ROLE OF KNOWLEDGE MANAGEMENT IN DIGITAL ERA

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ABSTRACT

The paper reviews knowledge management in digital business world. Knowledge management has been recognized by various industry sector as the key driver for business growth and a central mechanism for effective collaboration, sharing of knowledge in precise time and a pertinent productive parameter. The first section of the paper provides brief about the knowledge management and how internet and intranet have influenced the working model of business and how it has aided necessary knowledge sharing within an organization. The next section provides highlights about the business and factors that impacted information sharing and productivity in absence of digital influence to knowledge management function followed by how digitization can bring growth. The final section describes the influence of digitization on knowledge management function and studies done on energy and manufacturing sector. It describes how digitization has aided knowledge management and its impact on their business milieu.

Keywords: Knowledge Management, Digitization, Collaboration, Predictive analysis, Internet, Extranet, SMAC, IoT

A: INTRODUCTION TO KNOWLEDGE MANAGEMENT

Knowledge Management (KM) is an integrated function which enables the organizations to create, capture, store, share, and effectively use them for achieving their goals. Organizations use different tools to enable seamless flow of knowledge among their employees which help in creating a repository abundant in experience, processes and various business trends. This repository acts as a reference to concerned teams enabling them to adapt to dynamic business situations and plan strategies for future growth.

Knowledge Management has an important role to play at micro and macro level in all organizations. At micro level KM framework is designed to focus on retaining the knowledge gained through experience and exposure of employees and make business deliverables process dependent than person dependent. At macro level Knowledge Management enables a collaborative and common shareable platforms for seamless flow of information and knowledge.

Knowledge Management is an interdependent function in any organization and as the corporate bodies grow in their business, the internal collaboration between functions is imperative and
knowledge management has a vital role to play here. Thus need to be connected through internet/intranet and digitization of application for information flow, technology and knowledge management play a coupling role here.

Where does the Knowledge Reside in an Organization?

Knowledge is very important for every organization and leveraging this abundance of knowledge residing with every employee is important. Knowledge in the form of knowledge assets reside in many places in an organization. Depending upon the kind of organization, they are stored in various ways – databases, physical documents, predefined repositories, wikipages and more importantly, stored tacitly (experience and information stored in brain). Also in the current business world which is dynamic and where scenarios keep changing, organizations are emphasizing the use of SMAC and IoT platforms for information sharing, making it available for use to all employees operating in different time zones.

B: IMPACT OF INTERNET/INTRANET/EXTRANET ON KNOWLEDGE MANAGEMENT

Physical documentation was a crucial part of accumulating knowledge gained through experience in many sectors. But leveraging on these knowledge repositories was a stupendous task with panning geographical locations as organizations needed a quicker and accurate knowledge sharing platforms than paper copies. One of the major challenges that every enterprise faces in current day’s fierce corporate battle is, in time availability of necessary knowledge which drives critical business processes and decisions. In recent surveys done, the majority of the respondents confirmed that availability of on-demand collaborative tools has helped employees work better, quicker and cheaper and also accelerated decision making process. The Internet, Intranet and Extranet have added to the pace of knowledge availability. It is ensuring the right information and knowledge is shared with right people at required time.

Intranet builds a strong collaborative platform within organization enabling the teams to share the knowledge. It allows the organizations in integration of multimedia communication sometimes also acting as a platform for groupware applications and publishing. It is shown that usage of intranet has enhanced collaboration, productivity and socialization within organization and in a way influence overall organizational learning culture acting as a repository for embedded knowledge. Over a period of time it is seen that Intranet has emerged as knowledge sharing and collaborative platform of information within the organization.

![Organizational Knowledge Management Diagram](Fig1.jpg)
Extranet; is an extended platform of intranet has further helped knowledge management by allowing various stakeholders both internal and external being able to collaborate and transfer knowledge. While saying so, security of the organizational IP has to be considered and adequate measures are to be taken to ensure the same is secured with strong authentication.

