

Knowledge Management

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Received: 17.08.2019 Revised: 19.09.2019 Accepted: 20.10.2019

Abstract--- Knowledge Management (KM) is an organizational function that concerns itself with the capture, storage, and dissemination of the knowledge that is inherent in the organization by using software or a processing tool to capture, store, and disseminate knowledge. The objective of knowledge management is to enhance organizational competitiveness, improve performance, the sharing of lessons learnt, and the continuous improvement of the organizational processes. Typically, organizations have well-established tools and software to capture, store, and disseminate the learning's that accrue because of the organizational processes. Companies like 3M, Pfizer, and Infosys are thought to the world leaders in KM. This is because they have a clear set of guidelines for capturing knowledge after every project or product that they rolled out. For instance, these companies have guidelines for project managers to publish the learning's that have accrued after a project and upload them into the KM system. Further, the bottom line imperative for a successful KM system is that employees should have a sharing mindset instead of an exclusivity mindset. What this means is that the employees must be willing to share their insight and knowledge with the other employees.

Keywords--- Acquisition, Creation, Internalization, Selection, Transfer, Utilization.

I. INTRODUCTION

KNOWLEDGE management is the systematic capture of insights and experiences to enable an organization to identify, create, represent, and distribute knowledge. The insights and the experiences of individuals in the organization comprise the knowledge that is created in the organization and is embedded in the form of practices and processes.

Knowledge management



Knowledge Activities

Knowledge management (KM) cannot be achieved with a single definite activity. It involves an assortment of activities. These are usually referred to be knowledge activities. The utilization of the knowledge activities at the

resources connected to knowledge which is limited and assisted through an extensive choice of aspects will result in KM.

Research studies do indicate a number of knowledge activities which are important. Some of them are as below:

- Knowledge Acquisition
- Knowledge Utilization
- Knowledge Selection
- Knowledge Transfer
- Knowledge Creation
- Knowledge Internalization

Research studies indicate that knowledge transfer deserves the most careful attention among these activities so that the organizations can manage knowledge successfully.

As discussed above, many organizations consider KM integral to their core processes. Indeed, KM has become so widely prevalent in organizational discourse that it is rare to find a large organization without a KM system in place. Further, the existence of a KM system has become necessary for organizations to achieve the SEI-CMM certification. Moreover, there is recognition that a KM system is necessary in order not to “reinvent the wheel”. What this means is that learning's can be used to avoid duplication of work, and eliminate redundancies in the organizational processes. Apart from this, a KM system improves organizational communication and loosens up the rigid walls between different functions in the organization. Finally, a KM system is needed to ensure that past mistakes form the stepping-stones for future success.

Dimensions of Knowledge Management

There are several dimensions to Knowledge Management (KM) and the most popular framework distinguishes between “tacit” knowledge and “explicit” knowledge. Tacit knowledge refers to the internalized knowledge that individuals in an organization possess and where he or she might not be aware that they have the knowledge about how they accomplish particular tasks. On the other hand, explicit knowledge is the knowledge that individuals in organizations know that they have and are conscious of it.

The crucial element in any Knowledge Management system is to ensure that tacit knowledge is captured and converted to explicit knowledge. Moreover, it has been hypothesized that even explicit knowledge needs to be converted into information that is meaningful and useful. After all, mere data is not useful and only when data is transformed into information and codified as knowledge is it useful.

Strategies of Knowledge Management

There are different strategies to capture knowledge and they include the “push” and the “pull” strategies. First, it must be made clear that knowledge can be captured before, during, and after the processes actualize. Hence, there need to be incentives for employees to contribute to the knowledge base. The push strategy focuses on making employees contribute to the Knowledge Management system in a proactive manner wherein individuals strive to contribute to the Knowledge Management system and the knowledge base without any prodding or persuasion. This approach is also known as the codification approach to Knowledge Management.

Another strategy is the pull strategy wherein individuals who need knowledge make explicit requests to those who possess knowledge. In this case, the experts are called upon request and hence the knowledge seeker pulls the information rather than the expert pushing the information. This approach is known as the personalization approach to Knowledge Management.

Motivations for Knowledge Management

There are several motivations that drive organizations to implement Knowledge Management systems. As discussed in the introductory article, the need to have a Knowledge Management system has become mandatory for certifications as well as to have sources of competitive advantage. The most compelling motivation for having a Knowledge Management system is that organizations do not have to reinvent the wheel and subsequent iterations of the same process can be done in a more efficient and productive manner. Indeed, the reuse of knowledge leads to synergies between the different processes and helps in solving intractable problems.

