

## THE DEVELOPMENT OF LIBRARIES IN INFORMATION WORLD

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**Abstract:** *In this information age, the evolution of ICTs has transformed library institutions and information work towards the management trend. It influence the lifestyle nowadays where ICTs produced knowledge society which are generation who are able to stabilized and develop nation to quality of life. In order to become knowledge/Information society, the way of information handling and managing are important issues to be discussed and preserved. Due to that, the development of libraries should be maintained and upgraded based on the growth of technology.*

**Keywords:** *Information/Knowledge Society, Digital Library, ICTs, Information Services*

### INTRODUCTION

Nowadays, library function and manage is differ from a few years ago where it was managed traditionally. All the library processes are done manually at that time. As we are adapted to 21<sup>st</sup> century and the world are approaching to the information age. The changing scenario of information environment the knowledge professionals have to be more interactive, collaborative and dynamic. The information made available to all those who seek it regardless of physical boundaries, formats, and time constraints. Information sources are important towards country development.

Dr. Abdul Kalam, former president of India, mentioned:

“Efficient utilization of existing knowledge can create *comprehensive wealth* for the nation and also *improve the quality of life* including better education, health care, infrastructure and other social needs”.

From the speech noticed that, he is very concern on knowledge because knowledge can bring up and stabilize the nation. He focuses on the ability of his citizens to create and maintain a knowledge society, infrastructure, develop the knowledge workers and enhance their productivity. Information dissemination is important to produce the information literate society. This society plays an important role as a main platform to improve the quality of life. There are three main economy sectors:

1. Agriculture
2. Manufacturing
3. Services

All of these contributing to the development of nation besides create comprehensive wealth. To maintain and achieve that target, knowledge professionals must see how well can meet the requirements. These people are also known as Knowledge economy or Knowledge Society's economic counterpart whereby wealth is created through the economic exploitation of understanding.

They have to foresee their continuing role in contributing to the development of informed citizens, incorporating and utilizing new technologies that enhance their endeavours. At the same time they should strike a balance between the traditional role and the new roles.

## INFORMATION/ KNOWLEDGE SOCIETY

Without realized, the evolution of information and communication Technologies (ICTs) and the construction, produce diverse "information Societies" according to the countries and regions' specific and different historical economic, social contexts and development levels. The geography barrier is not issues of the failure of information dissemination as ICT have been use wisely.

The term of a *society* is defined as the creation, distribution, and manipulation of information has becomes the most significant economic and cultural activity while *information society* is a society that involved in the creation, distribution and manipulation of information. According to the Argentina expert (2005) reinforces the value of networking in the informational era. He defines an *Information /Knowledge Society* as " The economic and social state which survival and development actions are characterized by potential capacity of its actors to connect to each other through networks, using ICTs extensively, intensively and strategically in order to obtain and share , stock, processes, analyze and distribute information".

Technology nowadays supported the growth of nation by built platform of information to distribute and create information/ knowledge society which consists of professional in varies field of expert. There are a few important feature of knowledge society are being published by Wikipedia. There are:

1. The knowledge society should not be constrained by geographic proximity as the current technologies, ICT are able to reach and distributed information to all.
2. Current technology offers much more possibilities for sharing, archiving and retrieving knowledge.
3. Knowledge has become the most important capital in the present age, and hence the success of society lies in harnessing it.

Based on that theory and evident, to develop and improve the quality of life including better education, health care, infrastructure and other social needs, information with supportive technology are the main medium to be maintain and getting updated. Based on that, National knowledge Commission (NKC) recognized that access to knowledge is essential and stated, “Access is one of the most fundamental issues in a library knowledge society”. It shows that, library play an important role in creating knowledge society.

## **LIBRARY**

### *The roles of library*

There are no doubts on the important of library in education. Theoretically the objective of library establishment is to fulfill the requirement of support materials use in teaching and reference of academicians. Basically, the roles of library are:

1. To serve the needs of the academic community
2. To provide references materials at appropriate level
3. To provide study areas for users
4. To provide lending service appropriate to different types of user
5. To provide an active information to user

Library is one of the major element need to be concern in creating knowledge society. It is because library and information services are fundamental to the goals of creating,

disseminating, optimally utilizing and preserving knowledge. Besides, it is an instrumental in transforming an equal society into egalitarian, progressive knowledge society.

