
KNOWLEDGE MANAGEMENT IN LIBRARIES: GAINING COMPETITIVE ADVANTAGE THROUGH E LEARNING

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Abstract

Welcome to the 21st century and the knowledge society. The business landscape is changing rapidly. The competitive environment is no longer linear or predictable. Survival and success depend entirely on the organization's ability to adjust to the dynamics of business environment. Changes in Information Technology (IT) have generated gaps in access and control of information and knowledge. Even when these gaps are bridged, several fundamental challenges remain. How do we apply KM for value-added and competitive advantage? How do we convert data into information and knowledge? How do we use technology to convert challenges into opportunities? Knowledge management is the solution for realigning the institution's technical capabilities to create the knowledge that drives the institution forward. This paper provides a conceptual view of knowledge management, its types and the transformation from data to information and to knowledge-Elucidates the role of knowledge management in libraries-discusses how the emergence of e learning has enabled knowledge management practices to be measured and evaluated in accordance with learning objectives.

Keywords : E-Learning/ Knowledge Management

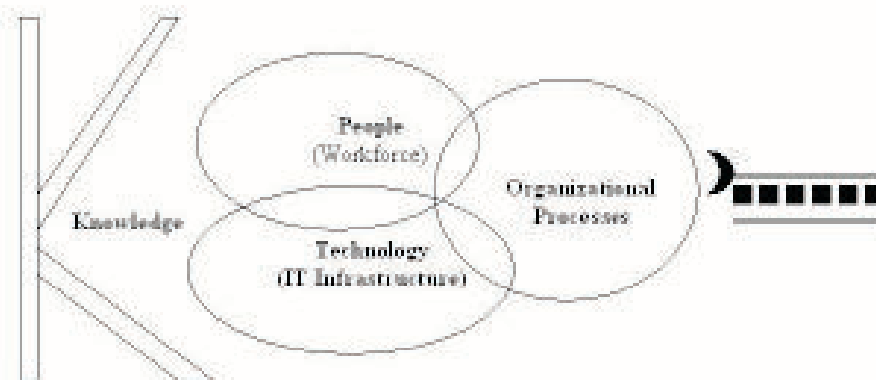
1. Introduction

We live in a world that changes by the minute. Change often moves organizations and advances people's intellect. For change to be effective, organizations as well as people must change. The key to change and growth is awareness, sharing ideas and coming up with new and innovative ways of staying ahead of the competition. It involves learning, innovating and adopting behavior designed to improve quality and performance. The unprecedented growth of information and knowledge has impacted all organizations including the libraries. This has made knowledge management more important. The conventional function of libraries is to collect, process, disseminate, store and retrieve information to provide better services to the clientele. The role of libraries is changing to provide the competitive advantage for its users. The success of library depends upon their ability to utilize information and knowledge of its staff to better serve the needs of the user community. There is a considerable opportunity for librarians to use their

traditional skills to assume a new function of managing knowledge within the library, which would complement the traditional library service function. The practice of Knowledge management has generated a number of technologies from email to sophisticated search and extended analytical tools. Whatever the tools used the objective is the same: to capture, to store, to retrieve and to disseminate the information from internal and external sources and build upon the wealth of intellectual knowledge inherent in the organization. Combining e learning with knowledge management presents exciting opportunities for content development and targeted learning based on real time training needs.

2. Knowledge management

Knowledge management is a newly emerging interdisciplinary business model that has knowledge within the framework of an organization as its focus. It is rooted in many disciplines including business, economics, psychology, and information management. It is the ultimate competitive advantage for today's firm. Knowledge management involves people, technology and processes in overlapping parts.



Overlapping Human, Organizational, and Technological Factors of KM

2.1 Definitions

- Knowledge has become the key economic resource and the dominate – and perhaps even the only – source of competitive advantage – Peter Drucker, “Managing in a time of great change.”
- Knowledge management is a framework, a management mindset, that includes building on past experiences (libraries, data banks, smart people) and creating new vehicles for exchanging knowledge (knowledge enabled intranet sites, communities of practice, networks) – O’Dell et al.2000

