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Information, Technology and Knowledge Management

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Abstract

In this information and knowledge age, libraries must come out from back of the screen to the centre stage of the organization. With the excellent skills in organizing and codifying information sources and making information accessible to others, library professionals can play an important role and contribute more for organizational development. To sustain in technologically competitive global market, libraries must have a strong information system in order to increase the organizational competitive advantage. The success of the organizations' greatly depends upon the value and capacity of its library. This paper attempts to explain in details about the information, technology and knowledge management, an attempt is also made to differentiate them.

Keywords: *Information Management, Technology Management, Knowledge Management*

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INTRODUCTION

"As a general rule, the most successful man in life is the man who has the best information"

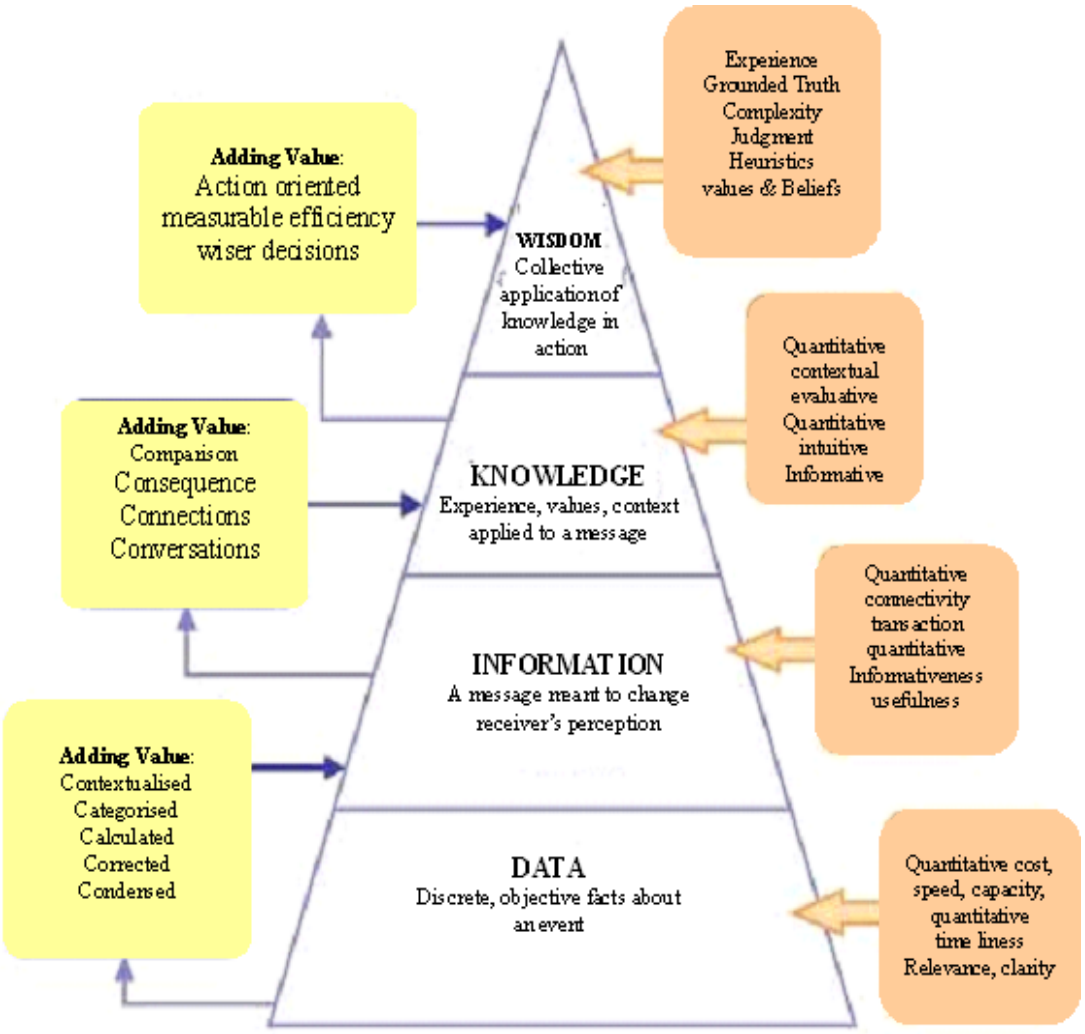
Benjamin Disraeli

Evolution of society is divided into 3 epoch viz. Pre Industrial agrarian society, Industrial Society and Post–Industrial Society. Pre industrial society was prevalent till late 18th century. In pre industrial society the emphasis was on extraction of resources from the nature. During this period the focus was on farmers and plantations.

