CHAPTER – III

KNOWLEDGE MANAGEMENT METHODOLOGY

3.1 Knowledge Management methodology and Challenges

Having understood the definitions and conceptual differences with core dimensions of Knowledge management as the Tacit Knowledge, The Explicit Knowledge it is beneficial to understand the challenges that hamper the practice of knowledge management within organizations. The accrued benefits of the KM practice are also discussed in the section and help understand the need of practicing KM with tangible and intangible outcomes.

3.1.1 Challenges

• Structural differences within organizations such as Division of Labour, Departmentalization, Configuration, and Distribution of Power. These systems cause silos of knowledge to rise given the nature of work being done.

• Cultural issues such as Norms, Shared Values, and Beliefs cause diversity of thought giving rise to different ways of working and perspectives.

• Information & Decision Processes get hampered given that organizations are constantly dealing with diversity of Decision Mechanisms, diverse knowledge and resources Databases and systems, inadequate Reward & recognition systems, imbalanced Compensation, inadequate review mechanisms, inadequate change management, branding and proliferation of the organizational work functions and services, Diversity of Leadership Styles, insufficient Training, role based transfers leading to expertise loss in subject areas, Selection or recruitment of the right resources etc.,

• Task Diversity, Difficulty in execution, and Variability compound the challenges.
Where organizations have adopted the usage of knowledge management systems, challenges surface in specific relation to People, processes that are followed, the usage and exploitation of the technology platform, and its content management capabilities; and the overall knowledge sharing culture of the organization. A study of the sites and technology platform and interactions with the M&M stakeholders threw up challenges with respect to the existing sites and knowledge management system. This assessment and analysis formed the first step towards providing the solution recommendations.

The issues are summarized below:

3.1.2 People related issues

- Awareness is lacking among teams regarding availability of information in the KMS.
- Ownership: Many employees, who have uploaded data and used the data, have moved. Current users are unaware of the existing data.
- Experts: There is no list of experts being maintained. There are no subject matter experts defined to resolve queries on different topics.

3.1.3 Process related issues

- Governance: Defined roles & responsibilities are lacking. Metrics are not being tracked to enable monitoring, control, compliance, maintenance and continuous improvement of the KM Practice and Technology Platform.
- Reusability: Documents are not being made reusable and the current site structure does not have an archival policy leading to redundancy. Also multiple copies of same documents are uploaded in same or different sites thus creating duplication.
- Usability: Proper navigation, user friendliness, and intuitive UI of the KMS are lacking.
• Process workflows: No defined process workflows for capture, contribution, movement of documents based on age of data, validation & feedback, and continuous improvement.
• Rewards & Recognition to incentivize users to ensure desired knowledge management behavior happens only in pockets.
• Change Management & popularization to ensure the KM culture and promotion of the KM Program are missing.
• Taxonomy is not well defined and does not aid effective search.
• Metadata for knowledge assets is not captured at the time of upload of knowledge assets into the centralized KMS.

3.1.4 Managing the available content
• Scattered: Content is stored in multiple sites and sub sites. This makes search difficult.
• Capture: Content is not captured from end-user perspective.
• Unstructured: Proper content classification is missing.
• Content Type creation to capture required information of knowledge asset types is not being handled.
• Quality: Documents uploaded on the site are not reviewed for quality.
• Rating: Content rating to ensure user perspective of the document during usage is lacking. Hence, quality of the documents cannot be gauged.
• Formats: There are no consistent formats for documents that are widely accessed and used.
• Duplicate check and Versioning is not enabled on the sites leading to redundancy in content capture.
• Monitoring: Access management is ineffective as much of the content is ‘access restricted’.

3.1.5 Technology Platform

• Inadequate information architecture

• Site structure: Proper Site structure to enable share ability, collaboration and maintain confidentiality of documents is missing. Proper site map is also not available.

• Site Creation: There is no formal process of site creation with common functionalities. Site creation has been allowed in an adhoc manner. Several sub sites have been created as test sites; they lack content and serve no purpose.

• Site Templates: Different site templates have been used. They do not serve their intended purpose

• Web Part usage: No standardization for uniformity of webparts on the sites and sub sites. There is sub optimal usage of OOTB features and Customizations have been permitted on an adhoc basis.