In large sized organizations Intranet plays crucial role in forming collaborative platforms for knowledge sharing with experts across the globe ready to help another colleague of his/her. The internet of intranet is significant when corporates have extend their boundaries and customer focus has become immediate priority.

Organization use internet and intranet extensively for sharing information and help reduce the barriers of communication. The flexibility that is deployed with use of technology platforms also make the processes function with effectiveness, reducing time spent on operational issues and improve focus on building strategic or competitive advantage for the organization. Some of the organization have made effort in building e-learning systems to reduce the barriers to learning like: Time difference, Physical presence, Calendar availability of the trainer and the trainee etchant single portal for all learning ensures better tracking of employees ‘performance with regards to training and eventual expertise, possible knowledge gaps through feedbacks. Making digital videos available for hand held devices has helped organization see improvement in productivity. Confluence of learning and other critical functions of the organization have become critical to the organization operational and growth strategy.

Organizations now seek for a tightly integrated platforms and critical applications within the organization to enhance information flow, collaboration, and growth apart from improving skills. At this stage digitization and use of mobile platforms, smart software and sensors are making systems more capable and allowing employees to concentrate on customer immediacy analyze market data and build business landscape for the enterprise.

As we proceed to analyze knowledge management in the context of digitization it is essential to know business before digitization to understand the factors that got affected in its absence and later part discusses KM in digital era in specific to industry sector

C: PRE-DIGITIZATION ERA- ITS IMPACT ON BUSINESS AND INFORMATIONFRAMEWORK

When technology was not truly a participant as an enabler, businesses were shackled in day to day operations, budgetary issues and slower response time to market, compelling them to rethink and reinvent their business model. A closer look at the era, just before digitization I found that organizations may have silo projects, functions and operative model. Even collecting market data for analyzing market trends and specifics of customer behaviors was a mundane task. It is revealed through some of the survey reports that such organizations would spend 80% to 90% of their budgetary cost into operations. Upon further analysis it is found that one of the areas that got highly impacted was the response time to the market requirements and studying customer behavior and trends in being devoid of digitization. Internally digitization would help in providing right feeds thus resolving issues of timeliness and cross functional worries, especially when a sales person needs to access information for taking quick decisions on the ground. Even though IT systems exeunt within the organization, the legacy systems prevent them to respond to business dynamics, thus making them more vulnerable to business threats. The functions like knowledge management had difficulty in bringing effectiveness in the system due to dis-integrated systems.
A closer look at some of the key factors that directly get impacted due to absence of digitization in the current milieu of business and its impact on information structure of organization.

**Efficiency:** Organization needs minute by minute collaboration in their day to day operations. Interdepartmental issues take precedence and effective collaboration is the key factor that drives businesses effectiveness. In absence of digitization organizations would suffer from information lag due to high manual interventions.

**Legacy Systems:** Though organizations need to have a very clear digital strategy to overcome their legacy applications or systems, it may be impeding factor in the success of the organization. In one of my interactions with a senior management of an automotive division, it was understood that legacy systems were causing operational inefficiency. With the current trend in market, business houses may feel the need of building a digital strategy around their value chain for competitive advantage.

**Confluence in business function:** While referring to some of the research papers published by Harvard business school, I sensed that being devoid of digitization may lead to difficulties when organization needs to consolidate their data, employee skills, assets and key processes. This may hint towards convergence or confluence of key business functions without which cost efficiency and customer experience may undergo a hard rock experience.

**Coordination:** Customer facing coordination has become imperative in current business arena. However if the organization is still on legacy system or applications it may impact the internal coordination which is vital for the information flow, decisiveness and operations. Coordination through effective tool and platforms build mechanism to reduce sudden disruptions and puts staff hands on to many things and improve their customer experience besides working together in multiple geographies and timelines.

In entirety, digitization seems to be the need of the hour for a successful organization.

