CHAPTER 6
PROCESS DESIGN FOR KNOWLEDGE MANAGEMENT SOLUTION IMPLEMENTATION

6.1 INTRODUCTION

Most of the multi-national companies aim to embark an initiative to enhance the capture, storage and dissemination of knowledge and information. The main objectives behind this initiative is the identification and analysis of available and required knowledge assets and knowledge asset related processes, and the subsequent planning and control of related actions to develop both the assets and the processes so as to fulfill organizational objectives.

In an organizational context, data represents facts or values of results, and relations between data and other relations have the capacity to represent information. Patterns of relations of data and information and other patterns have the capacity to represent knowledge. For the representation to be of any utility it must be understood, and when understood the representation is information or knowledge to the one that understands.

KM is the process through which organizations generate value from their intellectual and knowledge-based assets. Most often, generating value from such assets involves sharing them among employees, departments and even with other companies in an effort to
devise best practices. *KM* is often facilitated by Information Technology (IT), though technology by itself is not *KM*.

Knowledge assets are the knowledge regarding markets, products, technologies and organizations, that a business owns or needs to own and which enable its business processes to generate profits, add value, etc. *KM* is not only about managing these knowledge assets but managing the processes that act upon the assets. These processes include: developing knowledge; preserving knowledge; using knowledge, and sharing knowledge.

*KM* can be effectively implemented by proper knowledge organization structure and carry forward by incentive plan and lucrative reward programming. To better implement *KM*, some organizations place the positions entitled with, for instance, chief knowledge officer (CKO), knowledge engineer, knowledge analyst, knowledge manager, knowledge steward to administrate *KM*. And along with the development of information technology (IT), *KMS* has been integrated in organizational structure to assist in managing knowledge through intranet or internet

### 6.2 RESEARCH GAP BASED ON LITERATURE

The need for having a holistic view about the process design, reward design and communication plan in organizational transformation is highlighted in literature. It is also clearly evident that all the three designs are the key for any organizational change like *KM*. From the detailed literature survey the research gap is shown in Figure 6.1.
Development of process design for the knowledge capture, knowledge storage, knowledge retrieval and knowledge administration, development of key performance indicator framework, development of organizational structure for KM with roles and responsibilities, development of reward design with incentive plan and metrics and development of communication plan design in an organization for the KM implementation is not widely explored.
in the literature. This process design with reward and communication plan is critically important in an organization before the implementation of KM solution. Based on the development of process design, reward and communication plan, organization should focus on learning design and development of linkage with internal and external functions of organization. Otherwise, implementation of KM solution will not be successful for any organization. The primary intention of process design, reward and communication plan is to devise the backbone of KM which will be necessary for the implementation of KM portal. The objective of this module is to design a generic conceptual framework and generic design for process design, reward and communication plan for any manufacturing organization. The factors related to process design are derived from the literature and those can be changed with respect to mission and vision of the organization.

6.3 RESEARCH PROCESS AND METHODOLOGY

The research process and methodology for the development of framework for process design, reward plan and communication plan is detailed. The research process is divided into five phases:

Phase 1: Development of process design for the knowledge capture, knowledge storage, knowledge retrieval and knowledge administration

Phase 2: Development of key performance indicator framework

Phase 3: Development of the organization structure with roles and responsibilities

Phase 4: Development of reward program design with incentive plan and metrics

Phase 5: Development of communication plan design with all relevant phases

The research methodology used in the research process is detailed here:

In Phase 1, a Delphi based detailed brainstorming exercise with a pre-intended process design which is derived based on business literature, research
literature, individual discussions and face validity with academic experts in the area of KM and consultants from the consulting organization in the domain of KM is the methodology. Delphi based detailed brainstorming exercise are conducted with 43 executives belong to 32 manufacturing organization. For the derivation of pre-intended process design, discussions with 26 academic experts from 14 different top institutions all around India and 13 consultants from 4 different consulting organizations. These pre-intended process design can be used as a base for any manufacturing organization. The devised process design is presented in Section 6.4 because the generic process design and the process design derived for the case study organization are the same.

The research methodology for the phase 2, phase 3, phase 4 and phase 5 are similar to phase 1. The pre-intended key performance indicator framework, pre-intended organizational structure with roles and responsibilities, pre-intended reward design with incentive plan and metrics and pre-intended communication plan design are devised based on the same methodology as indicated for phase 1.

The devised key performance indicator framework, organizational structure with roles and responsibilities, reward design with incentive plan and metrics and communication plan design are presented in Section 6.4 because the generic framework and designs and the framework and design derived for the case study organization are the same. The diagrammatic representation of research design is detailed in Figure 6.2.
Delphi based detailed brainstorming exercise with a pre-intended framework and designed which is derived based on individual discussions and face validity is the methodology for the below five modules:

1. Development of process design for the knowledge capture, knowledge storage, knowledge retrieval and knowledge administration
2. Development of key performance indicator framework
3. Development of organization structure with roles and responsibilities
4. Development of reward program design with incentive plan and metrics
5. Development of communication plan design with all relevant phases

Figure 6.2 Research Process and Methodology
6.4 CASE STUDY DEMONSTRATION

The entire research process and methodology is demonstrated and applied through a real-life case study for Indian textile machinery manufacturing company. Thus 216 executives of this textile machinery manufacturing organization were involved in Delphi based detailed brainstorming exercise for development of all the designs of this study.