Landlord and military personnel were the dominant figures. This life revolved around agriculture, fishing and mining. This was followed by industrial society where energy and machinery played the major role. Everything rested on the use of energy for mass production and provision of service. During this period the focus of the society was on production and business. Businessmen were the dominant figures. The period after 1960s can be referred as the post industrial society. The essential characteristic of such society is that the theoretical knowledge is believed to be triggering all the innovations and policy decisions. This also signifies a noticeable shift from production to service industry and economy. Thus, the managerial and professional services took the driver's seat and technical skills were pushed to the back seat.

A society in which; the quality of life as well as prospects for social change and economic development, depend increasingly upon information and its exploitation. In such a society, living standards, patterns of work and leisure, the education system and the market place are all influenced markedly by advances in information and knowledge.

Relationship between Data, Information and Knowledge



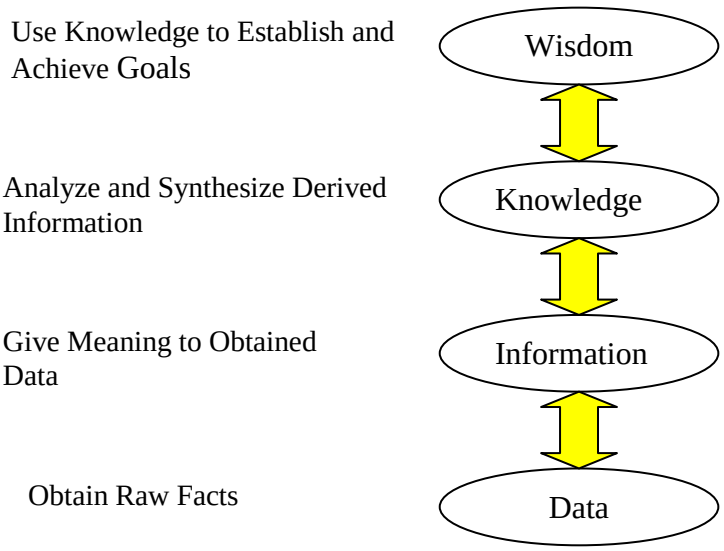
Source: Adapted from Liebowitz (2003)

Data are essential ingredients to information. Different types of data yield different meanings. When the data are brought in the purview of awareness it becomes information. By collecting information we make certain generalization that matures to knowledge. The accumulated knowledge over a period of time blossoms into a state of an ability to think and act wisely utilizing knowledge, experience, understanding, commonsense and insight called wisdom.

According to Russell Ackoff, the content of human mind can be classified into five categories:

1. **Data**: Symbols.
2. **Information:** data that are processed to be useful, provide answers to who, what, where and when questions.
3. **Knowledge**: application of data and information; answers how questions.
4. **Understanding**: appreciation of Why.
5. **Wisdom**: Evaluated understanding.

Ackoff presumes that the first four categories related to the past, they deal with what has been or what is known. Only the fifth category, wisdom deals with the future because it incorporates vision and design. With wisdom, people can create the future rather than just grasp the present and past.



INFORMATION MANAGEMENT

Information is only an organized or categorized data. The use of information is knowledge. A knowledge creation is the information put to use by the organizational staff. When this intangible knowledge is captured and used, will enhance the organizational performance. Libraries are generally driven by a desire to provide access to information sources and information sharing. Managing library and information services itself, is important. They need to be focused towards the organizational objectives.

Definition

By consolidating the various authors view (Lynda Woodman, 1999, D.P.Best, Ravichandra Rao, 1998), first, information management is defined as the desire to improve the overall performance of an organization using information with the help of technology. This is explicitly expressed or implied.

Secondly, information management differs from organizations to organizations as each has different objectives, different needs and different process of managing information. What is adequate for one need not be adequate for other. The type of information handled in a post office is different from the one handled in a sugar industry.