• Features to capture tacit knowledge such as wikis, blogs, discussion boards, media files are not being used effectively.

• Search is impaired due to customizations on several sites. The search feature does not capture failed searches and does not display results from different databases. In addition, the search functionality does not scan / search through content with different file formats.

• Workflows: Some workflows have been defined for some lists and libraries but they are inconsistent

  • Governance, Roles and responsibilities for proper usage, monitoring and maintenance of the site are not clear.
• User Management is not structured and accesses are based on adhoc requests from teams and individuals.

• Access & Security: There is no control mechanism for data confidentiality in critical documents.

• Health Check: The KMS has very slow response. Portal usage & accesses are not tracked.

• Metrics & Dashboards to present up-to-date reports of site usage and health are missing. No single placeholder to view latest reports and trends on usage and system health.

In current day context, it is a given that the ability of the organization to provide value differentiators that stem from improved decision making, quality of services and products, higher employee productivity, and large scale reusability of knowledge and resources; provide a much required edge over the competition within business contexts. The ability of the organization to focus on its knowledge assets enables it to discover, capture, protect and exploit what it knows, and to improve its knowledge development efforts to match its needs. Additionally, this helps firms

- learn from past slip-ups and triumphs

- Exploit existing knowledge resources by reusing them in territories where the firm stands to pick up e.g. cross-pollinating knowledge from one division to enhance or make an administration/item in another office, adjusting knowledge from a past procedure to make another arrangement, and so forth.

- Promote long haul concentrate on building up the correct capabilities and abilities and expel out of date knowledge.

- Helps in giving right data to the opportune individual at perfect time to take right choices.
- Enables hierarchical spryness
- Improves operational Efficiency
- Increases Innovation rate
- Enhances representative development and learning
- Reduces cost, process duration and expands benefit
- Augments centre development and supportability through enhanced consumer loyalty

In today’s world, time to market is of essence and only those enterprises which are able to reach to customers within no time through innovative means like knowledge management and reusability will stay in the reckoning in the long run. Organizations which have a strategy of reuse are the ones which in the long run which will see ROI and intangible benefits of being preferred vendor of choice.

Reusability, as a strategy and policy of the organization, needs to have the following steps
- Planning reuse
- Harvesting existing assets
- Obtaining external assets
- Evolving assets
- Helping project teams
- Tangible value for reuse
- Decommissioning the old assets.

A Re-Usable Asset is one that is well documented, articulated beyond the needs of a narrowed scope of project, duly tested, and has been implemented and has several used cases or can be used as examples to show how to reuse it.
Organizations can reuse source code available, components of information, developed artefacts, and templates that have been built with used cases examples. While KM is a baby step in artefact reuse, a clear strategy regarding reuse helps in enabling a holistic reuse philosophy. The word reuse of knowledge is often used to say “do not reinvent the wheel“ and this is the major step or first step for being successful in reusing the available knowledge assets is to have a proper project plan and where and how make use of information available, how much information to make reuse. It can be defined for the time being that a reusable asset is a robust asset that has been used on at least three separate projects by three separate project teams (at a minimum). It can be claimed that something is reusable, but it isn't truly reusable until it's actually been reused. Reuse strategy results in failure in most organizations because people are not aware of the existence of such an activity. Reuse isn't something that happens simply because organizations work with tools and technologies. Instead, reuse requires a systematic approach at enterprise level.

3.1.6 Harvesting Existing Knowledge Assets

Generalizing a knowledge asset requires subject matter expertise. Crack teams of technical specialists plus a domain specialist need to identify and come up with a list of components that can be reused (as is or with subtle modifications) the BA is the more appropriate person to identify the reusable components with his knowledge of the domain to see its appropriateness of usage for various business scenarios which can be validated by the tech specialist on samples from existing projects.

