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Knowledge Management and Innovation at Workplace: A Study of their Link in Indian Context

Deepali Dabas

Research Scholar, Ansal University, Gurgaon, India

Dr. Puja Chhabra Sharma

Professor, Ansal University, Sector 55, Gurgaon, India

Abstract:

Over the years there have been in-depth and elaborate discussions exploring the relevance of knowledge management in our society. Management of knowledge is regarded as one of the most critical factors for survival of an organization. To remain competitive in business environment, organizations need a capacity to develop, retain, utilize and organize employees' potential and capabilities. This paper attempts to establish that knowledge management leads to innovation at workplace. In this highly competitive world of today innovation has become a main stream of organizations. Management of knowledge has been regarded as one of the most important features for organizational survival. Authors have undertaken an extensive literature survey on knowledge management and innovation to emphasize that knowledge management works as a tool for innovation at workplace and have cited examples of Indian companies.

Keywords: Knowledge management, innovation

1. Introduction

A continuous increasing pressure of global market and competition is forcing organizations to become innovative. Knowledge is being acknowledged as an important part of the organization. The importance of knowledge is being recognized in the corporate world and all spheres of society. Knowledge helps to enlighten mind, molds attitude and shapes behaviors of individuals. To make society more civilized all agree that to gain knowledge is one of the most essential activities. Knowledge is considered as a powerful tool. Within the organization knowledge must be shared amongst employees. Organization that shares knowledge and ensures its management grows at a rapid rate and become more competitive.

2. Knowledge Management

In order to understand the knowledge management, it is important to first understand the concept of knowledge. Knowledge is the core of knowledge management. In today's economy, knowledge has become more important asset compared to labor, land and capital.

- Knowledge refers to a person's state of being with respect to somebody of information. These states include awareness, ignorance, understanding, facility and familiarity.

Fred Nickols, Executive Director — Strategic Planning & Management, Educational Testing Service.

- Knowledge means awareness, understanding, cognition, cognizance, science, skill, insight, experience, competence, practical ability, learning, wisdom, capability and certainty. The definition depends on the context in which the term is used.

Karl-Erik Sveiby, The New Organizational Wealth.

There are two types of knowledge: Explicit knowledge and Tacit Knowledge.

Tacit Knowledge is knowledge that is stored in the brain of a person. It is personal and is gained from experience and study. It is basically developed through the process of interaction with other individuals. It is context-specific. It includes intuition, subjective insight and conjectures. Tacit knowledge can be shared through various mechanisms and activities including workshops, conversations, conferences etc.

Explicit knowledge is knowledge which is contained in documents and other forms of storage other than human brain. It is basically codified and stored in documents, websites, databases, emails etc. This knowledge is readily available whenever required. Explicit knowledge includes anything that can be documented, codified and archived, which includes knowledge assets such as business plans, reports, drawings, memos, patents, methodologies, trademarks etc.

Knowledge management is the process through which organizations create value from knowledge and intellectual assets. Knowledge management is a process of acquiring, distributing, identifying and maintaining knowledge that is relevant to the organization.