**D: IMPACT OF DIGITIZATION ON ORGANIZATION GROWTH AND INFORMATION FRAMEWORK**

SMAC (Social, Mobility, Analytics and cloud) and Internet of things are digital technology of today. Enterprise today is looking for a comprehensive approach to connect their people, process and tools. Organization is using some of these tools to digitize the systems from information box to a meaningful convergence, where seamless interaction with all stakeholders is effectively made possible and vital for organization success. SMAC technology actually provides a competitive advantage because it allows the ecosystem to get closer to customers. IoT or internet of things is yet
another solution for enterprise, connecting people, process and systems through sensors or smart software that exchange data. Though it poses a challenge to the policy makers in devising information and communication technology policy, however a careful analysis of internal and external business environment can help in framing digital a digital policy. Technology has become so pervasive in today’s business functions and exponential increase in mobile devices and customers becoming more interactive, their thrust on immediacy, seems to have provided a reverse gear to organizations to rethink over their growth with smartly developed information and communication channel, covering their internal and external stakeholders. As I present my writing about the impact of digitization in growth of the organization, my interaction with some of the subject matter experts in pharmaceutical company revealed a lot more about information and communication technology frameworks. As pharma companies are highly dependent on information, the impact of digitization is distinguishable. My study was based on four key parameters that impacted the organization services and effective convergence of business functions. Digitization first calls for a well-designed information and communication technology policy. Though a very challenging task, given that business environment changes and in some cases may undergo a paradigm shift, forcing the organization to think or reinvent their business model. While a closer look at the four parameters under study, revelations are very distinctive

Information Channel: Iniquitousness of digital applications and systems plays a vital role in the extent to which enterprise and consumers have access to digital information. In the absence of digitization, the information flow between departments and coordination was scattered and needed manual interventions including too much of dependency on e-mails. An effective digitization however brought the much needed change in making the business operations seamless and staff spending lesser time over coordination for want of data. Post digitization service to customer improves as addressing immediacy of customers can be understood better.

Service to stakeholders: In the business of drugs, service to stakeholders is an imperative factor in the success of the organization as it involves internal and external stakeholders impacting the business or the value chain of the organization. It was observed that digitization improved the synchronization between inventory and logistics and MIS became more effective in monitoring and tightening the loose ends in the entire process.

Collaboration: In a digitized world organization cannot think of sustaining their business dynamics unless effective collaboration exists within the system. Effective platforms or tools should exist and be digitally capable of enabling flow of information between functions. Connecting with experts’ pool, addressing of issues became easier when the organization used single platform for coordinating and solving interdepartmental issues.

Skill and Usability: The ease of use of digital applications or systems within the organization helps in boosting the entire ecosystem and equally enables the users to adopt digital life, enhancing their learning and improved social network.

E: ENABLING KNOWLEDGE MANAGEMENT THROUGH DIGITIZATION

Knowledge Management is strategic to organization success and enterprise look for platforms and their digitization through use of SMAC or IoT technologies to give global access to knowledge pool. With the growing need of managing the knowledge assets, various industry sectors have paid emphasis on this area for over a decade now.
Industry sectors have recognized the relevance of central information system for sharing knowledge and creating platforms for collaboration. Pharma, power, automotive and agriculture etc., have acknowledged knowledge management as one of the key driving factor for their productivity growth. Most of the organization has implemented central knowledge management systems for access of knowledge documents, storing, organizing and editing. However the digital transformation that is overriding every business, the need to be on hand with every information has become important. Having global footprint, expanding in various regions of the world and addressing customer needs swiftly has actually demanded digitization to take precedence and affect various business function and become more agile in their way of handling business.

Enabling knowledge management function through digitization has gained priority now as organization focus on saving time, cost and accessibility from anywhere. With increasing emphasis on growth, the speed and accuracy of sharing information is important and digitizing knowledge management helps in converging the business functions to cater to business productivity in the long run.

Digitization enables knowledge management function in myriad of ways. The following factors have been analyzed in this context.

*Global Access:* Besides time being a critical factor, as the organization broadens its business base accessibility to any form of information or knowledge reference is critical. Digital libraries have enabled manipulation in creating and editing of knowledge assets, working on knowledge assets easy and staff working in different time zones have lowered dependency on people, increasing the effectiveness in their deliverables.