Apart from these imperatives, Knowledge Management helps organizations to manage the organizational arteries better as increased exchanges of information between

different individuals’ results in greater connectivity and more network effects. In other words, Knowledge Management systems help in managing innovation and organizational learning. This is a direct and beneficial effect of Knowledge Management and one, which is driving more and more companies to have working and efficient Knowledge Management systems.

Knowledge Transfer

The conveying of knowledge from one member to another member of organization involves knowledge transfer. Though this is a simplified definition, knowledge transfer itself is a complex process. First of it has to be noted that the knowledge conveyed is correct and also it should reach the proper member of the organization. In addition, the timing and form of the knowledge which is conveyed should also be accurate. Above all these aspects, the expense of this conveyance should be within acceptable limit. When all these are achieved, the knowledge transfer can be termed as successful. So as to garner profits of knowledge management, it is critical that knowledge transfer has to be done successfully.

In the existing phase where technologies are rapidly developing to share information, organizations are giving more emphasize to knowledge transfer. In addition to this, it must be noted that the created knowledge will help to attain improved performance for an organization when the transfer process takes place. There is no use in keeping the knowledge at the originating location. It has to be passed to the location where it can be exploited to the advantage of organization. Such an exploitation generates value for the organization, which in turn, bring to it the required competitive advantage. So, it is essential that an organization has to put firm foundation for the process targeted at achieving knowledge transfer.

Barriers to Knowledge Transfer

To understand more about knowledge transfer, it is essential to know about the barriers to transferring best practices in an organization. There is a need to develop a model for the process in which knowledge is transferred, and the obstacles in the different stages of the process can be studied. The critical hurdles to knowledge transfer are as below:

- Receiver of the knowledge has shortage of absorptive capacity
- Characteristics of the knowledge being handed over
- Rapport between informers and receivers

Characteristics of Knowledge Transfer

The speed with which the transfer of knowledge takes place is also important since it has to reach the recipient at the correct time and within acceptable cost. Knowledge received late and at an extra cost will not bring any benefit to the organization. It seems that the speed of the knowledge transfer will depend on the tacit nature of the knowledge. The tacit nature of the knowledge is fundamentally dependant upon two factors:

- First of all, the knowledge has to be codifiable.
- Secondly, it should be teachable.

If these are possible, the transfer of knowledge will take place speedily. It is also seen that the communication and the frequency of discussions between knowledge source and recipient are important factors of knowledge transfer. In addition, the type of knowledge transferred is also significant. The knowledge can be related to business, project or technology. The recipient has to be capable enough in the respective field to have the knowledge successfully imparted.

Knowledge Stickiness

Consider an instance of building a new system. Knowledge transfer can be visualised as consisting of a source which can be a system user and a receiver who is the system builder. The difficulty faced in the process of knowledge transfer is called knowledge stickiness. A methodical and concentrated inspection of the aspects which result in stickiness while systems are built, will be useful to handle the issues that come up as a result of shortage of needed knowledge transfer among the user and the builder. The level of stickiness during the knowledge transfer process depends on the following factors:

- The character of knowledge
- The features of sources and receivers
- The character of the association grown between sources and receivers

While knowledge transfer is taking place, the above three aspects, scheme together for triggering stickiness. It is important to handle stickiness carefully to enhance the process of knowledge transfer.

Implementing Knowledge Management thus has Several Dimensions Including

- **Strategy:** Knowledge management strategy must be dependent on corporate strategy. The objective is to manage, share, and create *relevant* knowledge assets that will help meet tactical and strategic requirements.
- **Organizational Culture:** The organizational culture influences the way people interact, the context within which knowledge is created, the resistance they will have towards certain changes, and ultimately the way they share (or the way they do not share) knowledge.
- **Organizational Processes:** The right processes, environments, and systems that enable KM to be implemented in the organization.
- **Management & Leadership:** KM requires competent and experienced leadership at all levels. There are a wide variety of KM-related roles that an organization may or may not need to implement, including a CKO, knowledge managers, knowledge brokers and so on.
- **Technology:** The systems, tools, and technologies that fit the organization's requirements - properly designed and implemented.

