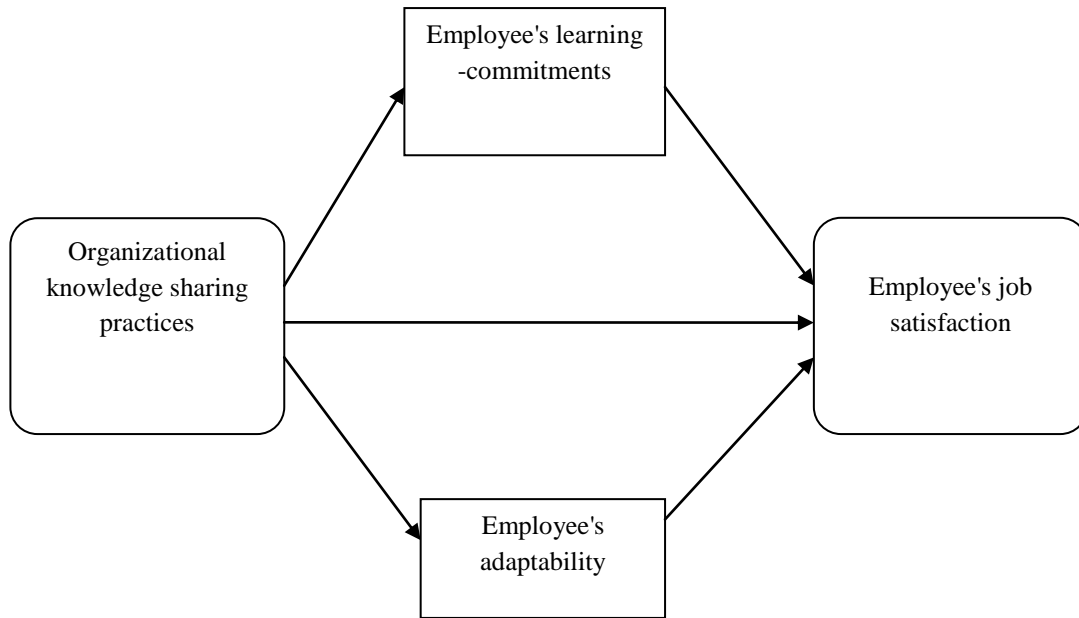
Figure 11. Relationship between organizational knowledge sharing practices

Source: Adapted from Almahamid and McAdams, 2010

Knowledge sharing benefits not only the individual's, but also the group's and the entire organization's performance. According to Cheng, Ho and Lau (2009), if managed properly, knowledge sharing can improve work-quality and decision-making skills, problem-solving efficiency as well as competency that will benefit the organization. Knowledge is regarded by individuals as valuable and important to gain power, status, and reputation in an organization.

2.3.2. Formation of Knowledge Sharing Model for Small and Medium Enterprises

Here, knowledge sharing (KS) model formed/created for small and medium organizations, in which some of the factors are mentioned to mention the influence of those factors on knowledge sharing in SMEs.

Factors influencing Knowledge Sharing. Sharing knowledge leads to increase the performance and productivity among employees. Several studies have been conducted to find out the motivational factors that affecting an individual's knowledge sharing behavior. Jain et al. (2007) and Seonghee & Boryung (2008) found that *reward* is an important motivational factor

for KS.   According to Luo (2009), the determinants of knowledge sharing in the organization's teams. He found the extrinsic rewards and relationships have a significant influence on individual's. The factors that influence knowledge sharing behavior are *lack of incentive rewards and lack of Information Communication Technology.* So, motivational issues and lack of HR, lack of technologies, cultural issues, lack of monetary benefits and lack of time considered the barriers of knowledge sharing in the organization.

According to every major study on KM or OL, culture is a key barrier to success. Culture is generally defined as the beliefs, values, norms and behaviors that are unique to an organization. For example, "the unwritten rules" and "how work gets done around here. Creating a culture that breaks down some of the existing barriers to knowledge sharing, recognizing individual and team contributions and having the systems and structures that support sharing and valuing information is critical to success. Riege (2005) develops KS culture depends on the factors as follows:

1.   Motivation, encouragement and stimulation of individual employees to purposefully capture, disseminate, transfer and apply existing and newly generated useful knowledge, especially tacit knowledge;

2.   Flat and open organizational structures that facilitate transparent knowledge flows, processes and resources that provide a continuous learning organizational culture, clear communication of company goals and strategy linking knowledge sharing practices and benefits to them, and leaders who lead by example and provide clear directions and feedback processes;

3.   Modern technology that purposefully integrates mechanisms and systems thereby providing a suitable sharing platform accessible to all those in need of knowledge from diverse internal and external sources.

The effect of an organizational culture on KS in small and medium organizations (SMEs) have explored factors which has a significant effect on knowledge sharing, which are, organizational culture and it's traits(involvement, adaptability, consistency and mission) are the significant predictors of employees' attitudes and intentions with regard to knowledge sharing. Those factors influence KS in SMEs, also, it is possible to encourage employees to share knowledge and to improve organizational culture (Pool et al., 2014). The development of a

knowledge -sharing culture relies on: Shared vision; value-based leadership at all levels; open and continuous communication; and rewards and recognition. Mark Koskiniemi of Buckman Labs says: "Ninety percent of moving an organization to success in knowledge sharing or learning is in having the right culture. If your people are not confident that they can or should communicate freely, then all the best technology will be unable to pry knowledge out of them, or help them absorb knowledge."

