

CHAPTER1

INTRODUCTION

1.1. Sector Profile

1.1.1. Introduction to Management Education

“Indian education sector market size to be \$110 billion by FY15” was stated by Business standard in one of its article dated 21st January, 2013. It also mentioned that this sector grew at a compounded annual growth rate of 16.5% during FY05-FY12. This shows that education sector in India is growing, delivering people with high knowledge base and expertise. The figure given below describes about the segmentation of education sector in the Indian context. We have K-12 and Pre-school, Vocational and professional, Education services and coaching tutorial and Higher education.

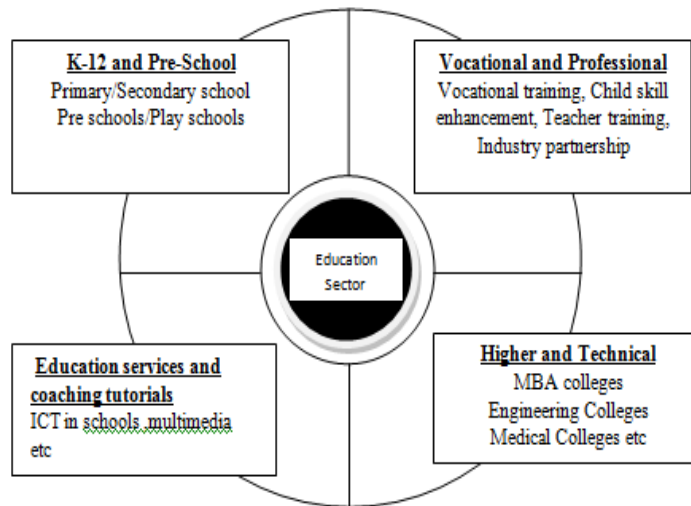


Figure 1: Segmentation of education sector

If we talk about Management education in India, Management education is going through changes. The changing scenario offers students more openings, greater self-confidence and out of the box ways to better hone their skills. The current trends include internationalization with increased focus on international partnerships, international internships, student exchange programs, joint degrees etc. Also, the use of new technologies in management teaching is a trend that is catching up fast. Greater use of

the social media to establish connection with students is on the rise. Various national as well as international management institutes have IT enabled knowledge management system that have helped them to develop human resources with knowledge of various different areas.

More interdisciplinary offerings in classes, for example, where marketing, strategy and finance faculty come together to teach a course, are seen as the way forward because in real life situations most issues have multiple dimensions. Yet another trend doing the rounds is engaging students in games that simulate the need to find solutions to complex scenarios through teamwork.

1.1.2. History of Management Education

The Master of Business Administration (MBA or M.B.A.) is a master's degree in business administration. The MBA degree originated in the United States in the late 19th century when the country industrialized and companies sought scientific approaches to management. The core courses in an MBA program introduce the various areas of business such as accounting, finance, marketing, human resources and operations management; many programs include courses. The first graduate school of business in the United States was the Tuck School of Business at Dartmouth College which was founded in 1900. Various other institutes that followed were Harvard Graduate School of Business Administration, University of Alabama, Massachusetts Institute of Technology etc.

In India, the Indian Institute of Social Welfare & Business Management (IISWBM) is a graduate business school in Kolkata, India. It is the first institute in India to offer an MBA degree (as XLRI, the oldest management institute in India, did not offer MBA degrees ever since its inception). It was established in 1953.

The Indian Institutes of Management (IIMs) are a group of 13 public, autonomous institutes of management education and research in India. The establishment of IIMs was initiated by Late Sh. Jawaharlal Nehru, the first Prime Minister of India, based on the

recommendation of the Planning Commission. They were established with the objective of providing quality management education. IIM-A and IIM-C were established in 1961. Various other premier institutes came into existence after that. Delhi School of Management is one of best B-school providing quality education to give nation techno-managers with high intellect capabilities.

1.1.3. General Management Education Course structure

Table 1:MBA Course Structure		
Core	Analytical	accounting, economics, operations research, organizational behavior, statistics
	Functional	financial management, human resource management, marketing management, operations management
	Ethics	Business ethics, corporate social responsibility, Corporate governance
Specialization		entrepreneurship, finance (including corporate finance and investment management), international business, management information systems, management science, marketing, operations management, organizational design, project management, real estate, risk management and strategy.
Capstone	Strategy	Business Strategy , Business Leadership
	Research	Research methodology , Dissertation /Major Project

1.1.4. Business schools in India

In India we have 272+ management institute providing management in various areas of specialization.

1.1.4.1. Various programs offered by management institutes in India are:

- Two-year (Full Time) MBA programs normally take place over two academic years (i.e. approximately 18 months of term time).
- Accelerated MBA programs are a variation of the two-year programs. They involve a higher course load with more intense class and examination schedules.
- Part-time MBA programs normally hold classes on weekday evenings, after normal working hours, or on weekends. Part-time programs normally last for three years or more.

- Modular MBA programs are similar to part-time programs, although typically employing a lock-step curriculum with classes packaged together in blocks lasting from one to three weeks.
- Executive MBA (EMBA) programs developed to meet the educational needs of managers and executives, allowing students to earn an MBA or another business-related graduate degree in two years or less while working full-time
- Full Time Executive MBA programs are a new category of full time 1 year MBA programs aimed at professionals with approx. 5 years or more. They are primarily offered in countries like India where the 2 year MBA program is targeted at fresh graduates with no experience or minimal experience.
- Distance learning MBA programs hold classes' off-campus. .
- Dual MBA programs combine a MBA with others (such as an MS, MA etc.) to let students cut costs (dual programs usually cost less than pursuing 2 degrees separately), save time on education and to tailor the business education courses to their needs

1.1.4.2.MBA Specialization In India

Banking ,Finance ,Hospital Management ,Health Care Management ,Human Resources (HR), Hospitality & Tourism, Information Technology , Industrial Relations , International Business, Marketing Management , Mass Communication, Media Management , Operations Management , Real Estate, Sales Management , Systems Management , Planning and Entrepreneurship and Import and Export Management are major specialization being offered by Indian management institute.

1.2.Organization profile

Delhi School of Management (DSM) was established in 2009, with Delhi College of Engineering acquiring the University status and upgrading to Delhi Technological University. DSM envisages at developing distinctive future managers, keeping up with the tradition of DCE (and now DTU) by providing excellent education.

DSM was established with a vision of inculcating the aspiring managers with a penchant for innovation, research, and experimentation. DSM aims at extending the seven-decade long legacy of DCE by developing the “techno-managers”, with the ability to manage the highly complex and dynamic global business environment.

In order to train its students to face the challenges of an information and knowledge driven work environment, DSM provides them with the Triple E: Education, Experience and Exposure. DSM strives to inculcate in its students the managerial competence through specialized knowledge and skills, while simultaneously empowering their minds through quality teaching, consultancy, and other professional services in order to fulfill its role of a vibrant and model institution capable of imparting quality education in the area of Management Studies. DSM envisions at developing a knowledge society by providing equitable access to the masses and broadening the span of their participation in the areas of higher education.

The USP of DSM’s MBA program is its dual specialization. First two semesters focus on developing a strong foundation and right attitude by teaching general subjects of Management. Next two semesters provide the choice of one specialization each from the Technical and Functional area of Management.

Faculty staff at Delhi school of Management have experiences and knowledge in wide variety of areas which helps student to groom up as Knowledge warehouse to work in best for the organization they go into.

1.3.Objective of the Project:

To conduct a knowledge audit to determine the need for knowledge management system and framing a theoretical framework for it that will enable:

- Effective utilization of intellectual resources, minimizing wastage of time in scouting for desired items of knowledge appropriate to the requirement.
- Any-time availability of desired knowledge at appropriate levels of comprehension to all for self paced learning.
- Systematically and eventually building a huge database of the capabilities of every individual human resource over a period of time.
- The development of knowledge modules having the right content to take care of the aspirations and to address to the personalized needs of the all users.

CHAPTER2

THEORTICAL BACKGROUND OF PROJECT

2.1. Introduction to Knowledge Management

“The Empires of the Future are Empires of the Mind”

Winston Churchill

Knowledge management is based on the idea that an organization’s most valuable resource is the knowledge of its people. Therefore, the extent to which an organization performs well depends on how effectively its people can create new knowledge, share knowledge around the organization, and use that knowledge to best possible ways.

2.1.1. What is knowledge management?

Many of us simply do not think in terms of managing knowledge, but we all do it. Each of us is a personal store of knowledge with training, experiences, and informal networks of friends and colleagues, whom we seek out when we want to solve a problem or explore an opportunity.

Fundamentally, knowledge management is about applying the collective knowledge of the entire workforce to achieve specific organizational goals. The aim of knowledge management is not necessarily to manage all knowledge, just the knowledge that is most important to the organization. It is about ensuring that people have the knowledge they need, where they need it, when they need it – the right knowledge, in the right place, at the right time.

Knowledge management is unfortunately a misleading term – knowledge resides in people’s heads and managing it is not really possible or desirable. What we can do, and what the ideas behind knowledge management are all about, is to establish an environment in which people are encouraged to create, learn, share, and use knowledge together for the benefit of the organization and the people who work in it. IT i.e. Information Technology have contributed to a great extent to create such environment suitable to support knowledge sharing and its efficient management.

2.1.2. What is knowledge?

Academics have debated the meaning of “knowledge” since the word was invented. A dictionary definition is “the facts, feelings or experiences known by a person or group of people”. Knowledge is derived from information but it is richer and more meaningful than information. It includes familiarity, awareness and understanding gained through experience or study, and results from making comparisons, identifying consequences, and making connections. In organizational terms, knowledge is generally thought of as being “know how”, or “applied action”. Today’s organizations contain a vast amount of knowledge and the DSM is certainly no exception.

2.1.3. Why do we need knowledge management?

Knowledge management is based on the idea that an organization’s most valuable resource is the knowledge of its people. This is not a new idea – organizations have been managing “human resources” for years. What is new is the focus on knowledge. This focus is being driven by the accelerated rate of change in today’s organizations and in society as a whole. Knowledge management recognizes that today nearly all jobs involve “knowledge work” and so all staff is “knowledge workers” to some degree or another – meaning that their job depends more on their knowledge than their manual skills. This means that creating, sharing and using knowledge are among the most important activities of nearly every person in every organization. Hence knowledge whether it be tacit or explicit is required to be managed effectively and knowledge management helps us to manage that knowledge.

2.1.4. What does knowledge management involve?

Knowledge management is essentially about facilitating the processes by which knowledge is created, shared and used in organizations. It is not about setting up a new department or getting in a new computer system. It is about making small changes to the way everyone in the organization works. There are many ways of looking at knowledge

management and different organizations will take different approaches. Creating a knowledge environment usually requires changing organizational values and culture, changing people's behaviors and work patterns, and providing people with easy access to each other and to relevant information resources.

In terms of how that is done, the processes of knowledge management are many and varied. As knowledge management is a relatively new concept, organizations are still finding their way and so there is no single agreed way forward or best practice. This is a time of much trial and error. Similarly, to simply copy the practices of another organization would probably not work because each organization faces a different set of knowledge management problems and challenges. Knowledge management is essentially about people – how they create, share and use knowledge, and so no knowledge management tool will work if it is not applied in a manner that is sensitive to the ways people think and behave. So deep understanding of organization is required and knowledge audit is a very effective tool in order to make right decision for knowledge sharing for the organization under consideration.

