Original Article

Knowledge Management and its Application in Library Sciences

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Abstract

The management of information has long been regarded as the domain of librarians and libraries. Librarians and information professionals are trained to be experts in information searching, selecting, acquiring, organizing, preserving, repackaging, disseminating, and serving. However, professionals in information technology and systems have also regarded information management as their domain because of the recent advances in information technology and systems which drive and underpin information management. One of the clearest evidences of this is that the positions of "Chief Information Officer" (CIO) in many organizations are generally held by information technologists instead of librarians. In fact, most of the work of CIO's has to do with developing and managing the IT infrastructure and systems, not the managing of information per se. With the growing interest in knowledge management, many questions have been raised in the minds of librarians regarding: the difference between information and knowledge; between information management and knowledge management; who should be in charge of information and knowledge management; would librarians and information professionals with appropriate education and training in library and information science be most suitable for the position of "Chief Knowledge Officer" (CKO) in their organizations; and what libraries can do in implementing knowledge management. Present paper is an attempt to study the different dimension of knowledge management and its application in library sciences.

Keywords: Preserving; **R**epackaging; Disseminating; Knowledge management; Chief Knowledge Officer.

Introduction

Knowledge is the full utilization of information and data, coupled with the potential of people's skills, competencies, ideas, intuitions, commitments and motivations. Knowledge is an intellectual capital when people out of creation, add value to Information. In dictionaries, the meaning of knowledge is "familiarity gained by actual experience, practical skill and acquaintance or "intellectual experience with perception of truth" or merely "acquaintance with facts Dr.

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Ranganathan has defined the Knowledge as "totally of ideas conserved by humans.

1. Davanport (1998) defined knowledge as follows: Knowledge is fluid framed experiences, values, contextual information as expert insights that provides a framework for evaluation and incorporating new experiences of information. (prolegomena section CR21) So, we say that in our daily life. We use the term Knowledge to denote one of the following: - Acquaintance; Example; I know Ram. This again may mean two things:

2. (a) I can recognize Ram; or (b) I know some facts about Ram.

3. Belief: Example God live in heaven and immortal.

Capability: Example: I know singing. Here, by knowing I do not mean that I know some facts about singing. Instead I mean," I am capable to sing." Rhyle has pointed out that

by our knowledge, we may also refer to our capabilities (Gilbert Rhyle: The concept of Mind, London, Rutchinson & Co., 1949, p.133).

Information

The process for knowledge creation and use as a continuum where data transforms into information, information transforms into knowledge and knowledge drives and undergoing behavior and decision making. Information is visible, independent from action and decision, different in format after processing, physical product, independent from existing environment, easily transferable and duplicate.

Knowledge is invisible, closely related to action and decision, different in thought after processing, spiritual product, identified with existing environment, Transferable through learning and not duplicate.

Types of Knowledge

Knowledge is classified into three types:

1. Explicit knowledge
2. Tacit knowledge
3. Cultural knowledge

Explicit Knowledge

It is formal and easy to communicate to others. It is the knowledge of rationality. That is, policies, rules, specifications and formulae. It is also known as Declarative knowledge.

Tacit Knowledge

It is complex form of knowledge. It has two dimensions namely technical and Cognitive. This is personal knowledge, which is in human mind and difficult to formalize and also difficult to communicate.

Cultural Knowledge

B.B.Chand describes the cultural knowledge as knowledge which includes Assumptions and beliefs. It is used to understand, describe and explain the reality as well as conventions. It is also useful to form the framework among orgazational members, recognize the new information and evaluate alternative interpretations and actions.

Sources of Ways of Acquiring Knowledge

The theory of evolution proves that man is basically an animal and yet it is said that the man is greatest of all living beings. A questing therefore naturally arises—"What makes the man great, and different from other animals?" Answer to this question is simple—" because, man is a rational animal". Among animals only man alone is capable of acquiring knowledge to a wonderful extent during its journey from the Paleolithic age the present man has increased its knowledge sphere.