Knowledge Sharing Processes. At its most basic level, knowledge sharing involves the processes through which knowledge is channeled between a individual to other in the organization. In the previous section, KM model and processes were described. Those models are enabling KS and it is shown that the importance of knowledge sharing/transfer and the conversion process. To create a knowledge sharing culture we need to encourage people to work together more effectively, to collaborate and to share ultimately to make organizational knowledge more productive.

Motivational Factors. Knowledge doesn't move without a motivating force. People will not give away valuable knowledge without concern for what they may gain or lose in the process. Important theories of work motivation approach it as a unitary concept that solely varies in strength but not in kind (Locke & Latham, 2002 and Vroom, 1964). There are different types of motivation taken into account when looking on KS. Osterloh and Frey (2000) make a distinction between *extrinsic* (pay for performance) and *intrinsic* (undertaken for one's need for satisfaction) motivational approaches. Intrinsic rewards derived from, enjoyment of knowledge sharing, satisfaction with KS outcomes and knowledge sharing context (interpersonal trust & team collaboration). To promote KS among employees and managers are recommended to do the following: reward & recognition, communication, processes/structures (Kumta, 2014)

Managers have a special responsibility for creating a motivating climate and for making every effort to enrich jobs. Motivation comes from within each individual and that managers cannot truly motivate but can stimulate or stifle motivation is, nevertheless, an important contribution of the study (Tyson, 2005). Exploring the factors that facilitate knowledge in the community/group in the organization. Internet technologies are increasingly used in knowledge exchange. Although, technological issues are the key drivers for Internet technologies adoption

and use, organizational and environmental aspects have been found to be important. It has shown that the factors affecting web knowledge exchange in SMEs are, IT expertise and commitment based HR practice. Technology and tools involved in technology to ensure KS would positively impacts the organization (Marques, Acosta and Merigo, 2015).

In brief, knowledge sharing has no real value to individuals and organizations unless those people who are in need of useful knowledge receive it, accept it, and also re-apply it. All organizations need to take an equally hard look to ensure that the right knowledge is getting to the right people at the right time. Formal and informal sharing networks already exist in most companies, and often it is a matter of building and expanding on those existing networks. The following figure is a theoretical model/framework of this research paper (see. Figure 12).

Effective knowledge-sharing practices have the potential to give a company a sustainable competitive advantage that is difficult to imitate for their competitors. The first step to success is the identification of a knowledge sharing barriers and the gap between the ideal and current state of sharing practices and values that are theoretically in place and actually practiced. Research model provided and it is describing the research purpose in it.

This research aims to investigate the factors like, the issues which SMEs faces in the knowledge sharing activity: cultural barriers, issues in the organizational culture, that can make impact on the success of knowledge sharing. Such factors as, interpersonal trust, communication between staffs in the group, information systems, rewards and organization structure play an important role in defining the relationships between staff and in turn, providing possibilities to break obstacles of knowledge sharing.

Techniques that emphasize knowledge sharing in organizations are as follows: collaboration & teamwork, training by talents, formal and informal discussion, utilize knowledge sharing tools (CMS, e-mails, groupware, intranet.. etc.,), Communication networks (internet, intranet and extranet), chatting during break time, brainstorming, workshops, seminars, conferences, focus groups and quality circles(Al-Alawi, Al-Marzooqi and Mohammed, 2007).

