

A Study on Knowledge Management

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I. INTRODUCTION

Knowledge management is a fairly modern concept. It refers to and enterprise that consciously and comprehensively gathers, organizes shares and analyze its knowledge to achieve its goal. It has gained in importance because companies have discovered that people, their skills and knowledge are essential to gain competitive advantage. It has become a major competitive tool for the present day organization. It is acquisition and use of resources to create an environment in which information is accessible to individuals and in which individuals acquire, share and use that information to develop their own knowledge. It is a conscious effort to get the right knowledge to the right person at the right time so that it can be shared and put into action.

II. RELATIONSHIP BETWEEN KNOWLEDGE MANAGEMENT AND HUMAN RESOURCES

HR and Knowledge management are related to one another and their interaction plays an important role in an organization. Emphasis on knowledge, skills, creativity, sharing information, all have an impact on HR's role in knowledge management. In the contemporary business environment, the competitive position of companies among others is influenced by its capability to create new knowledge which in return results in the creation of the competitive advantage.

The different areas of HR which helps in effective knowledge sharing are as follows:

1. **Reward Systems:** The first and most obvious area of HR involvement is knowledge management is reward management. An organization that plans to implement knowledge sharing should recognize and reward the acquisition, sharing and utilization of information. The pay system should also be effectively designed so that it motivates employees to personally improve knowledge management in the organization. An effective reward management system should incorporate both pay and non-pay reward systems. For maximum participation of employees in a knowledge environment, the reward strategy needs to be developed in consultation with those for whom it is intended. The reward system should be so designed that it encourages the sharing of information and expertise. In a knowledge environment, a mixture of short-term and long-term reward is necessary. Short-term rewards can be in the form of bonuses and the long-term rewards in the form of

retirement schemes. Short-term rewards will have an immediate impact and satisfaction to knowledge workers, while long term rewards foster greater commitment to the organization.

2.

Table 1

Wipro Infotech for instance has a 'saint and thief' award concept, under which both the saint (person who contributes the maximum knowledge) and the thief (the one who steals the most from the knowledge repository and deploys them) are rewarded.

3. **Recruitment, Retention and Succession Planning:** Recruitment, retention and succession planning from a Knowledge Management perspective can be looked at as filling knowledge gaps. Knowledge Management can lead to a more flexible recruitment process. Focusing on people to be recruited and knowledge gaps to be bridged rather than job slots to be filled can lead to a more flexible recruitment process. Flexibility here means selecting employees who are more creative and innovative and can adapt themselves to the changing work environment. HR policies and practices should be designed in such a way that they allow individuals to meet their personal aspirations. This is most important to retain good employees. Succession-planning in a knowledge environment is less about filling posts and more about planning to meet future skills and knowledge needs with existing resources.
4. **Training and Development:** HR's involvement and its contribution is perhaps the greatest in training and development. Manager's in a knowledge environment need to foster innovation and creativity and help employees manage their own learning and development. HR should get itself actively involved in the technological developments in the workplace as they can train the employees accordingly. A training methodology can also be used effectively within an organization to develop team-working at all levels. Training is necessary for individuals to work in teams as cooperation and sharing of information brings in benefits for the whole organization.
5. **Knowledge Management and Organization Culture:** Knowledge Management has profound implications for organizational culture, because it is the culture that

helps to bridge the gap between the provision of technology and information and the effective use for the benefit of the organization by individual knowledge workers. A culture conducive to Knowledge Management is likely to value:

- Respect for individuals
- Creativity and innovation
- Trust and cooperation
- Sharing of ideas and information
- Effective systems and procedures
- Continuous learning and development

In a knowledge-based economy, managers become more of facilitators rather than controllers. They will have the support of HR in making this transition. HR will assume a more flexible role as a result of changing roles of business.

III. ELEMENTS OF INTELLECTUAL CAPITAL

Intellectual capital involves three elements. They are as follows:

- Human Capital
 - Structural Capital
 - Customer Capital
1. **Human Capital:** Human capital refers to the employees' capabilities, skills and expertise. Human capital is the accumulated capabilities of individuals working towards organizational goals. Some of the key functions tied to human capital management are drawn from the traditional practices of human resource management. They include:
 - Building an inventory of employee competencies.
 - Scanning the environment and determining competencies which need to be developed to meet strategic objectives.
 - Developing a system to deliver the needed knowledge, skill.
 - Developing an evaluation and reward system which is tied to the acquisition and application of competency that is in line with organizational strategic objectives.
 2. **Customer Capital:** Customer capital refers to the extent and intensity of the organization's relationship with customers. Customer capital includes customer loyalty, goodwill and supplier relations. Various techniques and analysis tools have been developed to understand the value of customers and their perceptions better. Quality profiles are developed with the help of customer questionnaires to identify what quality really means to the customer; benchmarking each competitor on every aspect of quality; developing overall quality performance measures, all based on the customers definition of quality which decides their purchase. Consumer value maps illustrate how a customer decides from among competing suppliers and products. They contain information on which companies might be expected to gain market share.
 3. **Structural Capital:** Structural capital refers to the organizations' capabilities to meet market requirements.

