



Developing KMS Framework for B-schools

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ABSTRACT

The Indian management education is undergoing a paradigm shift in its scope and essence. However any progress comes with its own challenges. The objective of this research is to develop a framework of knowledge management system for B-Schools which would develop an Institute into a learning organization.

KEYWORDS

Knowledge management, Learning organization, system thinking, stakeholders' analysis, IT infrastructure Management .

Introduction:

With the set of high quality infrastructure, qualified teachers, efficient placement and training officers, eminent guest/visiting lecturers, well equipped computer labs and libraries, B-Schools are still experiencing some gaps in their day to day working and lacking in acquiring good information and ultimately end up in poor decision making which causes low results against expectations.

In the past decade, a number of experiments have been carried out in relatively prosperous organizations with an objective to yield strategic advantages of Knowledge Management (KM). Researchers have worked on possibilities of effective implementation of KM in organisations (Davenport and Prusak 1998, Davenport et al. 1998). As a whole, KM initiatives are rather expensive and do not always yield the desired result. KM processes involve major investments in a wide spectrum of areas related to knowledge capture, storage, value addition, distribution and finally educating employees about the benefits of knowledge creation and sharing (Davenport 2000). KM process is an interesting synergic mix of human, communication and IT tools (Petrash 1996). IT plays an important role in efficiently storing, distributing and adding value to knowledge (Ruggles 1997). It is experienced that IT and Communication Technology have developed a rich state of sophistication and are capable of performing knowledge exercises efficiently (Van der Spek and Spijkervet 1997). At the same time, many of the researchers observed that it is rather the human component that failed to create satisfactory effort and support in developing efficient knowledge system in an organisation (Davenport 1997, Hickins 1999, Cross and Baird 2000, Asllani and Luthans 2003).

Davenport et al. (1998) conducted a study on 31 projects in 24 companies in 1998 to evaluate success factors in KM projects (Davenport et al. 1998). Eighteen projects were determined to be successful; five were considered failures, and eight were too new to be rated. The common factors identified among successful KM projects in this study were - senior management support, clearly communicated KMS purpose/goals, linkages to economic performance, multiple channels for knowledge transfer, motivational incentives for KM users, a knowledge friendly culture, a solid technical and organisational infrastructure and a standard, flexible knowledge structure. Also some abstract factor like ability to identify, capture and transfer critical tacit knowledge was considered to be the key to success of KM as mentioned in some later researches (Koskinen 2001). Technical issues such as knowledge representation, storage, search, retrieval, visualisation, and quality control were identified by Ginsburg and Kambil (1999) as ma-

ior success factors. Similar findings were arrived at in a number of successive researches. Leadership and top management commitment/support were found to be crucial for success of few KM projects (Holsapple and Joshi 2000). Resource influences such as having sufficient financial support, skill level of employees, and identified knowledge sources were also found to be important in some other studies (Holsapple and Joshi 2001). Malhotra and Galletta (2003) observed that using incentives always did not guarantee a successful KMS.

Out of the 12 components advocated by Jennex and Olman (2004), integrated technical infrastructure that creates networks and repositories of structural knowledge may be an important factor to be considered in case of successful implementation of knowledge process in the academic institutions (already suggested by Keong et al. 2001, Davenport et al. 1998 and Barna 2002). Motivation and commitment of users, including incentives and training may also be considered as another important factor. The fact was proposed earlier by Lorange (1996), arguing that such motivations driven by incentives and training, stimulates the faculty, discipline based or inter-disciplinary, towards individual and organisational learning. Impact of organisational culture that supports learning, sharing and use of knowledge (initially advocated by Alavi and Leidner (1999); Sage and Rouse (1999) and others) cannot be ignored for successful KM initiatives in such organisations. It may be argued that, a KM culture can only be created through positive attitude of the top management towards support for resource allocation, democratic leadership and adequate training facilities (already mentioned by Holsapple and Joshi 2000 and Barna 2002).

Management institutions in India are always challenged to stay relevant both in terms of education and research. Management institutions generate information about students, courses, faculty and staff that includes managerial systems, organizational personnel, lectures details, quality research and so on. This useful information which serves as a strategic input is very useful to any management institution for improving the quality of education process. Research shows that many information technology implementations in educational institutions fail not because of technology but because of insufficient attention is paid to issues related to institution's culture (Levine, 2001; Friedman and Hoffman, 2001). Often there are several useful experience and studies (let us define this as knowledge) we come across in evaluations, courses, students' counseling, and admissions. This knowledge will enhance data sharing, analyze diversified student relationship management, increase the success of student performances and programs etc. KMapplies systematic approaches to find, understand, and use

knowledge to create value (Probst, Raub and Romhardt, 2000; O'Leary, 1998; Mikulecký and Mikulecká, 1999).