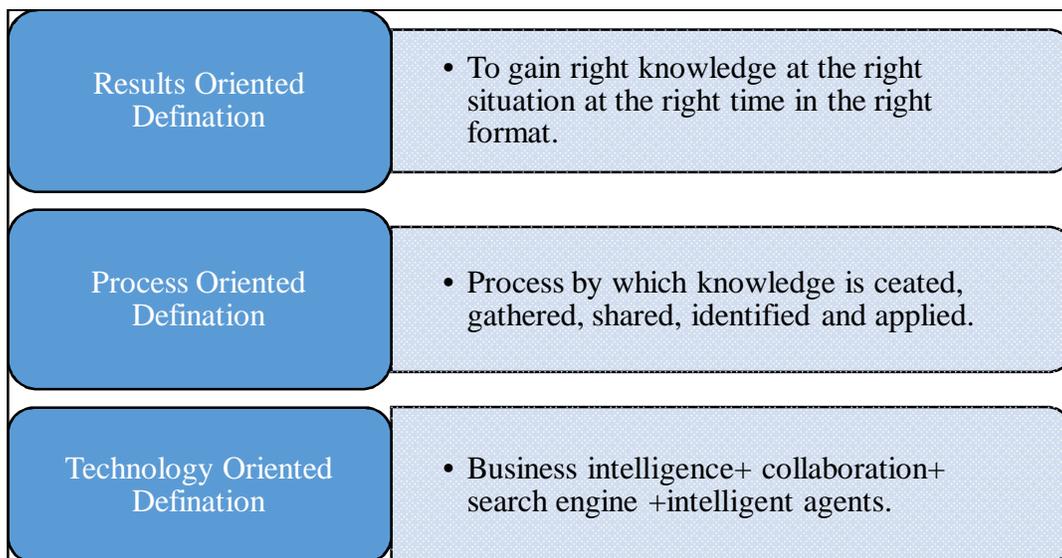


Figure 1: What is Knowledge Management?

Source: Benjamins, V.R., "Knowledge Management in Knowledge-Intensive Organizations", *Intelligent Software Components* (2001).

- Knowledge management is a process which enables creation of relevant knowledge throughout the business in order to create organizational value. – David Smith
- Knowledge management is the process of organizing, locating, transferring and using information and expertise within an organization. – American Productivity and Quality Centre.
- Knowledge management is an interdisciplinary model that deals with all aspects of knowledge within the organization, including knowledge codification, creation, sharing and how these activities promote innovation. –Gotcha

2.1. Aspects of Knowledge Management

There are two aspects of knowledge management.

2.1.1. Information Management:

The term information management is associated with the management of knowledge related to objects that are handled by information systems. The practice of information management was developed and became popular when executives realized its importance to improve the company's competitiveness. On the increasing popularity of information management, concepts of 'information analysis' and 'information planning' developed.

2.1.2. People Management:

It involves management of tacit knowledge that resides inside the heads of individuals. It requires managing the knowledge that prevails alongside organizational processes involving dynamic skills and capabilities. To manage people in an effective manner it is important to take into consideration their social values, aspirations and attitudes.

Both aspects of knowledge management symbolize two critical concerns:

- (a) Make organizational knowledge more productive, and
- (b) Produce large benefits.

2.2. Pillars of Knowledge Management

To clearly understand knowledge management we consider four pillars as follows:

2.2.1. Management and Organization

Commitment at the highest level of management is one of the most important pillars of knowledge management. This commitment is very essential for the success of knowledge management initiatives. Without commitment, knowledge management initiatives often fail. The commitment from top management can come in two ways. First, the managers at the highest level should serve as role model by sharing knowledge.

2.2.2. Organizational Structure

It should be evolved and maintained to support knowledge management. To implement knowledge management a knowledge management department be set up that clearly describes policies for promotion and implementation of knowledge management led by a Chief Knowledge Officer. Chief knowledge Officer should be involved in categorization and collection of knowledge and should act as a facilitator.

Why is it important to manage knowledge at workplace?

- Increase in the rate of competition and innovation
- Reductions in staffing which creates a need to substitute informal knowledge with formal methods.
- Continuous pressure of competition reduce the size of workforce.
- Decrease in the amount of time for experience in order to acquire knowledge.
- Early retirement which leads to loss of knowledge.
- Increasing mobility of workforce which leads to loss of knowledge.

Figure 2

Source: Barclay, R.O. and Murray, P.C., "What is Knowledge Management?" *Knowledge Praxis*, <<http://www.media-access.com/whatis.html>> (2004).

2.2.3. Infrastructure

All knowledge management systems need to have proper infrastructure to be effective. Knowledge management can be implemented only when there are appropriate communication technologies and informations are available. A proper ICT infrastructure is a need to create, share, apply and organize knowledge at workplace. The basic infrastructure will have a portal, an e-mail environment and a virtual workplace. In knowledge management, three technology infrastructures are required. First, the technology infrastructure to organize content; second, to search information once organized and third to locate an appropriate expertise.