Some of the major ways or sources of knowledge may be listed as under:

Authority

Dictionary meaning of authority is: power or right to enforce opinion, or power to influence the conduct and action of others, or commanding highest regard and respect over a group of persons. Authority is a very big source of knowledge in our society in all walks of life, such as in family, in government, in religion, in literature, in various disciplines and so on. a great deal of our knowledge comes to us through such authorities. A child acquires most of the knowledge during the childhood through his father or mother.

In communist countries views held by Marx and Lenin are considered so much important that they influence and determine the laws of the nation and its policies.

The field of religion, authority plays a vital role in acquiring knowledge. the common man is so much attached to religion that he acquires fundamental knowledge about the world, the universe, way of life. Conduct, behavior, etc by reading text, or by listening to religious discourses. in medicine, a patient accepts the advice of Doctor by considering him authority.

Thus in authority-based knowledge, the thinking of a person or his acts are governed by the concerned authority. It is based on faith. There is no scope for analysis, arrangement, or logic in it. Knowledge acquired through an authority may culminate into two forms of behavior reasonable and fantastic .Assassination of Socrates, mahatma Gandhi, Martin Luther King, Indira Gandhi, and the fatwa posh an salmen Rushdi are often quoted as examples of fantastic.

Tradition

Human beings acquire knowledge of the surroundings and many other things through tradition. This knowledge is transferred from one generation to the next generation or by fellow-members of the society through one another. Authority cent red knowledge is based on faith and tradition centered knowledge is based on belief. Tradition is important source or way acquiring knowledge.

Sense Perception

A person acquires a great deal of knowledge through sense perception. Psychologists accept sense perception as a major source of knowledge. The organs concerned with these senses are eye' ear, nose, tongue and skin. When any things come into contact with these, the concerned senses get stimulated and knowledge is gained or acquired. The knowledge that fire is hot, ice is cold and so on, is the result of stimulation of senses.

These are considered to be fine basic senses.

Sense perception has been accepted as a major source of knowledge by Indian authorities also since ancient times. The saying "Pratyaksham Kim Pramanam" i.e. knowledge acquired through direct observation/experience needs no evidence.

Reasoning/Intellect

Knowledge – may it be sensory or philosophical—can be improved, sharpened, connected and modified through intellect by the application of reasoning. The basic process of learning, i.e. acquisition of knowledge through trial and error process, also applies intellect .e.g. let us assume that a person comes across an advertisement relating to sale of a house. He can react two ways:

1. He may collect all savings at home and bank, rush to the seller finalises the deal if the saving are less makes the payment and purchase the house.

2. He can do another things; he may visit the location, examine the house, analyse and ascertain whether the house suits his requirements location and accommodation wise if yes, he talk to the seller, negotiates the price, takes from him one-two days time for payment and in the meantime ascertains that the house is not subject to any family or legal dispute. The second way is certainly more rational and tends to produce better knowledge, i.e.reason-based or logical knowledge.

Intuition and Speculation: Speculative mode of thinking therefore is based on reflection and intuition. The knowledge about religion, morale, future, etc can be concluded by intuition which can be developed with the aid of rigorous thinking and be of mental analysis, including meditation. Intuition may be of great help in generalization or drawing hypotheses. Ancient Indian sage like Parashar, Aryabhatt and others gave radical theories of astronomy and astrology as they had developed their intuition. Newton must have received a flash of intuition when he got the clue from a falling apple and developed the theory of gravity of earth. These great people must have possessed high degree of intuition and applied speculations in drawing their conclusions.

Positivistic Thinking and Scientific Method

It is guided by positive fact, observable phenomenon and the laws established by scientific method. This system rejects all metaphysical, sensory, logical or traditional knowledge unless these stand the test of

scientific method through induction and deduction. It runs into three stages:

1. *Perception Stage:* The person perceives or experiences some facts or occurrence.

2. *Metaphysical Stage:* He analyses it to himself in the light of observation, intuition and intellect.