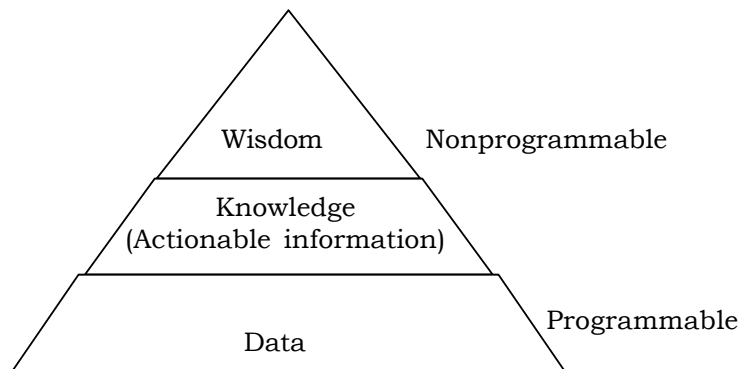
- It is “obsoleting what you know before others obsolete it and profit by creating the challenges and opportunities others haven’t even thought about.” Malhotra 2000

From data to information and to knowledge

- Data: scattered, unrelated facts, writings, numbers or symbols
- Information: Selected, organized and analyzed data
- Knowledge: information combined with users ability and experience that is used to solve a problem or to create new knowledge.
- Wisdom: forward looking and thinking based on ones value and commitment.

Differences between information and knowledge can be summarized as: information is visible independent from action and decision, different in format after processing, physical product, independent from existing environment, easily transferable and duplicable.

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.



Data, Information, and Knowledge

3. Types of knowledge

- Tacit knowledge
- Explicit knowledge

Tacit knowledge is knowledge embedded in human mind through experience and jobs. Coined by Hungarian medical scientist Michael Polanyi, it includes institutions, values, and beliefs that stem from years of experience.

In contrast explicit knowledge is knowledge codified and digitized in books, documents, reports, white papers, spread sheets, memos, training courses and the like. Explicit knowledge can be retrieved and transmitted more easily than tacit knowledge. Because it is knowledge learned directly from experience, tacit knowledge (also referred to as whispers in the ears) is difficult to share across space and time.

Tacit and explicit knowledge have been expressed in terms of knowing – how and knowing that respectively. They have also been viewed as embodied knowledge and theoretical knowledge respectively.

The information revolution has placed emphasis on sharing huge amounts of information that is now accessible on the Internet. In a time of e-everything, “information is accessible from business-to-business, business-to-consumer, and consumer-to-consumer (Malhotra 2000)”. External relationships such as supply chain management have been successfully used to improve productivity and flexibility based on sharing between suppliers and customers. Companies have taken this idea of information sharing through Knowledge Management to work within the firm. Aided by technology, employees now can share knowledge internally in an effort to make the corporation a more productive enterprise. Knowledge Management is gaining acceptance across the academic libraries. Several factors triggered interest in Knowledge Management are:

1. The pace of change has accelerated dramatically during the past decade. Companies are looking at innovative ways of taking on the competition. Innovation is the one core competency needed by all organizations (Drucker 1969)
2. Globalization and Geographic dispersion changed the organization’s scope.
3. Downsizing and reengineering resulted in staff attrition and knowledge drain. This prompted organizations to access their knowledge core and make more effective use of it.
4. Networking and data communications made it easier and faster to share knowledge. Knowledge sharing is becoming the best way to distribute expertise across and around the firm by a technology.
5. Increasing dominance of knowledge as a basis for improving efficiency and effectiveness triggered many academic libraries to find the means for utilizing the knowledge they have gained from previous experience.

As information and knowledge has become an important productive factor for the modern economic system, the society will inevitably require intensified management of information and knowledge. How to manage knowledge will become an important subject facing libraries in the near future. Knowledge Management in libraries should be focus on effective research and development of knowledge, creation of knowledge basis, exchange and sharing of knowledge between library staff (including its users), training of library staff, speeding up explicit processing of implicit knowledge and realizing of its sharing.

4. Knowledge Management in Libraries

While the business world is changing the new knowledge economy and digital age, libraries of all types are undergoing drastic changes also. The new role of libraries in 21st century needs to be as a learning and knowledge center for their users and intellectual commons for their respective communities where “people and ideas interact in both real and virtual environments to expand learning and facilitate the creation of new knowledge.”

As a learning organization, libraries should provide a strong leadership in knowledge management. Unlike those business organizations whose goal for knowledge management is for competitive advantage, most public, academic, and research libraries, with the exception of company libraries, have a different orientation and value instead of competition, internal use only, and little sharing of knowledge with others outside, the most important mission of public, academic and research libraries is to expand the access of knowledge for their users. Charged by this mission libraries should aim their knowledge Management goal high. Below are given some areas where the libraries can do to improve their knowledge Management.