Knowledge Sharing is the Collaboration Systems foster the sharing of knowledge among people working in groups. Improved group coordination and collaboration is enabled through
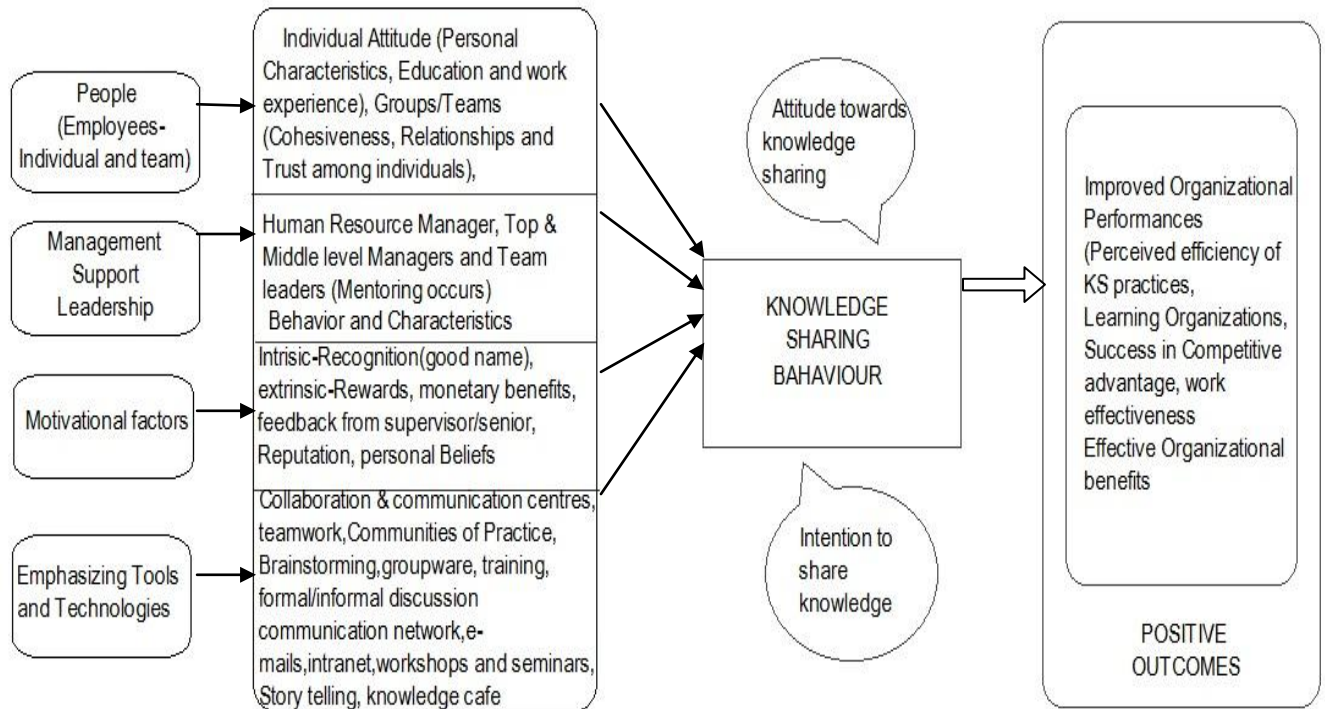
Figure 12. Theoretical perspective of Knowledge Sharing Model for IT SMEs

some of the tools which are following: e-mail, teleconferencing, data conferencing, video-conferencing, groupware, and Internet-based applications. Groupware and Intranets represent the most prevalent examples. *Communication* plays important role in sharing knowledge. It is the baseline for knowledge sharing. This researcher considers "*communication*" is a most important factor of knowledge sharing practices.

We have go through the scientific literatures, which have been the most useful theory that investigated, in order to find solutions of the related problem. Knowledge sharing practices must have people, processes and technology to enable sharing of knowledge. The most important factors have been discussed here and the model has more relevant factors which are in particular suitable for the selected SMEs in India.

To summarize, communication and collaboration in a team/group in the organization is an important phenomena and different models above have been discussed to make knowledge sharing model among knowledge workers (KW), who are the knowledge assets for the

organization and it's important to share knowledge among teams. These models may also vary from the culture type and size of the organization.

To summarize the findings of the research literature analysis, some conclusion of the literature made and it follows:

- *Knowledge defined as "individual knowledge, shared knowledge, and objectified knowledge are different aspects or views of organizational knowledge". It includes, analyzed data and integrated information. Also, knowledge is the information given meaning and integrated with other contexts of understanding.*

- *Knowledge Management defined as, when group knowledge from several subunits or groups is combined and used to create new knowledge, the resulting tacit and explicit knowledge can be called organizational knowledge. And it can be defined as the explicit and systematic management of processes that enable vital individual and collective knowledge resources to be identified, created, stored, shared, and used for benefit. Those are considered to be the main processes of KM.*

- *Knowledge Sharing: It is the most important process in KM, it plays a determinant role for both knowledge reuse and knowledge creation. Knowing who knows what, who needs to know what, and how to transfer that knowledge is critical. Investing in developing an effective way to transfer knowledge may results in success of the organization, in which knowledge transfer is processes.*

- *Knowledge sharing across organizational boundaries: The team members work together during the project, enabling the transfer of all types of knowledge. In the absence of this kind of arrangement, often only explicit knowledge could be transferred, since these specialists would typically not socialize professionally. Careful reviews should be taken to assure good cooperation among culture, people, processes, and enabling technologies, which are the four pillars of Knowledge Management infrastructure. In order to explore knowledge sharing model in detail and also, identify about above mentioned factors, that influencing knowledge sharing in the two cases of the Indian organization's have been analyzed. Next part of the thesis provides the research methodology, which explains, how the empirical research was organized and conducted.*

3. RESEARCH METHODOLOGY

This study focuses on the methodology that the researcher followed to fulfill the aim and objectives of the research.

Knowledge management is about developing, sharing and applying knowledge within the firm to gain and sustain a competitive advantage. It is simply, managing knowledge within firms. One of the processes of KM is knowledge sharing. However, this research focuses on the knowledge sharing behavior in the SMEs, which encompasses sharing of tacit and explicit knowledge among individuals in teams/groups of the organization. The reason because each individual in a team has unique knowledge, it must be shared with the colleagues, so that positive outcomes can be reached. The main thing is sharing the tacit knowledge.

3.1. Company Profile

The selected SMEs in India (see Table 5). Based on the number of employees, the size is categorized as small and medium enterprises in the Indian economy. If the number of employees are less than 10, then the company can be Micro enterprise. Indian SMEs are chosen from Information Technology (IT) sector. Because, the IT industry in India is a key part of the country's economy (www.statista.com). Everywhere we can see IT professionals in India. So, it is very important to share knowledge to acquire and to develop knowledge economy.