6.4.1 Process Design Development

This section will define the KM processes for the case study organization that needs to initiate in order to achieve its KM goals and objectives. The processes thus described, revolve around the following four broad areas which form the main process for any KM initiatives such as knowledge capture, knowledge storage, knowledge retrieval and knowledge administration.

6.4.1.1 Knowledge capture

One of the very first step towards KM is to capture the knowledge that exists in the organization. The different processes for knowledge capture that can be adopted in a manufacturing organization are defined with respect to the following three areas namely structured knowledge, document workflow and unstructured knowledge.

Structured knowledge: This section defines the process to capture and store all the structured information (knowledge items) in a manner such that these can be easily retrieved at any point in time. The process environment design for structured knowledge is explained in Figure 6.3.
Any KM tool provides the facility to upload content and catalog it using attributes. These attributes are used when doing selective searches. There are a number of ways in which content can be collected for storing into the KM repository. The following procedure is suggested for capturing and storing structured knowledge. These are:

- A user voluntarily submits a document to KM through an offline system such as email for upload into KM. In this case KM administrator would review the document and upload it after assigning the required attributes, using the content management tools’ content upload workflow. The contribute section captures the categories, to which a Knowledge Item is uploaded and also the attributes related to that category from the user who uploads the document to the system.

- An end user can upload content directly into KM. Here (based on the licensing issues) the user would upload the content into the content upload workflow of the document management tool, and the content
would get uploaded after it is approved by the Expert / KM administrator.

- Some of the contents in the KM repository can be collected directly from other applications. Such data can be made available (for search and access based on security policies) in KM that are residing in internal application databases or external links. In such cases the KM system should be able to talk to these databases and retrieve information, on an “as and when” required basis.

- The Workflow process will facilitate KM administrator in ensuring that the knowledge items are available as and when they are due. The detailed explanation of the document workflow process is mentioned in the “Document Workflow” section.

Key roles involve KM administrator, KM expert and user.

Document workflow: This workflow is required to push the knowledge items contributed by users through a review and approval mechanism before they get published in KM site. The knowledge items contributed to the KM through contribute section is routed through a workflow process. The participants in the workflow are expert and KM administrator.

Expert: The contributed documents to KM Site will appear in the Expert section for approval. The Expert for each category is identified and the Expert should be able to see the documents concerning his area. Expert should be able to do the following actions such as approve, reject with reason, change profile values and change categories.

Administrator: After the knowledge item successfully passes the expert approval process, it will be waiting for KM administrator to publish it for display in KM site as shown in Figure 6.4. Administrator should be able to do the following actions such as publish, reject with reason, change profile values and change categories.
Key roles involve KM administrator and KM expert. The process environment for administrator is explained in Figure 6.4.

![Diagram](image)

**Figure 6.4 Process Environment Design – Administrator**

Unstructured Knowledge: This section defines the process to capture and store the unstructured knowledge that is being exchanged through unstructured means such as chats, discussion forums etc. in a manner such that these can be easily retrieved at any point in time, and are also made available for searches across the KM site.

Employee Chat: This is an online chat facility that is required. The chats can be mainly: many to many chat or one to many chat (chat with an expert) or one to one chat as in Figure 6.5. In all cases, there should be an authentication of the person entering into the chat. All chats should be moderated. Any User can request for a Chat along with the information on the topic and time for the Chat. The KM administrator schedules the Chat with respect to the request from the user or on his own and invites users for the chat. He is the owner of the Chat. The owner initiates the chats at the scheduled time and intimates the invited users. There should be a facility of creating a Knowledge Item out of a
Chat transcript. This knowledge item is stored in the KM repository with the appropriate properties tagged to it and appropriate security settings. The KM administrator can also create Frequently Asked Question (FAQ)/Tips out of chat transcript. The expert should be able to select questions to edit and submit to the new document, FAQ or Tips. The process environment design for employee chat is explained in Figure 6.5.

![Diagram](image_url)

**Figure 6.5 Process Environment Design - Employee Chat**

Discussion Forums: This is essentially a bulletin board service. The KM administrator should be able to create forums under particular domains and sub-domains. He can modify users list at any point of time. Under such forums Administrator can create a new topic and also can approve/reject topic requests from users for discussion. Any assigned users can then post their views on this topic. The thread will continue with users’ replies against topics and also with replies to the replies. Only KM administrator will have the facility to delete topics, or the replies posted as explain in Figure 6.6. View
access will be available for all assigned users to the forums, whether they have posted a question/comment/reply or not. There should be a provision for the topic to expire at a given time. KM administrator will then convert it (offline and manually) into useful knowledge items, to be stored in the repository, if required, else the entire transcript can be stored in archives. The process environment design for discussion forums is explained in Figure 6.6.