Knowledge resources Management Because of 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 in concert with their mission and charges. 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 their needs. Changing concept from “Ownership” to “Access” and from “just in case” to “just in time” should be the goal of sound resources development strategy.

An integrated OPAC with both internal and external resources as well as printed and other formats of knowledge should be developed and maintained. Useful websites and knowledge sources should be regularly searched and selected from the Internet and included in OPAC by hard links (HTML). Going beyond explicit knowledge, libraries should also develop means to capture all that tacit knowledge that is of importance to their users, their organizations and to the internal operations of libraries. Website of each library should serve as a portal for all sources of selective and relevant knowledge and information whether explicit or tacit, whether onsite or remote and in all formats. In the current digital and networked knowledge age, the size of information resources 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. One has to comb the large number of findings in order to find few relevant pieces of information. Still information on the web can be useful if only we can employ advances artificial intelligent tools to surf the Internet and to select, find, arrange, classify and automatically deliver the needed information to each user based on his or her special interests and needs. There is a need of new knowledge Management systems, which can test, and hold promise for greatly enrich knowledge resources, improved user services and more efficient use of knowledge for creation and decision-making.

Resources Sharing and Networking. – As the 20th Century was about to call it a day, there came the big wave of LPG- Liberalization, Privatization and Globalization. As we made a foray into the new millennium, the technology scene underwent a sea change. Now, technology is changing as fast as you bat your eyelid or may be even faster, and knowledge has virtually become the power to rule the roost. The new knowledge professional or the new age manager is technically proficient, very ambitious highly innovative, bright and sharp on the uptake, goal oriented and networking conscious.

The new-networked electronic environment has deeply affected the world of information and has an immediate impact on the role of information professionals. The networked environment has also changed the way libraries and librarians serve their readers and this new environment professionalism will necessary entail a much higher level of technical knowledge. Training information professional to cope up with the extended responsibilities has become a challenging task for library and information profession. The only way for any educational institution to come out a winner in this new environment is to be prepared for the future and the changes. Sharing of resources have been greatly expanded by the rapid development of computer, telecommunication, networking and digital technologies.

Information technology is a necessary though not solely sufficient component of profitable knowledge Management. All types of technologies are today being associated with knowledge Management. Some of these are

- Internet
- Intranet
- Artificial Intelligence
- Expert Systems
- Data Mining
- KBMS
- DBMS
- Web Mapping Tools
- Simulation
- Web Technologies

A perspective of how technology can support knowledge Management can be had from the table below where technology helps in the conversion of knowledge inputs into outputs.

User Services: Utmost goal of KM is to provide users with a variety of quality services in order to improve the communication, use and creation of knowledge. As much as possible these services should be tailored to the interest and needs of each user. questions, and the use of e-journal and digital resources etc. User satisfaction and needs should be collected through periodic users' surveys. Findings should be used for the planning and re design of library services. Information about each user can be obtained by analyzing the records of each registration, surveys, circulation and interlibrary loans, frequently asked reference

No.	Inputs	How ICT supports knowledge Management
1	Knowledge (Information) inputs	Scanning of sources of information Organizing information User need presentation Extracting hidden, unavailable information
2	Knowledge processing	Extracting and reviewing knowledge from the past, case histories etc. Rapid combination in many forms
3	Knowledge repositories	Create single reference point Reduced storage costs
4	Knowledge Flows	Rooting as per needs, right knowledge at the right time to the right people Improving work flow
5	Knowledge use/create (Knowledge output)	Helping in thinking process Support informing decisions

Some of the manual services such as “new publication alert” and “selective dissemination of information” which libraries have been providing, can now be done automatically by employing the “push technology” with great efficiency and convenience.

Human Resource Management: The most important source of knowledge Management system is the “Human resource”. The library staff and users, both in and outside the libraries, possess a great amount of expert knowledge. The term human resource may be defined as the total knowledge, skills, creative abilities, talents and aptitudes of an organizations workforce, as well as the values, the attitudes, approaches and beliefs of the individuals involved in the affairs of the organization. It is the sum total or aggregate of inherent abilities, acquired knowledge and skills represented by the talents and aptitudes of the persons employed in an organization HRD and ‘knowledge productivity’ are integrative and interactive processes that help organizational achieve such capabilities.