Unlike human capital, structural capital can be formally captured and embedded. Also referred to as the organizational capital, it includes capabilities developed to meet market requirements such as patents. While it is impossible to have an all encompassing framework for managing the organizational(structural) capital of the firm, value chain analysis gives a systematic approach to the subject. Value chain analysis is to identify the elements of organizational processes and activities and link them to the creation of value. Processes are structured and measured sets of activities that are designed to produce a specific output for a particular customer or market. To identify the firm's value creating processes, the way in which knowledge is created, transformed and utilized a model is first established using process analysis and the activities within each process are subsequently analyzed. The end product of the Knowledge Management process can be then valued as (i) a patent, a consulting process, or a trademark; (ii) an improvement in organizational efficiency that can be measured by cost savings, profits, revenues growth, return on investment etc.; (iii) improved capabilities of the firm, measured by individual and team-based indicators of performance.

IV. IMPORTANCE OF INTELLECTUAL CAPITAL

Intellectual capital of a company includes employee expertise, unique organizational systems and intellectual property. Simply put, intellectual capital is knowledge. While intellectual property means trademarks, patents and copyrights, intellectual capital is the collective knowledge in the organization. The knowledge a company's employees have about its products and services and about its organizational systems and intellectual property make up its intellectual capital. Managing intellectual capital requires corporate executives to measure performance with more strategic initiatives such as capturing knowledge in expert systems and quantifying its value to the company.

Table 2

KM – The TCS Way

Tata Consultancy Services introduced KM as a concept in 1995. The management initiated the process of defining the framework in 1996 and a dedicated KM team called “Corporate GroupWare” was formed in 1998. After a preliminary study, this group launched the KM pilot in mid of 1999.

The KM implementation team is a matrix of several groups; the steering committee, corporate GroupWare Implementers, branch champions, application owners and the infrastructure support group.

Today, KM in TCS covers nearly every component of operation, from quality assurance to HR management. The offices are linked through dedicated communication links across its 50 offices in India, clustered in about eight regions. The communication network is connected in a two tier architecture. Backbone nodes are connected through 2 Mbps/64 Kbps links, while the intra-city nodes are connected through a minimum of 64 Kbps links. Overseas offices are connected through the net and the Lotus Notes Domino servers.

The knowledge repository resides on the corporate and branch servers. As a TCS employee, one can access the knowledge repository through the TCS intranet, with a browser front end or a Notes Client. Once an employee is into the intranet, he could branch off to the knowledge domain he is interested in areas such as processes, line of business/line of technology and projects.

Adapted from KavithaKaur, ‘Give and Take.’ Computers-Today, January 16-31,2000.

V. MANAGING INTELLECTUAL CAPITAL

The growing demand for knowledge-based products and services has changed the structure of the global economy. The role of knowledge in achieving competitive advantage has gained in importance. It is important for companies to manage intellectual capital effectively.

1. **Promoting Knowledge Sharing:** It is the stage of disseminating and sharing of knowledge in an organization. Collaborative work environments help in sharing knowledge effectively. Collaborative problems solving, teamwork and brain storming sessions help disseminate knowledge. Technological support makes knowledge sharing and utilization effective. For example knowledge sharing at the World Bank is done with the help of knowledge sharing coordinators, such as knowledge, managers, coordinators, and advisors and a small coordination unit- the Knowledge Sharing Group. The Knowledge Sharing Group meets at least

once in a month to ensure that programs, systems, and human resources create an environment conducive to knowledge sharing and learning.

2. **Implementing Technological Systems:** The role of technology has broadened the reach of knowledge acquisition and transfer. Its primary role in Knowledge Management is that of storing and transferring knowledge. The World Wide Web and the Internet have increased the power of technology in organizations. The reasons for growing importance of the Internet are:

- The Internet is cost effective than leased networks.
- Using the Internet companies can connect to any place, anywhere. This is especially for companies that operate in a number of countries.
- Resources and databases that are distributed can be connected in a cost effective and reliable manner which can help customize to regional preferences.