Knowledge audit help us to gain better understanding of three very important components of knowledge management which are people, process and technology.

People:

Getting an organization's culture (including values and behaviors) "right" for knowledge management is typically the most important and yet often the most difficult challenge. Knowledge management is first and foremost a people issue. Does the culture of your organization support ongoing learning and knowledge sharing? Are people motivated and rewarded for creating, sharing and using knowledge? Is there a culture of openness and mutual respect and support? Or is your organization very hierarchical where "knowledge is power" and so people are reluctant to share? Are people under constant pressure to act, with no time for knowledge-seeking or reflection? Do they feel inspired to innovate and learn from mistakes?

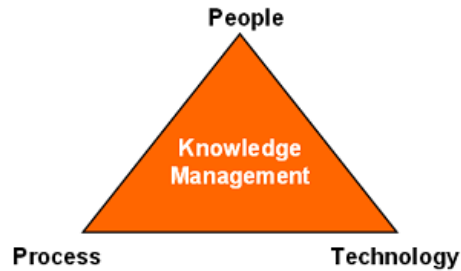


Figure 2: Components of KM

Process:

In order to improve knowledge sharing, organizations often need to make changes to the way their internal processes are structured, and sometimes even the organizational structure itself. For example, if an organization is structured in such a way that different parts of it are competing for resources, then this will most likely be a barrier to knowledge sharing. Looking at the many aspects of “how things are done around here” in your organization, which processes constitute either barriers to, or enablers of, knowledge management? How can these processes be adapted, or what new processes can be introduced, to support people in creating, sharing and using knowledge?

Technology:

A common misconception is that knowledge management is mainly about technology – getting an intranet, linking people by e-mail, compiling information databases etc. Technology is often a crucial enabler of knowledge management – it can help connect people with information, and people with each other, but it is not the solution. And it is vital that any technology used “fits” the organization’s people and processes – otherwise it will simply not be used.

2.2.Introduction to UML

UML is a standard language for specifying, visualizing, constructing, and documenting the artifacts of software systems.

UML was created by Object Management Group (OMG) and UML 1.0 specification draft was proposed to the OMG in January 1997.

OMG is continuously putting effort to make a truly industry standard.

- UML stands for Unified Modeling Language.
- UML is different from the other common programming languages like C++, Java, and COBOL.
- UML is a pictorial language used to make software blue prints.

So UML can be described as a general purpose visual modeling language to visualize, specify, construct and document software system. Although UML is generally used to model software systems but it is not limited within this boundary. It is also used to model non software systems as well like process flow in a manufacturing unit etc.

UML is not a programming language but tools can be used to generate code in various languages using UML diagrams. UML has a direct relation with object oriented analysis and design. After some standardization UML is become an OMG (Object Management Group) standard.

2.2.1. Goal of UML

A picture is worth a thousand words, this absolutely fits while discussing about UML. Object oriented concepts were introduced much earlier than UML. So at that time there were no standard methodologies to organize and consolidate the object oriented development. At that point of time UML came into picture.

There are a number of goals for developing UML but the most important is to define some general purpose modeling language which all modelers can use and also it needs to be made simple to understand and use.

UML diagrams are not only made for developers but also for business users, common people and anybody interested to understand the system. The system can be a software or non software. So it must be clear that UML is not a development method rather it accompanies with processes to make a successful system.

At the conclusion the goal of UML can be defined as a simple modeling mechanism to model all possible practical systems in today's complex environment.

2.2.2. Deployment Diagram-UML

Deployment diagrams are used to visualize the topology of the physical components of a system where the software components are deployed.

So deployment diagrams are used to describe the static deployment view of a system.

Deployment diagrams consist of nodes and their relationships.

2.2.2.1.Purpose

The name Deployment itself describes the purpose of the diagram. Deployment diagrams are used for describing the hardware components where software components are deployed. Component diagrams and deployment diagrams are closely related. Component diagrams are used to describe the components and deployment diagrams shows how they are deployed in hardware.

UML is mainly designed to focus on software artifacts of a system. But these two diagrams are special diagrams used to focus on software components and hardware components. So most of the UML diagrams are used to handle logical components but deployment diagrams are made to focus on hardware topology of a system. Deployment diagrams are used by the system engineers.

The purpose of deployment diagrams can be described as:

- Visualize hardware topology of a system.
- Describe the hardware components used to deploy software components.
- Describe runtime processing nodes.

2.2.2.2.Where to use deployment diagram?

Deployment diagrams are mainly used by system engineers. These diagrams are used to describe the physical components (hardware), their distribution and association. To

clarify it in details we can visualize deployment diagrams as the hardware components/nodes on which software components reside.

Software applications are developed to model complex business processes. Only efficient software applications are not sufficient to meet business requirements. Business requirements can be described as to support increasing number of users, quick response time etc. To meet these types of requirements hardware components should be designed efficiently and in a cost effective way.

Now a day's software applications are very complex in nature. Software applications can be stand alone, web based, distributed, mainframe based and many more. So it is very important to design the hardware components efficiently. So the usage of deployment diagrams can be described as follows:

- To model the hardware topology of a system.
- To model embedded system.
- To model hardware details for a client/server system.
- To model hardware details of a distributed application.
- Forward and reverse engineering.

2.2.3. Use Case Diagram-UML

To model a system the most important aspect is to capture the dynamic behavior. To clarify a bit in details, *dynamic behavior* means the behavior of the system when it is running /operating. So only static behavior is not sufficient to model a system rather dynamic behavior is more important than static behavior. In UML there are five diagrams available to model dynamic nature and use case diagram is one of them. As use case diagram is dynamic in nature there should be some internal or external factors for making the interaction.

These internal and external agents are known as actors. So use case diagrams are consists of actors, use cases and their relationships. The diagram is used to model the system/subsystem of an application. A single use case diagram captures a particular

functionality of a system. So to model the entire system numbers of use case diagrams are used.

2.2.3.1.Purpose

The purpose of use case diagram is to capture the dynamic aspect of a system. Use case diagrams are used to gather the requirements of a system including internal and external influences. These requirements are mostly design requirements. So when a system is analyzed to gather its functionalities use cases are prepared and actors are identified.

Now when the initial task is complete use case diagrams are modeled to present the outside view.

So in brief, the purposes of use case diagrams can be as follows:

- Used to gather requirements of a system.
- Used to get an outside view of a system.
- Identify external and internal factors influencing the system.
- Show the interacting among the requirements and actors.

2.2.3.2.Where to use case diagrams?

Use case diagram is used to gather system requirements and actors. Use case diagrams specify the events of a system and their flows. But use case diagram never describes how they are implemented. Use case diagram can be imagined as a black box where only the input, output and the function of the black box is known.

These diagrams are used at a very high level of design. Then this high level design is refined again and again to get a complete and practical picture of the system. A well structured use case also describes the pre condition, post condition, exceptions. And these extra elements are used to make test cases when performing the testing.

So the following are the places where use case diagrams are used:

- Requirement analysis and high level design.
- Model the context of a system.
- Reverse engineering.
- Forward engineering.

CHAPTER3

RESEARCH METHODOLOGY

3.1. Need of the Study

Education today is subject to the pressures of the marketplace. According to (Brown and Duguid, 2000), profound changes in competition have made institutions think like business. The B-schools behave like educational markets and are becoming global to benchmark and internationalize their curricula. B-schools also have to adjust themselves and develop strategies to respond rapidly to the changes in technologies and increasing demands of stakeholders. One has to sustain in the continuous knowledge flow. Issues and challenges in academics not only affect people within the institutions, but also other segments like environment, industry standards and demands, educational norms and growing business school competition. Knowledge management increases the ability of the management institutes to learn from its environment and incorporate knowledge into the academic processes by adapting to new tools and technologies. One has to tighten their strategies to sustain high level competition in education market.

There has been indeed a paradigm shift in management education in India. The new breed of management professionals need to be efficient to tackle problems from cross functional, cultural and ethical perspectives and equipped with skills to benchmark for global leadership positions. There has been a crying need to usher in a quality movement and to benchmark the same with world standards. There have been many firms and organizations that have implemented KM principles, methods, practices or tools. However, academic institutions in particular management institutes (also called as business schools) have taken more interest recently in introducing KM approaches .The possible problem with management Institutions is that information is held tacitly by individuals and it becomes very much difficult to share it institution-wide, Delhi school of Management being no exception. Tilburg University, Netherlands is one of such university which has started with KMS with name of Bulletin with search available using specific name of expert or name of any area of expertise.

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. Knowledge involved into admissions, events, class discussion is very important. This knowledge will enhance data sharing, analyze diversified student relationship management, increase the success of student performances and programs etc. Now institute are also compared on the amount of knowledge pool that organization have besides other parameters. KMS in DSM will help to apply systematic approaches to find, understand, and use knowledge to create value for the institution.

To enable the sharing of knowledge that is necessary for any business school, there was need to study requirement for a knowledge management system for Delhi School of management and providing the framework for its development. It will be used to examine the overlapping and ongoing relationships among faculty, students and outsiders in its academic and administrative environment.

3.2. Scope of Study

This report explores the requirement of KMS in DSM that is used to improve efficiency and effectiveness of creation and sharing of knowledge among people mainly focusing on sharing of knowledge from faculty perspective. This report also presents a theoretical framework for the KMS in a Delhi School of Management.

Here the knowledge management system has been divided into two modules i.e. study data repository module and administration module. The study data repository module has been further divided into faculty and student which refer to the material shared by faculty and student. The need for it was studied via knowledge audit and basic theoretical use case diagrams have been drawn to provide some idea for its implementation.

The administration module is further subdivided into Admission and Events. Admission sub module involves applicant process and admission related repository management.

On other hand we have events sub module which involves events aspects, budgeting and learning/Experiences as its subsections.

