A Study of the Knowledge Management Systems in Software Dependent Organisations

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Abstract: The study looks at the state of the knowledge management systems in software dependent organisations and tries to identify problems encountered in the implementation of knowledge management systems by these organisations and suggest alternatives and solutions to them. The study also tries to find out whether their exists some relation between the successful implementation of knowledge management systems in the organisation and the success of the organisation.

Introduction:

Globalisation, persistent progress in technology, intense competition, more informed studied and demanding customers are some of the challenges that are impacting businesses today. No organisation across industries today can afford to ignore these challenges if they were to survive, progress, and have an 'edge' over its competitors. There is a need for organisations to be flexible, adaptive and to continually reinvent themselves, to understand and embrace new technologies as a core dimension of strategy. What is making a difference today or what will help them sustain is the processes the organisation follows and the knowledgeable people who work in it. The challenge is to build, combine and integrate the knowledge assets of thousands of such knowledgeable individuals and creating an environment in which the knowledge accumulates and is shared across at a low cost.

Jones(2003) affirms Knowledge is an infinite asset and is so because it is the only asset that increases when it is shared. He says Knowledge Management is taken as tools, techniques, strategies to retain, analyse, organize, improve and share business expertise. Traditional companies and business aimed to ensure success based on management of finite physical resources. In the Knowledge economy companies pursue rapid innovation, business agility and just-in-time learning, they hope to retain their infinite assets - the knowledge of their people.

Knowledge management is a method of systematically and actively managing ideas, information and knowledge of the employees. It is the use of past experiences and expertise, which speeds up the decision making for the organisation. The knowledge accumulated in organisations over time can be used to solve identical and similar problems. The goal of knowledge management is to capture, store, maintain and deliver useful knowledge in a meaningful form to anyone who needs it, anyplace, anytime within an organisation. It is a single information system that knows everything important happening in the organisation, it keeps track about every significant task performed and can make this information available to any employee anywhere.

organisations need to have the capacity to react "fast" to grab an opportunity lest their competitor takes it up before them, so they need to be able to take correct decisions fast and to be able to make these decisions correctly and speedily they need to have access to all the knowledge their organisation has in terms of know-how, experiences, wisdom. Knowledge management is emerging as the methodology for capturing and managing intellectual assets of the organisation as a key for sustaining the competitive advantage.

Relevance of the Study:

Inspite of so much knowledge being available in the organisations individuals still have the mindset of reinventing the wheel for themselves when a problem needs to be solved. This is probably because of paucity of time to look around for solutions in the organisation or in the industry the organisation belongs to or in other industries - which could be customised and applied or because of more belief in self than others who have made their knowledge freely available and provided solutions implemented by them in similar situations.

Managing knowledge is an ongoing activity which needs to be given its due importance and which requires changes to be made in the work processes to ensure that people work towards contributing what they feel is useful to others and using the knowledge available to them in a way to make a significant contribution in achieving the goals of the organisation.

It was felt that it was important for organisations to appreciate the knowledge it had and to be able to harness it to its advantage , for that is what is going to decide whether they have "an edge" over others in this knowledge economy. To enable the organisations to do so and to help them with suggestions regarding what actions they need to take to have this knowledge culture in their organisation it is necessary to first try and understand what knowledge means to organisation, whether they find it useful to

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reuse it, where they felt knowledge resided in their organisation. Whether they felt the need to harness it to their advantage, how and where this knowledge could be used. Whether the culture of the organisation was conducive to people sharing knowledge, whether doing so contributes to the success of the organisation. What systems were in place to manage this knowledge etc. In today's world, there is an acute need to optimally use the resources available. Knowledge is one such resource, hence the need for Knowledge management.

Objectives:

The following were the objectives of the Study:

1. To study the state of Knowledge Management Systems in the software dependent organisations.

2. Identify problems encountered if any, in the implementation of these knowledge management systems and suggest alternatives and solutions.

3. To identify if there exists some relation between success of the company and successful implementation of knowledge management systems in the company.

Hypothesis:

The present study was designed to be an exploratory study and the following working hypothesis was formulated "Knowledge Management Systems plays a dominant role in the effective management of software dependent organisations."