- **Politics:** The long-term support to implement and sustain initiatives that involve virtually all organizational functions, which may be costly to implement (both from the perspective of time and money), and which often do not have a directly visible return on investment.



Knowledge Worker

A knowledge worker is one who uses knowledge as the capital for work and who uses brain power rather than brawn power to get the job done. In other words, knowledge workers “think for a living”. A knowledge worker is also one who uses creative thinking, out of the box problem solving, and does no-routine and non-standardized work. In other words, the knowledge workers tasks keep changing with time and unlike the worker on a shop floor, a knowledge worker does not perform the same task repeatedly continuously. Knowledge workers are also known to have greater involvement with the big picture unlike the traditional workers who feel alienated from the larger organizational goals because they are just cogs in the machine.

The Rise of the Knowledge Economy

The rise of the knowledge worker has been helped by the rise of the knowledge economy or the sector that comprises of Information Technology, Business Process Outsourcing, Financial Services, and other forms of work that deal with knowledge as the basis of work. Even doctors, lawyers, and other fields use knowledge as the basis of their occupations; the knowledge economy usually does not include these sectors.

With globalization and the opening up of the global economy, there has been a concomitant rise in the services sector. Along with this, the knowledge economy has also been helped by the decline in manufacturing in the West and the increase in the contribution of the services sector to the Gross Domestic Product of most countries. Indeed, in many countries (including India but not China), the services sector contributes more than half to the economic output in the country.

Managing Knowledge Workers

There are significant differences in the management of traditional workers and knowledge workers. First, the knowledge workers are less inclined to be hierarchical and hence, they prefer openness and a flat organizational structure. Second, they have relatively more control over their work than traditional workers do as they have more control over the processes that define their work. Third, they have higher salaries and hence are prone to lead consumerist lifestyles as opposed to the workers in manufacturing or other sectors. Fourth, they are also prone to burnout and stress related ailments, as the pressure to deliver and perform is more on them. Finally, they change jobs more frequently than other workers do and it has been shown that whereas the previous generation worked all their lives in one or two companies, knowledge workers are likely to hop several jobs during their careers.

These aspects make the management of knowledge workers a specialized function and hence, in many services sector companies, the Human Resource Function is staffed by those professionals who have had previous experience in managing knowledge workers.

Knowledge Workers

Knowledge workers is a term used to refer to the employees in the IT (Information Technology), BPO (Business Process Outsourcing), Financial Services, and other sectors where the brain or the intellectual work is the determinant instead of brawn or physical labor. In this respect, knowledge workers have become a separate category altogether for the HR managers and the HR field as managing them needs different approaches when contrasted with managing employees in other sectors. This article examines some such approaches that are needed for managing the knowledge workers.

HR Approaches to Managing the Knowledge Workers

To start with, considering the fact that knowledge workers work on the basis of their intellectual capabilities, the HR managers have to ensure that these workers remain mentally agile and intellectually fit to cope with the demands of their jobs. Therefore, in recent years, the theorists as well as the practitioners in the HR field have emphasized the fact that knowledge work and knowledge workers must be treated in a manner that makes them central to the organizations objectives. In other words, the knowledge workers are the key assets to the companies in their sectors and not plant or machinery or even other assets such as buildings. This attitude has been summed up concisely and lucidly by the Indian IT icon, NR Narayana Murthy, who said that the IT companies assets' leave every evening and return the next morning to work. In other words, what this means is that the HR managers have to treat the knowledge workers in the same manner in which earlier era management used to protect their physical assets.

Further, managing the knowledge workers also means that the pay and benefits have to be commensurate with their

skills, experience, and the value that they add to the bottom-line of the organizations. It is no wonder that IT employees often command stratospheric salaries and humungous perks as they are indeed valuable to the companies who just cannot afford to let go of their top performers. Another aspect of knowledge work is that these companies are flat in terms of organizational arrangements as opposed to the hierarchical nature of organizations' in the manufacturing and allied sectors. This means that the HR managers have from other sectors that make the switch to IT and allied services sectors companies have to get used to the informal, first name basis as well as the lack of hierarchy in the companies in these sectors.

Downsides of Preferential Treatment of Knowledge Workers

Having said that, it must also be noted that sometimes, the royal treatment accorded to the knowledge workers gets to their head leading to demands for more pay, attrition for the slightest reasons, as well as an attitude that they are superior to others. Indeed, there was a time (before the current recession) and during the dotcom boom when IT employees used to attend interviews and in the course of the interview, talk to other companies as a means of pressuring both companies into accepting their demands. Moreover, even now, some knowledge workers are prone to ask for raises and more benefits irrespective of the fact that the present economic downturn has made it tougher for the companies and the HR managers to comply with their requests.