*Saves Time and Cost:* Digitization does require a strong information and communication technology policy. Organizations need to invest in digital technology which support in achieving their objectives. Organization may have to invest, however in the long run, its saves time and cost. As accessibility to tools and applications becomes easy when juggling between operational task and delayed coordination.

*Project Management:* It has been observed that projects create very effective learning documents and must be shared in the central knowledge repository of the organization. Once this knowledge becomes
shareable in the digital platform, it becomes a reference for others and thus reducing the cycle time and improved productivity.

**F: HOW IS INDUSTRY DIGITIZING KNOWLEDGE MANAGEMENT**

(Study done for Energy and Manufacturing sector)

1.0 **Energy Sector**

In one of my study of digitization in knowledge management function, energy sector drew some of the interesting method of implementing knowledge management and digitizing the function.

Some of the organizations in energy sector in India have framed an interesting knowledge transformation model and support of technology. Socialization, Internalization, Externalization and Combination are the four parameters used to improve the knowledge management culture as well as digitization of the process to culminate a learning culture as well as making the share ability of knowledge, information and interdepartmental collaboration more effective. In such scenario the governance due to adoption of centralized model and mechanism of tracking and access becomes highly effective and security threat reduces. In energy sector tacit and explicit knowledge and their interplay is highly significant as conversion of tacit to explicit and vice versa leads to actual knowledge transformation. Socialization is connecting between people, either face to face or meeting through a platform which everybody can access and connect with teams. This socialization within the organization aids in tacit to tacit transformation.

Externalization played an important role as team dialogues and conversations within teams, even questions and answers made relevance in making the environment very transparent. And asynchronous alliances through groups (areas affecting outside work) like newspapers, internal magazines and representing forums- both internal and external, led to solid knowledge culture and effective team building within the organization. Communities like blogs, expert net also facilitated in transforming tacit to explicit knowledge.

Though significance of internalization cannot be denied in any sector, energy sector like Information technology which thrives on projects, learning is key to building skilled resources and improves productivity. Mobile enabled learning videos and access to mandatory certifications and a continuous practice of this has a remarkable change in the organization. The most important change that impacted was accessibility from anywhere and troubleshooting majority of problems being on field. Internalization plays significant role in explicit to tacit transformation.

<table>
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<th>Socialization</th>
<th>Externalization</th>
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<td>• Informal meetings</td>
<td>• Team dialogues</td>
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<th>Internalization</th>
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<td>• Learning videos (Mobile enabled)</td>
<td>• Digital Library (Access through mobile devices)</td>
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<td>• 24/7 access to internal certifications</td>
<td>• Classified search</td>
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In the combination environment it is amalgamation of explicit and explicit as associates who create and store the knowledge, they need to be used by other staffs and reuse. Some of the organizations have developed digital library and stored artifacts by functional classification which eases the search and thus the access to any form of knowledge asset is easy. Access over internet and intranet makes the staff access information in their timeline. In global arena where footprints of organizations extend beyond border, access to knowledge is vital for solving business specific issues.

Technology though is not the solution, how technology can enable knowledge management to bring solution to all business issues is vital. It is very important for the organization to decide the right mix of technology push model and strategy pull model to have a right framework of knowledge management and support round the clock communication, collaboration, retrieval of knowledge base and troubleshooting with accuracy and speed.

2.0 Manufacturing Sector

There is not one sector that digitization has not touched. Digitization and digital technologies have been impacting corporate performance across various industries. Organizations are now realizing the productive and disruptive impact of digitization on various aspects of their businesses. We have been witness to the huge impact digitization has had on the operations of manufacturing industries. Digital tools and technologies enable manufacturing industries to have better profits by reduced costs, increase productivity, achieve faster time-to-market and increase customer focus. While digital disruption is happening at a lightning speed it is important to ensure that the repositories of knowledge gained in this rapid progress are maintained and made available to the employee base working on similar projects across the globe. This facilitates usage of techniques such as crowd sourcing, co-creation and open-innovation. These in turn accelerates product development through innovative solutions thereby ensures that the organizations are able to face the rapidly changing market conditions.