3. *Positive Stage:* He establishes his findings resulting into positive knowledge of which he is confident.

Scientific Method is known as "Modern Method of Acquiring Knowledge"(Understanding Educational Research: An Introduction by Deobold B. Van Dalen. New York, McGraw-Hill,1962, p.23). Knowledge gained through scientific methods is reliable as it has the following major attributes:

1. It recognizes only those facts or occurrences which are evidenced by observation and experimentation.

2. It does not accept any knowledge as 'universally true' but 'probably true'.

3. It welcomes and is open to valid criticism and is willing to modify or change its views if found unscientific.

4. As against other sources, it is not only subjective but both subjective and objective.

Knowledge and Library Science

The concept and name—"Knowledge Management"—was started and popularized in the business world during the last decade of the 20th century. It was the business world that first recognizes the importance of knowledge in the "global economy" of the "knowledge age". In the new knowledge economy, the possession of relevant and strategic knowledge and its unceasing renewal enables businesses to gain competitive advantage. The applications of knowledge management have now spread to other organizations including government agencies, research and development departments, universities, and others.

The management of information has long been regarded as the domain of librarians and libraries. Librarians and information professionals are trained to be experts in information searching, selecting, acquiring, organizing, preserving, repackaging, disseminating, and serving. However, professionals in information technology and systems have also regarded information management as their domain because of the recent advances in information technology and systems which drive and underpin information management. One of the clearest evidences of this is that the positions of "Chief Information Officer" (CIO) in many organizations are generally held by information technologists instead of librarians. In fact, most of the work of CIO's has to do with developing and managing the IT infrastructure and systems, not the managing of information per se.

With the growing interest in knowledge management, many questions have been raised in the minds of librarians regarding: the difference between information and knowledge; between information management and knowledge management; who should be in charge of information and knowledge management; would librarians and information professionals with appropriate education and training in library and information science be most suitable for the position of "Chief Knowledge Officer" (CKO) in their organizations; and what libraries can do in implementing knowledge management.

Knowledge management is an audit of "intellectual assets" that highlights unique sources, critical functions and potential bottlenecks which hinder knowledge flows to the point of use. It protects intellectual assets from decay, seeks opportunities to enhance decisions, services and products through adding intelligence, increasing value and providing flexibility.

Knowledge management complements and enhances other organizational initiatives such as total quality management (TQM), business process re-engineering (BPR) and organizational learning, providing a new and

urgent focus to sustain competitive position

Knowledge management is a process of creating, storing, sharing and re-using organizational knowledge (know-how) to enable an organization to achieve its goals and objectives.

1. Historical Background
2. Acquisition of Books
3. Organisation
4. Reference Services
5. Demand of the five Laws.

The challenge of Knowledge Management is to determine what information within an organization qualifies as"valuable."All information is not knowledge, and all knowledge is not valuable. The key is to find the worthwhile knowledge within a vast sea of information.

1. Knowledge Management is about people. It is directly linked to what people know, and how what they know can support business and organizational objectives. It draws on human competency, intuition, ideas, and motivations. It is not a technology-based concept. Although technology can support a Knowledge Management effort, it shouldn't begin there.

2. Knowledge Management is orderly and goal-directed. It is inextricably tied to the strategic objectives of the organization. It uses only the information that is the most meaningful, practical, and purposeful.

3. Knowledge Management is ever-changing. There is no such thing as an immutable law in Knowledge Management. Knowledge is constantly tested, updated, revised, and sometimes even"obsoleted"when it is no longer practicable. It is a fluid, ongoing process.

4. Knowledge Management is value-added. It draws upon pooled expertise, relationships, and alliances. Organizations can further the two-way exchange of ideas by bringing in experts from the field to advise or educate managers on recent trends and developments. Forums, councils, and boards can be instrumental in creating common ground and organizational cohesiveness.