Thirdly, information management stresses on converting external and internal information into actionable knowledge in a cost-effective manner. In view of this there are five components of Information Management:

External Information => Information Resource Management (IRM)
=> Information Technology
Internal Information => Management Information System (MIS)
=> Information System
Converting => Information Technology
=> Information Processing
Actionable Knowledge => Strategic Information Management
Cost-Effective Manner => Strategic Information management
=> Information Resource Management

These five components correspond to the six activities. Therefore, information management comprises of theses six fields of activities.

In a nutshell, IM has many meanings and is applied differently depending on who uses the concept.

At the heart of it, IM is a "structured set of work activities that comprise the way in which companies capture, distribute and use information and knowledge" (Davenport, 1997). Organizations today do not lack information. They lack tools to draw the right information to the right people at the right time. Hence IM is a combination of the following disciplines:

- Information Technology (IT)
- Management Information System (MIS)
- Strategic Information Management System
- Information Resource(s) Management
- Information Processing
- Information Systems

Information Technology (IT)

Information Technology has arisen as a separate technology by convergence of data processing techniques providing the capabilities for processing and storing information and telecommunications is a vehicle for communicating it.

Advances in telecommunications have made it possible to transfer information form anywhere to any where at extremely high speed. Online access of databases is made possible instantaneously. Electronic document processing and delivery are the gifts of IT. Development of expert systems can be applied to information and documentation tasks enriching retrieval function.

Management Information System (MIS)

MIS is a system designed to provide management and supervisory information with required data that is accurate, relevant and timely, possible on a real-time basis. This type of information is necessary for decision-making. MIS contains specific hardware, software, databases and models designed to assist in planning, decision- making and management. Therefore, in a nutshell, MIS is an integrated computerized system, covering both internal and external information for management and decision making in a given organization and company.

Information Systems- Information Handling

Information system comprises of the documentation centers and the communication systems. Information systems deal with the current status of the organization, its business functions, data requirements, data sources, potential opportunities, evaluation, priorities, organizational structure, control mechanism etc.

Information Resources Management (IRM)

Information Resources deals with applying management techniques such as planning, evaluation, control etc., and treating information as a resource like men, material, machine and money. Information is considered an expensive and vital resource to be managed in line with the corporate goals. Information is to be gathered, stored, processed, generated and retrieved. It has a market value. Therefore, it has to be handled or managed with care.

TECHNOLOGY MANAGEMENT

Technology plays a dominant role in determining the educational needs of the workforce. It is no doubt that technology has played an important role in creating the present environment within which organizations must adopt and learn how to enhance compared to their competitors. The advents of World Wide Web and rapid increase in the internet, intranets, extranets, portals etc., have created networking capabilities with faster speed and global markets reach.

Integrating Technology and Knowledge Management

- ❖ Facilities the process of transmit and exchange information.
- ❖ Enables in capturing information.
- ❖ Enables the sharing of information.
- ❖ To gather vast amount of information.

Comparison Between Human-Based and Technology-based Knowledge

Human-based Knowledge	Technology-based knowledge
Face to face meetings	Video conferencing
Bullet-in, Newsletters	Web-sites, Portals
Company reports, MoU	Groupware (Lotus Notes)
Hard copy reports	Electronic Forums
Post-mail	E-mail
Pen & Papers	Scanner
Memos, Circulars	Intranet
Books, Filing cabinet	Digital Documents, Database

Technology Led Library

- Reduced costs
- Fast and user-friendly
- Regular up-dation of information
- Rapid retrieval of required information
- Overcome shortage of intellectual staff in schools/colleges/universities
- Information about customers, library statistics, etc.,
- Reduced processing time
- Increased customer satisfaction

The rapid technological development has been changing the nature of the workplace and demands placed on employees. At the same time, there is increase in global competition and survival of organizations is becoming more difficult. To be globally competitive, employees have to apply greater knowledge and adopt quickly through learning. They must change from ordinary workers to knowledge workers. Libraries and librarians can play a vital role in improving the staff efficiency and contribute to competitive advantage. Supporting knowledge workers needs for access to knowledge information capturing and leverage the knowledge they generate, are issues that librarians need to support and manage.

KNOWLEDGE MANAGEMENT

Knowledge management is a conscious discipline that strives to apply the personal store of knowledge for the accomplishment of organization al goals.