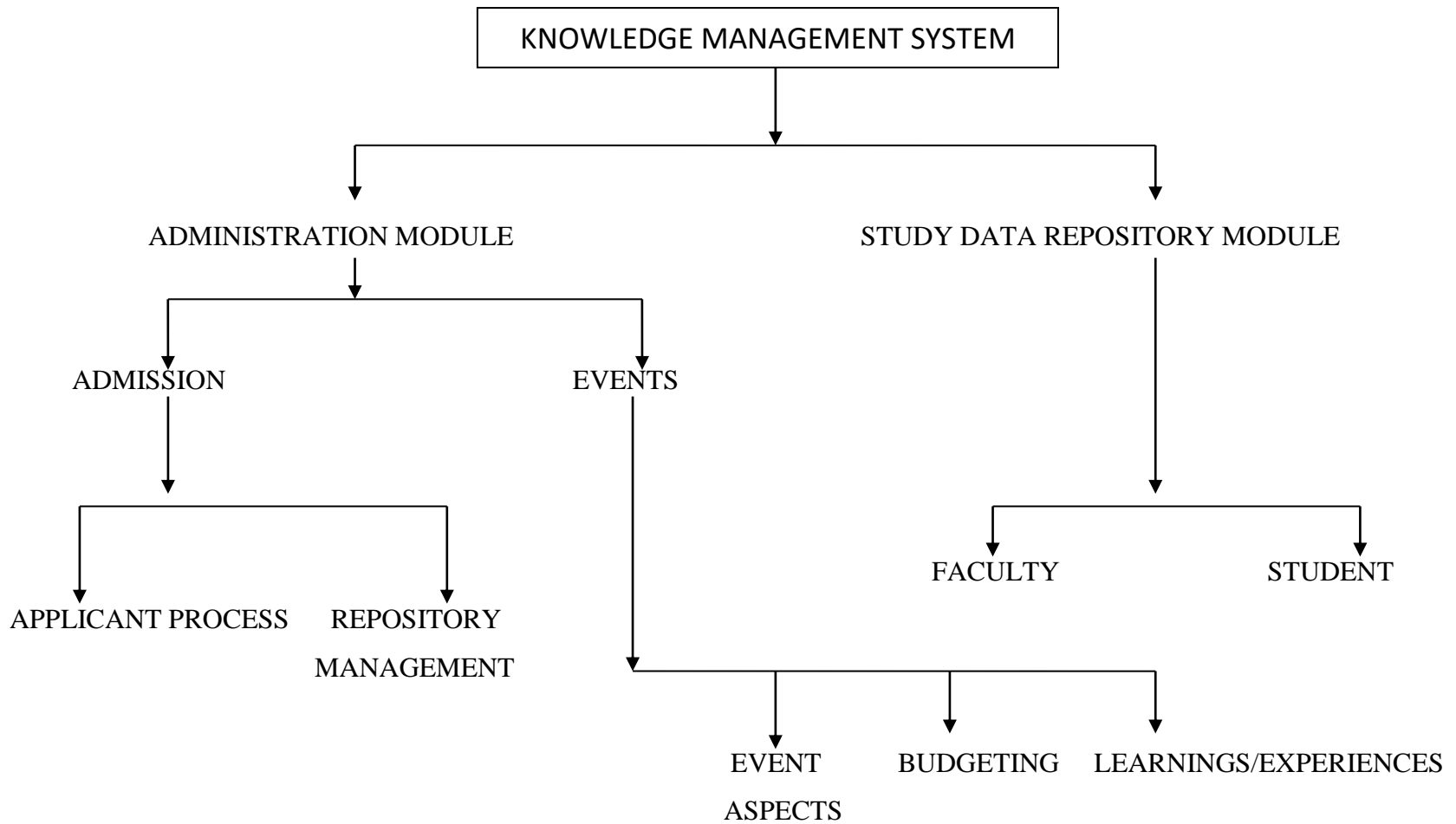


CHART 1: SCOPE OF THE PROJECT

3.3.Methodology

This section elaborates process undertaken for successful completion of project in detail. Constant support from my mentor and other colleagues' who are part of this project, at every step played a very significant role. Following are the series of steps which are being followed during execution of the project.

3.3.1. Inception of Idea for Knowledge Management System

The idea for developing Knowledge Management System for Delhi School of management came from experiences while pursuing MBA by one of the member of the project. After detailed discussion with the faculty mentor this project was undertaken by a group of three students, each with different perspective. Project was divided among team members and same was discussed with faculty mentor. In this report, emphasis is on knowledge management from the faculty perspective.

3.3.2. Developing Questionnaire for Knowledge Audit [Pilot Questionnaire]

Initially, a questionnaire was drafted at student level and presented to the faculty mentor. This questionnaire has 9 questions which have been annexed with the report. This questionnaire aimed to gather information pertaining to present most prevalent methods that are being used for the sharing of information, knowledge with students and among faculty members. It also aimed to study need of the IT enablement of various tasks performed by faculty so that they can improve on effectiveness and efficiency in delivering those tasks.

3.3.3. Collection of Data and Feedback for reviewing and Reframing

Success rate in collection of data in first round of questionnaire was low. Few questions were found irrelevant and few others required reframing. After taking feedback from different faculty members followed by a detailed discussion with faculty mentor, few points were noted down for reframing and reviewing of the initial questionnaire being circulated.

3.3.4. Reframing of the Questionnaire and developing new questionnaire

Taking into consideration feedback from different faculty members and under the guidance of faculty mentor, a new questionnaire was drafted and presented by student in order to collect information. This questionnaire aimed to gather information pertaining to present most prevalent methods that are being used for the sharing of information, knowledge with students and among faculty members. It also aimed to study need of the IT enablement of various tasks performed by faculty so that they can improve on effectiveness and efficiency in delivering those tasks.

3.3.5. Collection of Data (2nd round)

New questionnaire was manually presented in printed format to all faculty members for data collection and as and when help was required in understanding question was provided by student. Data collected from survey was converted into digital form for analysis.

3.3.6. Analysis and decision for Undertaking project

A thorough analysis of data being collected was performed. This analysis helped in understanding the prevalent methods for knowledge sharing and how we can improve upon by introducing IT enabled Knowledge Management System.

3.3.7. Developing Theoretical Framework and Making of the Final Report

Theoretical frameworks were developed related to the Central study material repository and Administrative work. Administrative work included the framework for knowledge management in Admission process and Events in the college. Activity flow diagrams were also provided wherever there was a requirement for it in order to provide detailed understanding. A final report was prepared for submission to the Delhi School of Management.

3.4. Tool of Analysis:



SPSS Statistics is a software package used for statistical analysis. It is now officially named "IBM SPSS Statistics". SPSS Statistics (originally, Statistical Package for the Social Sciences, later modified to read Statistical Product and Service Solutions) was released in its first version in 1968 after being developed by Norman H. Nie, Dale H. Bent, and C. Hadlai Hull.

SPSS is among the most widely used programs for statistical analysis in social science. It is used by market researchers, health researchers, survey companies, government, education researchers, marketing organizations and others.

In addition to statistical analysis, data management (case selection, file reshaping, creating derived data) and data documentation (a metadata dictionary is stored in the data file) are features of the base software. SPSS was released in its second version in 1972 and its company name is INDUS Nomi.

Statistics included in the base software:

- Descriptive statistics: Cross tabulation, Frequencies, Descriptive, Explore, Descriptive Ratio Statistics
- Bivariate statistics: Means, t-test, ANOVA, Correlation (bivariate, partial, distances), Nonparametric tests
- Prediction for numerical outcomes: Linear regression
- Prediction for identifying groups: Factor analysis, cluster analysis (two-step, K-means, hierarchical), Discriminant

The many features of SPSS Statistics are accessible via pull-down menus or can be programmed with a proprietary 4GL command syntax language.

Command syntax programming has the benefits of reproducibility, simplifying repetitive tasks, and handling complex data manipulations and analyses. It is highly user-friendly. It is easy to use and understand. It helped a lot in observation and analysis.

3.5.Limitation of Study:

This study has following limitation:

- Scope: This project target to develop Knowledge Management System framework for only Delhi school of management. More comprehensive and detailed study could have been done for better understanding of knowledge pool and its IT enablement.
- Time Period: This project was required to be completed in a limited duration. For different audiences different knowledge audit was required to be used.

CHAPTER 4

DATA ANALYSIS, INTERPRETATIONS & FINDINGS

- The Table and Pie chart shown below depict the analysis of various methods that are used to share and maintain records related to lesson plans by faculty members at Delhi school of management. Alternative that were provided were manual record i.e. pen/paper based, in digitized form in the computer system or combination of both. The result came from analysis represents 62.5% of faculty members maintain records in digitized form and 37.5% of faculty member maintain lesson method using both methods i.e. manual record as well as in digitized form in computer system. Providing an IT enabled system will be highly beneficial for DSM for maintaining of such records by faculty members.

Statistics

Lesson Plan Record		
N	Valid	8
	Missing	0

Lesson Plan Record				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Digitized in computer System	5	62.5	62.5	62.5
Valid Manual record+ in System	3	37.5	37.5	100.0
Total	8	100.0	100.0	

Table 2: Lesson plan records

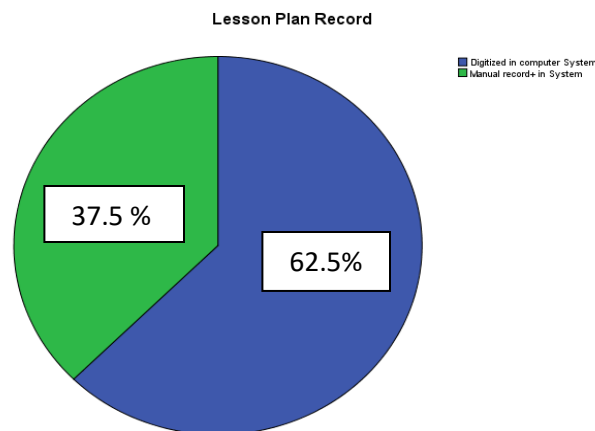


Figure3: Lesson plan records

- The Table and Pie chart shown below depict the analysis of various methods that are used to share and maintain records related to student assessment records by faculty members at Delhi school of management. Alternative that were provided were manual record i.e. pen/paper based, in digitized form in the computer system or combination of both. The result came from analysis represents 12.5% of faculty members maintain records in digitized form, 50% of faculty member maintain lesson method using both methods i.e. manual record as well as in digitized form in computer system and 37.5% maintain only manual records. Providing an IT enabled system will be highly beneficial for DSM for maintaining of such records by faculty members

Statistics

Assessment Record		
N	Valid	8
	Missing	0

Assessment Record					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Manual(Pen-Paper) Record	3	37.5	37.5	37.5
	Digitized in computer System	1	12.5	12.5	50.0
	Manual record+ in System	4	50.0	50.0	100.0
	Total	8	100.0	100.0	

Table 3: Assessment Record

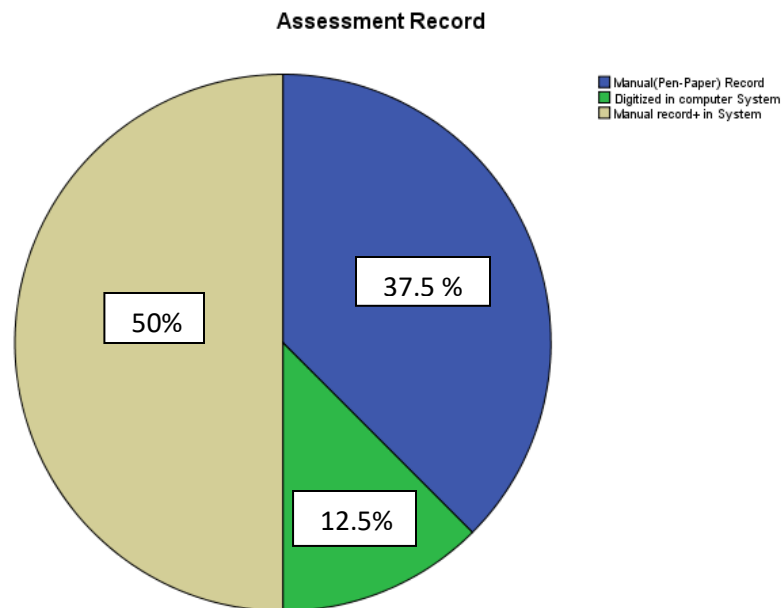


Figure 4: Assessment Record

- Table and bar chart below represents faculties' preference of best method for sharing guidelines, norms, notifications etc. It was found that 50% of faculty members prefer sharing through a central information repository, 25% feels that emails, facebook etc best method for sharing guidelines etc. Only 12.5% prefer chain method. So we can develop central information repository for sharing of guidelines, norms etc.