5. Knowledge Management is visionary. This vision is expressed in strategic business terms rather than technical terms, and in a manner that generates enthusiasm, buy-in, and motivates managers to work together toward reaching common goals.

6. Knowledge Management is complementary. It can be integrated with other organizational learning initiatives such as Total Quality Management (TQM). It is important for knowledge managers to show interim successes along with progress made on more protracted efforts such as multiyear systems developments infrastructure, or enterprise architecture projects.

Importance of Knowledge Management

Knowledge and Information Management is important only to extent that it enhances an organization's ability and capacity to deal with various situations that emerges during various operations. An organization has it look into the following four dimensions.

Mission: What are we trying to accomplish?

Competition: How do we achieve a competitive edge?

Performance: How do we deliver the results?

Change: How do deal with change?

KM provides innovative and cost effective solution to the library users. Information technology, especially the cyber technology drives the way of knowledge management.

Use of cyber technologies accelerates the rate of quality, quantity and cost effectiveness with improved productivity and suitability in services. It decreases cost and harnesses the human intelligence very efficiently. Knowledge Management involves enhancing organizational learning.

Knowledge management seeks to make the best use of the knowledge that is available to the library, while creating new knowledge in the process. Knowledge management should be about exploiting and realizing knowledge of the employees and building a culture where knowledge sharing can thrive. Throughout the process, the library will generate value from their intellectual and knowledge-based assets. Therefore, the library will continue to grow and prosper from the knowledge of employees throughout the library. This is also a great benefit for new employees replacing retirees within the library structure. Knowledge management is often facilitated by information technology, but technology itself is not knowledge management.

The Objective of Knowledge Management for Libraries

Knowledge innovation is the core of the knowledge economy society. As bases for collection, processing, storage and distribution of knowledge and information, libraries represent an indispensable link in the scientific system chain, an important link in the knowledge innovation Libraries take part in scientific research process directly. The library work is an element of knowledge innovation.

Libraries must pay attention to diffusion and conversion of knowledge. They act as bridge for turning the results of knowledge innovation into realistic productive forces. Knowledge Management in libraries is to promote relationship in and between libraries, between library and user, to strengthen knowledge internetworking and to quicken knowledge flow. Libraries will carry out researches on development and application of information resources, construction of virtual libraries, protection of intellectual property rights in the electronic era etc., thus founding the base for knowledge innovation in the knowledge economy era.

Need/Scope of Knowledge Management in Libraries

The need for application of knowledge

management in libraries can be analyzed on the basis of factors:

Limitations of Exiting Initiatives: TQM Performance Appraisal of Employee and other such as initiatives have helped libraries to become more accountable towards their job and responsibilities. However these initiatives are not able to harness the inherent talent of library personnel's as well as their intrinsic knowledge that could differentiate the services
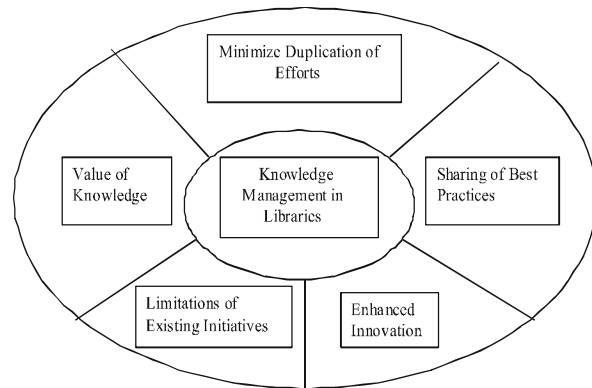
provided by the libraries and create a winning advantage in the society.

Source

Value of Knowledge: Applied know –how can enhance the quality of products and services. It may be helpful in achieving cost effectiveness in the various library operations and services.

Minimize Duplication of Efforts: By retaining knowledge as organizations downsize or reshuffle, library and information centers can save costly mistakes or reinventing the wheel.

Sharing of Best Practices: Library and information centers can save millions a year by taking the knowledge form their best performers and applying it similar situations elsewhere. The applied know-how of the best performing library and information centers may be adopted as a model.