Effective management meant optimizing the use of resources available with the organisation to achieve the desired results. The desired results could be more profits, more informed and timely decision making, pioneering in launch of new product/service, bettering ones position in competition, maintaining lead in the industry or the like and by using resources like men, money, material, time and knowledge. Harnessing the knowledge available with the organisation and using it to its advantage resulting into cost curbing, reduced risks, innovations, making timely and informed decisions leads to effective management.

From the responses in the questionnaires and reconfirmations of the same seen in the case studies it can be seen that organisations have achieved this by managing the knowledge they have with them. The contribution of Knowledge Management and the systems used to deploy it is significant and hence the hypothesis could be used as a foundation to formulate and verify more concrete hypothesis for future studies.

Methodology:

The researcher was fully aware about the research designs that the researcher needs to adapt in order to achieve the objectives of the study. Given the research problem, the objectives of the study and the variables identified for the study the researcher thought that the best suited design for this kind of study was the exploratory design. As Kothari (2002) affirms "The main purpose of exploratory studies is that of formulating a problem for more precise investigation or of developing the working hypothesis from an operational point of view, the major emphasis in such studies is on the discovery of ideas and insights. The research design

appropriate for such studies must be flexible enough to provide opportunity for considering different aspects of a problem under study. Generally the three methods in the context design of such studies that are talked about are the survey of concerning literature, the experience survey and the analysis of insight stimulating examples."

In the present study an elaborate survey of the concerning literature was done followed by an experience survey. An experience survey is a survey of people who have practical experience with the problem to be studied. The objective of this survey is to obtain insights into the relationships between the variables and new ideas relating to the research problem. From among these respondents a few cases which stood out by the nature of their managing knowledge were chosen and studied in detail.

Sampling:

From the two types of sampling techniques (probability and nonprobability sampling) the researcher had to resort to nonprobability sampling. With probability sampling the researcher knew that the findings from the sample could be generalised and assumed to be population parameters. The researcher also knew the drawback of the simple random sampling, systematic sampling, cluster sampling, stratified sampling and was afraid that these sampling procedures may lead to NULL sets.

The variables of the study were well-defined and the attributes of the study could be easily differentiated, the very nature of the study could not lead the researcher to a well defined atleast therotical sampling frame. In the event of absence of sampling frame, the researcher had to adopt nonprobability purposive judgemental sampling technique. The organisations which felt the need to manage knowledge and were IT dependent were identified as the sampling unit.

Tools for Data Collection :

Questionnaire :

In the present study the primary data were collected through the questionnaires. The questionnaire used was divided into various sections proposing to collect demographic data of the respondent, software dependency reasons and state of KMS in their organisation, KM usefulness as the organisation perceived it, purpose of KM, the culture and organisational structure, their KM experience, and the infrastructure they had in place for the said purpose.

The questions were both close ended and open ended in nature. The close ended questions were either dichotomous questions (true/false or yes/no) or multiple-choice questions. Most questions were selection questions where the respondents had to select the most appropriate option or options which were more true than false. In some questions the respondents were asked to rank the options presented to them depending on their perception of priority of the option.

The questionnaire also had open ended questions. As the researcher felt that these open ended questions would be a better fit in the context of the topic on which other close ended questions

were placed. The open ended questions were placed intermittently thus digressing from the set norm of placing open ended questions at the end of the questionnaire.

There was also area left at the end of the questionnaire where the respondents were requested to mention areas or give suggestions which they thought were relevant to the study but were inadvertently missed out by the researcher.

The questionnaires were self administered. The respondents were contacted telephonically to ascertain whether they felt the need to manage knowledge and felt it would be beneficial to do so, their organisations were software dependent and had the required infrastructure in place. The respondents were telephonically briefed about the topic and background of the research or in case of their availability, the researcher met them personally.

Case Studies:

From the 39 respondents of the questionnaires five organisations were selected and their experiences are presented as case studies as the researcher felt they give an insight into the issues involved in implementing knowledge management systems in organisations. It is difficult to generalise their experiences and use them as it is for what works for every organisation differs but like Kothari (2002) asserts "case study deepens our perception and gives us a clearer insight into life", It is possible to learn from their experiences and address the issues and challenges that may arise in your organisation and customise it in a way that works for your organisation.

Secondary Data Sources:

The researcher got insights into the subject from extensive data analysis. Books, Journals, Periodicals, Company broachers, websites formed the basic secondary data sources. Right from the definition issues to hypothesis formulation were based on the insights the researcher had from the secondary data sources. Last but not the least the secondary data sources also included websites, search engines, online encyclopedias which the researcher utilised in the study.