Technological components that tie together the Knowledge Management system of a firm can be divided into:

- Knowledge flow Meta Component
 - Information Mapping Meta Component
 - Information source Meta Component
 - Information and Knowledge Exchange Meta Component
 - Intelligent Agent/Network Mining Meta Map
- **Knowledge Flow Meta Component:** It includes components that enable the flow of information in the organization. GroupWare, Intranets and extranets help knowledge flow through an organization. Organizations use techniques such as brainstorming sessions, problem solving, idea generation etc. for knowledge sharing. GroupWare supports such a collaborative work environment. Groupware is a class of software that helps employees to connect to local area network to organize their activities. It is also called work group productivity software. Typically, groupware supports the following operations:

- (i) Scheduling meetings and allocating resources
- (ii) E-mail
- (iii) Password protection for documents
- (iv) Telephone newsletters
- (v) File distribution

Intranets and extranets are useful for providing internal and external information to a firm. Companies need to find effective ways to distribute information. Intranets are useful in improving the overall knowledge flow in the organization. Extranets help companies tap information from their allies and the knowledge-based resources of their partners.

- **Information Mapping Meta Component:** It maps the path of the origins and destinations influencing information. It deals with context, information distribution channels and external network paths that form the information-mapping component. Document management is an important aspect of the information mapping meta component. In general document

management, is the automated control of electronic documents right from creating to archiving. Electronic documents can include any kind of digital object bitmap images, HTML files, SGML, PDF, graphics, spreadsheets, and word-processed documents. Document management allows organizations to exert control over the production, storage, management, and distribution of electronic documents leading to greater efficiency in the ability to reuse information. It consists of converting information into a easily transferable and searchable format.

- **Information Source Meta Component:** It consists of components that provide information to the Knowledge Management system. These include distributed search and retrieval mechanisms, multimedia content and project management tools. A good example of a project management tool is the Microsoft Project that provides organizations with tools for storing and organizing data. Project management tools help users link the resources they use to the project management data.
- **Information and Knowledge Exchange Meta Component:** It consists of tools that allow people and systems to exchange, share and transfer explicit and tacit knowledge. The sub components of knowledge exchange meta component are messaging integrators, Internet conferencing systems, video conferencing, etc.
- **Intelligent Agent Mining Meta Component:** It includes sub components such as search engines, content mining and automatic indexing. This component allows synchronous and asynchronous searches to be performed. Synchronous means occurring at regular intervals. Most communication between computers and devices is asynchronous it can occur at any time and at irregular intervals. However, communication within a computer, is usually synchronous and is governed by the microprocessor clock. Meta information provides insights into the kind of information users, types of data and information being accessed and information repositories accessed most frequently. A Knowledge Management system can be implemented effectively if it is leveraged with existing technology tools and information resources. Knowledge servers can be used to integrate significant data spread across the enterprise. Knowledge servers help in smooth integration of knowledge across multiple enterprises.

VI. MEASURING THE INTELLECTUAL CAPITAL

It is important for any organization to choose the right kind of techniques for measuring intellectual capital. A wrong choice can lead to incorrect performance results. Right metrics can help evaluate the performance of an organization. Organizations need to focus on metrics that can help evaluate the past, present and future performance of a company. Most metrics usually focus only on past performance and ignore the strategic view point of an organization. The following are some of the traditional and the present day techniques of measuring intellectual capital.

- Benchmarking

- Balanced Scorecard
 - Skandia's IC Index
1. **Benchmarking:** It is the process of identifying the things companies do the best. It means setting standards for performance. Benchmarking can bring about an improvement in the overall productivity, service quality, customer satisfaction, distribution, etc. The benchmarking process can be useful for self comparisons. M.J. Spendolini has suggested a five step process for benchmarking which include:
 - (i) Determining what to benchmark, whether it is the Knowledge processes or products and the scope of benchmarks and identifying reasons for benchmarking.
 - (ii) Identifying a benchmarking team, customers involved and the allocated budget.
 - (iii) Analyzing benchmarking targets and partners.
 - (iv) Collecting and analyzing the data relevant metrics for benchmarking, and finally;
 - (v) Getting the required feedback and incorporating changes.