Enhanced Innovation: The development like Internet vas revolutionized the concept of global village, this may be helpful to Library and Information Centers as to cater the library services globally by applying KM methods in

improving their information products and services. A success of such small initiatives will motivate them for the further innovation in its operations and services.

Knowledge Management in Library

Business world is changing in the new knowledge economy and in the digital age, libraries of all types are undergoing drastic changes also. The new role of Libraries in the 21st century needs to be as a learning and knowledge center for their users. As a learning organization, libraries should provide a strong leadership in Knowledge management. Unlike the business organization, the learning organization should sharing of knowledge with others outside. Libraries should improve their Knowledge management in all of the key areas of library services.

Knowledge Resources Management

The exponential growth in human knowledge in a variety of formats, libraries need to develop their resources, access and sharing strategies from printed to electronic and digital resources. Restricted by limited funding, technology, staff and space, libraries must carefully analyze the needs of their users and seek to develop cooperative acquisition plans to meet the needs of users Libraries should be developed and maintained an integrated online public access catalogue (OPAC) with both internal and external resources as well as printed and other formats of knowledge. Useful websites and knowledge sources should be regularly searched and selected from the internet and included in OPACs. A system for the reviewing and updating of these resources should be performed.

Going beyond explicit knowledge, libraries should also develop to capture all that tacit knowledge that is of importance to their users, their organizations, and to the internal operations of libraries. The website of each library should serve as a "portal" for all sources of relevant knowledge and information whether explicit or tacit, whether on site or remote and in all formats.

In the current digital and networked knowledge age, the size of information sources on the web is growing exponentially. No one really knows exactly how many web pages are on the internet, because new web pages are added every second. Universities and research organizations are knowledge reservoirs. These highly valued intellectual assets, regardless of whether they are explicit or tacit, should be inventoried, archived, indexed, frequently updated and made accessible in digital form, Libraries should use the new approach to capture web information by cooperative efforts such as Dublin core metadata and the cooperative online resources catalogue (CORC). Other new methods such as data mining, text mining, content management, search engines, spidering programs, natural language searching, linguistic analysis, semantic networks, knowledge extraction, concept of yellow pages, and such technologies in information visualization as two dimensional or three dimensional knowledge mapping etc., have been a part of recent developments in knowledge management systems.

Resources Sharing and Networking

Traditionally, libraries have a long practice of resource sharing and networking. These have been greatly expanded by the rapid development of computer, telecommunication networking and digital technologies The sources of the cooperative work and resources sharing of OCLC (Online Computer Library Center) and Ohio LINK (Ohio Library and Information Network) in US, is the best examples in resource sharing and networking with the result of the full cooperation and participation of all member libraries without selfishness. Large and major libraries must take the lead in such an Endeavour.

Information Technology is a Tool for Knowledge Management

To facilitate the implementation of knowledge management, a well-defined and

operational knowledge management system should be in place. Latest information technology should be used in the libraries. In this regard, the library director / librarian should consider himself as the chief knowledge officer of the entire organization and should work together with the chief information officer, heads of the planning department, the computer and information technology center, the human resource management department, the finance department etc., to design and develop such a system. Such knowledge management system should be built on the existing computer and information technology infrastructure including upgraded intranet, extranet, internet and available software programs to facilitate the capture, analysis, organization, storage and sharing of internal and external information resources for effective knowledge exchange among users, resource persons (faculty, researchers, subject experts etc.,), publishers, government agencies, business and industries and other organizations via multiple channels. In recent years, many of the newly developed information technology for databases and information/document management can be utilized in knowledge management such as data warehousing, data mining, text mining etc.