A review of the literature on this subject matter identified a wide range of models on knowledge management maturity. Typically 5 out of 8 levels of knowledge management maturity have been defined as "no knowledge management maturity" as compared with those of ideal where knowledge management tend to be an organizational function. Conceptually management maturity models can be categorized as groups. This is done based on a capability maturity model (CMM) provided by software engineering institute/Carnegie Mellon (SEI) to insure whether they can be created. This CMM was earnestly introduced by SEI during 1990s and during this period of time some representations of this model were undertaken by SEI. CMM is a model that provides a roadmap to implement progressive changes on different organizational processes. It is a foundational model that is used to measure the level of organizations' maturity in particular those with intensive knowledge processes such as software producing organizations. KPMG defines the four key areas of KM as people, process, content and technology. In each area there are certain activities to be done. Firms can be assessed according to how they implement these activities. This model is often used for benchmarking purposes. On the basis of an assessment of the organization's activities, the firm is placed in a five-level model called the "Knowledge Journey." The model starts from knowledge chaotic level and progresses to knowledge aware, knowledge focused, knowledge managed, and knowledge centric level. Siemens' KMMM is a structured method for assessing an organization's overall position in KM. KMMM consists of an

analysis model, a development model and a defined assessment process. The analysis model helps the KMMM consultant to take account of all important aspects of KM and reveals which key areas and topics should be developed in the future. The development model provides information as to how the respective key areas and topics can be best developed to reach the next maturity level. The assessment process structures all relevant steps from assessment definition to result interpretation. This deliberately designed model allows both, qualitative and quantitative outputs on the current status of KM in an organization. The development model defines five maturity levels of KM: 1. initial, 2. repeated, 3. defined, 4. managed, and 5. optimizing. Lee and Kim have developed an integrated management framework for building the organizational capabilities of KM.

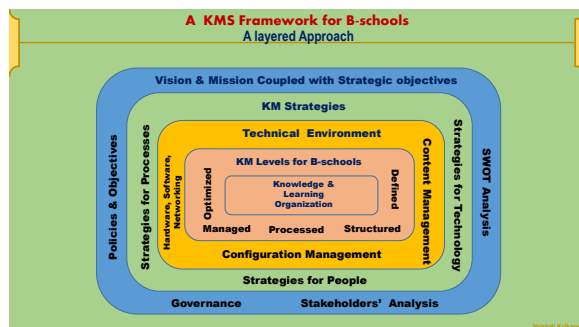
Firstly, the PDCA cycle of activities – plan, do, check, and act this cycle well known as the Deming's Cycle by Quality Management practitioners, has inspired the ISO 9004 (2000) Quality Standards in order to get a continuous process improvement of the Quality Management System. Secondly, the Single-Loop Learning and Double-Loop Learning defined in the Argyris & Schön's organizational learning theory. Furthermore, think about the relevant infrastructures, which are adapted sets of devices and means for action. Beyond a network that favors cooperative work, it is important to implement the conditions that will allow sharing and creating knowledge. An ad hoc infrastructure must be set up according to the specific situation of each company, and the context of the envisaged KM initiative. The SECI spiral of conversion Model proposed by Nonaka and Takeuchi and the Japanese concept of Ba inspire this infrastructure Nonaka, I., Toyama, R., Konno, N(2000).

Objective of the Research:

To evolve a KMS (Knowledge Management System) which would provide B-schools a guiding path towards improving individual as well as organizational performance and help the individual and organizations in achieving their vision and formulating their growth strategies.

A proposed KMS Framework for B-schools

Figure -1: KMS - A layered Approach



Implementing a complete knowledge management takes time and money, however, the results can be impressive and risks can be minimized by taking a phased approach that gives beneficial returns at each step.

A successful knowledge management system will consider more than just technology. An organization should consider following aspects while implementing Knowledge Management Practices:

People. This aspect of KMS increases the ability of individuals within the organization to influence others with their knowledge.