On Balance Assessment

Of course, the pros and cons listed above cannot be generalized to the entire community of knowledge workers as there are many who work for the sake of the satisfaction and the opportunities for self actualization that is part of their jobs. Indeed, it is this aspect that the HR field has recognized as being the key imperative when dealing with knowledge workers which means that the HR managers in conjunction with management have to ensure that the job and the role is challenging for the knowledge workers. For instance, it is the case that with so much competition among both the companies for employees as well as within prospective employees for the mega successful companies, there manifests a race for the best and the brightest of the employees and competition between employees to get into the truly innovative companies.

Example of a Successful Knowledge Management System: Infosys

The previous articles in this module introduced the term knowledge management and presented some real world examples of how knowledge management works in contemporary organizations. This article examines the ways and means to build a successful knowledge management system and the process by which essential components of the knowledge management systems can be designed and incorporated. To take the example of the famous Indian IT major, Infosys, the company and its founders have an abiding

commitment to knowledge management as is exemplified in their assertion that their key assets are their people and that their brand derives its value from intellectual capital. Towards this end, Infosys has a highly successful knowledge management system in place that is vertical as well as horizontal in design and approach. It is vertical because it covers all the components of the traditional hierarchy driven organizations and it is horizontal because it incorporates the entire gamut of divisions and groups in its ambit.

The key aspect about the knowledge management system is that it does away with hierarchical boundaries meaning that all employees are treated equal in the creation, sharing, and dissemination of knowledge. In other words, any employee at any level can contribute and any employee at any level can participate in discussions and knowledge sharing with those higher or lower in the hierarchy.

Components of a Successful Knowledge Management System

The second aspect of a successful knowledge management system is that it must make the preservation and furnishing of project artifacts mandatory which means that project managers have a responsibility to upload the project documents into the knowledge management system upon completion of the projects. In this way, discipline and a structured system of knowledge dissemination as well as a rigorous method of sharing and distributing of knowledge is assured. The third aspect of a successful knowledge management system is that the employees who give more than they take must be rewarded for their contributions to the knowledge management system and the rewards system in place in the organization must have incentives for employees whose contributions are valuable. Further, a successful knowledge management system would also enforce strict quality control wherein the documents submitted to the portal are checked for accuracy and reliability and only those that are found to match the quality standards are accepted. Moreover, the key aspect here is that there must be both voluntary and mandatory participation wherein employees are required to contribute a certain amount of time compulsorily and above that, it must be made voluntary.

Advantages of a Knowledge Management (KM) System

Many advantages accrue to organizations that have efficient knowledge management systems. These include reducing the iterations in subsequent projects, leveraging existing knowledge to improve on the processes, achieving synergies between processes and functions, and generally improving productivity because of the convergence of all these aspects. The key aspect about having an efficient knowledge management system is that one need not reinvent the wheel. In other words, organizations can derive benefits from the knowledge that is present in the system and hence, reduce the work needed to do the same or similar tasks again. For instance, if a particular organization has stored knowledge about previous projects in the KM system, then subsequent projects having the same or similar kind of tasks or deliverables can benefit from the existing knowledge by

reusing the artifacts, documents, and knowledge units that are there in the KM system. This reduces iterations for projects as the similar deliverables can be submitted without having to redo the same thing repeatedly. This is one of the most important reasons why corporates go in for KM systems as having an efficient KM system results in quantum jumps in productivity.

KM Systems Reduce Rework and Result in Synergies

The next aspect is to do with achieving synergies between the processes and functions. For instance, if a particular project needs inter-function execution, the KM system can be mined for knowledge about previous projects that have artifacts related to processes that are interdisciplinary. In other words, managers can simply take the knowledge units from the existing data store and reuse them. When other functions are involved in the project, an integrated KM system that has details of cross-functional expertise can come in handy. This means that functional and Processual knowledge can be combined leading to synergies between them. Many organizations also store knowledge related to optimizing the existing processes and improving the existing processes. These are requirements under the capability maturity models like SEI-CMM where the certification depends on how well the organizations engage and indulge in continuous improvement. This is the reason why many organizations in their quest to be certified under the capability maturity models often have put in place KM systems that are comprehensive and integrated.