A four step approach would be as follows:

- Identify eligible RUSAs
- Abstract and generalize them for usage
• Evaluate the ones shortlisted from existing projects
• Validate or test for robustness
• Beef up properties and attributes to fit any business scenarios envisaged by business analysts
• Test thoroughly in multiple other projects before sign off and posting into the RUSA portal

There are four basic harvesting or Knowledge asset creation strategies that can be followed:

• Creation of Knowledge asset while work is in progress, while the projecting getting closed, permanent project asset during the beginning which can also be used for new projects

3.1.7 Developing Knowledge Assets

• Architected reuse- Create resources got out by your endeavor design.
• Single-utilize assemble- Construct it because of reuse since that particular resource will be required by different groups
• Public open source- Begin a typical OSS extend trusting that others will do some "free work"
• Internal open source- Have an OSS extend inside our private intranet where just individuals from our association are included with the venture.

3.1.8 Evolving knowledge Assets

A regularly ignored issue in reuse projects is the means by which we'll develop our vigorous resources after some time. At the point when a benefit is
accessible for reuse, we will find that we have to develop it to meet new necessities. We have to consider three crucial issues Ownership, Configuration management, Change management.

3.1.9 Publishing an Asset

Once the reuse asset has been identified and put through the reuse cycle, it can be populated and published.

3.1.10 Retiring / Archiving an Asset

As newer versions of assets are published into reuse repository, older versions can be retired. The retirement of a reusable asset can be as simple as assigning it a "deprecation date", after which reuse team withdraws its support from the asset.

The most important aspect of reuse initiative is to have proper measures on how the outcome of **reuse can be calculated** and the measures can be hours saved to use of available information, cost invested in creating a Knowledge asset, the benefit derived of the asset created or made available.

A pictorial representation of the above described frame work has been presented below.
3.2 Knowledge Management Dimensions, Models and Framework

3.2.1 Dimensions

Knowledge Management is a holistic discipline that asks everybody to take personal responsibility and accountability for their knowledge. To successfully implement knowledge management initiatives, it is necessary to consider, at least, 3 key dimensions of KM:

- Personal Knowledge Management
- Organizational Knowledge Management
- Inter-Organizational Knowledge Management
3.2.2 Personal Knowledge Management

Many organization’s have implemented knowledge management system for personal or individual’s knowledge management. This is called the bottom-up approach where the organization’s always believed that if the individuals knowledge capability is enhanced to identify, create, articulate, share and apply this will intron result in better performance of the team, inter organization and at group level as an automatic outcome.

Another reason for the knowledge management drive at individual level competition and need for individual and organizational growth to tackle the overload of available information, use the information in a better way, create more focus on the outcome, be proactive is doing the task and prioritizing the work to manage the
projects or work in an efficient manner. This helps in many ways of stress reduction, better creativity, timely delivery and better life style.

The personal knowledge management purely refers to the individual’s capabilities, exposure, and personal development for knowledge worker. Hence the applicable tools, strategies in this dimension are purely at personal level to identify, capture, assess, learn, visualize, communicate, share and apply.

The aspect of Personal knowledge management has been associated with gadgets like mobile, wireless and web-based, tablets, cameras, search engines, blogging, etc.

3.2.3 Organizational Knowledge Management

Most the organizations in the earlier era have travelled on creating organizational knowledge management. It is to introduce Knowledge management strategy with a proper infrastructure for identifying, creating, visualizing, sharing and then using the knowledge across the organization for better outcomes. Unlike the personal knowledge management which is a bottom up approach this is a Top-Down approach. The beginning of this is by identifying the right knowledge assets that would help achieve the objective results and then enhance them with further additions or developments and utilize them at the earliest. To enable this activity of capture, share, use etc the organization would setup a robust infrastructure. They would create a process to capture the innovative learnings and create more ideas around it and take them forward as best practices and create knowledge repositories of these assets and versions. Various methods or platforms used to do these activities can be categorized at expert net, blogs, communities of practice. Highly calibrated tools are used for
these kind of knowledge activities like internet, portal, taxonomies powerful search
engines, analytics etc.

3.2.4 Inter-Organizational Knowledge Management

This refers to within the organization and within the group the kind of
knowledge networks that are available or need to be created for better outcome. A
strong knowledge network with all the employees, partners, and service providers
comes under this category. Most of the renowned organization’s have started this
journey basis the fact that most valuable and high end knowledge may reside outside
your organization and knowingly or unknowingly that is compromised if there is no
proper connect. As an example many commercial organizations, education institutes
are walking towards collaborating with customers, service providers to co create and
enhance the knowledge and level of services. It is quite obvious that the internet and
World Wide Web has created a single platform for communicating in a collaborative
way, learning and sharing information. Globally large initiatives of collaboration,
knowledge management systems and ecologies are evolving.

