EXTENT AND EFFECTIVENESS OF KMS AS AN EFFECTIVE MEANS OF FOSTERING SYSTEMATIC TRANFORMATION WITHIN MULTINATIONAL: AN EXPLORATION AND ANALYSIS OF KMS IMPLEMENTATION PROCESS

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Abstract

This paper portrayed a Knowledge Management System implementation process within multinational companies and its effectiveness towards problem solving method which accelerates the growth of the companies. In the process of KMS, technology and cultural along with information driven appreciations are absolutely needed to make the whole course of action faster and efficient. Though companies are communicating locally as well as overseas clients through email, cc-mail and voice service but these approaches are lengthy and not effective to share information among clients. Sometimes it goes to the wrong persons and reading an email it takes an hour. So in order to solve the existing problems and make faster and proficient communication process smart and intelligent agents able to assists effectively because it helps to create information archive, categorized data and able to continue collective learning process to provide better services to the clients. In this process ‘Team Room Application’ is the best example on its archetypal is based on integration, collaboration, transaction and expert model of communications where accessibility of knowledge becomes easier and helps to take more rapid and effectual decision to achieve the professional and well-organized knowledge work. In this regard, this paper tried to analyze effectiveness of Knowledge Management System within different types of companies in view of four Knowledge Management strategy frameworks and implementation of effective ‘Team Room Application’.

Keywords: KMS; accelerate; technology driven; intelligent agent; team room application

Introduction

In the competitive business environment KMS have been successful in order to gain profit, sustain or survive in the market place (Nonaka & Takeuchi, 1996; Prusak, 1997). Before approaching any system including KMS organization needs to explore basic requirements and scope to implement effective and efficient system otherwise whole process will be failure because employee’s or staffs are not aware about the concept, system and culture of Knowledge management within the organization (Du Plessis, 2008). Even employees don’t practice knowledge management into their working place (McCann & Buckner, 2004). In virtual as well physical market place KMS need to use systematically because it enhances the work efficiency, organizational performance, competency of the completion of the work and creates the room for innovation process. However, in order to increase professional specialization in an expert level and manage information overload along with work force mobility organizational knowledge needs to maintain systematically (Gold, Malhotra, & Segars, 2001; Ives, Torrey, & Gordon, 1997). It can be technology in use or any other approach or method of application to capture and managing knowledge accurately to gain the competitive advantages. However, technology in use accelerates organizational performance and can face the challenges of the market.

Abdullah, Selamat, Sahibudin, and Alias (2005) comments ‘KM in an emerging field which has the capability to capture and store community knowledge into a proper form as corporate asset’. In KMS knowledge is integrated with business process and it would be successful if sharing and collaboration (Bixler, 2005) are effectively implemented within organizations or multinationals. However the value of KM and its effective use in a practical level also important. Knowledge sharing within organizations or multinationals gives strength to take the right decision in a right time where ICT is the catalyst for sharing information or knowledge. Besides it also maintain the flow of organizational learning and collaborative activities among employees which is ultimately accelerates the growth of the company. Recent study focuses that if organization failed to promote collaboration KM approaches may fail (Weber, 2007).

Nevertheless, the efficacious knowledge sharing in an organizations or multinationals both technical and behavior factors are influential (Calantone, Cavusgil, & Zhao, 2002; Hertzum, 2002; Kidwell, Mossholder, &
However, Wei, Cheng, and Pai (2006) remarks KM is a systematic process of sharing and organizing tacit and explicit knowledge which lead to the organizational performance and adaptability. Besides, McCall, Arnold, and Sutton (2008) explains, KMS focuses explicit knowledge that exists within the organizations.

In the KMS environment collaboration is an enabling tool where employees share knowledge in different ways based on their necessity where it supports KM process as well as entire implementation in the organizations (Abdullah 2008). On the other hand, expert system is a knowledge intensive computer program which is ‘capture the human knowledge in the form of a set of rules’ (Liao, 2003). This system has a decision making process with required action. It also integrated with the intelligent agent and other relevant systems in order to function effectively and speed up the organizational performance.

So, technology together with KM application is much more effective for organizational advancements. Besides, team room application, knowledge sharing culture, market information, collective and continuous learning with practical implementation are absolutely needed in KMS implementation. In this regards, this paper tried to portrayed KMS implementation within the multinationals. So KMS, a successful KM model and five major keys in KM technology has been elaborated in section II. In section III KM strategy, unified KM platform, team room application and its featured capabilities, business challenges and KM solutions exemplified. Results and discussion illustrated in section IV. In section V exploration of knowledge management strategy with specific company’s adoption has been identified and finally in section VI concludes with suggestive solutions and future research.