In a traditional libraries books, staff and the users used to be the components of the libraries, in contrast, in the knowledge economy added value accrues through the continuous application of new knowledge to the enhancement of the work processes, products and services. The performance differential can be traced to the intellectual resources rather than physical or financial resources. A typical example is the IT industry where wealth is held in intangible shape in the superior brainpower of the employees who make a significant difference to the market value of the firm. In a manner of speaking, knowledge is the chief organizational currency. Business organizations need to learn fast and facilitate acquisition of valuable knowledge by their employees that can be capitalized by organizations. In other words, organizations should be ‘knowledge productive’.

Improvement and innovation has become a critical attribute in the Knowledge Economy. HR practitioners in the Knowledge Economy need to develop aptitude to apply new information process and systems and adopt a holistic approach to effective interaction between organizational structure, technology and knowledge productivity. Developments in information and communication technology have a direct bearing on the knowledge repository in an organization.

5. An all-round improvement of library staff's quality and positioning of the human value will become important objective of knowledge Management in libraries.

In some ways, knowledge management is merely putting a new name to things that librarians have done for centuries. It is primarily a social, not a technological, technique. The service function and good relations with users, which are keys to successful librarianship, also are central to knowledge management. The instructional function of libraries is an essential component of knowledge management. The emphasis on meeting users needs as defined by users also is shared. The selection, organization and weeding of knowledge are necessary prerequisites to the successful operation of both services. Commitment to staff training is an important part of both knowledge management and library services. Library functions will be at the heart of knowledge based organization. And a knowledge-based organization such as an institution of higher education will insist on effective library and knowledge services.

But on the other side there are differences between knowledge management and the practices of most of the libraries.

- Knowledge management is almost goal oriented. If the academic goal changes, knowledge management will change rapidly to address the new goal. On the other hand, academic libraries tend to provide services as long as they are used.
- Knowledge management tends to be much more proactive in terms of users. It is more willing to initiate a dialog than the libraries have been in the past.
- Libraries traditionally try to be everything to everybody, whereas Knowledge management tends to be very focused and selective.
- Knowledge management is committed to the time value of knowledge, a concept unknown in libraries until recently.
- Knowledge management is outcome based, whereas libraries are people based.

As libraries adopt more aspects of the learning organization, and as Knowledge management learns more about organizing and supporting knowledge, it is likely that the differences will begin to blur.

6. Improving Competitive Advantage Through E-Learning

The term e-learning is derived from "electronic learning and refers to technology based learning or the "electronic" delivery of learning. It covers a wide range of distributed

knowledge applications and processes, including computer based learning, web based learning, virtual classrooms, and digital collaboration. Thus, e-learning includes delivery of content via all electronic media, including the internet, intranet, satellite broadcast, audio/video tape, interactive TV and CD-ROM.

The term “on-line learning” although sometimes used interchangeably with e-learning, more precisely refers to web-based learning which contributes just one part of the technology based learning spectrum: learning via Internet. It is learning experience that builds knowledge, skills and capabilities using real time web enabled technologies. It is about bringing learning to people and not people to learning. A traditional form of learning is “Pull” where learners have to go out and find the learning themselves. Now however “push” is beginning to happen where learning is sent to the learner.

In the knowledge era, the pressures on libraries are mounting on account of competition, constantly changing technology, shorter product cycles and shorter time to market. Libraries are adopting networking ideas to speed cycle times and to take on competition. There is an urgent need today for the libraries to enable front-line decisions, and people must know how to make them. Therefore e learning has become a vital function of the knowledge economy and old style training cannot keep pace with Internet speed. E learning is better suited to meet the requirements of the new economy and knowledge workers by being available when required, customized, and continuously, with access to the best and updated resources and knowledge centers. A comparison of education in the old economy versus knowledge economy indicates the importance and need of e learning.

Old Economy	Knowledge Economy
4 year Degree	40 years experience
Training as cost centres	Training as competitive advantage
Learner mobility	Content mobility
Correspondence & video	High tech multimedia centres
Geographic instituting professors	Brand name universities and celebrity
Just in case	Just in time
Isolated	Virtual learning communities

In this scenario where human capital is the chief source of economic value, education and training have to become life long endeavors for the workforce.