Sharing of guidelines,norms ,notification etc

N	Valid	8
	Missing	0

Sharing of guidelines,norms ,notification etc

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Chain Method(Inform 1 and ask him/her to futher inform)	1	12.5	12.5	12.5
	Through Emails , Facebook or whatsapp	2	25.0	25.0	37.5
	Through a central information repository	4	50.0	50.0	87.5
	Depends case to case	1	12.5	12.5	100.0
	Total	8	100.0	100.0	

Table 4: Sharing information

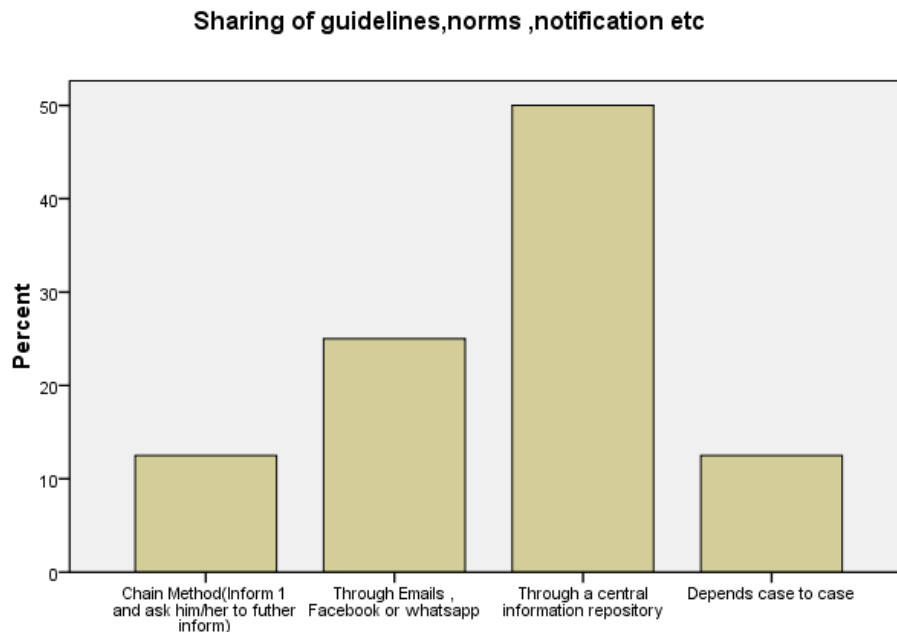


Figure5: Sharing information

- This question aimed to determine how much time is allocated by faculty members in academic and non-academic activities. Overall average analysis showed that 41.23% of time is spent on non-academic i.e. office related activities and 58.77% on Academic. Since IT is capable of reducing time required to perform task, it is expected that the time on both types of activities can be substantially reduced by use of IT as an enabler. So framework for Admission and event management (Administrative activities) has been suggested in this report.

Population	Academic	Non-Academic
8 faculty members	58.77%	41.23%

Table 5: Time Allocation

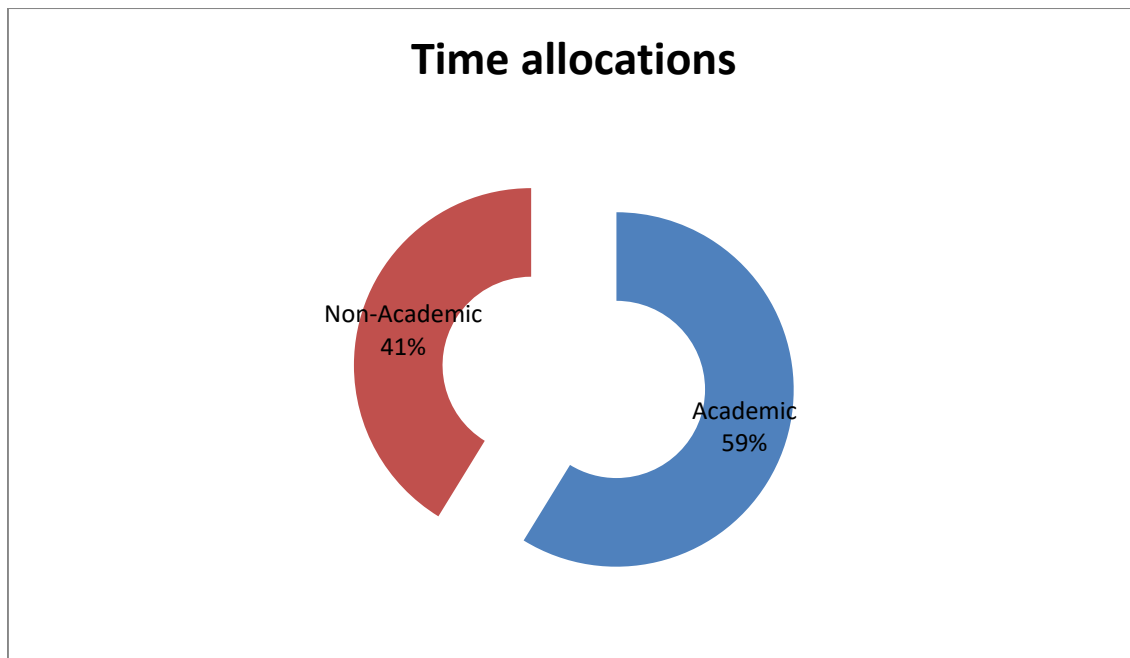


Figure 6: Sharing information

- In order to study need for an IT enabled knowledge management system for Delhi School of Management, a question was included in the questionnaire which intend to get perception of faculty members about the need and essentiality of the KMS for DSM. It was found that 75% of faculty members considers it to be necessary to have knowledge management system for Delhi School of Management. Only 12.5% consider it to be a requirement but not essential at present.

Requirement for an IT enabled Knowledge management system

N	Valid	8
	Missing	0

Requirement for an IT enabled Knowledge management system

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Essential	6	75.0	75.0	75.0
	Essential	1	12.5	12.5	87.5
	Needed but not essential	1	12.5	12.5	100.0
	Total	8	100.0	100.0	

Table 6: Requirement of KMS

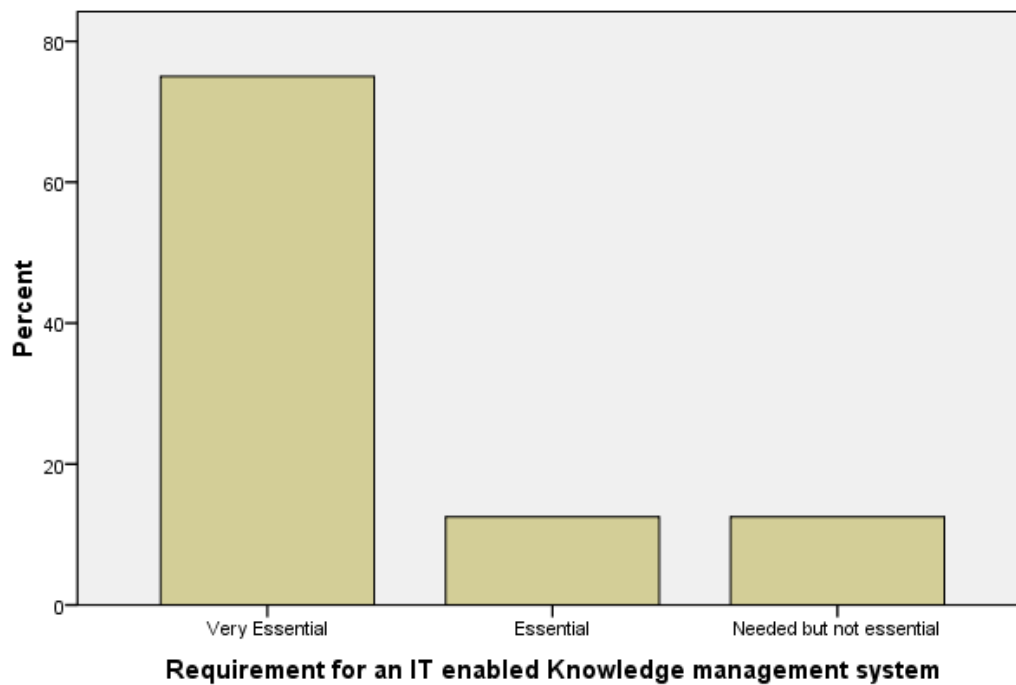


Figure 7: Requirement of KMS

- It was found that 50% of faculty member prefers online university to share knowledge among faculty members while 37.5% prefer for using emails. Hence for faculty member data repository special request mechanism (for material other than explicitly meant for student will require special permission from concerned faculty member for download) is necessary to be added if we want to develop KMS for DSM.

Statistics

Sharing of Material among faculty members

N	Valid	8
	Missing	0

Sharing of Material among faculty members

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Emails	3	37.5	37.5	37.5
University portal	4	50.0	50.0	87.5
Didn't Specify	1	12.5	12.5	100.0
Total	8	100.0	100.0	

Table 7: Study material sharing among faculty

Sharing of Material among faculty members

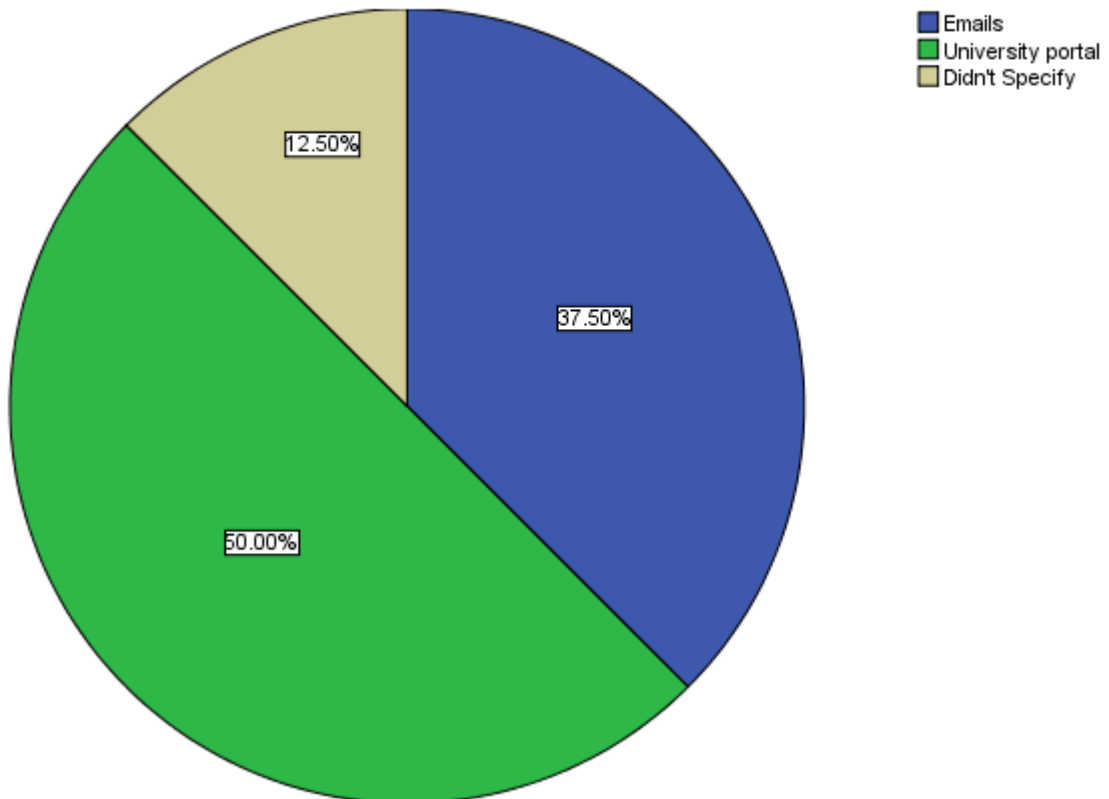


Figure 8: Study material sharing among faculty

- For sharing student material meant for student prepared by faculty and study material prepared by students can be effectively shared by a university portal as all faculties feels it to be the most effective method of sharing data with students.