**Knowledge Management Systems**

**KMS**

Knowledge Management Systems KMSs is a computer based information systems where enterprise can identify problems, analyze data and manage organizational knowledge in order improve their business process. Gray (2000) mentioned two types of KMS. These are knowledge repositories and knowledge maps where both ‘improve employee’s ability to search for and find knowledgeable individuals within an organization’.

In a Knowledge Management System technology in use, culture of the organization and information in different stages which are related to the company or organizations are important. Knowledge Management System refers to a class of information systems applied to managing organizational knowledge’ (Alavi & Leidner, 2001). However, this system has been used to manage knowledge and helping organization towards the decision making process and problem solving approach (Schreiber, 2000). Recent study had been conducted by Alavi and Leidner (2001) that shows, there are three areas such as culture driven, technology driven and information driven appreciation entails for success of the company or organization but implementation may vary based on needs. Data mining, data warehousing, expert systems, intelligent systems, smart systems and others are technology driven. Besides, culture driven is determined by the culture and behavior of the organization where flow of learning is important. Nevertheless, to implement KMS in an organization both external and internal knowledge and information are necessary because these are the driving force for growth of a company. Henceforth, KMS is applied to manage organizational knowledge which is based on IT and it enhances the organizational process of knowledge creation, storage/retrieval, transfer and application (Alavi & Leidner, 2001).

However, there are three common applications has been explored in knowledge management initiatives where IT is enabler to manage organizational knowledge; coding and sharing of knowledge, corporate knowledge directories and creation of knowledge network (Alavi & Leidner, 2001).

This system is implementing in different types of sector such as medicine, engineering, financial management system, e- business and many more areas effectively.

**Five keys in Knowledge Management Technologies**

The capacity to find right document is the most critical factor in knowledge management. For this, there is absolutely need to maintain document management system where KMS assists magnificently. It has a tremendous value of wide range of business processes. Besides, knowledge formed based on data and information in a specific context. Lotus and IBM has identified five essential Knowledge Management
Technologies which are the key factors for business process such as: (i) business intelligence, (ii) collaboration, (iii) knowledge transfer, (iv) knowledge discovery and mapping and (v) expertise location.

<table>
<thead>
<tr>
<th>Business Intelligence</th>
<th>Data warehousing, Data/text mining, OLAP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collaboration</td>
<td>Groupware, Synchronous Messaging, E-mail</td>
</tr>
<tr>
<td>Knowledge Transfer</td>
<td>Computer based training, Distributed learning, live collaboration</td>
</tr>
<tr>
<td>Knowledge discovery/Mapping</td>
<td>Search, Classification, navigation, Document Management</td>
</tr>
<tr>
<td>Expertise</td>
<td>Expert Network Visualization, affinity identification</td>
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These all are facilitate to connect people with effective collaboration in a common platform. Online work place is the best place to share and can be utilized effectively. However a single product can support multiple tasks to perform as Lotus Domino doing. It supports collaboration along with knowledge discovery and knowledge mapping.

A Successful KM Model

Knowledge Management is globally recognized and powerful solutions to face the challenges of internet era because it enhances organizational competency, efficiency, innovation and increase responsiveness. Thus KM offers wide range of business opportunities and values all over the world both in physical and virtual place. In knowledge management people, place and things are integrated ad adds the value towards the unlimited business process. Misra, Hariharan, and Khaneja (2003) and Abdullah et al. (2005) highlighted three factors that enhances business process. These are; people, technology and management. Experienced and expert people are the main resource for the organization where they work either in physical or virtual working place and they share knowledge each other and figure. 1 shows it effectively.

Figure 1: A Successful Knowledge Management Initiative (Abdullah et al., 2005)

These working environments also foster the collaborative work and share information, data and maintain the process of sharing. Along with these approaches IT played a major part in KM implementation process in the organization (Yoo & Kim, 2002; Zhang, Zhou, & Nunamaker Jr, 2002; Zimmermann, Gnasa, & Harbusch, 2002). Malhotra (2005) identified and two types of KM paradigm, one is input driven where IT and KM been used alternatively and processing driving paradigm is KM practices in the organizations such as training, learning, cultural change, collaborative activities as well as virtual working place where different types of business activities have been conducting by the organizations or multinationals. Oh the other, Wakefield (2005) also categorized two types of KMS, one is repository and another is network model. Network model is
follow cultural as well as communication channel and direct access to the individual. However, repository model focus more onto knowledge creation, sharing and retrieval.