Table 5. Selected SMEs in India

Size	Ref. Name	Name	Number of Employees	Sector
Small Enterprises	A	Brand my offer	18	IT
Medium Enterprises	B	Shlok Information Systems India Private Limited	97	
	C	Infosys	170	
	D	Speed Step	152	

3.2. Research Design

Research Questions

The main purpose of this research is to get answers for the research questions in this research. The following are the research questions of this theme:

1. What are the wide factors in the organizational level and how to determine knowledge sharing behavior with the factors?
2. How to formulate knowledge sharing model for SMEs and what factors it includes to explore the organizational outcome?
3. How to identify the opinion of participants from Indian SMEs to explore realistic knowledge sharing behavior.

Saunders, Lewis and Thornhill (2009) says, there are three types of research that are classified based on the objectives of a problem. The types of research are Exploratory, Descriptive and Explanatory research. The *Explanatory research* is used for conducting the empirical research. It is as agued by Saunders, Lewis and Thornhill (2009) that explanatory design tries to find out why something happens. Indeed, this research is like, how the small and medium enterprises enables knowledge sharing among individuals in a team. Research has certain objectives that look for explanations. Zikmund (1984) suggests that the degree of uncertainty about the research problem determines the research methodology.

Objectives of the Empirical Research

The empirical part of the research aims at achieving the following specific objectives:

- To identify the factors which affects knowledge sharing behavior in the organization and produce productive outcomes. Surely, literature provides theoretical solutions to the defined problem that the organizational level factors has wide views in an organization which are, individual dimension, organizational dimension and technological dimension. It is important to investigate the factors that are specific to the selected SMEs.
- To identify each dimension of factors in the selected SMEs, will be typical to Indian business environment. The concepts are theory has to be tested by investigate the selected SMEs. Each enterprise has different business cultures. It is not clear to provide solutions from literature of theoretical aspects of knowledge sharing. Generally, it may

be true but it is important to investigate the factors that are typical to India. Only an empirical research can provide evidences for theories. So, it is important to make scientific research to achieve specific results than general.

The empirical research points the factors that are the most important for developing knowledge organization, in the case of selected Indian SMEs.

Research Method and Research Strategy

Research methods are split broadly into quantitative and qualitative methods. Quantitative research is collecting numerical data that are analyzed using mathematical statistics. In other hand, qualitative research seeks to answer questions about why and how people behave in the way that they do. It provides in-depth information about human behavior. Based on the research questions, it is clear that, this research seeks qualitative research (Aliaga and Gunderson, 2005). The ways the research questions are formulated obviously suggest that this research seeks for *qualitative data*. They are rather opinion-oriented than statistics-oriented.

As argued by Saunders, Lewis and Thornhill (2009), research strategies are used according to the type of the research and research approach. Research strategies are Experiment, Survey, Case-study, Action Research, Grounded Theory, Ethnography and Archival Research. Survey strategy is a popular and common strategy in business and management research. *Interview* is needed when we want to do a research which requires an empirical investigation of a phenomenon within a particular context. This research focuses on the Indian context in terms of business environment context in terms of IT industry. Saunders, Lewis and Thornhill (2009) added a method that is important for generating answers to questions with 'what' and 'how?' In fact, all of the research questions are phrased with those pronouns.

Data Collection

The data collected by survey strategy is unlikely to be as wide-ranging as those collected by other research strategies. Semi-structured interviews used to investigate the statement of a problem and from the findings, collected data are analyzed to answer research questions (Saunders, Lewis and Thornhill, 2009). The primary data has been collected by telephonic interview. For data collection, *Skype* application has been used. It is free and convivial way of

communication. The advantage of this interview is, a remote way of communication. Also, it is possible to record the voice of the conversation. Because of the virtual of the interaction, the conduct of the interview has to be specifically adapted. Once the data are collected, then the content will be analyzed from the answers to the questions.

Sample Size and Grounding

Occasionally, it may be possible to collect and analyze data from every possible case or group member. Some research questions will require sample data to generalize about all the cases from which sample has been selected. For all research questions where it would be impracticable to collect data from the entire population, researcher needs to select a sample (Saunders et al., 2009: 614). The population here is IT sector in India. IT industry in Indian economy is wide. Survey allows the collection of large amount of data from a population is a highly economical way. The sample size is IT SMEs in India. Sample representatives are the selected IT SMEs (see Table 5). Because, the primary data has been collected by interview from this sample.

Target Respondents

In order to get richness in understanding of the required data of knowledge sharing factors, the qualitative data are the seeking results from the participants. 3 participants from each enterprise, so data collected from 12 interviewee. A set of semi-structured questions used to collect information by Skype interview between the researcher who is located in Lithuania and the SMEs which are located in India. The interview is organized around a set of 10 to 15 questions for which the respondents individually have to provide answers.

Research Questions

Qualitative interview research begins with a question. The questions generally seek to uncover the perspectives of an individual, a group or a different groups. The qualitative interview research questions have been formulated in order to focus on the main aspects of the research.