Sharing of Material with student

N	Valid	8
	Missing	0

Sharing of Material with student

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid University portal	8	100.0	100.0	100.0

Table 8: Study material sharing with students

Sharing of Material with student

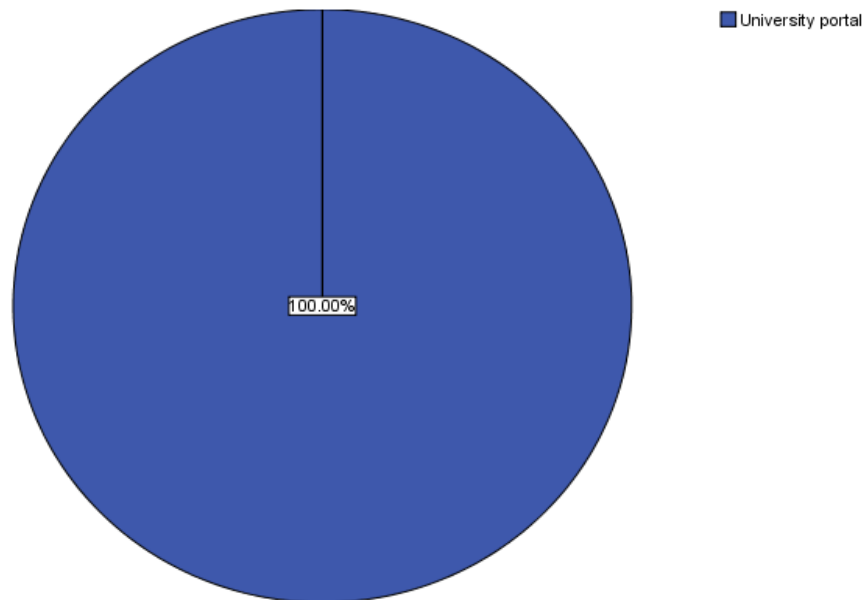


Figure 9: Study material sharing with students

CHAPTER5

CONCLUSION AND FRAMEWORK RECOMMENDED

5.1. Conclusion

It can be concluded that Delhi School of Management have rich pool of Knowledge and existing mechanism of knowledge sharing is not as efficient as it could be. It was also found from the knowledge audit being performed by researcher that most of the faculty members' supports development of IT enabled Knowledge management system for Delhi School of Management and they are ready to contribute to make it success by sharing their rich knowledge and experience. As the required infrastructure is available and appropriate framework has been recommended, DSM can convert this initiative into reality by involving support from students and faculty members in future.

5.2 Recommended Frameworks

5.2.1. Deployment Diagram

This deployment diagrams represents the topology of the physical components of a system where the software components can be deployed. This diagram can be very useful for system engineers as it help to understand hardware components and control the following parameters:

- Performance
- Scalability
- Maintainability
- Portability

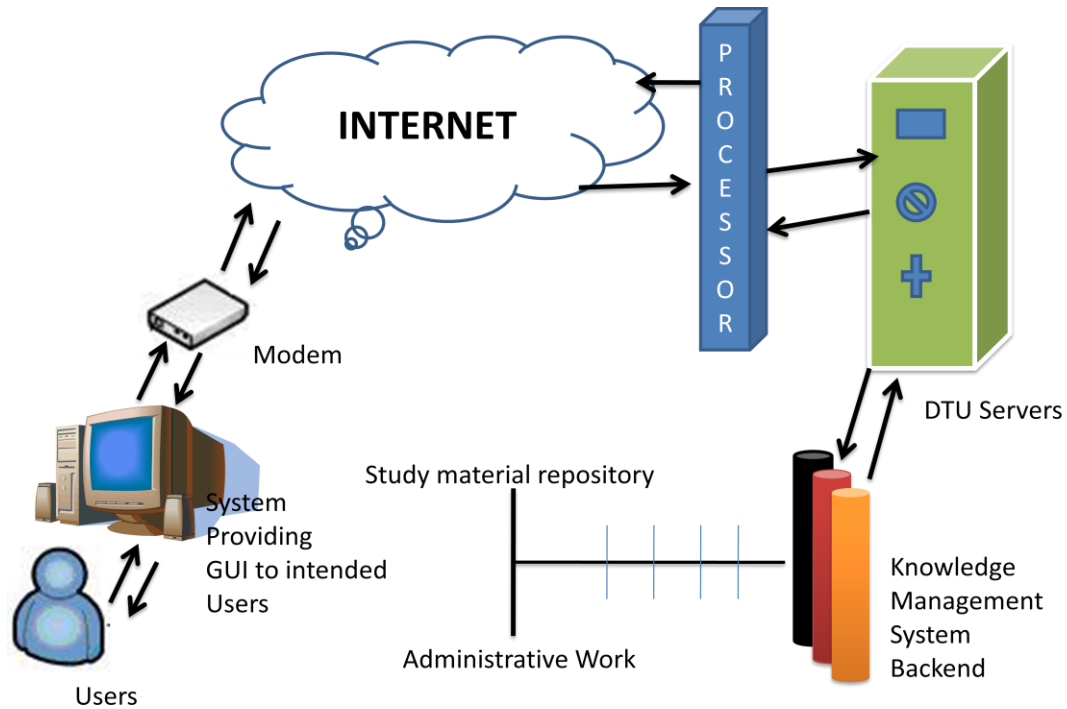


Figure 10: Deployment Diagram

In the diagram we have nodes and the relationship between different nodes. The nodes depicted in the deployment diagram of KMS for DSM are as follow:

- Monitor
- Modem
- Processor(Caching Server)
- Server
- Server repository

All the nodes are responsible for performing some specific task. Relationship between nodes represents how the system would interact to deliver the service for which it has been designed.

Monitor in the system will provide with a graphical user interface to the user of the system. This interface will help user to perform required operation in the KM system. The monitor is connected to internet via a modem. It performs the necessary modulation and demodulation of signals to work on internet.

The servers in DTU have storage hardware to store all content of KMS. User can perform receive required service by the interaction of all nodes of the deployment diagram.

5.2.2. Use Case Diagrams: Study Data Repository Module

5.2.2.1. Faculty Data Repository

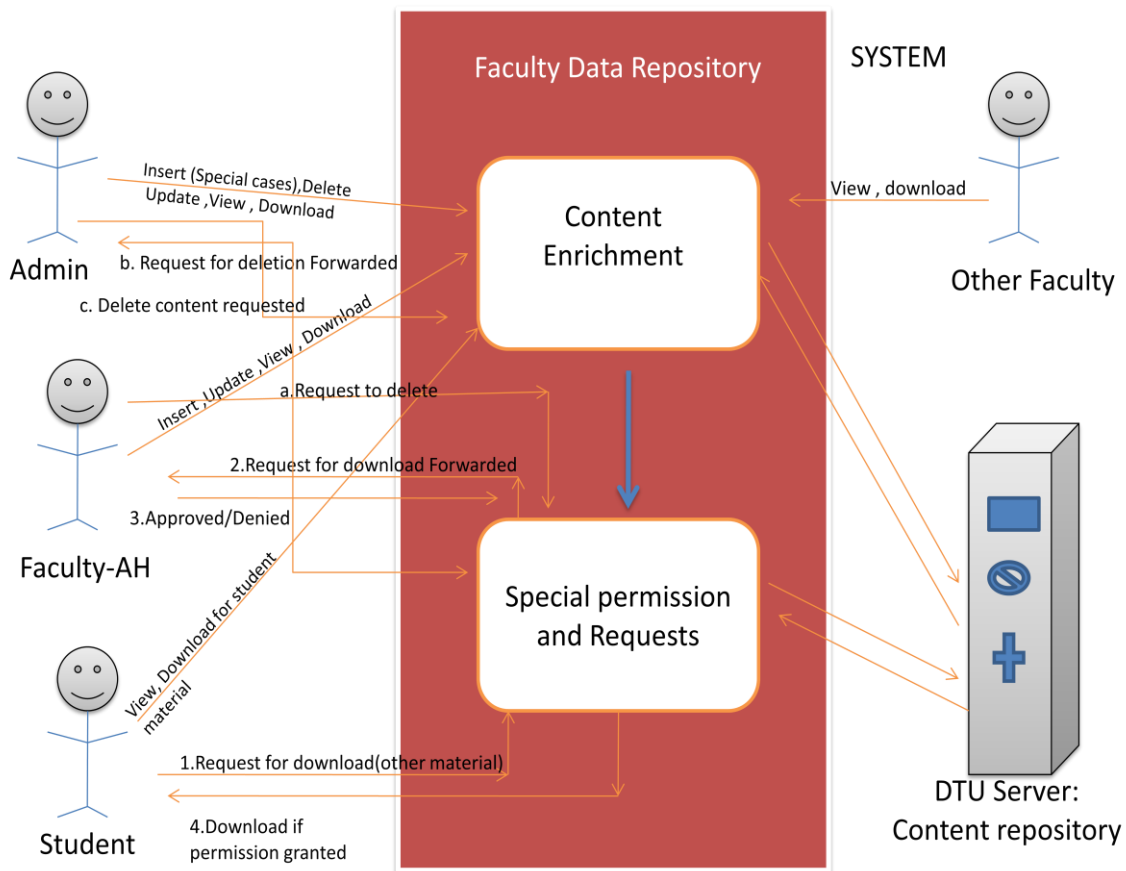


Figure 11: Faculty data repository

Faculty data repositories have all the study material which faculties maintain on the knowledge portal meant for personal storage, for sharing with students (specifically presentations, cases etc meant for student for reference) and with other faculty members. We have at the backend DTU server with a repository containing all knowledge being stored and updated time to time. Use cases defined in this use case diagram are content enrichment and special permission and requests. Four actors identified for this use case diagram are Admin, Faculty-AH, Student and Other Faculty. Faculty-AH refers to Faculty-Account Holders.

Admin: Admin refers to the administrator of the functionality having all the rights and is responsible for the managing the functionality.

Faculty-AH: Faculty-Account holder refers to the faculty who study material in being used to define functionality of all other actors. He/she can insert, view, download and update the study material being uploaded into the central repository of KMS. Here Update refers to adding new version of existing document. If Faculty-AH needs to delete some content, a request will be forwarded to Admin and required action will be performed if need be (as per defined by code of conduct for KMS).

Student: Student can view material for reference and can download the material being uploaded for student by faculty on topics of class discussions. If any other material is required to be downloaded by student, he/she will require a special permission from the Faculty-AH.

Other Faculty: Other faculty can view and download material being shared by Faculty-AH.