3.2.5 Team Knowledge Management

Lot of companies has gone ahead implementing the knowledge management
strategy for managing the team knowledge. This is because of the belief that as
knowledge individual collaborate as team that team becomes a Knowledge based unit
and engine for the entire unit. It has been observed and realized that members who
collaborate well in the teams transfer knowledge faster, better and these team create
new knowledge portfolios as part of the sharing and co creating which a real asset for
the organization. Hence enhancing the capability of the team Knowledge management
with better robust infra-structure helps them to deliver with fewer defects and less efforts.

Team knowledge management, is understood to be an activity related ‘Share’ and ‘Pull’ models for information and knowledge transfer, as against the ‘Send’ and ‘Push’ models that are said to be creating knowledge overloads. As the technology is growing it is creating new avenues like collaboration platform for teams and hence it became possible for cross functional teams working virtually and globally. It depicts that the concept personal knowledge management and the team knowledge management, overlap at many levels. The need to develop knowledge at a individual level and the five learning disciplines aligned to it are personal mastery, shared vision, thought oriented models and team learning.

3.2.6 Inter-relationships between the four dimensions of Knowledge Management

The knowledge management dimensions have to be assessed separately and each one is as powerful as the other has different approach of their own. While they seem to have different knowledge management strategies and use different method and techniques they are one and the same. They are single knowledge entities consisting of individuals! The scale of the knowledge entity is what differs across. The common mistake that is done is putting people who are complex organisms are pout into limitations and are expected to deliver high. It is to be understood that individually each part, person and dimension, is related to other r part, person and dimension, as a whole. Which means as and when an individual is improved the system as a whole is improved which leads to spiral strategy to better performance.
The vibrant knowledge ecologies are if any part remains unfocussed and is not delivering and the same is ignored it results to downwards spiraling with a decreased value. For example, many organizations start the knowledge management journey with an unbaked plan, strategy or connect with the individual knowledge management growth plan and in such cases the employees treat this strategic activity and would not pay the value attention needed. The other way round is, if the organization takes only personal knowledge management, the journey it can make is with many limitations and the scaling of workers becomes a major challenge. This would result as a doomed stage of outcome with limited results than the actual capability of organization.

On a similar note if organization embarks only on team knowledge management or inter organizational knowledge management, it will not be able to capitalize the benefits that personal knowledge management and organizational knowledge management as a whole can deliver. Hence a combination of all the four strategies has to be looked at as a model for better knowledge based organization.

3.3 Models

There were numerous models of knowledge management that have been proposed by researchers over a period of time. Some of them are presented here:

3.3.1 APQC Model

According to APQC Knowledge Management is a self-organized and ongoing project for any organization. Knowledge creation, sharing, usage and storage is integrated into an organization’s culture and improves over an agreed period of time which is measured using pre-determined parameters. To make knowledge management efficient it is imperative to have standardized processes through pilot projects and labelled activities specifically designed for KM. IT has to be taken into
cognizance that KM activities at times can be adhoc and non-systematic due to changing business dynamics.
The key areas KM as identified by this model are

- Processes & Roles in Organization
- Strategy & Objectives of KM
- Environment Partnerships
- People & competencies
- Collaboration Culture
- Leadership Support
- Knowledge Structures & Forms
- Technology & Infrastructure

The APQC model suggests following an Assessment Process for any organization to arrive at a Knowledge Management project. It involves a series of subprocesses as depicted below.

- Orientation & Planning
  - Management Briefing
  - Workshop
  - Interviews
- Motivation & Data Collection
  - Interviews
- Consolidation & Preparation
  - Workshops
  - Interviews
- Feedback & Consensus
  - Report Preparation
- Ideas for Solutions & Action Proposals
- Report & Presentation
- Action Plan
- Start of KM Improvements Project
The major outcome of assessment is expected to be the ability to select appropriate KM interventions for an organization which are at times tailor made as per the requirement.