So, here the ways the research questions are formulated obviously are not structured interview. The questions are semi-structured questions. It can be called semi-standardized

(Rossman and Rallis 1998: 124). Table below shows the main stages of the interview and the questions will be discussed during the research.

Table 6. Interview Research Questions

Type of the Questions	Research Questions	Seeking Results
Introduction	Thank you for your willingness to participate in this interview, I would like to hear your ideas and opinions about. Can you tell me about..?	To welcome participants, remind them of the purpose of this event in the group which is focused to seek results.
Initial questions	Questions about the organization and the importance of the KM and knowledge sharing activities among employees : 1. How interesting is IT is to you? 2. Who can be the knowledgeable resources in this IT Company? 3. What do you think about KM and KS..? ahh...That's interesting..What else can you tell me about..?	To assess the situation in the organization and identify some critical areas about sharing of knowledge. To define the knowledge workers which are the knowledge asset to the organization. From the answers probing takes place.
Main research questions	Questions about the knowledge sharing behavior and about factors: (Structuring questions) -I would now like to introduce a new topic… 4. What do you do when you want to share knowledge, for example a situation like, if you've specific skill and nobody else has? (Imagine) Your opinions about? -What should someone else in that situation do…? (Indirect questions) 5. What are the possibilities to share knowledge and gain knowledge from others? How does the knowledge can be shared? Your opinions..? 6. What pushes you to share your knowledge with other employees? Questions about the technology & communication and motivational factors used to emphasize the knowledge sharing behavior in the organization. 7. What can be the medium/source you can suggest to transfer the knowledge	To find how knowledge sharing happens usually. To find the medium used for communication. To find out the clarity and understanding of the topic To identify the attitude and intention of the employee to share knowledge. To find about the possibilities and capabilities of KS. To identify the personal beliefs, trust levels, relationships among employees. To get to know about individual dimension of

		participants.
	(information) with your colleagues and managers? 8. What tools and techniques would you recommend to enable knowledge sharing? - Can you give me an example of..? (Specifying questions) 9. How does your company encourage the employees to make interactive/communicative in order to ensure sharing knowledge/ideas?? 10. What can be the process of your work? For example, how do you record/store the logics of knowledge for the future use? (Indirect sharing of knowledge) So, does that mean any tools? Describe?(Interpreting) Questions about the organizational and management support factors while enhancing the knowledge sharing activities: 11. What are the main problems with knowledge sharing in your company? Specify some..? 12. How does the company can overcome these issues? Your opinion?	To identify technological dimension To find about the tools and techniques which are used in a company or some expectations of individuals (suggestions) to promote the effective technologies of KM and for knowledge sharing activities. To identify the motivational factors which motivates employees to share their knowledge with the teammates. To identify the problems, issues and challenges faced by the individuals on KS in a company. Also KS problems faced by the organization can be found here. Emerge KS behavior in the SMEs.
Additional questions	In your view, 13. What is the priority of Knowledge sharing? What are the advantages/benefits and issues the company can get by sharing knowledge in the company? 14. How would you encourage your teammates/workers to share knowledge with each other?	To find how supportive the management team for the knowledge sharing practices in the selected SMEs.
Final questions	Thanking for the participation. 15. Have we missed anything? You would like to say something?	

Framework for Data Analysis

Once the data are collected, the content will be analyzed for data interpretation. The answers to the questions will be classified according to the following dimensions:

- Generic and specific factors at IT SMEs discussed and it will be categorized according the KS model discussed in the literature review;
- Level of importance of each category contains factors which emerges KS behavior in the Indian IT SMEs.

Limitations of the Research

In the interview method, Skype has been used to collect data with audio calls and with videoconferencing interviews and because the researcher and interviewee cannot make face-to-face interviews due to distance between researcher and participants. But, face-to-face interview is better than telephonic interview. Skype audio and video conferencing had been improved but it doesn't mean we have no limitations. There are technical issues like lag in feeding, no clarity in audio of voice, automatic disconnect of network, microphone malfunction and list goes on. We have many alternative social sites like Facebook calls, Viber and WhatsApp calls etc., which could help us to continue our interview if have any problem with selected data collection applications. This research is a *pilot research* because of time constraints. Bias and subjectivity which in turn, affects validity and reliability of data, process of data collection, transcribing and analysis from each participant time consuming. So, less participants are interviewed from the sample. Thus, sample size generally not large. These are the disadvantages of using interview-qualitative research.

4. EMPIRICAL STUDY OF THE FACTORS INFLUENCING KNOWLEDGE SHARING BEHAVIOR AT THE SELECTED IT SMEs IN INDIA

This chapter of research is an empirical part, there are two sub-chapters of this part derived from it. Firstly, the findings from the qualitative interview data are described and presented then secondly, in the discussion part, based on the content - analysis method, the respondents reflection from the interview, that is the transcripts of interview have been analyzed and the data categorized.

In the research discussion part, the empirical research results will be provided. This investigation will provide the view of realistic research at the end. From the discussion of this study, the research will provide recommendations to the future research.