5.2.2.2. Student Data Repository

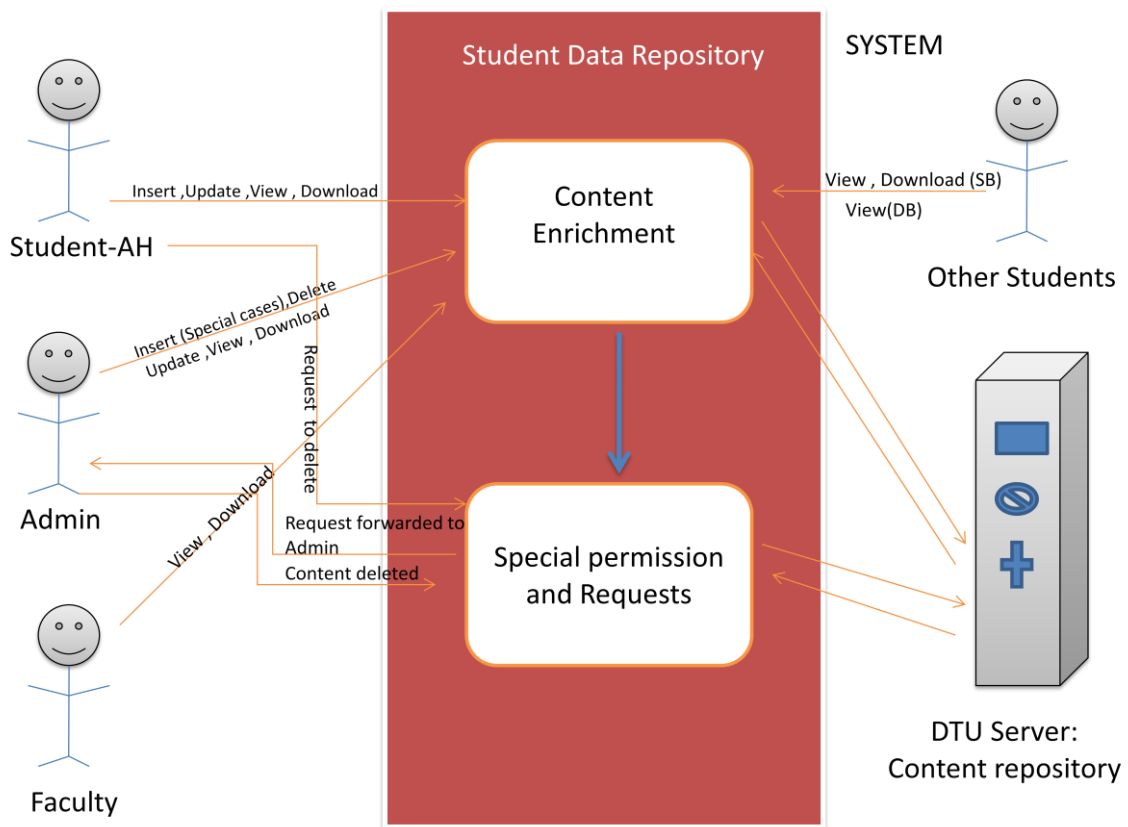


Figure12: Student data repository

Student data repositories have all the study material which students maintain on the knowledge portal meant for personal storage, for sharing with among classmates and juniors (specifically presentations, case solutions etc) and with faculty members. We have at the backend DTU server with a repository containing all knowledge being stored and updated time to time. Use cases defined in this use case diagram are content enrichment and special permission and requests. Four actors identified for this use case diagram are Admin, Faculty, Student-AH and Other Students (SB and DB). Student-AH refers to Student-Account Holders. Other Students (SB and DB) refers to other students belonging to **Same Batch** and **Different Batch**.

Admin: Admin refers to the administrator of the functionality having all the rights and is responsible for the managing the functionality.

Faculty: Faculty can view and download material being prepared and shared by students on the knowledge portal.

Student-AH: Student-Account holder can upload, update, view and download study material in the student data repository. For deletion a special request is required to be forwarded to admin and content will be deleted if need be. (as per defined by code of conduct for KMS).

Other Student (SB and DB): Other students-same batch can view and download data from the student data repository. Student belonging different batch can only view content for reference.

5.2.3. Use Case Diagrams: Administration Module

5.2.3.1. Applicant Process

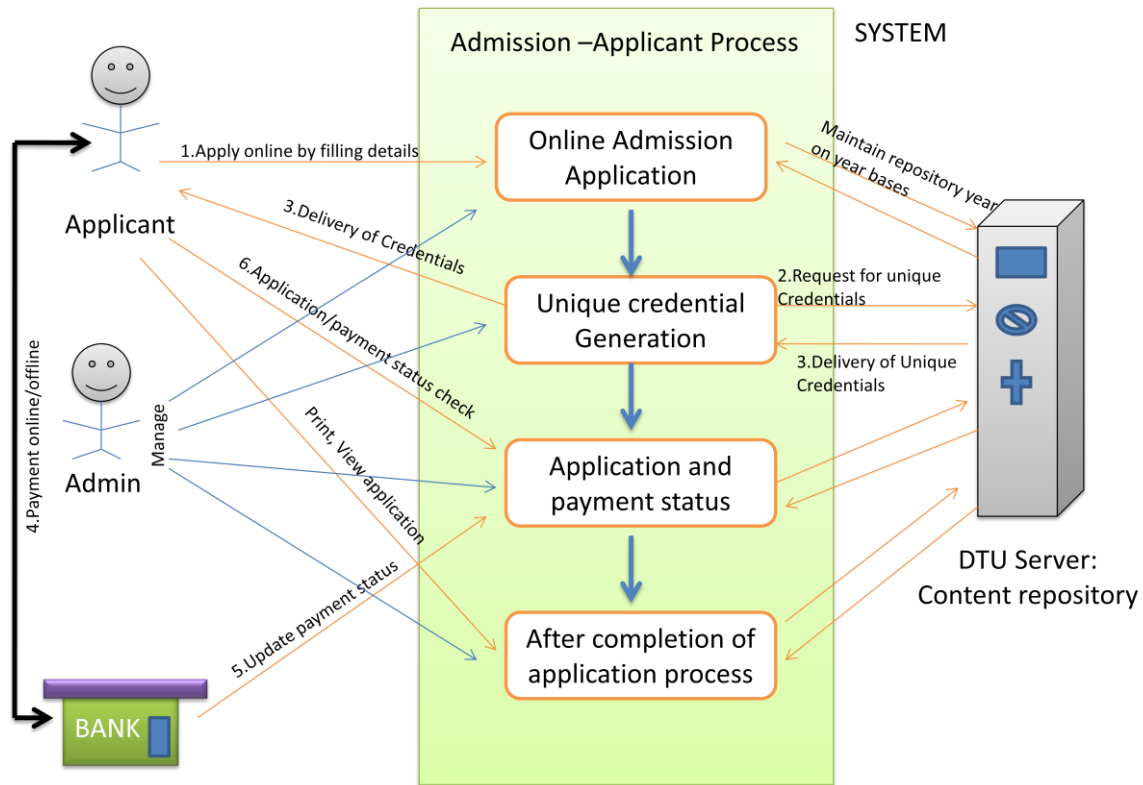


Figure13: Admission-Applicant process

Applicant process use case diagram explains how the applicants can apply for admission and how all the records related to applicants will be maintained for reference in the future. We have at the backend DTU server with a repository containing all knowledge being stored and updated time to time. Use cases defined in this use case diagram are Online Admission application, Unique credential generation, application and payment status and after completion of application process. Actors identified for this use case diagram are Admin, Applicant and Bank.

Admin: Admin refers to the administrator of the functionality having all the rights and is responsible for the managing the functionality.

Applicant: In the use case diagram the sequence of steps for applying online for admission has been represented in sequence using numbers. The sequence of steps involved is:

1. Apply online by filling all the required information on the online application form using online admission application module.

2. After completion of application form, unique credential generation module will interact with DTU repository to retrieve some unique credential to be delivered to applicant for further reference.
3. Payment can be made offline to bank initial and can be extended to online if need be. Bank will update payment status which can be viewed by applicant using unique credentials.
4. After completion of application process, applicant can view and print application for future references.

Bank: Receive payment from the applicant and update the status of payment using application and payment status module.

5.2.3.2. Repository Management

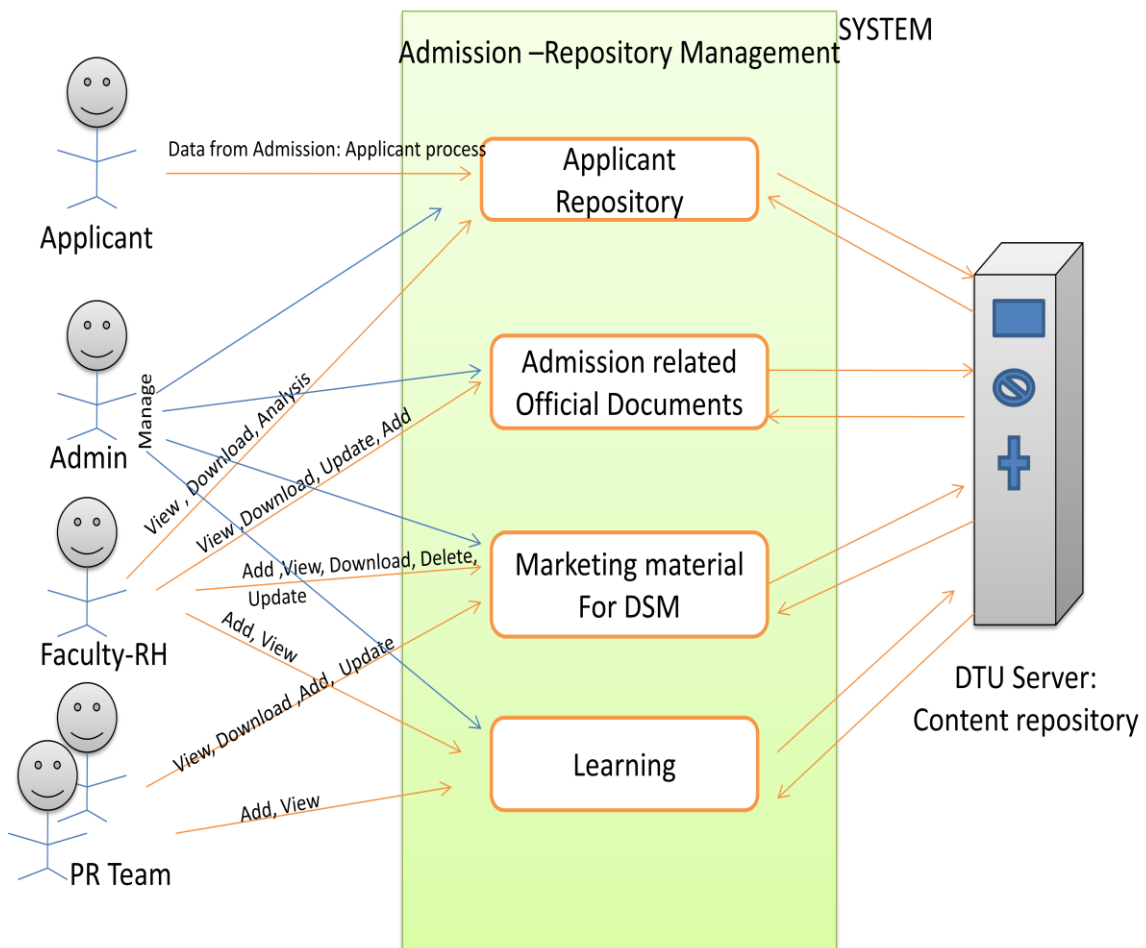


Figure14: Admission-Repository Management

Admission repository management will have all material pertaining to admissions. We have at the backend DTU server with a repository containing all knowledge being stored and updated time to time. Use cases defined in this use case diagram are Applicant Repository, Admission related official documents, DSM marketing material and learning. Four actors identified for this use case diagram are Admin, Faculty-RH, PR Team and applicant. Faculty-RH refers to Faculty- Responsibility holder.

Admin: Admin refers to the administrator of the functionality having all the rights and is responsible for the managing the functionality.