The IBM and Lotus Knowledge Management strategy becomes the hub to deliver the KM technologies for business solutions. ‘Lotus and IBM have embarked on a new stage in computing, one that will help organizations leverage their inherent knowledge and succeed in a new era’(IBM website 2001).

Knowledge Management Strategy

Unified KM Platform

K-station is a collaborative platform either end-users or communities capable to conduct business task and provides effective solutions. However, it helps to organize the task and able to work ‘out of the box’ and enhances team collaboration.

![Unified KM Platform](source IBM)

Fig 2 shows the k-station portal where services are being categorized in two ways, one is personal and another is collaboration. Personal service utilizes DHTML in order to support dynamic customization where security is highly measured both is personal and shared places. On the other hand in collaboration service k-station is integrated with collaborative tools in order to create interactive team work and shared community as well. Besides it helps to increase people activity too.

However, in K-station portal, there are two types of application which are called personal and community places. Personal places includes multi page places features, search tool, websites, news sources, mail, calendar and many more applications which is linked to community places as well. Nevertheless; discussion, presentations, documents, plans, content, activities including more activities which is created and maintained by the team members.

Common KM Application

‘Research within the field of KM has consistently grown and accumulated great importance in both academia and business’ (Lee & Chen, 2012). Knowledge management is being used to enhance and speed up the organizational performance and also accelerate the business process. There are several KM applications such as collaboration, virtual team room, email, decision support system, cultural initiatives, knowledge portal are most important for physical as well as virtual business sector.

At present, KM technologies and its implementation within the organizations or multinationals is a major issue because it can identify specific problems towards the solutions. In some cases, though KM technological adaptation or implementation differ one organization to other organization due to its different requirements, some technological application has common concepts, problems domains, idea, methodology such as data mining, knowledge based system versus expert systems (Liao, 2003). However, some technological implantation follows the ‘high degree of overlap’, such as knowledge sharing, knowledge discovery, knowledge acquisition(Liao, 2003). Yet the success depends on technological as well as cultural or behavior factor(Calantone et al., 2002; Kidwell et al., 1997).
Team Room Application

Team Room is an application has been developed by the IBM and Lotus. It is the integrated system using Lotus platform that can provide and share knowledge which ultimately developed communications. Lotus Notes® R5 is a very efficient and effective internet messaging and collaboration client based solutions provides standard support with dedication. Result shows Lotus Notes is the very effective product based on the functions and implementation in an organization’s (Rushli 2008).

It’s a collaborative client-server platform provides integrated system where group member can use Lotus email, contacts management, instant messaging, voice and video conferencing, online meeting, forum, blogs, discussions, file sharing, document management, workflow and other related applications.

It is a powerful tool for collaboration and information sharing that facilitates ongoing development project and share knowledge or information in a common platform. Even team room supports geographically distributed team member in a common sharing platform that Lotus and IBM offering for business solutions. Team room makes work easier and efficient. It helps to create collaborative product and strengthens the process of brainstorming. Besides, discussion about different issues within an organization is being resolved by team room application.

there are a common work processes follows Team Room application these are, (i) document management, (ii) action tracking (iii) meeting management (iv) collaborative writing (v) decision making (vi) brainstorming and (vii) archiving. In document management, document is being stored, posted, make it available for the clients via Notes, web, email and filled automatically as well. However, action taking is a work process where ‘action requests are made of team members’. Team members sometimes accept or rejects or negotiates the action followed by the work process. Meeting announcement is used to post in this working process. Even participants series of responses also updated. Meeting agenda, meeting minutes and action item also posted. However, collaborative writing also take into the place during working process which leads to brainstorming to develop creative ideas and it helps to enhance decision making process for any organization. On the other hand, archiving is also a working process where expired document is being stored properly because sometimes previous data is necessary to look at or monitor.

Team Room Featured Capabilities

Using Lotus Notes software, organization can work faster and efficient and team members along with clients can connect virtually. Customize client needs with custom built solutions also provides in team room application system. Besides, team room builds social capabilities, interests, and organizational structures to get access and benefit from it. When knowledge, ideas and information are posted, clients or team members share with its network. Further, it generates more knowledge for decision making process and opens up a new opportunity. Collaboration stimulates innovation thinking or process which is more important for organizational improvement or enhancement. Henceforward, innovation process leads organization to be a dynamic business environment.