4.1. Research Findings

Researcher taken notes during the interviews also the results from participants by recording the interview as audio transcripts. This research has been conducted in the context of knowledge sharing behavior in the IT SMEs. The author of the present research, as an Indian native and originally from Tamil Nadu, Southern part of India has used her personal network of contacts to reach the respondents.

The author has not done any sampling for at least two reasons. This research did not seek for quantitative data. The research has targeted IT software employees dealing with knowledge sharing activities. Therefore, the only criterion used for selecting the participants to the study was that they will be working in IT development, services and consultancy SMEs from India .Within the context of selected IT SMEs four of the participants working on the small and medium enterprises occupy a management position. Those four participants are Human Resources Manager, 2 Team leaders, HR specialist. These two managers dealing with the solving of issues are assisted by two employees each. In total, these 12 participants have composed the only sources of data collected in the framework of this theoretic.

Table 7. General profiles of the interviewees

Name	Position
Interviewee 1, Interviewee 2 and Interviewee 3	HR manager & 2 Individuals of Company 'A'
Interviewee 4, Interviewee 5, Interviewee 6	Team leader and 2 Individuals of Company 'B'
Interviewee 7, Interviewee 8, Interviewee 9	HR Manager Specialist, 2 Individual IT Employees of Company 'C'
Interviewee 10, Interviewee 11, Interviewee 12	Team leader and 2 employees from development team from Company 'D'

The method used by the author of the present research was semi-structured and open interview. Fifteen Interview questions were asked to the participants of the research. The participants have given their responses in the interview and the researcher has done probing to get specific or important answers.

The overall method used for analyzing the collected data was content analysis which is appropriate for qualitative research. Specifically, reading transcripts again and again have been used for sorting out the results from participants' responses. Therefore, the results are presented in the following section by analyzing the data. The important components will be interpreted corresponding to the first fifteen questions to produce results. Here mention about the results of the study are presented in accordance with the knowledge sharing model that mentioned above in the literature part.

4.2. Research Discussion

In this section, finding of the data will be discussed then analyzed using content-analysis method. Categories will be labeled and provided with sub-categories of most relevance data from the discussion. The categories will be explained, later the relationship between the categories will be provided. It will be the results of analysis and data interpretation.

The selected SMEs has professional employees and who needs to attain their main goals and to emerge the growth of the organization by enabling knowledge sharing activities and team building. First, to the small enterprise, it is not that easy to implement knowledge sharing activities and practices in a regular way by providing technologies and all. Currently, the

company faces the most common issues that most of the companies face in the beginning of start-up. If the management team supports to enable the important factors which influencing knowledge sharing in a community, it will emerge the growth of the company by increasing the organizational performances, also the competitive advantage raises automatically. The medium sized enterprises, the data collected from the development team, the participants from the development team need support from their team leaders to support the community to enable knowledge sharing activities to improve personal experience and to gain professional knowledge. All the selected medium enterprises have KM and knowledge sharing activities but it does not have any system to manage and maintain. So the team leaders and HR specialist can help the community to become knowledge community.

Interpretation of Results

The research aimed to explore the factors, which will influences knowledge sharing within the team is to be identified. To define, make use of the knowledge which is available in the knowledge assets in a company can contribute to achieve SMEs goals, benefits by ensuring the knowledge sharing practices in the enterprises. Also, by identifying how knowledge resources and the enterprises uses KS technologies referred as technology factors, to encourage knowledge sharing activities.

The following table shows results of content-analysis method, creating codes will be the sub-categories from the transcripts. By grouping them, categories are labeled (see Table 8).

Table 8. Categorized data of Interview Transcripts

Categories	Sub-Categories	Interviewee Reflections
Intention to share	Colleagues, Senior professionals & knowledge professionals, Community,	*I3: The person in the organization who have good grasping power or who is going to lead a project or team who innovates new concepts in the company also considered to be a knowledge*

knowledge	Willingness to share knowledge Enjoyment in helping others Knowledge self-efficacy, Attitude towards Knowledge sharing	*professional*
		I4: Team lead who is an administrator of the team has more knowledge in my view because, the person is organizing the company.
		I1: Actually, it is a small company, so the people who are working in this company, considered to be the talents. They are seeking to get new knowledge
		I8: I strongly recommend to share knowledge because, I had faced problems that I was expecting that a senior professional can share their experience, so that our mistakes cannot be repeated. I feel enjoyed and satisfied in the knowledge conversion process.
		I10: Of course, I'll be sharing with others, this help the other person to learn quick, Listening makes learning easier than reading!
		I11: I have intention to share knowledge. I enjoy to share my knowledge. If I know something and someone don't knows, of course I'll share my knowledge and spread it
		I6: Everyone in the company shares everything to everyone. I've positive attitude to share my knowledge with others
		I12: My habit is to help people. I do share knowledge and I feel satisfied from that.