![Diagram](image)

**Figure 6.6 Process Environment Design - Discussion Forums**

Online Collaboration: In this process, there will be a common ‘whiteboard’ on which different users who have logged in can share views online as shown in Figure 6.7. The whiteboard will allow users to draw (like a paint brush in MS Office) on this common screen, and that image will be seen by all logged in users. This way a cumulative effort can be used to develop a concept / strategy etc. The system will store the completed discussion, and will be available with KM administrator for further use. The process environment design for online collaboration is explained in Figure 6.7.
**Figure 6.7 Process Environment Design – Online Collaboration**

E Mail Integration: The system is the same as that described in structured knowledge. In addition, the system should provide a facility to be able to pick mails from the central mail server as explained in Figure 6.8. All mails addressed to a designated mail box for KM would be stored as a copy in the mail server. The KM system should be able to scan through these mails in the specified mailbox and search for any key “knowledge items” and bring out the search specific email contents. The key role include KM administrator, KM expert and KM user. The process environment design for e-mail integration is explained in Figure 6.8.

**Figure 6.8 Process Environment Design - E-mail Integration**
6.4.1.2 Knowledge storage

This section focuses on the storage of knowledge items as per the taxonomy and metadata definitions. Taxonomy defines the way the data is stored in the back end systems of the KM repository. It gives a classification of the way the data is catalogued as show in Figure 6.9. The knowledge items present in KM site should be linked to more than one category logically. This is as defined in the Metadata definitions. Access control to the document should be established to the user level. The primary requirement here is to provide for distributed data content with authorization and access control. The key roles include KM administrator and KM user. The process environment design for knowledge storage is explained in Figure 6.9.

![Process Environment Design – Knowledge Storage](image-url)
6.4.1.3 Knowledge retrieval

This is the process which explains how a user should be able to search and filter the contents on a variety of parameters, so as to finally reach the knowledge items desired by him. The results will be based on taxonomy and metadata definitions. The concept of search & filtering is producing a relatively small subset containing a high proportion of relevant documents whereby the user can locate the required information quickly. The search & filtering could be on the following parameters such as keyword, taxonomy, search in document indices and expert search. Keyword is the basis of the search. In the search, the entered keywords would be matched to the starting strings of the article keywords. Taxonomy is a search that could be done only on selected domain (taxonomy section). The list of domains will be maintained by the KM administrator as a master list. The users will get a pick list to select one or more domains. Search in document indices involves the catalogued document attributes or Metadata along with the full body text search. If ‘Metadata’ is selected, then the entered keywords would be searched in the ‘Title, Abstract, Keywords’ fields of all the documents in the KM database. These fields will have to be entered when content is being uploaded into the system. In case of a ‘Full text search’ the system would search through the contents of the documents and articles subject to the suitable search engine being used. After the user submits, the selection, the result page would be displayed. The resulting articles would be categorized based on the prevailing taxonomy and displayed in descending order of the last modified date, in each subsection. In the first page after the search, the number of results found in each section would be listed. The title of the section would be hyperlinked, and on clicking on the title, the full list of knowledge items in that section would be listed in a new window. The user can then view/download the individual knowledge items, based on his access rights. Expert Page is based on the keywords entered by the user for the search, the system
will also search the catalogued expert pages for the matching keywords. If identified, links to those expert pages would also be shown on the search results page. To allow this link to be established, the KM administrator would need to assign the keywords for each expert, in the expert definition databases as shown in Figure 6.10. The key roles include KM administrator, KM expert and KM user. The process environment design for expert page is explained in Figure 6.10.

![Diagram](image)

**Figure 6.10 Process Environment Design – Expert Page**

### 6.4.1.4 Knowledge administration

This section defines the activities/functions that the KM administrator team has to perform to maintain KM. The activities are defined section-wise below. The current taxonomy definitions are based on the discussions with business executives of manufacturing organization and it is only representative of the present business scenario. It is quite likely that the taxonomy will undergo changes in the course of time as the KM gets refined with use in manufacturing organization. In case there is a change in the taxonomy, KM administrator would need to move the contents accordingly. KM administrator could do the following tasks such as add new taxonomy items, delete taxonomy items, move contents from one head to another head
Retrieval is nothing but the KM administrator will have to continuously track the usage of the contents in KM and accordingly create or modify the domains / categories in the master list. This will have to done primarily with the view of making it easier for the users to access the right information quicker. It is the task of the KM administrator to facilitate the incentive plans for KM. KM administrator with the help of the administrator module should do the following tasks such as generate reports on the contributions and usage for the appropriate month/quarter & level of the organization and run the report., select the contributor/user of the month and plan and facilitate to provide the incentives for the respective outcomes. The KM administrator will receive inputs from the users/experts by email or hard copies of structured knowledge items (office files or .PDF files) on a regular basis. The KM administrator would need to do the following tasks such as upload the content with set of attributes, delete the content from the repository when required, convert chat and bulletin board transcripts into FAQs, Best Practices, Problems & Solutions and upload into relevant portions of the repository, decide the relevant E Mails collected and convert to ‘Knowledge’ and store in the repository, follow up for the knowledge items as part of the process tracking and upload into the repository. The output from this process is the uploaded content will appear in the KM repository under selected taxonomy item. The inputs for unstructured knowledge process are the chats, discussion forums etc. which are as defined in the unstructured knowledge capture process. The following tasks would be performed by the KM administrator as part of this process:

- Employee Chats:
  - Set up chat sessions with expert users and inform to all concerned
  - Invite concerned persons for the chat
  - Moderate chat sessions
- Review a chat transcript and convert to a FAQ and post into the repository.
- Follow up for answering of the open questions in the chats
  - Discussion Forums
    - Create a new topic for discussion.
    - Delete expired topics and irrelevant responses (at least for topics owned by KM)
    - Review the whiteboard discussions & post into KM repository
    - Review the e-mails for knowledge items and post into the KM repository.
- Convert online collaboration discussions into FAQs and post in the KM repository
- House keeping activities to delete old/irrelevant content.

This process will not only facilitate the capture and storage of unstructured knowledge within the manufacturing organization but also ensure that relevant information reaches the concerned employees about chats and discussions in the form of mails and flashes on the site so that employees are kept aware of the happenings.

Organization learning process provides for identifying the knowledge items related to organization learning and posting the same into the appropriate sections. The primary objective of this process must be to upload relevant content and tag it to be visible on the Organizational Learning section of the KM site. As part of expert management process, the KM administrator would need to do the following tasks:
  - Expert identification
  - Uploading of all expert’s detail to the site
  - Mapping of subjects/topics to Expert
  - Conversion of Expert chats to FAQ
  - Feedback rating & review to maintain expert’s rating
- Additional inputs to Expert to make the expert pages complete

The primary objective of this process must be to identify and upload relevant information on experts in the organization on various subjects tag it to be visible on the Expert Management section of the KM site.

6.4.2 Key Performance Indicators (KPI) Design

As part of this process, the KM administrator would be responsible to track the performance of the KM process on a regular basis. The administrator will use the reporting features of the KM system to generate reports specific to some key performance indicators (KPI) as defined below. These reports will then be analyzed and projected to the management as inputs for decision making and further improvements/changes to KM.

The KPIs that need to be tracked for KM are:

1. System Specific KPIs:
   a. Number of Log-Ins into the KM Portal
   b. Number of hits per section / subsection
   c. Number of views/downloads per Knowledge item
   d. Number of contributions

2. Corporate Strategic Objective (CSO) related KPIs:
   a. Number of documents related to each of the CSOs
   b. Exception reports for tracking CSO which do not have any knowledge items or have consistently low (less than five per month) knowledge inputs

3. Expert performance indicators:
   a. Number of reviews/approvals by the expert
   b. Number of pending reviews/approvals
   c. Mean time taken by the expert to review and approve a document.
4. Significant contributors / users for a period and what are their contributions. In this context significant contributors/ users would be the first fifteen top rated contributors/ users.

5. User names with names and dates of visit to the site, who has read / downloaded which knowledge item.

The management should set targets against each of the above KPIs. Following guidelines can used to initiate the measures initially. Before going live ensure that there is a balance of knowledge items available in the system across all sections and subsections. (For example this can be taken to be at least 3 documents against each of the CSO distributed across all sections such that in every section there is at least three knowledge items available. This is only an indicative measure. The actual target will have to be set by manufacturing organization based on the priorities and significance of its corporate goals). After three months of going live, the performance against each of the above KPIs have to be measured and refined. At this stage more specific targets based on the observations from the past months will have to set against each of the KPI. The KPIs have to be tracked regularly and reported every month. Further the KPIs have to be refined every 6 months subsequently.

6.4.3 KM Organization Structure Design

KM acknowledges that the knowledge that exists within an organization's employees is its key to success; therefore a shift from a technical/process focus to a more people-oriented focus is pertinent. The emphasis is not only on the processes that enable information to be provided and used effectively, but on the personal attributes necessary to take on the required facilitation and communication roles. For successful implementation and carry forward of the KM initiative, knowledge Organization structure with well laid out roles and responsibilities is absolutely essential for any
Organization. Taking into consideration the specific nature of operation of case study organization, the following knowledge organization structure is recommended for this case study.