Knowledge is categorized into two types. One from individual's mind, which is known tacit knowledge and the other is documents that is presented in written form, is known as explicit knowledge. Librarian efforts should bring out the individuals tacit knowledge as explicit knowledge. Managing knowledge is about creating an environment to encourage knowledge creation and transfer, but the real challenges lies in how to identify information and put it to productive use. Organizations have to manage knowledge in order to compete effectively and develop sustainable knowledge-base. The most important part for developing knowledge base is correctiveness of information and timely availability of information. Library can play viral role in organization by providing access to world-class information and services. If library and information professional can provide and effective support in the knowledge management phenomenon, it is necessary to understand the technology perspectives and concepts that enables knowledge management.

Origin of Knowledge Management

Knowledge management as a percipient discipline evolved out of brainwork of Peter Drucker (1970s), Karl –Erik Svieby (1980s) and Nonaka Tekuchi (1990s). The period witnessed abrupt economic, social and technological changes in the working of companies. New opportunities emerged and competition increased with globalization. Companies started downsizing, merging and reengineering their resources. Most of them started focusing on the usage of network and computer technology. However, it could not yield hardly any fruits of success that led to increasing prices, smaller companies and people no longer knew what they knew. On closer inspection, companies felt that it was their wrong approach to knowledge management, i.e., focuses on technology which misled them. In mid 90s most of the world's leading companies widely

acknowledged that their competitive advantage was due to their knowledge assets like, workers skills, customer relations and innovative measures. Excellence in business provoked other companies to follow the trend and knowledge management emerged as a core business objective.

Knowledge Management Process

Knowledge management process broadly involves activities like creating, capturing, and refining, storing, managing and disseminating knowledge. **Knowledge Creation** is a process which involves the conversion of tacit knowledge into explicit knowledge. At first knowledge audit is conducted to identify knowledge needs, knowledge resources and knowledge flows. Further opportunities have to be provided to generate new knowledge.

Knowledge capturing is a process where new body of knowledge identified and captured. **Knowledge refining** process is placed in such containers or into such context which can be easily used. **Knowledge storing,** the new chunk of knowledge is stored in repository. **Knowledge managing** is reviewed and evaluated to judge its accuracy and relevance. **Knowledge disseminating,** the new body of knowledge is made available at all times to anyone.

Knowledge Management Technologies

- Networking
- Internet, Intranet
- Web Publishing
- Search Engines and Text Mining
- Electronic Publishing Technology J Gate
- Electronic Document Delivery
- Scanner
- Compact Disks
- Robotics

Knowledge Management versus Information Management

S.No	Information Management	Knowledge Management
1	It deals with explicit knowledge	It deals with tacit and implicit knowledge
2	It is concerned with classifying, codifying and transferring knowledge	It relates to identification, creation and distribution of knowledge
3	It requires tools like schedules, index, databases, computers etc.,	It deals with skills or know-how to manage knowledge
4	It is material oriented	It is man oriented
5	It emphasis on enquires to repositories	It emphasis on collaboration and sharing
6	It provides good productivity and efficiency	It increases productivity for innovation
7	It emphasis on structured or formal information/knowledge	It emphasis on unstructured or informal information/knowledge
8	It is concerned with information external to the organization	It is concerned with internal information

Knowledge Management in libraries

The new role of libraries in the 21st century needs to be as a learning and knowledge centre for their users as well as the intellectual commons for their respective communities where to borrow the phrase from the Keystone Principles "people and ideas interact in both the 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.

INFORMATION, TECHNOLOGY AND KNOWLEDGE MANAGEMENT

Information in books and journals are transformed as usable knowledge, unless it resides in the minds of people. Knowledge can be transferred from face to face meetings and through interactions. Information management on the other hand, is about capturing, organizing and managing information. Knowledge management is about enhancing the use of organizational knowledge through sound practices of knowledge management and organizational learning. Technology plays an important role in knowledge management, although technology management is not about technology. Technology facilitates or enables the process of transmitting and sharing information. To support both explicit and tacit knowledge, a knowledge management needs to be built with technologies. Knowledge technologies are however, are interactively employed with users [1–3].

CONCLUSIONS

Knowledge management is a combination of information management, technologies and human resources. To evaluate the libraries position and to increase the skills of the staff, librarians should take this opportunity of Knowledge management and must provide access to world- class information and services. To conclude, knowledge management is like clicking a photo, the focus of an organization may be to achieve its goals and objectives, but it is the library like a camera flash, where we cannot get a clear picture without it.

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