2.2.4. People and Culture

Success of knowledge management depends on people and culture. People and culture are the pillars of knowledge management that require (i) Organizational structure to determine the way decisions are made and accountability prescribed for human processes, materials and resources. (ii) Human resource management practices include training, recruitment, career management, and compensation and performance measurement. If these practices are carried out well, there will be a deep impact on the knowledge management practices of the organization and it will lead to a culture of sharing knowledge amongst employees. Good training practices and continuous education, promotes sharing of knowledge at workplace. (iii) Organizational culture creates an environment of openness and a climate of trust. Motivation gives employees a desire to share knowledge and to generate ideas leading to Innovation at workplace.

2.2.5. Content Management Systems

This will include both internal and external information and systems that support the administration and creation of digital information. Content of web sites should be organized to ensure the proper functioning of knowledge management systems. The roles and responsibilities for updating and maintaining content should be clearly defined.

2.3. Innovation

Business success depends increasingly on the ability of the people to innovate. Business leaders are already recognizing the importance of thinking in shaping business strategy. Innovation is the basic foundation of economic growth. Engaging employees in contributing their innovative ideas has become an important Human Resource and knowledge Management tool in recent times. It is one of the critical determinants for sustaining, business competitiveness and improving productivity. Innovation is considered to be important because it allows businesses as a whole to change. Herkma (2003) stated that the aim of innovation is to produce new ideas and knowledge which develops and helps to find out the best solutions for society. Innovation is a process which captures, manages, acquires and diffuses knowledge with a basic aim to create new knowledge which supports to deliver a unique kind of products and ideas (Gloat and Terziovski, 2004). Innovation is an important process that looks forward to an organization's betterment. Innovation provides a counterweight to business. It provides a balanced life and a good quality of work life. Innovation is a complex development of new ideas and discoveries brought into the business and social environment, Innovation is a complex development of new ideas and discoveries brought into the business and social environment. Innovation basically implies product innovation, process innovation and behavioral innovation. Innovation is the foundation of economic growth. According to Canadian Innovation Centre, factors leading to innovation are; external drivers like competition, lowering cost and internal drivers, as improvement of quality and improvement in profitability.

2.4. Importance of Innovation

The basic aim of innovation is to create value for the business. Through innovation organizations are able to produce unique services and products. Innovation is essential because of the rapid and continuous change in taste and preferences of customers. According to a survey, 75% CEO's of organizations claim that their strongest weapon to compete is their innovative processes and products. Organizations that are unable to produce new ideas will be wiped out very soon because innovation works as a fuel for the organization to grow. Innovation leads to economic growth, competitive advantage, higher business revenues, opportunities for better returns and survival as quoted by Lorraine Yapps Cohen. Innovation is a key to sustain longer in business. Innovation is the "secret sauce" of business success, according to Harvard Business Review.