The roles discussed in the proposed KM organization structure are:

1. Chief Knowledge Officer (CKO)
2. KM administrator
3. KM Manager
4. KM Analyst
5. KM Engineer
6. KM Expert
7. KM Technical Support

All the above roles are rotational roles having a minimum tenure of 18 months and a maximum tenure of 36 months. The KM organization structure is detailed in Figure 6.11.
Figure 6.11  KM Organization Structure
6.4.3.1 Roles and responsibilities

The roles and responsibilities for the different designations as defined in the above KM organization chart are described below.

Roles and responsibilities of Chief Knowledge Officer (CKO):

- Providing overall vision, broad policy direction and guidance to the KM core team at case study organization.
- Overseeing the establishment, implementation, and evaluation of case study organization’s KM program.
- Monitoring the KM activities of the Offices, Divisions and Units to ensure that the occupational priorities are addressed along with critical initiatives of knowledge throughout case study organization.
- Coordinating with case study organization KM Manager to identify, select, assign, and evaluate the results of KM pilot activities.
- Forming and chairing the Organization KM steering committee.
- Program Manage all Organization wide KM activities.
- Implementing ‘Rewards & Incentives plan’
- Conducting an annual program review of results, lessons learned, and improvements in case study organization KM program activities.
- Measure the impact of KM on the business.
- Defining case study organization KM policies, procedures and guidelines.
- Budgeting and managing the funds allocated for organization wide KM activities.
- CKO must think holistically and strategically and must be able to convincingly communicate the value of KM to skeptical audiences.

Roles and responsibilities of KM administrator:

- Supporting the conduct and evaluation of KM pilot activities.
- Developing, overseeing, and conducting training on all aspects of KM
• Serving as the staff liaison between the case study organization KM Community of Practice and the KM steering committee.
• Monitoring ‘Rewards & Incentives Plan’.
• Conducting focus groups and other appropriate activities to determine case study organization KM needs.
• Communication on KM pilot projects and development efforts to KM Managers for incorporation in their respective areas.
• Maintaining and updating the case study organization KM Portal. These include the following:
  o KM Admin would review the documents and upload it after assigning the required attributes, using the content management tools’ content upload workflow.
  o Ensuring that the knowledge items are available as and when they are due:
    ▪ Publish
    ▪ Reject with Reason
    ▪ Change Profile Values
    ▪ Change Categories
  o Schedules chat sessions with respect to requirements and invites users for the chat.
  o Create discussion forums under particular domains and sub-domains. He can modify users list at any point of time. Create a new topic and also can approve/reject topic requests from users for discussion.
  o Maintain list of domains as a master list.
  o In case there is a change in the taxonomy, KM administrator would need to move the contents accordingly.
    ▪ Add new taxonomy items
    ▪ Delete taxonomy items
- Move contents from one head to another head
  - The KM administrator will have to continuously track the usage of the contents in KM and accordingly create or modify the domains / categories in the master list.
  - House keeping activities on the KM system such as delete old/irrelevant content.
- Facilitate the incentive plans for KM. KM administrator with the help of the Administrator system should do the following tasks:
  - Generate Report on the contributions and usage for the appropriate month/quarter & level of the organization and run the report.
  - Select the Contributor/User of the month.
  - Plan and facilitate to provide the incentives for the respective outcomes.

Roles and responsibilities of KM manager:
- Ensuring the development and implementation of their Divisional KM programs
- Leading development of KM strategies
- Selecting appropriate common techniques to implement those strategies
- Heightening awareness and interest in KM
- Communicating expectations for KM to the staff
- Clarifying communications to the staff and ensuring that the dissenting points are heard and understood
- Promoting inter-Division and inter-Unit knowledge sharing
- Sharing KM best practices and communicating them to their Division
- Periodically providing HR with forecasts of KM gaps and proposed solutions
- Serving as members of the Organization KM steering committee
- Linking KM to critical business processes and initiatives
- Reporting KM successes and risks to senior management
• Communicating lessons learned from KM activities in other Divisions to those involved in KM development activities in their Divisions

• Developing measures and metrics to monitor the effectiveness of Divisional KM activities

• Providing feedback to the CKO regarding results and lessons learned in their KM initiatives

Roles and responsibilities of KM analyst:

• Participating as members of case study organization’s KM community of practice

• Supporting the Office or Unit KM program and Divisional KM Champion

• Identifying budgeting needs and applying resources to develop and implement KM activities

• Conducting focus groups to obtain staff input on KM needs, capabilities, and techniques

• Promoting inter-Unit knowledge sharing

• Sharing KM best practices and communicating them to their Units

• Participating in and leading KM pilot activities to support identified priorities of their office or Unit.

• Providing feedback to the Divisional KM Champion regarding results and lessons learned in their KM initiatives.

• Periodically meeting with employees to identify knowledge gaps (personnel and procedures) and preparation of action plans.

• Special endeavor towards populating the KM Portal, by encouraging people to contribute and share.

• Ensure highest quality of document upload in terms of spelling, paragraph, font, title, relevant abstract, PDF conversion (wherever needed), etc.