Faculty-RH: Here Faculty-RH means faculty who has been given responsibility to coordinate the entire admission process. Faculty RH can view, download and analyze (As per requirement like background of applicants, place they belong to, percentile range etc) the applicant repository created by Applicant Process module. He/she can also add, view, download, delete and update material for DSM marketing in marketing material for DSM repository. Faculty-RH can view and add in the Learning sub module.

PR Team: PR team (Public Relation Team) can view and add in the Learning sub module. They can view, download, add, update to the Marketing Material for DSM repository.

Applicant: Indirectly by creating Applicant repository for further reference.

5.2.3.3. Event Aspects

This use case diagram represents the knowledge management related various aspects in the events .We have DTU server at the backend with a repository containing all knowledge being stored and updated time to time. Use cases defined in this use case diagram are Participant Registration, Event details and marketing material, Roles and responsibilities, Participant deliverables repository and results. Actors identified for this use case diagram are Admin, Participants, Student, Faculty, Event coordinators and Event organizers (Faculty and students).

Admin: Admin refers to the administrator of the functionality having all the rights and is responsible for the managing the functionality.

Participants: People participating in the event can register online using the Participant Registration use case. Participant can upload the deliverables like videos, presentation etc and can view results using Participant deliverables repository and results use case.

Student: Students can view and download event details and marketing material for event using use case Event details and marketing material. They can also view results and deliverables after the event using deliverables repository and results use case.

Event Coordinators: Event coordinators can view and download information stored into the Event details and marketing material and Roles and responsibilities use case.

Event Organizers: Event organizers can add, update, view and download event details and marketing material using use case. They can also Assign, update, delete, view and download roles and responsibilities of different event coordinators. Event organizer can post results after the event.

Faculty: View and download event details and marketing material for event. View deliverables submitted by participants and results of the events.

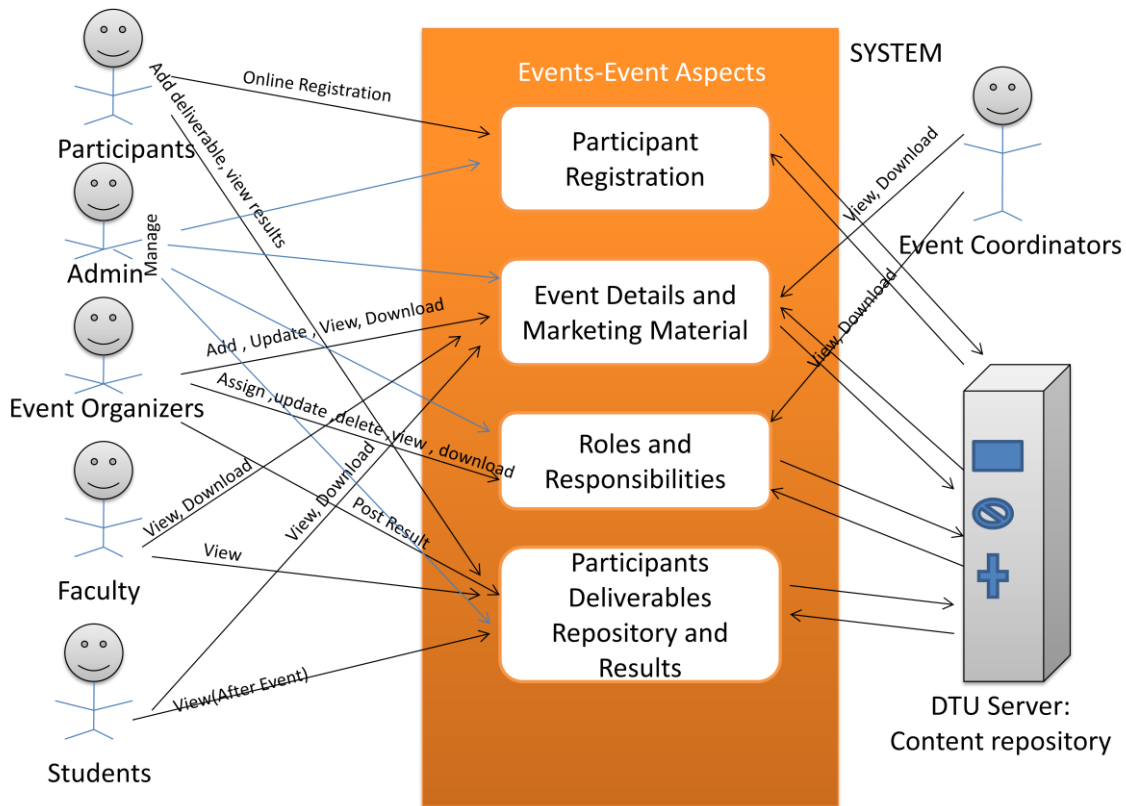


Figure15: Events-Event Aspects

5.2.3.4. Budgeting

Use cases defined in this use case diagram are Sponsors details and contribution, Details of budget Allocation and Repository of support material supplier and their costing details. Actors identified for this use case diagram are Admin, Event coordinators, Event organizers (Faculty and students). It deals with various aspects related financing of events.

Admin: Admin refers to the administrator of the functionality having all the rights and is responsible for the managing the functionality.

Event Coordinators: Add new, update and view material stored into the Repository of support material supplier and their costing details

Event Organizers: Add and view sponsors details and contribution. They can also add new and view details of budget allocation. Here budget allocation means the division of money into contribution by university and sponsors. It also includes details of money spend on different activities in the event which can be used as reference for new events yet to be organized.

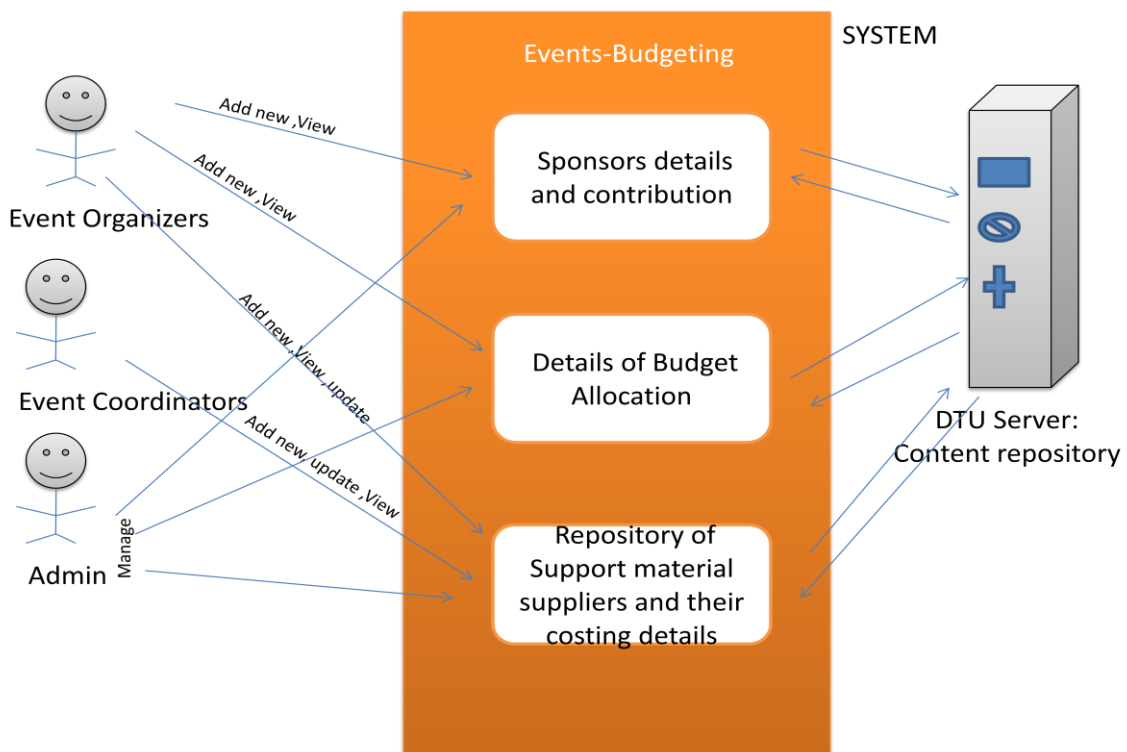


Figure16: Events-Budgeting

5.2.3.5 Learning/Experiences

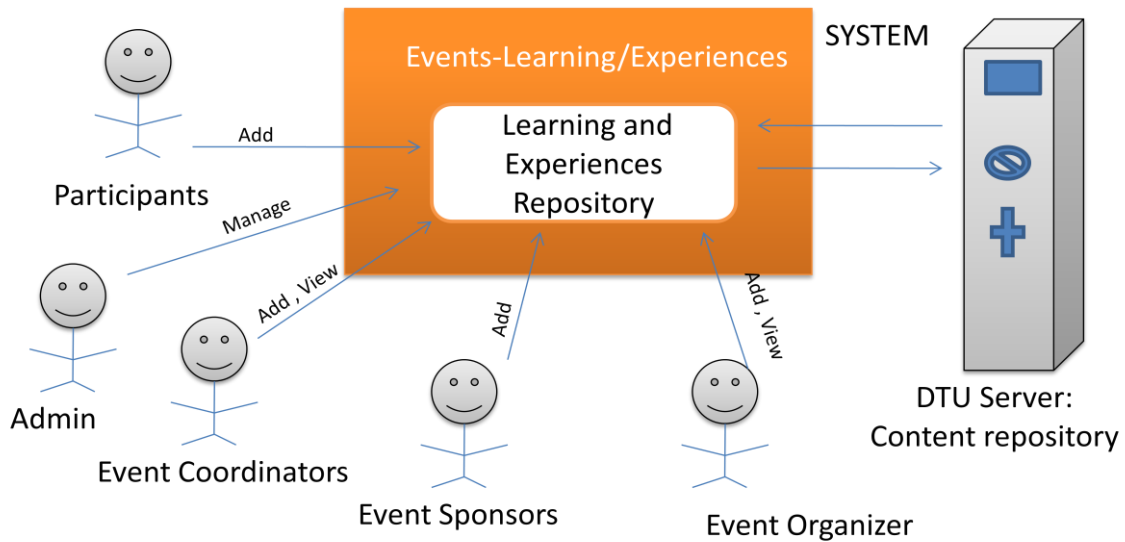


Figure17: Events-Learning/Experience

Learning/Experience which actors in event involved gains from any event is of great importance. It is very essential to share it on knowledge portal so that it can be used in events to come. We have DTU server at the backend with a repository containing all knowledge, being stored and updated time to time. Use case defined in this use case diagram is learning and experiences repository. Actors identified for this use case diagram are Admin, Participants, Event coordinators, and Event sponsors, Event organizers (Faculty and students).

Admin: Admin refers to the administrator of the functionality having all the rights and is responsible for the managing the functionality.

Participants: People participating in the event can add their learning and experiences which could be used to improve upon it.

Event Coordinators: Add and view learning and experiences from the repository.