a. Digital Factory Models

They ensure that the manufacturing processes and required resources are mapped rightly. Once knowledge is gathered digitally, collaboration plays a vital role in planning manufacturing and related tools. This information is visible and accessible to the entire value chain ensuring ideal utilization of operative and logistics flow before the product completes the manufacturing cycle. Manufacturers thus are more agile as the digital factory model allows the manufacturers to cut the engineering and manufacturing costs.
b. Digital Analytics

The concept of virtual factory has been a revolution in the manufacturing sector as it reduces the working capital through the use of centralized data. It allows planning and triggering predictive maintenance there by reducing machine down-time. It also helps in integration of various functions of manufacturing there by optimizing the value chain. This knowledge stored appropriately in digital format and accessed by everyone helps in predictive analysis of market trends on the costs and usage of the materials for manufacturing.

c. Digital Sales

The enhanced e-platforms for sales have increased the sales opportunities for all the manufacturers. The existing warehouses can be used more efficiently with the help of advanced warehouse management systems. It also allows the manufacturers to effectively adjust their capabilities to market needs.

d. Digital Communication Channels

Further, digital technologies can be used for testing prior to building real prototypes through virtual prototyping and testing through engineering simulation software. This reduces risk and costs associated with building of real prototype. The robust knowledge management system captures all these experiences and enables a quick collaboration of the same across various allowing the manufacturers to build tailor made solutions for customers, document the technical specifications and user guides. KMS practice further enhances the value of digitization by providing a collaborative platform for better delivery at reduced costs and increased profits.

The ever changing technologies and advent of digitization has impacted Knowledge Management.
CONCLUSION

Digital Transformation has impacted the business lines in every segment of industry and continues to do so. Its influence on knowledge management has the potential to impact the value chain of the organization. Though Information Technology sector is very matured in knowledge management frameworks, other industries have acknowledged the change and transformation in this space.

REFERENCES

- https://hbr.org/2013/07/is-your-organization-ready-for
- https://mitpress.mit.edu/sites/default/files/titles/content/9780262015080_sch_0001.pdf
- www.km.brint.com/
- http://www.kmworld.com/
- http://eprints.aston.ac.uk/2843/
- http://www.slideshare.net/djadja/digitalization-of-learning-and-knowledge-management-on-corporate
KNOWLEDGE MANAGEMENT IN THE EDUCATION SECTOR –
CHALLENGES AND RECOMMENDATIONS

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INTRODUCTION

A macro level view of knowledge management in the Education sector will probably tell us that a common KM framework that is applicable to most industrial and non-industrial sectors might work here as well.

The question is -- will this common framework fit the requirement of the academic world? How do we tell the difference?

A detailed survey has been conducted in various educational institutions like, Delhi University, Hyderabad central university and various departments in these institutions using instruments such as questionnaire & discussions has been conducted and the following understanding has been arrived at:

At a broad level, we do know that some of the goals of institutionalizing a KM practices include:

- Knowledge capture, storage, and sharing
- Improve access to knowledge
- Improve the knowledge eco-system/environment
- Manage captured knowledge as the organizations’ assets
- Etc…

While this is so, how and what methods of capture would improve student productivity, enhance their learning experience, motivate them to become more creativity and allow them to share ideas and views on subjects of their learning. For teachers it would be more on improving connectivity with the students, ensuring all students have access to relevant learning material, engage in discussions that aid creativity and innovation etc. For administrators, it would be on how to monitor the academic system, improve the learning curricula, access the right learning resources, improve teaching methods, performance of its teachers and staff, effectiveness of teaching methods, availability of required teaching aids and material etc.

Since we are aware that one size does not fill all, we need to understand the typical knowledge concerns in this sector; what are the common knowledge types; what form of taxonomy would suit this sector best; and what are the desired outcomes that would be most beneficial to the student community, teachers, administrators and other stakeholders in the educational environ.