• Keep all the Divisions / Units updated on the contributions made by them, ensure a healthy competition between the regions.

• Decision of Contributor / User of the month.
• Always keep on the look out for innovative ideas for knowledge creation. For e.g. through chats, discussion boards, personal interviews or group discussions.
• Design the questionnaire for measurement survey of KM effectiveness.
• Decide the methodology for measurement whether it is manual or web based.
• Help Units in collection of survey data.
• Responsible for overall collection and monitoring of conducting the survey across the Units.
• Complete analysis and presentation of the findings and results.

Roles and responsibilities of KM engineer:
• Ensuring that the staff / shop floor people understand and meet case study organization’s expectations from KM.
• Encouraging the shop floor people to share learning and knowledge.
• Ensuring that the staff is trained on the use of common KM practices and techniques.
• Ensuring that staff receive appropriate rewards and recognition for knowledge sharing.
• Ensuring that new and current employees are aware of the KM initiative and the importance of maintaining accurate and current information.

Roles and responsibilities of KM expert:
• Providing domain / functional area focused inputs.
• Participating as members of case study organization’s KM community of practice.
• Reviewing of various documents submitted in the KM portal.
• Providing rating of the documents
Roles and responsibilities of KM user:
- Understanding and meeting case study organization’s expectations from KM
- Providing rating of the documents (User feedback).
- Communicating expectations from KM to the KM Managers / KM Analysts.
- Participating in Chats, Discussion forums and online collaborations. For example the user should request for a chat along with information on the topic and time for chat.
- Participating as members of case study organization’s Communities of Practice
- Participating in e-learning course modules

Roles and responsibilities of KM contributor:
- Contributing knowledge items towards content creation for the KM portal
- Providing authentic and relevant information
- Complying with the Metadata attribute requirements for any document
- Research and prepare knowledge items useful towards meeting case study organization’s learning, technological and innovation needs.
- Volunteer for mentoring programs.

Roles and responsibilities of KM Technical Support:
- Provide KM Technical Support for the KM system
- Evaluate and improve the functionalities of the KM System over time
- Ensure accessibility and availability of the KM System to the employees of the case study organization.
- Resolution of technical issues related to the functioning of the KM System
6.4.4 *KM* Reward Design with Incentive Plan and Matrices

Very often the performance and motivation of employees is the most significant factor influencing his participation in any activity through which a company’s revenue and profitability can be increased. This section describes the incentive plan and matrices for evaluating the participants in *KM*. The primary focus here is to highlight the prominent participants so as to encourage others to follow suite. Keeping in mind both the most basic aspects of *KM*, i.e. knowledge capture and knowledge use, the incentive plan has been described in two fold, the *KM* contributors and the *KM* users. In both the cases, the idea is to highlight the most prominent contributor and the most prominent user of *KM*.

The contributor of the month is the person who has contributed the maximum to the *KM* repository during the month. The contributor of the month is decided at three levels according to the rating considered for all the employees in the company namely the company level (whole of case study organization), the division level, the unit level. The system should be able to capture the contributions of each individual, and produce reports for *KM* administrator to facilitate their process of deciding the contributor of the month.

This is an activity designed to identify significant contributors to the KM repository every month. This is performed by the *KM* administrator. The report as described below is generated by the system, and *KM* administrator will analyze the report to decide the winners. The system will pick the concerned person image from a folder and will be displayed. The name of the image will be as “userid.jpg”. The system should keep a record of the winners. The key elements of selection factors rating from expert, number
of views or downloads by the users and rating from the users. Each document/article will be measured on three parameters i.e.

1. Coverage – Does the document cover the subject well?
2. Utility – Do you think this document is useful in the functional area?
3. Learning – Did this document teach you something new?

The relevancies are measured with ratings (1-3), i.e.

- 1 is Satisfactory
- 2 is Good
- 3 is Excellent

The users and expert will read the document and give a feedback on each document. The expert feedback will be captured, while approving the documents. The user feedback will be captured, through the following two ways.

1. On close of the document from the web browser, the system will generate an alert message saying that “Do you want to give a feedback”, On selection of the “Yes” response, the system will open a feedback window for capturing the feedback, on selection of “NO”, the system will cancel the operation.

2. There is another link called “Feedback” against each document, on click of this link, the system will open a feedback window to capture feedback on the corresponding document.

The latest rating given by user / expert would be considered for the Contributor identification.