Management System Support	Encourage employees to share knowledge, Organizational structure Environment, Responsibility, Office Layout, Mentoring, Sociability	*I2: It is a responsibility of managers and team leaders to involve employees in the spirit of company. The managers let employees know what the current situation of a company is and what the passion of company is.* *I7: The organization has a structure that from top management to teams then to individual employee/team player. Knowledge sharing can takes place from HR to team managers/leaders. Leaders also can share knowledge with their employees* *I10: Knowledge sharing may increase the relationship of members and organization. The management team creates an environment in which employees can share ideas, information of real current situation about IT industry. The HR domain conducts Quiz programs, games in order to increase the knowledge by group discussion.* *I4: Weekend parties, Weekend Events, Celebrating festivals make employees feel like they are in a good layout, for example family environment.*

Communication Factors	Interaction with each others	*I2: The company offers employees two things. Firstly, time and secondly tools to make sure that while doing project communicate effectively with each other. The interaction leads knowledge sharing* *I4: HR managers, manager specialist conducts Weekend events to make employees interact with each other. The main thing is that they have to collaborate with each others.* *I5: HRM conducts Weekend events to make employees interact with each other.* *I8:Meeting to make employees interactive in order to share ideas*
Perception on cultural factors	Awareness, Fear, Afraid, lack of trust in sharing new knowledge	*I1: Only managers has the rights to give authority of a knowledge to an employee, It depends on the person. They'll recognize the person by k* *I7: Yes there are problem in Knowledge sharing personally. I'm afraid to share the knowledge, what if the new person in the team will grow higher than me. And at initially will not share all the information, because of lack of trust. If it is really needed to share knowledge, ideas then filter like which can be shared and which is not.* *I10: Because of a competitive industry, every IT professionals are competitive to each other. They want to be unique and personally they have little fear in sharing their knowledge with others. I can see that maximum of the*

		employees don't share knowledge. Rarely, few employees do by trusting another one
IT Technological Dimension	ICT, Tools and methods used to share	*I4: Zogo, Project management tools, For example, ticketing system.* *I5: The tools we use for knowledge sharing are, Word documents, Microsoft share point, SVN, Microsoft LYNC, now it's changed to Skype for business, webinar.* *I6: Documents, email, We don't use social media to communicate. But we use email.* *I7: SCRUM, a software used for storing/backup for future use. Webinar.* *I9: Visual basic (TFS) team foundation server used to store backups.* *I8:Agile Software development tool, one-one training to share experiences*
	Technologies "Emerge knowledge sharing activities" KS techniques used to develop knowledge sharing activities	*I1:Collaboration and group discussion technique makes* *I2:It is obvious to use techniques also brainstorming is a good one to collect ideas from employees* *I4: Collaboration centers, Discussion hall with clients, training session* *I8:Brainstorming ensures KS* *I9: In my experience, it is always more effective to have group meetings and discussion* *I11:*
Motivational Factors	Indirect compensation, Recognition, Incentives, Bonus,	*I2: Bonus for innovative ideas.* *I3: Performance Appraisal based on job performance*

	Performance Appraisal Encourage to share knowledge	I4:Certification on performance, it will be useful for future advancement I5: Extra points for attending session, it is CP (Celebrity Points).Also, they will provide vouchers to buy phone in means of indirect compensation I6: Recognition for KS is important in competitive industry I7:Good recognition for KS activities - intrinsic motivation I1: Providing incentives, but however, it is a small company, so we can be recognized by monthly performances. I11:Seminar about particular thing shared with colleagues and conference

Based on the interview, content-analysis method provides some main factors as a categories and the discussion shows, how it affects the knowledge sharing behavior of individual in the community and it shows how it affects the outcomes of the organizational performance. The interview reflection results of narrative data or the qualitative data has been categorized into main categories and sub-categories based on the content which is relevant and coherent using content- analysis method. The categories labeled here are maximum the factors which can evaluate organizational knowledge sharing behavior: *Intention to share knowledge, Management system support, Communication factors, Perception on cultural factors, IT technological dimension and motivational factors*. Category data analysis has done based on the respondents reflection. Qualitative data analyzed and the discussion will be following:

Intention to Share knowledge: The empirical study shows that maximum of the participants wants to share knowledge, when they need to learn something they can ask other colleagues in the company to learn/gain knowledge. It affects knowledge sharing behavior.

Management system support: The primary qualitative data collected from the managers, team leaders and from the individual employees to get to know about how they support to ensure

knowledge sharing activities in the selected 4 IT SMEs. The data collected from the participants and analyzed. This category influences knowledge sharing behavior in the SMEs.

Communication factors: Interaction of employees tend to share ideas, information and knowledge especially when they spend time in the events, they can communicate formally or informally in the events. Communication influence knowledge sharing behavior.

Perception on cultural factors: Behavioral factors of individuals knows that knowledge sharing is an important thing in the company but it is little bit hard for them because of fear that they will not be recognized for their knowledge.

IT technological dimension: Tools and techniques used to transfer knowledge among individuals are considered as a very important factor, so it is a main category from the results. Some software tools & techniques are mentioned in the above Table 8.

Motivational factors: An individual should be motivated to share his/her knowledge with his/her teammates and the intrinsic, extrinsic motivational factors were considered for the analysis because it influences knowledge sharing behavior in the selected 4 IT SMEs.