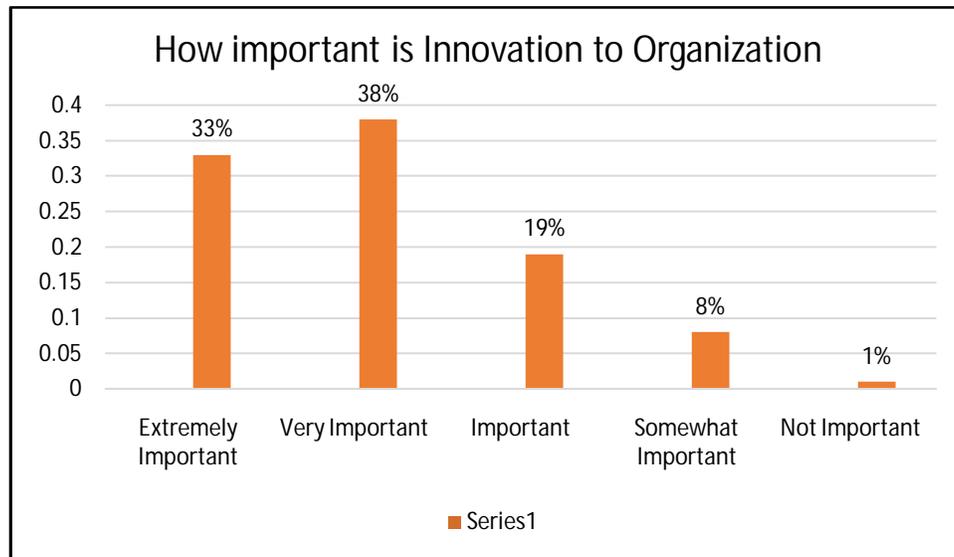


Figure 3: (Harvard Business Review, March 2010)

In a study by Steelcase included a survey of 200 corporate practitioners and found out that 38% employees feel that innovation is very important and is a way to supercharge an organization to growth. (Figure. 1)

Workplace innovation includes the continuous development of skills and competencies, flexible organization, modernization of labor relations and industrial relations (Totterdill, 2010; Pot, 2011). Organization that show high level of innovation and performance always experience better quality of working life. Innovation is directly related to development in the field of work of organization, employability and control structure of staff. They deal with the design of management tasks, design of the organization, design of job, organizational performance and quality of work life (Murray et al., 2010; Howaldt and Schwarz, 2010). A recent IBM study quoted that earlier employees use to become valuable through whatever they know, but at present people make themselves valuable by seeking opportunities to work with others and tapping into the expertise that others possess. In past, content was owned and protected, but today content is developed through participation of employees. The shift from a document-focused work style to a people-focused work style is an important step in creating environments that foster innovation. The document-focused style, connects systems and data, too often ends up producing content for its own sake. But the people-focused style, connects people and ideas, taps people for knowledge and insight in pursuit of an activity in which content is only one part. In the new collaboration, information is made available to a wider group of people who work together openly, quickly and more cost-effectively.

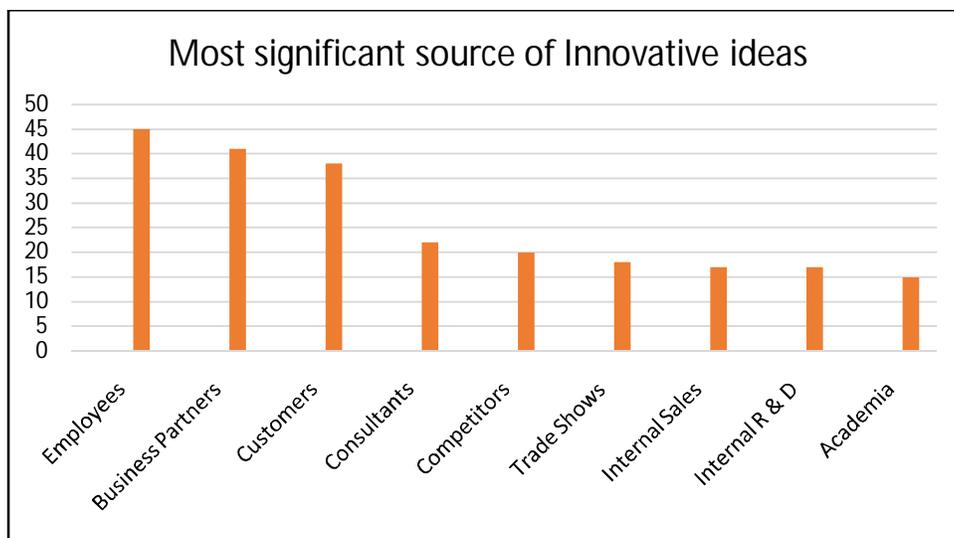


Figure 4: Organizations that have been successful with innovation have found that innovative ideas come from a variety of sources—and from collaboration among those sources.