TYPICAL KNOWLEDGE CHALLENGES IN THE EDUCATION SECTOR

It is important to understand the characteristics, management and style of functioning of the academic institutions. It is also imperative to understand that each level of academia has specific set of requirements and has its own set of challenges that range from academic, management, and administrative. These challenges present themselves in different ways based on whether they are
privately funded institutions, centrally funded or state funded. In many a case it could be the state funded institutions that suffer the most.

Knowledge Capture

- An understanding of what form of knowledge needs to be tapped in order to ensure improved learning for each student is currently lacking.
- An everyday behavior of most of the teaching staff is that they are experts in their own right and will use teaching methodologies which are inherent in them. In such cases it becomes difficult to get teachers to share knowledge other than what is taught as lessons within classroom confines. So while the lessons are well delivered the overall teaching experience that has much to offer in terms of teacher learning and research is never captured. Also teachers fall back on the one resource they believe will bail them out of a difficult class – and that is the library.
- For teachers there is also a greater need to ensure a track of the assignments and home work that has been given to students and track it in time. Since most of the effort is still manual, it poses a huge challenge
- For students who are most often than not burdened with everyday learning through a standard curriculum and who face pressures in the form of imbibing only what is taught becomes a hurdle in the students’ knowledge acquiring and learning process.
- Students learning curve is also lessened due to the lack of the right technology platform to collaborate, publish and interact with peers, experts and other relevant audiences
- Students in most academic institutions need to wait before face-to-face meetings with teachers to get their queries answered and doubts clarified. This also suppresses the desire for exploration, inquiry and interactive based learning.

Knowledge Storage

- Many academic institutions have invested in technology labs to enhance student learning in specific subjects as computer science. However there are no cross learning platforms as yet available to these institutions. So knowledge storage really does not exist in these institutions.
- Mechanisms to store declarative (facts, concepts), procedural (how to do…) and self-regulatory (knowledge of learners, their requirements, self-assessments, teaching tools and methods) knowledge is not well defined. Most methods that are employed are still manual in nature.
- Besides, what knowledge needs to be stored for common and specific role based use is not defined. This leads to learning in silos.

Knowledge Reuse

- Holistic approach to Knowledge asset classification within academic institutions is missing in several institutions
- An understanding of how reuse resources are chosen in terms of peer suggestions, pedagogical fit and relevance are still lacking in several academic institutions
- A comprehensive classification of what knowledge can be commonly used and what can be specific and role based is also not there, examples could be the reuse of
  - Question sets, lesson plans, quizzes, reading lists, syllabi, notes handouts, flash cards, learning games, attendance, performer analysis, student specific requirements, guides and know how on diagnosing and handling students with dyslexia and dysgraphia, activities and exercises, video, audio, podcasts etc
Investments in staff development activities that can often boost knowledge sharing and reuse within the staff is also lacking.

Improving learning methodologies by falling best practices and lessons learnt from similar institutions is also lacking.

Restricting knowledge reuse is also likely in cases where the larger part of the student community believes in ‘if the teacher has recommended it then trust and use it’. This gives rise to student is only imbibing what the teacher is sharing. It directly constricts the growth of a ‘student questions and learns to find relevant answers’ culture within the institution.

**Infra challenges**

- Knowledge management as we know requires effective use of technology and process to drive it. Both of which pose a challenge to the management of academic institutions as it comes with a cost.
- Investments in terms of educating teachers and staff on procured knowledge management systems using a ‘Train-the-trainer’ approach prove a challenge.
- While many academic institutions own computer labs, investments need to be made in terms of competent resources to manage the KM portal and monitor its usage.
- Since many teachers may be technology averse or completely lack knowledge of technology usage, it becomes difficult for the management to train its staff.
- Decision making on what information and knowledge needs to be shared with students and teachers is never easy.