Rating calculation procedure: A contributor earns the average of the Expert rating for the document (A). For Example: If the expert gives the following ratings against each parameter for a document

- Coverage - 3 (Excellent)
- Utility - 1 (Satisfactory)
- Learning - 2 (Good)
Then the average is = \( \frac{3+1+2}{3} = 2 \)

A contributor earns points on the number of unique downloads or views on the document by a user for the first time (B). A contributor earns the average of user rating for the document (C). For example: If the two users give the following ratings against each parameter for a document, then

user #1 Rating:
- Coverage - 2 (Good)
- Utility - 1 (Satisfactory)
- Learning - 3 (Excellent)

Then the average for user #1 is = \( \frac{2+1+3}{3} = 2 \)

User #2 Rating:
- Coverage - 2 (Good)
- Utility - 2 (Good)
- Learning - 2 (Good)

Then the average for user #2 is\ldots \hspace{1cm} (2+2+2)/3 = 2

Then the consolidated user rating the contributor earns is

Average user rating \( = \frac{((\text{user #1 rating}) + (\text{user #2 rating}))}{\text{No of users}} \) = \( \frac{2+2}{2} = 2 \)

\( P = \text{Max} \left( \{30\% \text{ of } B\} \text{ or } \{\text{Number of documents rated/number of documents downloaded}\} \right) \)

User rating (C) = \( \text{Average user rating} \times (P) \)

Final rating for each document = A + B + C

Total rating for the Contributor = Final rating of Doc 1+ Doc2 + Doc3.....etc.

All inputs are consolidated from the users and experts and the system will generate a report as follows. The ratings shown on this table will be a simple average of the ratings obtained by the contributor for each of his contributions from the experts and the users. Sample table for the contributor is shown in Table 6.1.
Table 6.1 Sample Table for Rating of the Contributor

<table>
<thead>
<tr>
<th>Contributor Name</th>
<th>No of Contributions</th>
<th>Expert Rating</th>
<th>User Rating</th>
<th>No of Views/Downloads</th>
<th>Final Rating</th>
<th>Select</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contributor #1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>□</td>
</tr>
<tr>
<td>Contributor #2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>□</td>
</tr>
</tbody>
</table>

Final Rating column should be orderable ascending and descending. This report will be generated for the following options such as the company level (whole of case study organization), the division level and the unit level. For each of the options, the report can be generated for the following time periods such as monthly, quarterly and yearly. The contributor of the month must then be selected from the report and the selected person will be recorded in the system. The same contributor photo & month would be displayed in the home page. There will be a link “How does one become the Contributor of the Month” provided under the contributor of the month photo. On click of the link the system will display a static page which contains Calculation procedure for Contributors in a separate window.

This is a link on the KM site that will be accessible to all the normal users. Under this link user can see his/her composite rating and leading contender for “Contributor of the Month” and the leading contender’s rating. The display message is as follows:

Your composite rating for contributor : [X]: 99.99
Your leading contender for contributor : [Y]: 99.99

“Under My Contributions”, users can view his/her contributions and accessible status of his documents for the period of 3 months. The report format is shown in Table 6.2.
Table 6.2 Sample Table of the Report Format User Contributions

<table>
<thead>
<tr>
<th>S/No.</th>
<th>Title of Document</th>
<th>Uploaded Date</th>
<th>Expiry Date</th>
<th>No of Views</th>
<th>No of Downloads</th>
<th>Document Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Each page where any article is opening should have a link to ‘Feedback’. This should open up a form, which will capture the feedback for deciding the ‘Contributor of the Month’. The feedback should be available in three forms:

- After opening a document for reading and closing it the user will be prompted to enter a feedback if he clicks YES the feedback form opens up for capturing feedback.
- After every download, a mail should go to the user, requesting for feedback.
- Every document should have the feedback link, on click of the link; the system will open a feedback window for capturing the feedback.

The process environment design for the contributor of the month is detailed in Figure 6.12.
**Figure 6.12 Process Environment Design – Contributor of the Month**

The user of the month is the person who has made maximum use of the $KM$ repository during the month. The user of the month could be decided at three levels namely the company level (whole of case study organization), the division level and the unit level according to the rating considered for all the employees in the company. The system should be able to capture the usage of each individual, and produce reports for $KM$ administrator to facilitate their process of deciding the user of the month. The following key elements will be used to decide the user of the month namely number of times the $KM$ site was accessed, number of unique views or downloads on the documents, participation on chat, discussion with expert and number of feedbacks given.
for the documents. The above key values are captured while the user is accessing the site. The above elements are measured as explained below:

- **Access (A):** Number of Times the site was accessed by the user (maximum of one point per day for access irrespective of number of logins in a day into the system).
- **Views/Download (B):** Number of document views/downloads from the site for the month (One point/view or download per document)
- **Usage of Chat (C):** Each Participation in the Chat is to gain one point
- **Discussion forum (D):** Each response for the month carries one point.
- **Feedback (E):** Number of feedbacks given by the user for the month

Final rating for a User will be the sum of all the above for the use = (A+B+C+D+E). From the values for the above elements the system will generate the report as follows in the Table 6.3.