Source: IBM, Global CEO Study 2006, March 2006

2.5. Scope of Innovation

Innovation can be incremental or radical. A radical innovation is a process with significant or unique improvements in existing features which improves the performance and cost of the product (Leifer et al. 2007). Radical innovation is considered risky for the

business as radical products are tougher to commercialize in the market. At the same time, radical innovation as a process is important for the business because it involves the development of new technology. Leifer et al. (2007) presented the idea of different hubs to bring radical innovation at workplace. One of the important hubs is of idea generators. Idea generators are responsible for generating unique ideas. Idea gatherers are receivers of the ideas. They have expertise, skills, judgment and motivation to respond to unique ideas. Plessis (2007) quoted that incremental innovation is a modification in a product which is called line extension or market pull innovation. Incremental innovation enhances competencies and skills of organizational employees. It is decisive for the organization because it helps organizations to increase their market share to be part of industry for a longer period of time (Banbury and Mitchell, 1995).

2.6. Relationship between Knowledge Management and Innovation

Messa and Testa (2004) quoted that organizations must train their employees to gain external knowledge and this activity is directly related to innovation capabilities. He stated that employees can acquire knowledge from external sources. These sources of knowledge can be integrated with organizational internal tacit and explicit knowledge and if knowledge gaps exist that can be filled through the new knowledge that will help to bring innovation at workplace. Ju et al., (2006) claimed that in order to get competitive advantage organizations should learn from outside sources. Through appropriate knowledge, organizations can bring in innovation. Organizations must develop channels within the organizations through which employee's share their knowledge with one another, Plessis (2007) in his study stated that innovation directly depends upon knowledge of people. So in order to bring innovation, organizations must identify knowledge richness and capability. Parlbj and Taylor (2000) stated that the one of the most important purposes of knowledge management is to bring innovation at workplace. Plessis (2007) asserted that organizations can develop the collaborations across the organizational boundaries to bring innovation and to get a sustainable competitive advantage. This collaboration helps organizations to acquire new knowledge that can fill the knowledge gaps within the organizations. This association brings innovation into the organization and this association reduces cost and risk in bringing innovation. Organizations that implement new knowledge, foster innovation as compared to organizations that don't focus on this aspect (Cavusgil et al. 2003). The acquisition of knowledge plays an important role to foster the process of innovation. Knowledge management helps the organizations to articulate knowledge which is a strong base to bring innovation (Plessis 2007). Knowledge management activities such as managing, gathering, learning, sharing, retrieval and reuse play an important role in bringing innovation at workplace. Through knowledge management activities, organizations find out the distance of knowledge from outside and inside the organizations. Organizations manage this knowledge and ensure availability of right knowledge to the right person at the right time.

2.7. Significance of the Study

In a highly competitive business environment, the demand for innovative products is huge. Knowledge plays an important role to make the organization to be more productive. Organizations these days do recognize and take full advantage of skills of employees in the form of knowledge which they possess. Organizations identify expertise, skills, motivation and creativity of the employees. Knowledge management focuses on this area which have been neglected so far Today. organizations compete not only on the basis of effectiveness and efficiency, but its success directly depends on how organizations gather, integrate, and identify, share and manage relevant knowledge of their employees to bring innovation.

2.8. Objective of Study

- To assess role of knowledge management to bring innovation at workplace.
- To find out the factors of Innovation at workplace.

3. Literature Review

Shankaret. Al.,(2003) investigated that knowledge management creates competitive advantage. Ju, Li and Lee (2006) developed a strategic model to identify interrelationships among knowledge management, knowledge characteristics, knowledge management capability, knowledge integration, organizational integration and innovation. They found that knowledge characteristics with higher levels of explosiveness enhance organizational integration and learning. They found that knowledge integration, organizational learning and knowledge management capability to play a significant role in innovation at workplace.