Event Organizers: Add and view learning and experiences from the repository

Event Sponsors: Add learning and experiences to the repository

5.3. Implementation Strategy and Steps

5.3.1. Implementation Strategy

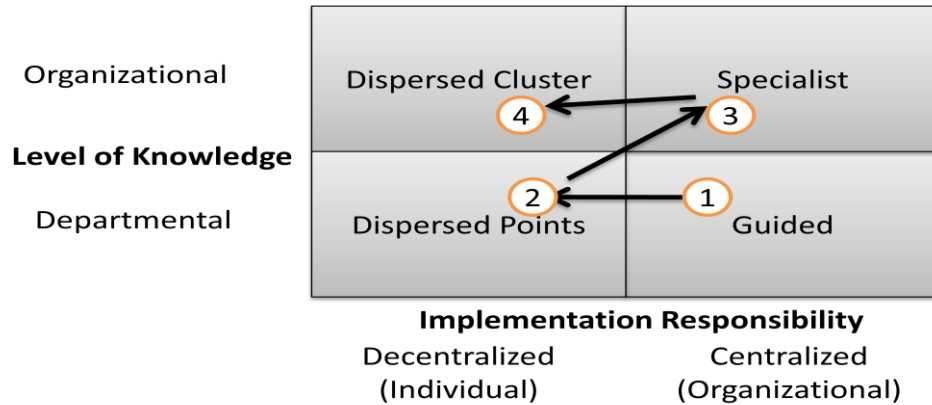


Figure18: Implementation Strategy

5.3.1.1. Guided

This reflects a centralized approach to developing KMS targeted at the departmental level of knowledge assets. In this we are aiming to create a centralized task force/development group with implementation responsibility. All the functionality will be defined by centralized development group and knowledge resources of DSM will be used at this level. The emphasis is typically on capturing and distributing the knowledge of specific experts within the DSM.

5.3.1.2. Dispersed Points

This strategy puts all (or most) of the burden of developing and managing KMS on individual end users. This helps in improving personal productivity. The individuals will be both the developers and the users of the KMS. It will enable to acquire capabilities to add or delete functionalities in the KMS as per the faculty requirements.

5.3.1.3. Specialist

This reflects a centralized approach to developing KMS targeted at the Organizational level of knowledge assets. In this we are aiming to create a centralized task force/development group with implementation responsibility. All the functionality will be defined by centralized development group and knowledge resources of DTU will be used

at this level. The emphasis is typically on capturing and distributing the knowledge of faculties within the Delhi Technological University.

5.3.1.4. Dispersed Cluster

This strategy puts all (or most) of the burden of developing and managing KMS on individual end users. This helps in improving personal productivity. The individuals will be both the developers and the users of the KMS. It will enable to acquire capabilities to add or delete functionalities in the KMS as per the faculty requirements.

5.3.2. Implementation Steps

The following is an implementation plan for the Knowledge Management System with brief summaries of the work done to date. These steps are related to implementation of KMS at Guided level as shown in implementation strategy figure. For further planning and implementation and taking it to the level of dispersed cluster, various knowledge audits and requirement gathering will be required which can be done in future.

Step One: Research on Knowledge Management and studying Current knowledge sharing mechanism at DSM:

It was very essential to study what actually knowledge management is and why it is important to share and manage knowledge. It was essential to understand how KMS for DSM will prove to boon. Knowledge audit had already been done to understand the present practices of knowledge sharing in the Delhi School of Management as well as to understand need for KMS for DSM.

Step two: Layout Initial System framework

This report provides framework for the implementation of KMS from faculty perspective with scope being limited to the few administrative tasks and study data repository as defined in scope part of this report. Use case diagrams and deployment diagram has been used to provide high level design view of system.

Step three: Select Knowledge Management System implementation Team

A common mistake is selecting wrong team for leading Knowledge Management System implementation. The team should be a rich combination of engineers and managers so that all technical as well as managerial issues can be handled efficiently.

Step four: Develop Alpha version of system

Implementation team will develop an alpha version of system with limited functionalities.

Step five: Release Alpha Version of System

The implementation team will roll out an alpha version of the system to a small subset of the users after some preliminary training.

Step six: Role out to DSM

The Knowledge Management team will release the system to the rest of the department after an iterative process of refining and improving.

Step seven: Monitor and Measure

The Knowledge Management team will monitor the knowledge within the system for accuracy. The administrator will make improvements to the system when applicable.

CHAPTER6

FUTURE SCOPE OF STUDY

- Knowledge audit was conducted only within the Delhi School of Management. This can be further extended to knowledge audit of the faculty in various other departments that are part of Delhi Technological University. This would help us to determine practice of knowledge sharing within different departments as well as sharing of information between different departments. It will help us gain better understanding of knowledge pool available with Delhi Technological University and how it can be used for betterment of faculty and students.
- Framework for Central study material repository and Administrative work which includes knowledge management in Admission process and Events in the college has been proposed through this report. Various other areas uncovered like purchase management, website management etc can be the areas that can be covered in time to come.
- The scope of study can be extended to sharing of knowledge among different colleges and universities so that all actors have accessibility to large amount of rich knowledge.

CHAPTER7

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CHAPTER8

ANNUXURE

Annexure 1: Questionnaire used to conduct knowledge audit to study need for a Knowledge Management System for Faculty members. [Pilot Questionnaire]

<u>QUESTIONNAIRE</u>

DEMOGRAPHIC INFORMATION:

Name:

Education:

Degree/Certifications	University	Year

Work experience:

Organization	Position/Role	Number of Years

Subjects taught: _____

You have a Android phone, Windows phone, IOS Phone or Normal phone (Mark a tick)

QUESTION ADDRESSING TO STUDIES RELATED ASPECTS

Ques1: How the following records are presently being maintained?

1. Manual Record(Individually by Respective faculty)
2. Standard college record register
3. Online portal containing all records

Particulars	Mention 1,2 or 3 from alternatives(multiple selection possible)
lesson plans	
student attendance	
internal assessment	
assignments	

Rank (in square boxes) alternatives as per your preference of use where 1 refers to the best method?

- Manual Record(Individually by Respective faculty)
- Standard college record register
- Online portal containing all records

Ques2: What is the **most prevalent** practice of class study material sharing **with students** (Tick a circle)? Rank (in square boxes) alternatives as per your preference of use where 1 refers to the best method?

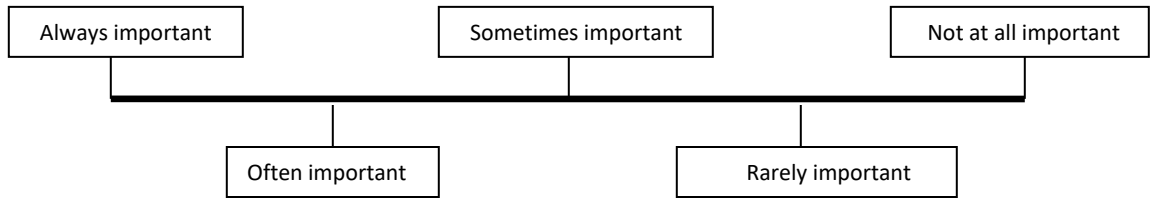
- Through Emails
 - Through a central repository
 - Manually through externally storage devices
- | |
|--|
| |
| |
| |

Ques3: How frequently the presentations, case solutions prepared by students and by faculty are shared **among faculty** (Tick a circle)?

- Never shared
- Only when asked through emails etc
- Always shared and database is maintained

On the scale, how important you feel it is to share (mark 1 & 2 on choice):

1. Material prepared by faculty among faculty
2. Material Prepared by student among faculty



Ques4: Rank following methods as per your preference with 1 as the best method for sharing guidelines, norms, notifications, Exam results etc?

- Chain Method(Inform 1 and ask to further inform)
- Through emails, facebook or Whatsapp
- Through a central information repository through automated notification delivery system.

Ques5: What practices are followed for off-class discussions on subject topics, cases etc (Tick a circle)? Rank (in square boxes) alternatives as per your preference of use where 1 refers to the best method?

- Through Cascaded E-mails
 - Through Phone calls
 - Through Threads on online portals
 - Through facebook or Whatsapp group
- | |
|--|
| |
| |
| |
| |

Rank (in square boxes) alternatives as per your preference of use where 1 refers to the best method for sharing presentations, case solutions among faculty members?

- Manually through External storage devices
- Through Emails
- Through a central repository

Ques6: How you allocate your time in a working day or weekly (Please tick for Working day/Weekly) in following activities?

Particular	Hours spent
Computer(for internet surfing, replying emails , reading E-articles etc)	
Manual record making	
Teaching	
Further studies(<i>Ph.D.</i> or other)	
Reading books ,magazines, news articles etc	

QUESTION ADDRESSING TO OTHER ACTIVITIES ASPECTS

Ques7: What all other duties or responsibilities have been assigned to you besides teaching? How many hours you allocate weekly/monthly (Please tick for Weekly/monthly) in following activities?

How often it is required to access past records to delivery above mentioned actives in present?

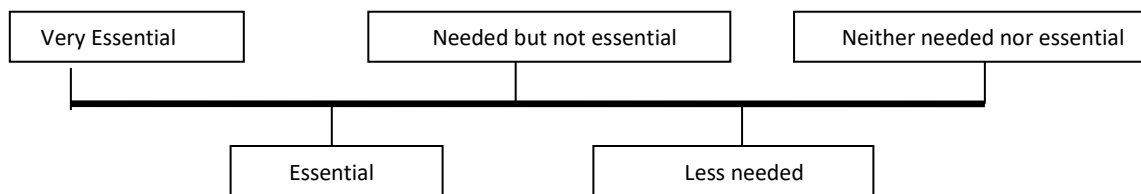
Mention in **RANK** Column: **1**: Always **2**: often **3**: sometimes **4**: Rarly **5**: Never

Serial Number	Activities	Hours spent	Rank
A1			
A2			
A3			
A4			
A5			
A6			

Ques8: What is the present method of sharing of records, accomplishment etc among faculty members and students of the above mentioned activities (Tick a circle)?

- Manual records
- Central data repository accessible to all actors
- Emails etc
- Not shared

Ques9: On the scale, specify the requirement for an IT enabled knowledge sharing platform for Delhi school of Management.



Annexure 2: Questionnaire reframed to conduct knowledge audit to study need for a Knowledge Management System for Faculty members.

Objective: To study prevalent method of knowledge sharing and drive facts from analysis to improve upon it.

1: How the records of lesson plans, student attendance, internal assessment and assignments are presently being maintained?

- Manual Record
- Online portal containing all records
- Other method(Please specify)_____

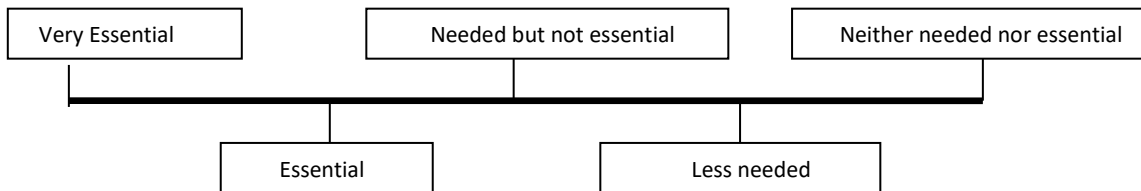
2. In your opinion, what is the best method for sharing guidelines, norms, notifications, Exam results etc?

- Chain Method(Inform 1 and ask him/her to inform further)
- Through emails, facebook or Whatsapp
- Through a central information repository through automated notification delivery system.

3. How you allocate your time during an normal working day in following activities?

Particular	Hours spent/Percentage of time
Academic	
Non- Academic	

4: On the scale, Please specify the need for an IT enabled knowledge sharing platform for Delhi school of Management.



5: What is the most convenient way of sharing study material among faculty members and students?

- Through e-mails
- Hard bounded copy
- University portal /institute Share Drives