**Table 6.3 Sample Table of the Rating Report**

<table>
<thead>
<tr>
<th>User</th>
<th>Site Access (A)</th>
<th>Views / Downloads (B)</th>
<th>Participation on chat (C)</th>
<th>Discussion with Expert (D)</th>
<th>No of Feedbacks (E)</th>
<th>Rating (A+B+C+D+E)</th>
</tr>
</thead>
<tbody>
<tr>
<td>User 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>User 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>User 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Rating column should be orderable ascending and descending. This report will be generated for the following options such as the company level (whole of case study organization), the division level and the unit level. For each of the options, the report can be generated for the following time periods namely monthly, quarterly and yearly. The user of the month must then be selected from the report and the selected person will be recorded in the system. The same user photo & month would be displayed in the home page. There will be a link “How does one become the User of the Month” provided under the User of the Month photo. On click of the link the system will display a static page
which contains calculation procedure for users in a separate window. The process environment design for user of the month is detailed in Figure 6.13.

![Diagram](image)

**Figure 6.13 Process Environment Design – User of the Month**

### 6.4.5 Communication Plan and Design

Communication about the *KM* initiative is one of the most important factors for the success of *KM*. Right communication would not only generate the much required awareness, but also help in setting the expectation right with the employees. Repetitive and consistent communications via a broad set of channels is perceived as crucial for making the employees use and gain from the knowledge repositories. In this communication, theories about
KM should be limited and focus should be on the success stories, anecdotes and personal impressions of managers and employees. In the subsequent sections discuss the communication plan that can be used in manufacturing organization for its KM initiative. This plan has been discussed specific to the three phases of the KM solution rollout.

The three phases thus discussed are:

- Phase 1 - Pre launch
- Phase 2 - Launch
- Phase 3 - Post launch

Phase 1 - Pre launch

The communications objectives for the Pre-Launch Phase are to generate anticipation and build momentum for the launch of the KM and to project the usefulness and benefits of KM.

Channels & Activities: The various channels that can be used for promotion and awareness generation can be:

- E-mails
  - Teaser mails: An advance or teaser mail to intimate the employees of the impending arrival of KM.
  - Info mail: An info mail with all basic details of KM (concept, framework, possible benefits, etc)
- Promotional Posters / Banners / Brochures
- Creation of Groups (The KM team has to be instrumental in spreading the news/ word of mouth about KM and generate as much momentum as possible)
- The employees to be provided with an opportunity to come forward and ask questions about KM. A body in the form of “Just ask us” can be formed, which would be responsible for answering all questions. Questions (along with answers) which are genuine and can be helpful in bringing
clarity should be appreciated and acknowledged by publishing in the internal magazine of the Organization.

Phase 2 - Launch

The communication objectives for the Launch phase are to develop urge of the employees to visit the KM site and to provide education on KM site and its features. The basic objective should be to entice the users to make a visit to the KM portal. It is very important to launch with entries already written and published. That way, you allow users to come and explore the site which helps them decide right then if they wish to make a return visit.

Channels and Activities: The various channels that can be used in this phase are:

- E-mail
  - a. Everyday for 7 days prior to Launch
  - b. Education mails with proper information on the manufacturing organization’s KM initiative, expectation from employees, roles & responsibilities, etc

- Education campaigns
  - a. Navigation aspects of KM, etc
  - b. Instruction / procedure for Chat / Discussion forums
  - c. Instruction / procedure for document upload / download

- User group presentations
  - a. Showcase successful KM initiatives and benefits derived out of it

Phase 3 - Post Launch

The communication objectives for the Post Launch phase are to sustain the enthusiasm, to entice the users to visit and revisit the KM site and to introduce new features in a periodical manner and keep the momentum up and going.
Channels and Activities: The various channels that can be used in this phase are:

- Contests
  - Quiz (on KM portal)
  - Treasure hunt (locate a document from KM portal based on hints given at various places within the portal)

- KM Web page
  - New feature addition in the ‘What’s New’ section.

- Status reports
  - Weekly Usage report (Document download status for each Division,)
  - Weekly Contribution report (Document upload status for each Division)
  - Weekly highlights (Number of hits from each Division, Unique visitors, Value packs released, etc)
  - Graphical representation in a way which can be easily understood by all

- Rewards and recognition
  - Star User of the month
  - Star Contributor of the month

6.5 SUMMARY

Implementation of KM involves the identification and analysis of available and required knowledge assets and knowledge asset related processes, and the subsequent planning and control of actions to develop both the assets and the processes so as to fulfill organizational objectives. At the strategic level the organization needs to be able to analyze and plan its business in terms of the knowledge it currently has and the knowledge it needs for future business processes. At the operational level, the process design is very critical and it forms the backbone for the implementation of KM solution. Devised generic process design framework can be used as a basis for any
manufacturing organization and from there the process design can be improved further according to the needs and objectives of an individual organization. KM is a continuous process and not a one time activity. It is thus very essential that organization follows a framework of activities as part of its KM process. Also Knowledge sharing is one of the most critical steps in KM activities. To achieve effective knowledge sharing, it is important to encourage workers to share their knowledge for the best interests of the firm. The generic process design, organization structure, KPI design, reward design and communication plan design developed in this research can be directly taken as base for any manufacturing industry in building KM solution.