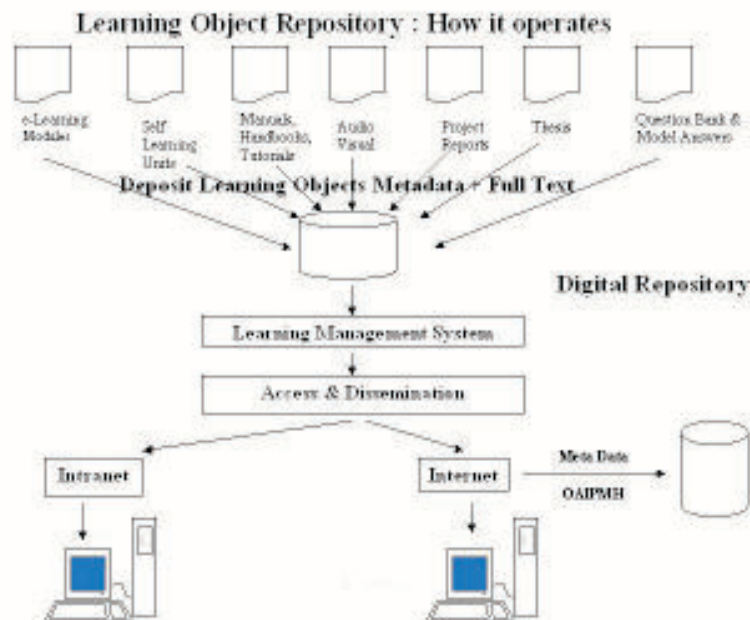
A learning management system that register, tracks and delivers content to learners; reports on learner progress, assessment results and skill gaps for instructors; enroll learners, provides security, and manages user access for administrators.

Learning object is a key component of e learning. A learning object is a “chunk” of instructional material. It is made up of three components:

- Performance Goal
- Necessary learning content to reach that goal (such as texts, video, illustration, presentation, demos, task simulation); and
- Some form of evaluation to measure whether or not the goal was achieved

From	To
Learning	Performance
Libraries	Digital libraries, virtual libraries
Telling	Interactivity
Manual	Online
Cycle time	Real time
Physical facilities	Network facilities
Individual	Organisation
Training management	Knowledge management

The rapid advancement in information and communication technology has lead to a convergence of teaching and learning. This has lead to the development of digital learning objects supporting online learning and digital library content. A learning object must be modular, discoverable and interoperable so that it can be reused.



The objective of any e learning is to broad base learning and ensures that training reaches out to more and more individuals. The emergence of e learning has enabled knowledge management practices to be measured and evaluated in accordance with the learning objectives. Before e learning knowledge management was held in the confines of information technology, e learning has proved to be a catalyst to move knowledge management from its high level focus to acceptance as an enterprise wide operational objective.

An implementation strategy for e learning should follow the 6D approach, where 6Ds stand for Desire, Disposition, Design, Deliver, Drive the learner and Determine.

- Desire : Does the organization need e learning?
- Disposition : Is the organization ready for e learning?
- Design: What is the model of e learning?
- Deliver: How will the organization provide e learning?
- Drive the learner: How will the organization drive the employees to demand e learning?
- Determine: Is e learning effective?

E learning is attractive as it promises better use of time, accelerated learning, global reach, fast pace, and accountability. But, any organization that wants to ring in changes by foraying into something as big as e learning, must remember that it is challenging the age-old traditional libraries. The learning breaks down when “untouched by human hands.” E-learning providers have a bottleneck – the last yard from the monitor to the learner’s brain. Without “personal assistance” this connection will never be made.

7. Conclusion:

Knowledge management is bound to produce both optimists and the doubters. However, we know that the source of organizational wealth is something specifically Human-Knowledge. The rapid advancement of Knowledge exchange tools (such as the Internet, intranets and groupware) is setting the stage for Knowledge management. The potential of this emerging concept lies in how well we share the “know-how” to augment the decision-making quality and capacity of the organization. To promote knowledge sharing environment, libraries must consider cultural, social, and organizational changes as well as technological support. The trend towards knowledge sharing is good for co-workers, for the libraries, for the society as a whole. The key converter from hoarding knowledge to sharing knowledge is trust. To gain a competitive advantage in an unpredictable environment, we must learn to master the art of knowledge sharing and Knowledge management. Efforts can be realized only if there is a follow through. Corporate culture must change first. Globalization has created new opportunities but involved new risks as well. Development of strong capabilities, competencies and significant experience by serving demanding user community must precede globalization. Libraries should be excellent in quality, process efficiency and productivity, should be technology-savvy and must be extremely responsive to user needs.

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