Processes. Process oriented approach involves how to establish best practices and governance for the efficient and accurate identification, management, and dissemination of knowledge.

Technology. It addresses how to choose, configure, and utilize tools and automation to enable knowledge management.

Structure. It directs how to transform organizational structures to facilitate and encourage cross-discipline awareness and expertise.

Culture. It embodies how to establish and cultivate a knowledge-sharing, knowledge-driven culture.

Deployment of KMS needs a structured approach, which will minimize the risk in overall execution and to ensure the desired results. To achieve this, a systematic approach is required as follows:

- Establish Knowledge Management Program Objectives
- Prepare for Change
- Define Processes and procedures for KMS usage
- Determine and Prioritize Technology Needs
- Assess Current State
- Build a Knowledge Management Implementation sketch
- Measure and Improve the Knowledge Management Program

Layer-1 (Reference Figure :1) Vision and Mission Mission Statement Purpose

A B-school's mission statement is essentially its statement of purpose. It serves as a guide for all of the Institute's decision-making.

Vision Statement Purpose

Vision statement should include a commitment to integrity, transparency, openness and other such values. "Mind tools," indicates that a vision statement takes your mission and adds an element of human values. It should inspire employees and given them a sense of purpose.

Now a days B-schools are operating in a global environment .In the era of fast moving and changing business patterns, it is very important to get ready for the changing demand of

business world. It is possible by adopting global curriculum, pedagogy, practical and hands on experience, global collaboration and industry institute interaction, live projects and case study development etc. To implement all the mentioned practices a proper system is required which will take care of capturing global information from the external sources which is important to design curriculum aspects, technological aspects, placement strategy etc.

- To cope with the global demand of businesses and to pave the gap between the demand and supply, information systems play a very vital role. Here the role of KMS comes into the picture.

- To gain the competitive advantage, the Vision and Mission of a B-school should be designed in such a way that it should include the global aspects not only terms of technology but also in terms of leadership, values and culture.

For the successful implementation of KMS the vision and mission of an Institute should be designed/refined in such a way that it will become to a successful global business school.

To become a top B-school, it is necessary that all the strategies should be aligned with the vision and mission of an Institute. KMS provides the facility of defining and aligning the processes and procedures with the strategies and ultimately with the vision and mission.

The vision and mission of a B-School should also be reviewed by its stakeholders for obtaining the feedback on a regular basis. All these aspects are of great important while KMS deployment.

Relationship between Vision and Mission and Institutional Strategy

Strategic planning is the process of developing the Institute's objectives, strategies and tactics to achieve the mission of the Institute. Long -term Objectives of a B-School may include starting new courses and programmes, ,infrastructure development, revenue or profit goals, stakeholder's satisfaction and improved brand awareness.

On the other hand, Short-term Objectives may include, technology up-gradation, applying and acquiring of accreditation, adopting of case study approach and innovative teaching learning methods in the curriculum, promoting research etc.

SWOT Analysis:

SWOT analysis is a next step to assess Institutional strength and weaknesses. SWOT Analysis of the Institute SWOT analysis is a strategic planning method used to evaluate the Strengths, Weaknesses, Opportunities, and Threats involved in a system. It involves specifying the objective of the business and identifying the **internal** and **external** factors that are favorable and unfavorable to achieve that objective.

Following are the proposed parameters for SWOT analysis before implementation of KMS

Strengths:

- Strategic Management Aligned with Mission
- Adequate Infrastructure and Proper Resources Management
- Academic & Administrative Excellence
- Strong Governance Structure
- Well defined Quality Policy
- Detailed Policies, Adequate Transparency and Disclosures
- Knowledge Management, Research and Innovation
- Engagement with the broader community
- Innovative Learning and Teaching
- Intellectual Contributions, Research and Development
- Excellent Pedagogy, Teaching Quality and Effectiveness

Weaknesses:

- Lack of funds

- Lack of Infrastructure
- Intake of students not satisfactory
- Staff and faculty competency

Opportunities

Strategic alliances for distance education

- Strategic partnership with global partnership for technology oriented projects
- Positive changes in Government policies related to the education sector.
- Fund raising opportunity

Threats

Technology changes that effects the future growth and productivity.

Experienced staff leaving for better conditions to other industries.