Collaboration is a platform where people share, create, discuss and organize their ideas in a virtual environment are easily can capture. This capturing process generates new knowledge which can implement for further development project. In a team room system, team members can also able to access anywhere other than the work station which gives strength to complete any project. Diagram 3 shows team room featured capability with thoroughgoing indication.
There are several private sectors, universities and government/nonprofit organizations in the world using Lotus Notes and Domino in order to get competitive advantages and efficient working processes. Companies such as Honda, Toyota Motors, General Motors, IBM, computer technology base leading companies HP, Panasonic, Hitachi, Compaq, different banks such as HSBC, Citibank are also using Lotus Notes for business performance. On the other hand, USA, Australia, India, Sweden, Japan, UK, and Canadian Navy along with several universities are also using Lotus Notes. This solution is being used in different sectors such as: telecommunications, travel and transportation, government, wholesale and distribution services, healthcare, professional services, education, computer services, financial markets, and many more industries.

However, in this paper the researcher is going to focus on Integral Inc., a leading management consultant and research firm specialized in the management of innovation, located at Cambridge, Massachusetts, implementation of Lotus Notes within the company which finally increases their business growth in the world market.

Business Challenges

Integral Incorporation wanted to improve their existing system because their communication system was 'clearly inadequate' and email capabilities were extremely inflexible. Even sometimes need to take an hour to read an email. Similarly their voice mail systems were also having problems. Due to the overwhelming response from worldwide, they need to improve their systems. Otherwise, they will be disappearing from the market.

Knowledge Management Solutions

Integral Inc. has taken initiative to solve their existing problem by implementing Knowledge Management System (KMS). They identified technology, cultural, and Information driven appreciation of KMS can enhance and assist them to develop business processes.

Integral Inc. was facing problems of using their old system of communications. They were communicating overseas as well as local clients by using mail (ccmail) and voice mail service but it was not effective to share information among the clients. It was a lengthy and ineffective practice because sometimes voice mail goes to the wrong persons and to read a mail it takes an hour. So, solving their problem they took initiative to collect information then to employ smart and intelligent agents. They also create information archive, categorized the data and started to collective learning process of how to solve and offer better service to clients.
Result and Discussion

Integral applied ‘Team Room Application’ where communications and accessibility of knowledge can be shared. In this system integrated system distributed the knowledge within whole group. A ‘Team Room’ helps to take quicker and effective decision by the team members in order to achieve effective knowledge work. Effective knowledge developed the database, larger bandwidth, email and multimedia product, speed for information retrieval and global IT infrastructure. But the imperative process is information stage. This stage is divided into two parts, one is external and another is internal. Collecting clients information, market information, customer information and competitive information are important in the external level and the internal level; financing, product and service, HRIS, activity based costing are important.

These all implanted by Integral to enhance their capability to deliver good services to clients and knowledge sharing among the project team and others those are involve within it.

The most significant issue for Integral is using the systems within organization compulsory. So, everybody is bound to use ‘Team Room’ application. At the beginning they unplug ccmail and started to use Notes Mail. Gradually everybody started to follow the new system.

Over the time Integral was rewarded on the basis of three dimensions that how effectively they worked with the clients, overall contribution to the firm knowledge and how well she/he functioned as part of collective. So, it is appears that, the implementation process was fully successful.

Benefits

This system provides appropriate level of access and allowing collaborative document access for the team members, clients or third party organization.

1. Enabled simplified and collaborative coordination among team members and helps to provide right data to the right person in right time.
2. Using the system productivity and collaboration increased among the employees and helps to collaborate with internal team and external vendors, firms or business associated through chat, instant messaging, and web conferencing worldwide.
3. Using this system dramatically improves the work efficiency, performance and transparency of the working process.
4. Clients based supports increased and decision making process becomes easier due to the information sharing among the team members.
5. Enables expert to solve the problems.
6. Leverage the team member towards accuracy.
7. Integrating for improved performance and reliability to use this system
8. Transforming business process towards the innovation and organizational performance.

It is assumed that, team room application is successful applying at Integral. But there is something worked or motivate as a force from behind towards the perfection are organizational culture, technology and information driven initiatives. However, on the way to implementing KMS system organization culture is the biggest barrier [44]. So, organization should rectify the barrier first then proceed to the system implementation. Otherwise, all approaches will be in vein.