The model also suggests a follow up activities to enable a sustained knowledge management program.

➢ Systematically gain knowledge from customer contacts
  o Build a community with Lead Customers
➢ Build and Keep contact with your most important stakeholders
  o Create a scorecard with time spent per stakeholder
➢ Develop a program to cooperate with your partners
  o Define a process how knowledge can be exchanged on a regular basis

3.3.1.1 Benefits of APQC Model

- Holistic & systematic approach
- Oriented towards KM interventions
- Adaptive – focused on the next step
- Easy to understand model
- Derived from successful methods (EFQM, CMM)

<table>
<thead>
<tr>
<th>Codified</th>
<th>Proprietary Knowledge</th>
<th>Public Knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uncodified</td>
<td>Personal Knowledge</td>
<td>Common Sense</td>
</tr>
<tr>
<td>Undiffused</td>
<td>Diffused</td>
<td></td>
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</tbody>
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Figure 6: Boist’s Knowledge Category models
3.4 Boisot’s Knowledge Category Models

In 1987, Boisot developed a model explains knowledge and its management in four quadrants. It considers knowledge as either codified or uncodified and as diffused or undiffused, within an organization. The term “codified” particularly refers to knowledge that can be readily prepared for transmission purposes such as financial data. The model typically referred as undiffused and codified is used to mention that proprietary knowledge which in many cases used in scenarios where the knowledge is transferred to a smaller group as and when needed. On a similar note the word uncodified is used to represent a type of knowledge that cannot be transmitted or shared. The word Personal Knowledge is used where uncodified and undiffused knowledge is referred to. It includes experiences, perceptions, views, ideas etc. The model helps understand the words uncodified and undiffused knowledge which are referred to describe personal knowledge (e.g. ideas, thoughts, opinion, experiences etc). Quadrant which is on to the left depicts the categories public knowledge and knowledge as part of common sense.

When it refers to Public knowledge which we understood as codified and diffused the aspects that are commonly referred would be digital or normal library, all types of journals, books, newspapers, etc. The next important one as Boisot is common sense knowledge or knowledge that is considered as available with most of the individuals which comes under diffused and uncodified category is developed through the process of socialization and externalization (Boisot, 1987). As an outcome of this model it can be understood that knowledge across organizations is either diffused or spread and the same is shown or can be seen in the horizontal dimension in the above figure. The understanding through the Boisot model is that those sects of knowledge described as codified or coded and uncodified which
means knowledge that cannot be transmitted fall under the discrete category.

Coming to the thought or concept of diffused knowledge the model does not provide the clarity of understanding as to whether this talks about gathering of knowledge inside the organization or the idea of spreading Knowledge across.

3.5 Choos ‘s Knowledge Management Model

This model is based on the elements used for creation of new senses for and optimized decision inference. Choos’s model revolves around the point how informational elements are selected and introduced in organization actions which are a result of the concentration and absorption of information coming from external environment in every knowledge cycle. At identification phase, the requirements are defined and this helps in information filtering. Combining previous experiences common interpretations are built at an individual level. As per this theory by establishing clear processes and by sharing individual interpretations chaos can be transformed into clarity.

There were four processes majorly identified as per Choo’s Model:

3.5.1 Changing the environment – it is external for the organization, having the possibility to disturb information flow between participants

3.5.2 Adaptation – understanding the changing environment and steering the internal knowledge flow to form a base for the decisions impacting the organization.

3.5.3 Selection and Keeping – when people try to interpret the observations, interpret them for the decision making which rich experience enabling final success it creates organizational memory. This memory can be reused in future for new interpretations in order to unify them into a coherent organizational vision.
3.6 Demerest’s Knowledge Management Model

The above figure is known as Demerest’s knowledge management model. The model categorically talks about building knowledge within the organization. This building of knowledge is not limited to inputs received on scientific basis which is what all the models talk about but also includes the building of knowledge from social aspects. This model goes with a thought that the knowledge that is built is proliferated and exemplified within the organization through social activity process along with the form of explicit knowledge forms such as knowledge assets etc (McAdam and McCreedy, 1999).