- Employee Turnover
- Competition
- Government policies

Strategies:

Strategies are long term implementation plans to achieve the goals and objectives. These statements define how you can succeed in achieving your mission and stay along in the completion. Strategies are likely to be defined following a SWOT analysis as both external and internal environment assessment is needed as an input to develop strategies.

Strategic options may include, the development of the Institution for the development for example strategic options like introducing new programmes, infrastructural development, going global are identified to achieve goals and objectives.

A strategy like, implementing ERP system in the Institute or planning for creating case study repository can be identified for the above mentioned objectives. One or many strategies could be defined for a combination of goals and objective.

Tactics: Tactics are short term implementation or action plan to deliver the long term strategy.

A grass root level action plans are defined to ensure daily activities are in line with achieving the relevant strategy(s). Once Vision, Mission, Objectives, Strategies and Tactics are defined, a basic framework about the goals and objectives is ready which can be further align with the KMS strategies.

Now these statements can be used to assess the internal capabilities and limitations of an organization, these statements are examined for their completeness, clarity and awareness within organizations, if these qualities are missing then a change is needed within organizations to solve the identified organizational level internal weakness.

These statements should provide a clear focus and direction and should serve as an internal strength for the organization.

Policies and Procedures

A set of policies are principles, rules, and guidelines formulated or adopted by an Institute to reach its long-term goals and typically published in a booklet or other form that is widely accessible.

Policies and procedures are designed to influence and determine all major decisions and actions, and all activities take place within the boundaries set by them. Procedures are the specific methods employed to express policies in action in day-to-day operations of the organization. Together, policies and procedures ensure that a point of view held by the governing body of an organization is translated into steps that result in an outcome compatible with that view.

For error free and smooth functioning of the Institute, departmental wise procedures should be designed. For example, academic procedure, Placement Procedure, Library procedure, Administrative procedure, Maintenance procedure etc. These procedures should be backed up with the standard forms and formats to be used. This will enhance the scope of standardization at the Institutional level.

Every Procedure will have the departmental objectives aligned with the vision and mission of the Institute. At the time of review or audit the outcome could be measured against the defined objectives and deviation could be identified.

In KMS deployment process, the policy regarding IT usage plays a very important role as the backbone of every KMS is IT infrastructure.

Similarly, the policies regarding Human Resource, IT practices and its usage, library usage, Placement assistance should be defined and revised on a regular basis. Human Resource policies are of utmost important in KMS implementation because reward and incentives, training and mentoring clauses could be added as per the KMS expectations in the policy.

Governance

Governance is a framework of rules and practices by which a board of directors ensures accountability, fairness, and transparency in a Institute’s relationship with its all stakeholders.

Institute governance is most often viewed as both the structure and the relationships which determine Institute direction and performance. The board of directors is typically central to corporate governance. The Institute governance framework also depends on the legal, regulatory, institutional and ethical environment of the community.

Stakeholders’ Analysis

Stakeholders are all those who need to be considered in achieving project goals and whose participation and support are crucial to its success. So identification of all stakeholders is an important activity of the Institute to ensure the KMS success.

At the time of developing the framework for Institute governance, the feedback from the stakeholders like students, faculty members, staff members, parents, employers, society should be taken into consideration

Stakeholder Management processes

- Identifying all stakeholders
- Documenting stakeholders needs
- Assessing & analyzing stakeholders interest/influence
- Managing stakeholders expectations
- Taking actions
- Reviewing status & repeat

The aim of stakeholder analysis process is to develop a strategic view of the human and institutional landscape, and the relationships between the different stakeholders and the issues they care about most.

Layer-2 (Reference Figure :1) KM Strategies

KM strategies can be divided into 3 parts:

- Strategies for Technology
- Strategies for Processes
- Strategies for people

KM strategies should be articulated very specifically considering all the above mentioned areas because in KMS implementation all the three aspects are equally important.

Based on the survey done for 50 colleges in Part –A of this research, it is observed that almost all the B-schools have a good IT Infrastructure. The only gap is that this infrastructure is not properly used from the knowledge management perspective.

Strategies for Technology covers:

- Upgradation of IT infrastructure
- Analysis of Technical Feasibility analysis
- Make or Buy decisions
- Strategies related to tailor made KMS options available in the market
- Cost related strategies

Strategies related to data capturing, storage, communication, content management tools and techniques.
Use of Statistical tools for the analysis purpose

Business Continuity Planning

B-Schools should first undertake the gap analysis in the technology area. B-Schools should study the existing IT infrastructure available in the Institute and the required IT infrastructure for the KMS deployment. The gap analysis will help KMS team in taking the decisions based on the departmental requirements.