Productivity Leaps because of KM Systems

The third aspect about having a KM system is that the reduction in the number of iterations, the optimization of existing processes, reuse of artifacts, and cross functional expertise available for the other projects all result in productivity leaps. Productivity is the ratio of the time taken to do a particular task to the magnitude and scope of the task. Therefore, when the first iteration happens, one is doing the task for the first time and hence, one would take more time. However, when the task is repeated, one has gained expertise in performing the task, and hence, one takes lesser time to do it the second time or the subsequent times. This is the productivity improvement that happens with expertise and knowledge.

How a Well-Oiled KM System is beneficial to the Organizations

Similarly, when organizations leverage on the existing knowledge and expertise available in the KM system when other projects have similar tasks to do, the resulting productivity leap is because of the reuse of the existing knowledge that reduces the time and the effort it takes to do the same task the next time around. This is the key aspect that anyone who is interested in how a KM system improves efficiency must know about the advantages of a well-oiled KM system. This is also the reason why many organizations reward employees who contribute Knowledge Units (KU's) to the KM system as by doing so they are contributing to the

efficiency of the overall organization. Finally, KM systems also help in creating an open working environment where the culture is geared towards sharing knowledge instead of hoarding knowledge.

Knowledge Management Systems and the Internet

We are living in an information age that is characterized by increasing information about everything and anything available anywhere and everywhere. In this context, knowledge management has to be done in a structured and organized manner if redundancies and information overload are to be avoided. The point here is that the internet has placed information at everyone's disposal by the click of a mouse. Therefore, the key imperative is to ensure that the vast amount of information is used in a meaningful and organized manner. Otherwise, the risk of being stuck with unnecessary data and redundant information is high. This is the reason why many companies use the internet in a judicious and responsible manner. For instance, it is common for organizations like 3M (the pioneer in KM) and Infosys to lay down clear and coherent policies about what information can be used from the internet and which information has to be sourced from specialized databases. This means that many of these organizations articulate how the internet can be used as a source of data. The other reason why many companies are wary of using the internet for information is because of potential copyright issues that might result from using information that is not sourced from holders of the copyright.

How the Internet can be used and Misused

This is also the reason why many American and European universities prohibit the use of sites like Wikipedia as sources of information and instead, ask the students to reference the knowledge from premier and academic databases like EBSCO, Emerald Insight, and JSTOR. Similarly, many investment banks and consultancies subscribe to the business databases like Reuters, Bloomberg, and Financial Times store, as these are valid and established sources of information. The point here is that the internet is like a vast ocean where finding accurate data is like trying to find a needle in a haystack. This is the reason why many KM systems of consultancies, investment banks, and corporates explicitly prohibit their employees from relying too much on the internet for their data and knowledge needs. By subscribing to premier databases like those that the ones listed above, these companies ensure that the data and the knowledge that they are using is reliable and accurate. Moreover, the internet has also spawned file sharing and data sharing that is sometimes outside the purview of the existing laws. Therefore, apart from copyright issues, sourcing data from the open internet can also cause piracy charges to be leveled against the companies.

Some Advantages of Using the Internet for KM Systems

Having said that, it must be remembered that the internet has been a game changer for businesses and individuals as far as knowledge management is concerned. This can be seen in the way major media networks and newspapers often rely on

the internet for information. Of course, media houses have dedicated fact checkers who verify the veracity of the information. The case of individuals is different, as they might not know that the statistics they quote and the data they use might not be reliable in the absence of validation and confirmation from independent fact checkers. Further, even media-persons have been found to use data that is not reliable or inaccurate. The point we are trying to make here is that having a store of knowledge by itself is not enough. One needs to watch out for accuracy and reliability. Especially when corporates have established KM systems, it is important to have gatekeepers who can vet the inflow of information and ensure that only reliable and accurate information is let into the KM system.

II. CONCLUSION

Our change management and communication experts guide you through change – and we recognize change is hard! We listen and truly understand our clients' needs, whether it's a change in knowledge and information management technology, agile organization restructuring, or content management processes. Rather than focusing only on short-term interventions, Enterprise Knowledge (EK) experts enable you to be an agent of change and continue your project's momentum over time. As business processes become more holistic, KM software is developing a more robust approach that includes vendors, clients and customers. Newer knowledge base software options allow for external integration so that internal and external parties can share information more easily.

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