Data Analysis:

Data analysis is the process of bringing order, structure and meaning to the mass of collected data. The questionnaires filled by respondents were collected, coded and tabulated to have a structured data. All the variables and their values were properly labeled before the actual data analysis was carried out. The data was edited and cleaned; it was also checked for unification and consistency in coding. The data were then analysed using suitable statistical tools. All the data analysis were carried out using 'Statistical Package SPSS for Windows version 15.

Research Outcomes:

1. The respondents perceived the most important benefit of knowledge management to be learning from past experiences leading to avoidance of costly mistakes and saving the costs of reinventing the wheel. The next important benefit was faster problem solving and response to issues as now it was possible to tap expertise/fruitfully use the experience available with the organisation. These were followed by improved customer service and enhancing customer satisfaction and retention. An ongoing need to reduce costs and increase productivity followed by the need for speedy response to customer problems were the most popular purposes for practicing knowledge management.

2. Respondents who believed that their purpose of having a Knowledge Management System (KMS) in their organisation was to be able to cater to the changing needs also believed they would be able to do so faster by learning through best practices of others in the industry. The form in which knowledge was "usable" was when it was in the form of lessons learnt from projects, discussion databases, help desk repositories. Also presentations, marketing materials used by the organisation were useful.

3. Respondents who believed that the benefit of having a KMS in their organisation was to avoid duplication of work, reduce learning time and improve the speed of implementation also felt that they could do so by studying the information in project reports. Knowledge was shared and transferred in their organisation through written/oral and visual reports, also educational and training programmes were found to be effective. Mentoring was used by the organisation to transfer the knowledge. And organisations also felt knowledge repositories worked for them. However personnel rotation programmes ware not found effective for knowledge sharing and transfer by the respondents.

4. Respondents who believed that knowledge sharing should be made a requirement of the job also believed that the benefits of having a KMS in their organisations were faster product development times and increased innovation and collaboration, avoidance of duplication of work, reduced learning time and improved speed of implementation and better decision making and reduction of risk because of more informed decision making.

5. Nearly half of the respondents felt that employees in their organisation did not hoard knowledge, the remaining half said that knowledge was hoarded by the employees in their organisation. The most important reason to hoard knowledge was people believed that knowledge was power and that hoarding it guaranteed job security, the next common reason was people don't realise that their knowledge is valuable to the organisation. And people won't get credit for sharing knowledge and won't be able to own it any more, there existed organisational barriers that create situations where people refuse to share what they know. Some respondents did not know how to share knowledge. Very few respondents felt that hoarding was due to technology for knowledge sharing did not meet their needs

6. The presence of a Chief, Knowledge Officer in an organisation responsible for working towards making Knowledge Management successful speeds up decision making in their organisation, these organisations also feel they are also making more informed decisions and that their response to opportunities has improved.

7. Respondent organisations which discussed and analysed successes and failures of a project with a view to understand why a project succeeded or failed were also tolerant to their employees making mistakes and looked at this as part of the learning process.

8. Respondents who practiced knowledge management in their organisation believe that it speeds up their decision making and their responses to opportunities have improved.

9. Respondent organisations who attempted   perceiving contribution of KM in tangible terms think they are successful in practicing knowledge management, this reinforcing their need to always quantify everything.

10. Respondent organisations who think they successfully practice knowledge management was due to " Senior management's support which is critical to initiate the project, provide resources, to help identify important knowledge on which the success of the organisation relies and to market the project".

11. Respondent organisations who thought they are not successful in practicing knowledge management thought so due to "Too strong an emphasis on providing tools that assist in the transfer of explicit knowledge but ignores importance of tacit knowledge".

12. Respondent organisations who think they are successful in practicing knowledge management also had "what they are trying to accomplish?" as the issue most important for their organisation. i.e. they were focused and had clarity as to what they were trying to achieve.

13. While comparing state of Knowledge Management Systems in IT Vs Non IT organisations although the IT industry seemed to be at an advantage in terms of the infrastructure available machines, inherently more techno savvy and trained manpower, the technologies in place, intranet, access to internet, documents already available in digitised format, the state of IT organisation was no different from other industries.