Strategies for Process:

Based on the responses taken from 50 B-schools about the procedures, documents and processes standardization, very few B-schools have standardized the procedures and are using standard documentation system. Moreover, these documentation are decentralized in maximum cases.

B-Schools should first identify the areas where standardization of procedures is possible. B- Schools may have following approaches for area identification:

Function wise

Process wise

Function wise procedures are based on the departmental activities. For Example: Placement procedure, Academic procedure (Programme wise), Library procedure etc. (Reference: Figure- 2)

Figure: 2 - Function Oriented Approach of KMS for B-Schools

| Function Oriented Approach of KMS | | | | | | | |
|-----------------------------------|---------------|-----------|---------------------|---------|----|-------|------------------------|
| Level/Function | Top Level Mgt | Academics | Placements | Library | IT | Admin | Research & Development |
| Optimized | | | | | | | |
| Managed | | | | | | | |
| Processed | | | Strategies and KPAs | | | | |
| Structured | | | | | | | |
| Defined | | | | | | | |

Process wise procedure may include students personality development process, Management development process, Industry institute interaction process etc. (Reference: Figure- 3)

Process oriented strategies may include whether to go for any certification or not. Those who have already acquired some quality standards certification, they could think of redefining the scope for KMS implementation.

Figure: 3 Process Oriented Approach of KMS for B-Schools

| Process Oriented Approach of KMS | | | | | | |
|----------------------------------|----------------------------------|-----------|---------------------|----------|-------------------|-----------------|
| Level/Function | Industry – Institute Interaction | Admission | Teaching Learning | Research | Curriculum design | Event mangement |
| Optimized | | | | | | |
| Managed | | | | | | |
| Processed | | | Strategies and KPAs | | | |
| Structured | | | | | | |
| Defined | | | | | | |

Strategies for People:

After conducting the survey it was analyzed that B-Schools don't have specific strategies for reward and incentives for sharing the knowledge within Institutes, there are no policies for training and mentoring about how to create, share and use knowledge for decision making. Most of the B-schools are not encouraging the learning culture, system thinking and use of technology as a major part of learning activity.

People are the most vital source for successful execution of KMS. Strategic related to people covers:

1. Training schedules and methods
2. Institute culture development
3. Competency development of the employees.
4. Rewards and incentives related strategies
5. Mentoring structure and execution

Proper people oriented strategies will definitely bring the culture of Learning organization in the Institute.

Layer-3 (Reference Figure :1) Technical Environment

Technical Environment includes:

- Configuration management
- Hardware , Software and Networking
- Intranets, Electronic Document Management System (EDMS),
- Content Management System
- Information Retrieval (IR) technique,
- Electronic Publishing System,
- Groupware and Workflow System,
- Data warehousing & Data Mining Tools
- Database Management System

Technical Environment basically consists of Infrastructure Management.

For an organization's information technology, infrastructure management (IM) is the management of essential operation components, such as policies, processes, equipment, data, human resources, and external contacts, for overall effectiveness.

Among other purposes, infrastructure management seeks to:

Reduce duplication of effort

In B-schools lots of data is overlapping and redundant. For example: Student data. Student data is stored at the administrative department, at academics, in the library, at the placement, in the hostel files. To avoid the duplicate records and to eliminate inconsistency, a proper centralized DBMS should be installed at the Institute level.

Ensure adherence to standards

In absence of decentralized and non-standardization procedures processes are overlapping and time consuming. To reduce the cycle time adherence to the standards is necessary.

Enhance the flow of information throughout an information system

If B-Schools are considered from a system perspective, the output of one subsystem is an input for another sub system. For Example, the output of academics may be considered for grading system for the placement department, the output of library department could be considered as an input for admin function for clearing student's fee dues. Therefore, a flow of information throughout the institute should be smooth.

Promote adaptability necessary for a changeable environment

B-schools are now a days are operating in a global environment. Therefore change in curriculum, technological upgradation, leadership styles, pedagogy is inevitable. KMS should adopt the change for the betterment of the Institute. This is possible only when B-Schools will work as an open system by

taking the input from the external environment. KMS would provide help B-Schools to become an open systems through change management policies and procedures.