How might the Case related to knowledge management strategy

Choi and Lee (2002), refers ‘the fit between knowledge management process and knowledge management performance strategies is a lynchpin in improving corporate performance’. So if process goes in a right direction efficiency and performance will be very accurate. Towards the business performances if existing system is not effective need to adopt new system. However, some times the process can be costly and insubstantial to implement(Soliman & Spooner, 2000). So the implementation process should be appropriate and strategic in
action which is very crucial for organizational improvement. Choi and Lee (2002) claimed that, most of the studies are failed due to absence of dynamic knowledge management strategies within the firm because knowledge varies organization to organization. Another study is conducted by Storey and Barnett (2000) that explores that 80% of KM systems failed due to its inappropriate KM strategies. So this survey suggests one single application is not suitable for all types of business domain or business solutions. It must be based on knowledge process, location, time, organizational requirement followed by the socio cultural context (Soliman & Spooner, 2000).

On the other hand, López-Nicolás and Meroño-Cerdán (2011) identified three dimensions for enhancing corporate performance; these are financial performance, process performance and internal performance. However, strategic approach also is needed to improved organizational performance. Strategic KM should be appropriate in action. In this study researchers found integral Inc. is successful applying in strategic KM using Lotus Team Room application. Integral Inc. was a rapidly growing management consulting and research firm working with management of innovation. Organizational or any type of Innovation depends on tacit knowledge (Gloet & Terziovski, 2004) and it depends on ideas (Borghini, 2005).

It is well known that, Integral Inc. has huge clients including health care, electronics, automotive, chemical, utility, construction, computer and many more consultancies. Due to the innumerous clients worldwide, Integral could not manage them properly as they were having problems with maintaining communication because existing system which is being used by the Integral employees to serve the clients is inadequate. So, Integral adopted new system in order to solve the existing problems and new system accelerates the business growth of the company. It is known that strategic management accentuates on monitoring and evaluating an organizations external opportunities and threats in light of its strengths and weaknesses where internal and external environment are important. External environment leads towards the competition and Internal environment followed organizational structure, senior management and culture. After adopting the new system Integral Inc. expanded their business all over the world and achieved the highest popularity. At the earliest time Integral Inc. having problems with communication sector because of using ccmail and voice mail that goes to sometimes to the wrong persons. It is proved that, using ccmail is still an important communication tool if it goes to the write persons and can access easily. Due to the in effective and time consuming process Integral Inc. changes their system which is called ‘Team Room’ Application for communication and others purposes. Donoghue, Harris, and Weitzman (1999) incorporates knowledge management strategies framework followed by integration where integrated process, team and best practices are involved; collaboration includes knowledge linking, action learning and strategic framing; transaction which is includes automation, routinization; and expert model includes experience hiring, capability protection and involved in development process give strengths to Integral Inc.

![Knowledge Management Strategy](image)

**Figure 4. Knowledge Management Strategy**
it is also noted that, strategic framing link to the action learning process through the practice of Integral Inc. employee’s as company make compulsory for everybody. Integral Inc. collaborating with technical team where individual action has been taken to follow and maintain all rules as well as system. Besides, company hired 30% new professionals annually for increase the productivity and efficiency which supports expert model of KM strategy. So, it is proven that if effective KM strategy followed and practiced within the company undoubtedly they will be successor.

Conclusion

Nowadays organization is adopting Knowledge Management systems because it increases customer satisfaction and supports e-business initiatives. Besides, it helps to improve work efficiency and grow revenue of the company. It also provides training and corporate learning, virtual as well as physical work space and manages legal and intellectual knowledge. However, KMS extends the field of knowledge sharing and reduced resourced requirements. It is anticipated that, using Lotus Notes organizational performance is much effective than any other systems because its ‘Team Room’ provides comprehensive business solutions for different types of company. Though there are positive effects on using ‘Team Room’ Application for accelerating the growth of the company there are several matters or issues needs to address. When a new system is planning to familiarize there is a need to move forward but the first issue appears how to move on and where to use the new system. So, before using any system needs to have a prior knowledge. Besides, if information sharing is sensitive must be effect on business negatively. However, diverse socio-cultural issue is another emerging challenge for KMS implementation within the firm or business sector or organizations. Nevertheless, implementing the pilot version project implementation is also a challenge for the company. For the organizational development Knowledge management along with other management activities are important for creating an effective business model. So in order to implement KMS within the organization needs to have high level of adaptability, innovation process which would be leading to the dynamic business environment.

References