Table 3

Bench marking practices in top companies

1. **Intel:** Intel can be lauded for its scientific, "fact based" approach to recruiting and HR. Their workforce planning model has some excellent design features. Their culture of constructive confrontation also helps to drive an incredible rate of continual change.
2. **Wal-Mart:** When it comes to high-volume recruiting, nobody does it better. Wal-Mart's TV ads highlighting their great-place-to-work status are a bold approach to proactively defending their strong employment brand.
3. **Google:** Google's ratio of recruiters to employees is mind-boggling. They also excel at candidate assessment and recruiting women engineers.
4. **Dell:** Dell excels at top management, and is one of the best at attracting great managers by widely publicizing their great management practices and approaches. They have a great management identification program and an astonishing revenue per employee that some calculate at nearly \$1 million.
5. **Microsoft:** Giving GE a run for their money as best in talent management is Microsoft. They excel at workforce planning, redeployment, utilizing analytics, and leveraging the internet. They are also truly world class when it comes to the effective use of contingent workers. Microsoft was also ranked #57 on Fortune Magazine's 2005 100 Best Companies to work for in America.

<https://www.eredia.com/ere/the-top-25-benchmark-firms-in-recruiting-and-talent-management/>

2. **Balanced Scorecard:** This method supplements traditional financial measures with three additional perspective customers, internal business processes, and learning and growth perspectives. This method originally developed by Robert Kaplan and David Norton of the Harvard Business School.
3. **Skandia's IC Index:** Skandia, a Swedish company has used a technique called the Intellectual Capital(IC) Index to try and track the flow of intellectual capital over time. Skandia first developed its IC report internally in 1985, and in 1994 became the first company to issue an IC addendum accompanying its traditional financial report to shareholders. It aims to provide managers with an indicator of change, and external analysts with a quantitative measure of company performance. The IC-Index has several distinct features as it takes into account performance in the past. The chief architect behind Skandia's initiatives, Leif Edvinsson developed a dynamic and holistic IC reporting model called the navigator which had five areas of focus: financial, customer, process, renewable and development and human capital. According to Skandia's model, the hidden factors of human and structural capital when added together, form intellectual capital.

VII. ROLE OF THE KNOWLEDGE MANAGER

A Knowledge Management initiative requires a leader who can implement a successful Knowledge Management program in the organization. Here comes the role of the Chief Knowledge Officer(CKO) who can make Knowledge Management an integral part of daily work. The main functions of CKO are as follows:

- Promoting KM: The CKO should educate the employees about the advantages of the KM system and how it can be useful in sharing knowledge. To motivate employees, knowledge objectives should be linked to individual objectives like compensation and rewards. The top management should be educated about the importance of Knowledge Management. The participation of the management will make knowledge management successful.

Knowledge Management systems must be built to support business processes that affect the bottom line of the organization. One of the important tasks of a CKO is to convince employees and the top management about the value of Knowledge Management. The Management should be convinced about the financial implications that KM can have on an organization, whereas employees will have to be convinced that KM will not be an added burden to them. Management and employees have to be brought together for successful implementation of the Knowledge Management program. The CKO should also collaborate with core group that includes IT and human resource departments. In order to implement a KM program successfully, a CKO has to build successful organizational and technical

capabilities. On the organizational front the tasks of the CKO are:

- Identify knowledge gaps and assess how they can be bridged.
- Build an organizational culture for knowledge sharing that involves all employees in the process of knowledge sharing.
- Create appropriate measurement criteria to evaluate the Knowledge Management programs in the organization. These measurement standards also help in rewarding employees who share the best practices.
- Familiarize employees with the best practices in Knowledge Management and how they can increase their productivity.
- Educate employees about the KM systems and protocols.
- Remove socio-cultural barriers that inhibit the sharing of knowledge, so that knowledge can be transferred, used and distributed effectively.
- Improve the level of existing knowledge by identifying areas of performance and areas that need improvement.

The technological initiatives that a CKO should take up include:

- Build enterprise-wide channels for communication.
- Develop an effective Intranet through which employees can share knowledge.
- Encourage teamwork and a collaborative work environment that can help in collaborative problem solving.
- Support employees with technical help and introduce them to technologies like telepresence, telecommuting etc.
- Introduce cross functional tools that can help teams from different functional areas to collaborate.

Apart from technical skills and through knowledge of the technical aspects of KM, a CKO also should be an effective manager who can understand the functioning of the organization. Trust and cooperation from the employees is absolutely essential for successful implementation of a KM system.

VIII. CONCLUSION

With growing importance of intellectual assets managing knowledge effectively has become crucial to organizations. For effective management of intellectual capital there is a need to promote knowledge sharing and implement technological systems. To know whether Knowledge Management systems are performing as per the expected standards, there is a need for metrics. Right metrics can help evaluate the performance of an organization.

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