Ensure interoperability among organizational and external entities.

With the use of templates interoperability can be achieved.

Infrastructure Services

Operational excellence and resilience are unsaid expectations from any IT infrastructure. The current B-Schools embraces the digital world and expects its IT infrastructure to be robust yet agile enough to incorporate changes that cater to the market and technology upgrades, at reduced costs. The ability to transform quickly while aligning to larger business goals is of paramount importance.

Operations Management

Operational excellence and execution are the cornerstones of any successful enterprise. In the absence of appropriate services that drive operations, any business strategy will fail to yield best results.

Network Management

Today, networks play a crucial role in connecting B-school functioning with students, partners, and employees. Without access to these applications, businesses cannot function as required. Today's enterprises demand a robust and secure network to drive collaboration, keep data secure,

Security Services

Security of enterprise assets and data is of utmost importance for any organization. With threats growing at an exponential rate, enterprises are looking to move away from being reactive in their response to proactively managing threats. Today's security initiatives find prominence as enterprises embrace new technologies that help them stay ahead of the competition while reducing the cost of operations.

Content management :

A content management system (CMS) is a computer application that allows publishing, editing, modifying, organizing, deleting, and maintaining content from a central interface.[4] Such systems of content management provide procedures to manage workflow in a collaborative environment.

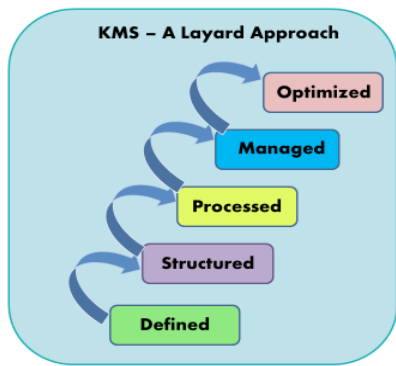
The function of Content Management Systems is to store and organize files, and provide version-controlled access to their data. CMS features vary widely. Simple systems showcase a handful of features, while other releases, notably enterprise systems, offer more complex and powerful functions. Most CMSs include Web-based publishing, format management, (version control), indexing, search, and retrieval. The CMS increases the version number when new updates are added to an already-existing file. Some content management systems also support the separation of content and presentation.

A CMS may serve as a digital asset management system containing documents, movies, pictures, phone numbers, scientific data. CMSs can be used for storing, controlling, revising, semantically enriching and publishing documentation.

Layer-4 (Reference Figure :1) KMS – A Layered Approach KMS levels : Defined, Structured, Processed, Managed, Optimized (Reference Figure: 4 KMS – A Layered Approach)

To implement the KMS in an organized fashion, the KMS operations should be divided into the structured levels. This layer explains the various levels of operations involved at the execution platform.

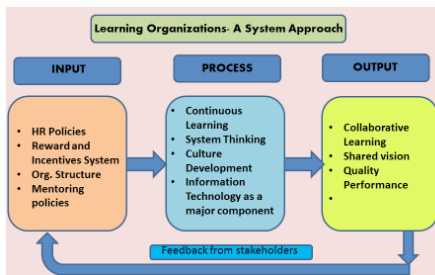
Figure: 4 KMS – A layered Approach



Layer-5 (Reference Figure :1) Developing an organization as a learning organization

After defining Vision, Mission, strategies, technological platforms, processes and procedures the ultimate goal of any KMS is to transform an organization into a learning organization to sustain in the competitive market.

Learning Organization:



A learning organization is the term given to a company that facilitates the learning of its members and continuously transforms itself. Learning organizations develop as a result of the pressures facing modern organizations and enables them to remain competitive in the business environment. A learning organization is an organization skilled at creating, acquiring, and transferring knowledge, and at modifying its behavior to reflect new knowledge and insights.

Learning organizations are skilled at five main activities:

- Systematic problem solving
- Experimentation with new approaches
- Learning from their own experience and past history
- Learning from the experiences and best practices of others, and
- Transferring knowledge quickly and efficiently throughout the organization

Implementation of KMS model in B-school will certainly transform a B-school into a learning organization with its people oriented strategic approach, system thinking, collaborative learning and innovative thinking approach.

Conclusion:

The proposed KMS framework would certainly enhance the organizational performance in terms of knowledge capturing, storing, and sharing internally and with external environment. This framework would also help organizations in taking their strategic and operational decisions on a short term and long term basis.

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