Drucker (1994) quoted that knowledge is one of the prime factors besides conventional factors like labor, land and economic development. In today's era, the organizations which utilize their knowledge in an effective manner will be the winner through offering innovation at workplace. Majchrazk, Cooper and Neece (2004) developed an effective approach to reuse the knowledge for innovation by making better understanding of knowledge. Goh (2005) stated that in order to bring innovation at work place, organizations should support knowledge centered principles in order to make role of knowledge creation for innovation. Galunic and Rodan, 1998 showed the relationship between innovation and knowledge management. They found that knowledge strategy determines innovation and have a strong influence on the performance of employees. Innovation is the combination of knowledge assets that creates new knowledge in the organization. The main task of organization is to recognize existing knowledge in order to explore new knowledge (Galunic et al., 1998). Number of studies have focused on the role of knowledge management in the process of innovation. A study by Liao and Chuang (2006) claimed important role that knowledge management has played for the knowledge capability and on activity and speed of innovation. Huergo (2006) suggested that technology management plays an important role and is directly responsible for the success of innovation at workplace. Yang (2006) applied a different approach and hypothesized that knowledge innovation improves the product performance, via the moderating effects of manufacturing competencies, marketing,

knowledge dissemination and knowledge acquisition. Brockman et al. (2003) in his study argued that knowledge management tools “Efficient information gathering” and “use of innovative information” improves innovativeness of new products at workplace. Darroch et al. (2005) in his study confirmed the positive effect of knowledge dissemination on innovation success. Davenport and Prusak (1998) in their study suggested that one of the best ways to transfer knowledge at workplace is by hiring smart people and by letting them talk to each other. Success of innovation is determined by the presence of technological, organizational and marketing competencies and if all these are present at one time, then organizations are more likely to innovate successfully (Cobbenhagen, 2000). Massa and Testa (2004) in their study explained relationship between innovation and benchmarking through knowledge management. They found that organizations get the knowledge (explicit as well as tacit) from outside the organization with the help of benchmarking. In order to bring innovation at workplace, organizations have to include both the type of knowledge which are acquired and captured from outside as well as inside the organization. Plesis (2007) analyzed the role of knowledge management to bring innovation at workplace, and found that the world’s economic growth has been changed only because of the rapid increase in innovation and the shift of new technologies, and increased rate of new products in the market.

3.1. Factors Responsible to Bring Innovation at Workplace

3.1.1. Knowledge Collaboration, Transformation, Integration and Innovation

An important factor to bring innovation at workplace is Knowledge collaboration. Collaboration may be internal as well as external. With internal collaboration, organizations become aware of the knowledge that exists in the organization in form of explicit and tacit knowledge. Through internal collaboration, organizations come to know where, what and how much knowledge is available in the organization. Internal collaboration encourages innovation to take place because organizations integrate with employees that lead organizations towards pool of creativity and expertise important to bring innovation at workplace. External collaborations play an important role in bringing innovation at workplace. External organizations also play a crucial role to bring innovation like competitors and customers (Grassman et. Al; 2006). In order to bring innovation it is crucial to make a direct link with external organizations to get knowledge which are essential for innovation (Chesbrough; 2003). Linking with partners and external organizations is a core process to bring innovation at workplace. Chesbrough (2003) in his study argued that if any organization wants to innovate in a highly competitive environment, the innovation process must be supported by flexible and open structure. Organizations must merge with external capabilities and knowledge. This knowledge and collaborations allow the organizations to get more innovative ideas at workplace.

3.1.2. Organizational Learning and Innovation

To survive in a highly competitive business environment organizations must focus on continuous learning as needs and preferences of customers are rapidly changing and to meet the requirements organizations must learn new ideas and ways. Organizational learning strengthen organizational knowledge assets and knowledge capability. Knowledge transformation process is enhanced by organizational learning as employees learn new ideas to share with others who need to fill the knowledge gaps. Organizational learning enhances the communication among employees so that knowledge integration, sharing and dissemination are achieved. Drucker (1993) in his study analysed that organizational learning increases the quantity and quality of accumulation and information of knowledge in a dynamic environment. Organizational learning strengthens the ability to create new knowledge.