![Figure 1 - Examples of KM challenges in Education](image)

**NEED FOR KNOWLEDGE MANAGEMENT**

There is a need to view educational institutions knowledge needs from a ‘DISCOVER’ perspective:

- **Demand** – academic institutions must be cognizant of the student, teacher and stakeholder need for reaching out to external resources to improve and increase learning. There is a demand of
student-centered teaching method that uses online learning resources to facilitate information sharing outside the constraints of time and place among a network of people. This is very useful for on campus education as well as distance education. There is also a demand for home, classroom and virtual libraries that are media and info rich. A demand for personalizing content to suit user needs is also showcased through several studies in the recent past. Student needs also include using social media to quickly interact with peers, reach out to teachers for queries and clarification of doubts at specific times in the learning process.

- **Identification** – of the required knowledge resources be it explicit or tacit knowledge must be done on priority to improve the learning experience
- **Storage** – of knowledge assets that are generated within the institution and borrowed from external sources must be done on priority. There is a direct need for understanding the ontologies of domain, contexts and users.
- **Collaboration** – to leverage ideas, expertise, resources, guides, teaching material, books, notes, lesson plans etc is much needed
- **Verifying** – knowledge gained through collaboration is relevant to the student and stakeholder community needs to be established
- **Reusing** – knowledge assets in common and specific contexts must be done through adequate training and mentoring mechanisms.

**Figure 2 - DISCOVER the need for KM in Education**

**SOLUTION APPROACHES**

As seen through the need for KM, there is a greater demand now for ‘Asynchronous learning’ through centralized knowledge portal running on open source technologies as this comes with minimal costs. So greater management buy-in, there must be a focus on ontology driven search and navigation, engagement with the KM system in terms of discovery, capture, storage, sharing, reuse and archival. Role based access and context based views to allow administrators, students, teachers and relevant stakeholders to participate actively in the KM Program, Adequate emphasis on tacit knowledge collaboration as most knowledge sharing would be tacit in nature especially peer interactions and student teacher interaction.
A possible architecture for this could be as follows:

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**Figure 3 - Proposed Architecture for KMS in Education Institutions**

**BENEFITS BY IMPLEMENTING THE SOLUTIONS**

- Access to learn-by-doing platforms
- Access to controlled web2.0 platforms to enhance small group interactions on subjects of learning, creativity and innovation platforms,
- Incentivization in some form to allow teachers and students to interact better and think out-of-the-box
- Access to student guides and learning aids to enhance students’ learning curve
- Access to teachers online to connect in real time.
- Search by peer reference and pedagogical fit
- Use content to suit learning needs.
- Track changes in curricula while falling back on old curriculum.
- Long term benefits for the management as learning and teaching become more systemized.
- Movement from conventional teaching and learning to KM oriented education systems.
- Shorter cycle times in reaching out to faculty and staff and improved student learning curve
- Position the academic institution as a ‘thought leader’ in several subject areas.
- Administrative decentralization leading to reduced cycle times that could help increase concentration on more pressing issues that the educational institute has to work upon.
- Connected to external sources to understand the latest happenings and trends in the educational field.
- Improved ability to track latest trends in education across all levels.
REFERENCES

- http://www.cs.nott.ac.uk/~pszdap/network/previous%20workshops%20etc/understanding%20concept%20of%20knowledge%20leakage/general.pdf
- http://crl.du.ac.in/ical09/papers/index_files/ical-22_210_446_1_RV.pdf
- https://books.google.co.in/books?id=ARhfAE2Jkp0C&pg=PA404&lpg=PA404&dq=knowledge+management+function+and+significance&source=bl&ots=rz5hg3oEE4&sig=LviBUHPOaRGTj0X4leVhqH2CDpo&hl=en&sa=X&ved=0CGEQ6AEwCWoVChMI3_O1_6TEwIVVwuOC2rfg7s#v=onepage&q=knowledge%20management%20function%20and%20significance&f=false
- http://www.alaska.edu/files/oit/PinkSCAN_knowledge.pdf
- http://www.academia.edu/9710216/KNOWLEDGE_MANAGEMENT_IN_EDUCATION_SECTOR
- http://eric.ed.gov/?id=ED477349
- https://books.google.co.in/books?hl=en&lr=&id=_5GI-8F1y-