14. A common facet observed in all the case studies was the use of knowledge repositories and availability of a helpdesk and an expert locating facility for the personnel in the organisation. The organisations assigned inducted personnel to a mentor to also learn the finer nuances of the job thus demonstrating that mentoring for tacit knowledge sharing was implemented in organisations. Organisations are taking special efforts to make their employees realise the importance of managing knowledge, ways of doing so and the advantages of knowledge sharing reaped the benefit of doing so, there was less knowledge hoarding in these organisations. All this helped in changing their attitude to their job and increased their confidence in the management especially as they trusted the management more. Top management was actively involved in it and monitored the knowledge management initiative of the organisation. The responsibility of this initiative was assigned to some senior person in case the organisation did not feel the need for a separate CKO. Also technology was in place in terms of Intranet in all these organisations.

Recommendations and Suggestions:

1. In spite of being knowledge intensive in nature, having made significant   investment in information technology, having a significant manpower turnover, organisations have not realised the importance of capturing knowledge gained over time, residing in the minds of their employees and using it to their advantage. Organisations have invested in training their manpower, have absorbed the losses made due to their mistakes, yet they do not give due importance to the fact that they lose the knowledge, the experience when these trained people leave them. It is important that the organisation capture their knowledge, their experiences, the lessons learned from their mistakes/failures and does not repeat them.

2. A Comparison was made of State of Knowledge Management Systems in IT Vs all other industries under review. The IT industry seemed to have an advantage in implementing Knowledge Management Systems in terms of the infrastructure available machines, trained manpower inherently more techno savvy manpower, the technologies in place- intranet, documents already available in digitised format but its state was no different from other industries. It suffered more as it has more manpower turnover, more rate of obsolescence of technologies/information, all this leading to more hoarding of knowledge, more people who felt insecure about sharing their knowledge. People who lacked social skills and were more comfortable working with machines than communicating socially. As quoted by Thomas Davenport" Successful knowledge transfer involves neither computers nor documents but interactions between people.

3. All organisations however large or small should capture and reuse the knowledge they have gained over the years. It is definitely a waste of resource in terms of time, money to relearn/rediscover something the organisation has learnt already. Like a wise person does, the organisation too should use all the knowledge it has gained over time as the basis to convert the situation it finds itself in to its advantage.

4. Most organisations did not have a Chief Knowledge Officer. It was seen that the presence of a Chief Knowledge Officer significantly contributed to implementing Knowledge Management System in the organisation. He is the one who would be able to convince people of the importance of knowledge, of managing knowledge , of knowledge sharing. He would be the facilitator connecting the knowledge seeker with one who possessed that knowledge in the organisation. He is the crux of knowledge sharing in transforming the tacit knowledge into explicit knowledge for others to learn from and use anytime, anywhere.

5. Knowledge management requires a major transformation in organisational culture to create a desire to share, methods to ensure that knowledge bases are kept current and relevant and a commitment at all levels of the firm for it to succeed. Conscious steps need to be taken by the organisation to make the employees appreciate the importance of knowledge for the organisation, to invoke trust in the employees that they would be given due credit for the knowledge they have shared, and due care would be taken to ensure that their knowledge would not be misused, to have a rewards and recognition system in place to motivate employees to share and have a conducive Knowledge environment in the organisation.

6. Organisations were aware and wanted to use the resources money and time to its advantage by learning from past experiences what they had learnt during the process of solving a problem. Also there is a realisation that the knowledge they had

needed to be disseminated organisation wide to the people who could use it and in a readily usable format (most times knowledge was available but not in a usable format). But the organisation failed to link it with its improved ability to react faster to new business proposals, link it to faster product development times, more possible innovations in their products(by knowledge sharing within the organisations) and collaborations with other organisations(Knowledge exchange with other organisations) which would give them access to the "core expertise available with others" for ready use.

7. The researcher, based on the findings of the study feels that organisations need to develop their own core competencies and gear up in a way that, they are able to "use" the core competencies of organisations they can collaborate with, to their advantage. They need to have clarity as to know what and how much of knowledge they needed to hold on to (which was not shareable) and what was required to be shared by them with other collaborating organisations to get the most out of the collaboration venture.

Organisations need to create their own knowledge environments reflecting/suited for their own cultures and needs, there is no single standard solution that will work for everybody. The approach to creating this knowledge environment differs reflecting the unique character of each organisation.

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