3.1.3. Knowledge Transformation and Knowledge Characteristics

Knowledge characteristics is one factor that affects the knowledge transformation and innovation. There are basically two types of knowledge characteristics: Knowledge Complexity and Tacit knowledge. Tacit knowledge is composed of human competencies, expertise and capabilities that are embedded in human mind. To pace up process of innovation, organizations must focus on the transformation of tacit knowledge into the explicit knowledge because tacit knowledge is difficult to capture, share and disseminate. To get benefits from tacit knowledge, organizations must transform tacit knowledge through coaching, mentoring, formal and informal meetings so that tacit knowledge can be shared with other employees. Knowledge complexity is a hurdle in knowledge transformation process that brings innovation at workplace. Complex knowledge is difficult to share with other employees and this slows down the pace of innovation at workplace. Meetu and Perez-cano (2004) stated that knowledge complexity retards the process of knowledge transformation and it is difficult to apply in organizations. Knowledge complexity affects the learning efficiency of the organization because employees can’t have access to such knowledge (McEvily and Chakarvarthy, 2002).

3.1.4. Organizational Culture and Innovation

Culture is an important factor for implementation of knowledge management. DeLong and Fahey (2002) quoted that knowledge management faces difficulties that’s why organizations do not get maximum benefits from knowledge management. Organizational culture is one of the biggest hurdles to implement the knowledge management system. In order to effectively implement knowledge management systems, organizations must create desire for achievement and knowledge among employees of the organization. To implement knowledge management, organizations need to build a culture for knowledge within the organizations in which knowledge sharing will be an integral part of the organization culture and strategy. Gold et al., (2001) stated that supportive and encouraging culture helps to build knowledge management system in the organizations.

3.2. Examples of Indian Companies

3.2.1. Tata Consultancy Services

TCS have launched Knome, a social Intranet that enables employees all over the world to connect, collaborate and innovate by sharing IDEAS, Thoughts and giving feedback. The wisdom of the employees is based on collaboration, KM and Innovation.

3.2.2. Google India

There are many internal email LISTS dedicated to discussion of IDEAS like GOOGLE IDEAS WEBSITE. Googlers submit their ideas regularly regarding product development and improvements. They make suggestions as to how to make things better around GOOGLE. Colleagues provide their feedback by making comments and ratings. Management Team keeps close watch and is responsive to IDEAS and issues that Googlers raise.

3.2.3. MICROSOFT

Company believes that key to their success is collaboration and Innovation. They have set up a COLLAB LAB, At Hyderabad Campus that enables employees to collaborate on product design and processes. Project Teams use this Lab to brainstorm, design and develop innovative ideas. It has helped teams to greatly enhance their productivity and deliver products on time, without disturbing their work life balance. This is how, Innovation, KM and Collaboration work together to deliver.

3.2.4. IFOSYS

Vishal Sikka connected with over 1,60,000 engineers to share with them KEY AREAS of INNOVATION that they believe customers are focused. Out of 2700 ideas selected were ultimately narrowed down to 10. Management believed that some of the ideas can be used to develop IP or for offering new services. INFOSYS has now started building Team of Domain Specialists across divisions to strengthen its engagement with clients. A team of Executives was set up to resolve issues. This is where; KM and INNOVATION go together at Infosys.

3.2.5. HCL

Company believes that employees are at the heart of Innovation. It inspires by providing them right tools, and right culture that enable them to collaborate, communicate knowledge, and innovate freely across teams and boundaries. Innovative ideas and solutions as developed by employees are Wilki-portal and Arkmedes for KNOWLEDGE CREATION AND SHARING and Meme for collaboration and networking. To encourage employees to share their innovative idea, Mad Jam (make a difference Jamboree) was created by a group of employees.

3.3. Conclusion

Several factors that play an important role to bring innovation at workplace have been discussed. ICT is one of the essential factors which help organizations to manage and find out the organizational knowledge that increases organizational capabilities and assets. Knowledge success is also one factor that is important in diffusing knowledge from individuals to the entire organization that boosts organizational knowledge culture. To accelerate innovation process, organizations must implement the determinants of innovation that lead to innovation.

A limitation of this Study is that no empirical data has been collected. The nature of study is exploratory. Hence there are certain grey areas which can be undertaken for further research on this topic.

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