It can be seen in the illustration that knowledge dissemination is happening as a set process across the organization both internally and its surroundings. This means knowledge generated or disseminated is put into economic use with respect to the outputs of the organization. The arrows indicate the direction of flow of knowledge. To understand this better it can said that solid arrows depict the primary direction of flow of knowledge and the light color arrows or the plain ones depict recursive flow of knowledge. The model is more liked and understood as it covers the fact that it does not creating any assumptions of definitions but takes a more holistic view.
However the reality may be which is not clearly showcased but can be presumed through the data provided that knowledge transfer and related flow is circulatory in a very rapid way when looked at various forms of learning and actions related to those learnings.

3.7 Nonaka and Tekeuchi’s SECI model

Though there are many models explaining the Knowledge Management and frameworks, has gained popularity and is widely adapted many organizations. SECI Model of Knowledge conversion as identified by Nonanka & Tekeuchi is given below.

3.7.1 Tacit to Tacit (Socialization) - The word tacit means knowledge lying within individual or individuals which is not converted into documented model. These can knowledge sharing through socials interactions of groups or individuals or person to person discussion of thought sharing of the experiences. The related examples that can be considered to explain this model are brainstorming sessions, meetings etc. Capturing tacit knowledge is always a challenging aspect and in many circumstances this is not possible as a formal activity with respect to time and space. The presumed way of capturing tacit knowledge is like through sharing of experiences, spending time with the expert of working in the same environment where the expert keeps depicting the information related to that work and the absorber or the receiver grasps or grabs the knowledge. When it is said that tacit knowledge is shared normally in a traditional way it was called as apprenticeship where the learners or the apprentices learn through hands on experience while observing the teacher rather than reading manuals.
3.7.2 Tacit to Explicit (Externalization) – The act of converting tacit to explicit knowledge is through externalisation such as articulation of the thoughts or information as white papers etc or the publishing of information in any mode such as digitisation or paper mode. The factors that help developing and embed the complete tacit knowledge and the factors that enable its communication are the externalisation modules as described earlier. Apart from written documents images or pictorial representations, concepts etc considered in this category.

It can said that the process involved in converting tacit knowledge to explicit knowledge mode, the tacit knowledge component is crystallized, and helps others to share it in an easy way and hence it becomes the base for new knowledge. The example here can be a Concept created before a new product is developed.

3.7.3 Explicit to Explicit (Combination) – This model or process is more of how the available explicit or pre articulated knowledge in reworked or combined with other types of explicit knowledge capsules and organizing them in a new concept or model. The example that can be used to depict this model is building prototypes and showcasing before the same it converted to the reality model. In the latest world of computers the Local area (LAN) or Wide area networks (WAN) and the gigabytes of knowledge data bases or warehouses can be said as Explicit to explicit knowledge conversion. The explicit knowledge can be collected from inside or outside the organisation and then gets combined with the other knowledge capsules duly edited and process and is released in the form of new explicit knowledge. This new knowledge is then proliferated among the identified or needed people.

3.7.4 Explicit to Tacit (Internalization) – This is a reverse engineering and loop in the cycle of knowledge generation as coated by Nonaka & Tekeuchi’s SECI model.
This is conversion of explicit knowledge in the organization through process of internalization of learning by the individual and implementing as per his or her understanding for the work. This way it completes the cycle of explicit knowledge that was available or is made available and the individual put that to use and deliver the work. This becomes an asset to the organization as the information shared as explicit is reused and hence it becomes tacit knowledge with some individual additions of ideas which becomes part of individual’s knowledge. It can be understood that internalization can be seen as a process of continuous development of individual of his ability and reflection to understand and recognize between ideas, concepts and different patterns. As a process of Internalization the knowledge gains a new ‘level’, which confirms the circular or spiral process of knowledge creation (Nonaka & Takeuchi 1995: 71-2, 89) which is referred as the SECI model.