Human Resource Management

The most important resource in the knowledge economy system is the talents who grasp knowledge. The talent competition has become the focus of market competition in the knowledge economy era. In the knowledge economy era, the libraries will attach importance to vocational training and lifelong education of library staff to raise their scientific knowledge level and ability of acquiring and innovative knowledge. They also will respect the human value, guide and bring into play wisdom potentialities of library staffs. It is an important way for raising work efficiency of library staff. An all round improvement of library staff's quality and positioning of the human value will become important objectives of knowledge management in Library and

Information centers. The library staff members of Universities and research committees should be inventoried, indexed regularly and be made searchable and accessible through electronic databases created and maintained by libraries. The expertise should be appreciated with appropriate rewards and incentives. As a learning organization, libraries should allocate annual funding to provide continuing education and staff training to all staff members. Knowledge must be renewed and expanded to prevent it from becoming stagnant.

Libraries should also encourage the transfer of knowledge and experience from experienced staff to new staff members. A mentoring system should be in place to help new comers to learn from experienced library staff. Informal seminars, discussion sessions for staff can interact and exchange "lessons learned" "best practices" and other experiences should be scheduled at regular intervals and at convenient times sit and chat rooms can be created through intranet libraries should be attending to favorable working conditions and environment, which will contribute to better staff retention.

User Services in Knowledge Management

The utmost goal of knowledge management is to provide users with a variety of quality services in order to improve the communication, use and creation of knowledge. Information about each user can be obtained by analyzing the records of user registration, surveys, circulation and inter library loan, frequently asked reference questions and the use of e-journals and digital resources etc., User satisfaction and needs should be collected through periodical user's surveys. The findings should be used for the planning and redesign of the existing library services. Some of the manual services of the library such as "new publication alert" and "Dissemination of information" should be done automatically by employing the "push Technology" with great efficiency and convenience. Each library user can also set up

his virtual "my library/portal" for new information/resources provided by the library.

Technologies for Knowledge Management of Libraries

Library and information centers should be developed/modified based on the perfect environment for new media applications. Due to impact of globalization, economic competition and revolution of ICT, the libraries are under going tremendous change its environment. ICT tools and techniques, knowledge management systems, internet, web resources, digital libraries have made a significant change in the existing library systems and services. It is a major challenge for the library professionals.

Knowledge acquisition is the starting point of knowledge management in Libraries. The application of IT, enlarges the scope of knowledge acquisition, rises Knowledge acquisition, speed and reduces knowledge acquisition cost. It is impossible to accomplish such important tasks by using man's brain only in the modern society in which the knowledge changes with each passing day. It will be possible to link Closely knowledge sources and knowledge workers by computer networks, thus Constructing knowledge networks in libraries based on realization of single point Informationalization.

Data wise technologies developed the following list of technologies for the knowledge management.

- Intranet within an organization
- Document management systems
- Information retrieval systems
- Relational and object databases
- Electronic publishing
- Groupware and work flow systems
- Push technologies
- Help desk applications
- Brain storming applications
- Data warehousing and data mining

Globalisation

Exploring the new Dimensions: Knowledge Management can be helpful in introducing the library and information professionals globally, providing them a platform for their regular skill enhancement and up-to-date,realistics and practical knowledge. It can be used for the purpose of converting the traditional learning system into an e-learning practice, thus accelerating the new dimensions of its scope and coverage.

Conclusion

Knowledge Management is an emerging field, much tooted or hyped since late 1990s. Due to the complicated nature of knowledge and its management, it is often difficult to estimate or demonstrate the value of the Knowledge Management. In the business world, knowledge management has been regarded as strategically important for organizations to gain a competitive advantage over their competitions, to add value their products, to win greater satisfaction from their customers.

In the library world, there is a lesson to be learned from the business world. For any library to succeed in implementing knowledge management will require a strong leadership and vision from the top administration. Information Technology and systems can provide effective support in implementing knowledge management. Libraries should work together with Information Technology Professionals and others to develop the appropriate knowledge management systems. Libraries, with limited budget and human resources, should utilize the current management structure and technology to implement KM, either bottom-up or top-down. With an effort, KM will help to increase libraries operational efficiency and later to the ever increasing need

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