4.3. Knowledge Sharing Model in the Selected IT SMEs

In the literature review, a model has been illustrated for the SMEs theoretically. It has main factors that influence the knowledge sharing behavior. Here, in this empirical research, categories were found from the primary qualitative interview after data analysis. These categories are similarly connected to the factors of KS model, because if we focus on the categories, we can find it clearly. Communication factors and Motivational factors are there as it is. The remaining are also has some characteristics of the theoretical model. Management system support are related to the Management support and leadership. Perception on cultural factors denotes the behavioral aspects and the characteristics of an individual employee. Finally, technology factors are grouped by its relevancy of data.

The relationship among categories will be depicted as a figure by the author. So that, it would be easier to identify the main points, blocks of KS model. The following figure drawn using categorical data.
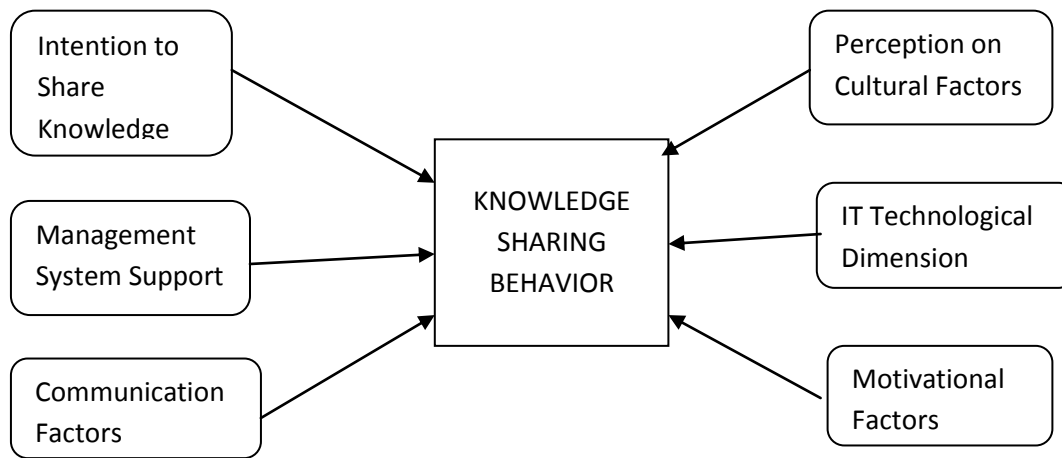
Figure 13. Relationship between the categories

From the figure, we can see that, the categories are influencing knowledge sharing behavior in the selected IT small and medium enterprises. The investigation of this empirical research provided different categories which are important in the selected Indian IT SMEs to ensure the knowledge sharing within the organizations to make knowledge economy.

To summarize, during the interview research method, different factors were identified. Intention to share knowledge, Management system support, Communication factors, Perception on cultural factors, IT technological dimension and motivational factors are the most important factors at the selected IT organizations. Some of the important factors has been found here and the content has been analyzed by the category data analysis.

The qualitative primary data collected from interview method analyzed by content analysis, in specific category data analysis. From the respondent's reflections, relevant data are grouped then labeled as categories. The main categories are discussed above. Also, the knowledge sharing model in these 4 IT small and medium enterprises are discussed. Finally the results of empirical study depicted as a figure to shows the connection between the categories. The investigation proves that, the theoretical KS model is suitable for this SMEs.

Conclusion

The overall aim of the research was to investigate the factors which enhance and influence knowledge sharing behavior of small and medium enterprises. It has been investigated and explored. The empirical study proposed, evaluates the conceptual model of knowledge sharing based on the main factors.

In order to achieve this aim the following specific objectives were set:

1. To examine the assumptions of knowledge sharing behavior behind knowledge management.

    Firstly, in the literature review, the definitions of knowledge and the overview of knowledge management models, cycles and processes were examined in order to identify the important values of knowledge sharing behavior. Research was focusing on going to specific from general in order to narrate the research objective.

2. To identify factors in the organizational level to determine knowledge sharing behavior.

    The important and the main factors were identified in the organizational perspectives from the existing literature, scientific sources and etc. The study found the main factors that were strongly influence knowledge sharing behavior. The factors are: IT factors, organizational factors and communication factors. In the empirical study also the factors has been found using categorical data analysis, content-analysis method.

3. To formulate the effective knowledge sharing model for SMEs to explore the positive organizational outcome. To identify the opinion of participants from Indian SMEs to explore realistic knowledge sharing behavior.

    In order to find the theoretical solutions for the formulated problem, a model has been illustrated. The model was depicting the factors which influence knowledge sharing behavior and the possible outcomes were provided. In the realistic social research, the interview research questions were formulated in order to find the answers from the participants of sample size. And, the opinions of participants were identified, analyzed and the realistic knowledge sharing results were explored.

Recommendations to the Future Research

In this research, for the formulated problem, theoretical solutions were derived from the theoretical sources by literature review. But in the empirical study, the research was designed based on the interview method, the progress has been made in the factors that influence knowledge sharing behavior for small and medium IT enterprises, but many important research questions and technical support remain. Limitations of this research were explained in the research methodology part. Because of the time constraints, just 4 SMEs from the IT sector were analyzed in this research paper. In the IT industry, Indian economy has more directions from this research. The research recommendations are organized according to the objectives proposed in the beginning of the research.

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