![Figure 8: Knowledge conversion models by Nonaka & Takeuchi](image-url)

3.8 Importance of Knowledge Management Framework

As understood for any organization which has the thought process of implementing a knowledge management system the Knowledge management frame
work is a very important and essential component. This would be a guide line that helps avoiding errors and would also be a contributor in reducing efforts, time and also for cost management. Many prominent researches, authors have explained and showed different models of Knowledge management frame works. All these proposed frame works have given a perspective without providing a specific direction on accomplishment of these procedures. One of the prominent frameworks is Wiig’s (1997) Knowledge Management framework which talks about three pillars representing the functions needs to manage knowledge. These three pillars are Knowledge transfer, Knowledge creation and Knowledge manifestation and usage. Another prominent model known as Leonard-Barton (1995) model talks about a frame work which consists of four core capabilities and four knowledge building commotions which play a very important role for a Knowledge organization. The third model is built by APQC and Arthur Anderson (1996) having seven processes of knowledge management considered to be an advanced model. The seven processes are identifying and collect the information, create the knowledge, organize the knowledge, apply the knowledge, adapt and finally share. Another prominent model was created by Van der Spek and Spijkervet (1997) which talks about four stages in knowledge management activity stages knows and conceptualize, reflect, act, and retrospect. The new Knowledge management frame work of Chih-Ping et al. (2002) is a combination of all earlier frame works. It contains the three important features of this frame work are knowledge resources, knowledge management activities, and knowledge influences. While Chih-Ping et al. (2002) have integrated the earlier frame works the approach was taken by studying highly intensive knowledge based companies.
The summary of the framework review is shown in Table below.

Table 1- A Review of Knowledge Management Frameworks

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<thead>
<tr>
<th><strong>Frameworks</strong></th>
<th><strong>Descriptions</strong></th>
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| Leonard-Barton, 1995                     | 1. Shared and creative problem solving  
2. Importing and absorbing technological knowledge from the outside of firm  
3. Experimenting and prototyping  
4. Implementing and integrating new methodologies and tools. |
| Choo, 1996                               | 1. Sense making (includes “information interpretation”)  
2. Knowledge creation (includes “information transformation”)  
3. Decision making (includes “information processing”) |
| Van der Spek and Spijkervet, 1997       | In the Act process  
| Nonaka, 1996                             | 1. Socialization (conversion from tacit knowledge to tacit knowledge)  
2. Internalization (conversion from explicit knowledge to tacit knowledge)  
3. Combination (conversion from explicit knowledge to explicit knowledge)  
4. Externalization (conversion from tacit knowledge to explicit knowledge) |
| Alavi, 1997                              | 1. Acquisition (knowledge creation and content development)  
| Szulanski, 1996                          | 1. Initiation (recognize knowledge need and satisfy that need)  
2. Implementation (knowledge transfer take place)  
3. Ramp-up (use the transferred knowledge)  
4. Integration (internalize the knowledge) |

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3.9 Anticipated reasons for failures to KM - “A Synthesis of Knowledge Management Failure Factors” by Alan Frost paper released January 2014”. In the given scenario many a times Knowledge management is seen as cost based activity and hence all the organization’s irrespective of the domain are not very keen to implement in a structured way at the same it is difficult to quantify the benefits in a tangible way which is called the ROI. Even today Knowledge management is still a concept for which there is no standard definition that can be said as accepted by all. Knowledge management is always presumed to be a surface level information approach with no deep rooted thought process and this has led to many failures while implementing Knowledge management system which has smudged the reputation and image of this entire subject.

3.10 The major contributing factors for the failure of KM are

- There have never been direct indicators of benefits that are measurable
- Lack of senior management support financially and thought leadership.
- Lack of proper planning, followed through for design and implementation
- Non availability of skilled knowledge managers and implementers
- Cultural issues at the organizational level
- Non availability of a defined Organizational Structure

It has to be accepted or understood the reason for having a knowledge management system as a process should be to achieve the objectives of the organization or rather exceed the performance. It should not be merely limited to becoming a knowledge individual or knowledge based organization but to create knowledge wealth, transfer the knowledge and apply the available knowledge for better outcomes with less efforts and nil reinvention.
For many today Knowledge management is a good to have concept, whereas knowledge workers of those who work day in day out with knowledge as the differentiator consider this as an extraordinary tool. Those who have failed to understand the importance of knowledge management will always look at this as burden or an extra activity in their routine work. It is very much predicted that in the global era the effective knowledge management, at all individual levels teams and organization will eventually become the mainstream for successful growth and ROI.