### *Impact of IT on library and information services*

In information era, internet is not the strange term in community due to impact of internet in worldwide industries, business, science and technology, education, medicine, public administration, communication, information management, art and design, engineering, architecture, music and entertainment, broadcasting and mass media. As the application of IT is widespread in various disciplines due to capability on information services and information delivery and access in an ongoing agenda and growing in importance each day as world becomes an electronic universe with growing application of Information Communication Technology (ICT). Internet also known as the “premier network of networks”, as ‘everyone’s computer are connected’ or, most graphically, as an ‘unmanaged of web of computer plasma’ (Bane and Milheim, 1995, 1). A part of internet known as *World Wide Web (or the Web)* is a subset of the computers on the Internet that are connected to each others in a specific way that makes those computers and their content easily accessible to all computers in that subset. The web was first introduced in the early 1990s and develops well to be a huge database of information and services. The capabilities of web to store and manage databases are unimaginable by us. Hence, World Wide Web is called the ‘world brain’ or ‘electronic brain’.

This technology affected the library management and services a lot. Library nowadays resulted from a few stages of transformations. Initially library is managed traditionally where a specific place which a finite collection of tangible information bearing primary entities like books and journals. As technology growth traditionally library was transform into *Automated Library*. At this stage, a mix of paper and digital references resources and meta-information were use without supported by digital media. The impacts of technology appear slowly in library services as the digital media is started to use in *Hybrid Library*. Both printed and digital meta –information sources and the coexistence of both digital and paper primary resources are used. Nowadays, the impact of technology and ICT transforming library to becomes high technology institution with transforming to *Digital Library*. Digital library comes with new approach of information services to user beside improve the quality of information work.

### *Factors affecting next generation libraries: Changing paradigm*

The changes of library can be seen obviously as a single library transform to a network library; from one collection library to distributed collections; from the catalog interface to multiple interfaces; from books and journals to information fields and streams encompassing traditional and nontraditional forms of scholarly communication. These transformations are affected from a few factors. One of the factors is the way people access information from traditional library visit to network access. By using network access, users are available to access information anytime and anywhere. User do not need to spend much time to go to library as there are available to download information needed by using internet which is more convenience and time saving. Besides that, the effect of rapid movement of technologies towards nano storage and real times access with convergence of computer technology and telecommunication, the digital media has replace print media spark the evolution of digitalizing library. The transition libraries from information storage and retrieval to information facilitators and aggregators instead of ownership of information the present generation gives important to access to information. The others factor encouraging the next generation libraries is the increasing of information collections. The information collections keep on increasing and the way of managing these sources should be revise and upgraded. In information age, these information are in varies format and interface. The way of storage also need to concern as in traditionally library, huge space are required for storage. It differ when digital library as it leading to speed of present day microprocessors, decreasing size of storage media and moving toward nano storage. As ICT application able to making network to worldwide, libraries are going for consortia rather than stand alone which makes possible to have access to more number of journals and e-sources. All the E-sources are available in full text databases. Digitization helped to have open access to information rather than closed access. It also opens an opportunity to collaborate with other libraries as it is possible for global access information. In addition, the growth of next generation changes the methods of information search. Today it is text or touch but next generation search technology is ought to be include reflectivity, density, tone, speed and volume. In this new information environment the user is considered as consumer of knowledge. Hence, digital revolution and networked environment made the libraries without walls where data and information can now be transmitted to all corners of the world, and also accessed without geographical restriction.

### **DIGITAL LIBRARY TECHNOLOGY AND TRENDS**

Sun Microsystems defines a *digital library* as the electronic extension of functions user typically performs and resources they access in a traditional library. These information resources can be translated into digital form, stored in multimedia repositories, and makes available through Web-based services. The emergence of the digital library mirrors the growth of e-learning (or distance learning) as the virtual alternative to traditional school attendance. As the increase amount of student turn to off –campus alternative for lifelong learning, the library most evolve to fit this new educational paradigm or becomes obsolete as students search for another ways to conveniently locate information resources anywhere, any time. Digital library start to appear on campus in the early 1990s and focused on digitization technology, metadata schemes, management techniques and digital prevention. With the advent of the internet, individual’s expectations for access information increase dramatically. It is no longer considered practical or acceptable to travel to a specific location during certain hours to locate needed information. With digital libraries, individual can:

- Gain access to the holdings of libraries worldwide through automated catalogs.
- Locate both physical and digitized versions of scholarly articles and books
- Optimize searches; simultaneously search the internet, commercial databases, and library collections.
- Save searches and conduct additional processing to narrow or quantify results.
- From search results, click through to access the digitized content or locate additional field of interest.

All these capabilities are available from the desktop or other Web-enable device such as personal digital assistant or cellular device.

Sun Microsystem (2002,8) describing a fully developed of digital library environment involve the following elements:

- Initial conversion of content from physical to digital form.
- The extraction or creation of metadata or indexing information describing the content to facilitate searching and discovery, as well as administrative and structural metadata to assist in object viewing, management and preservation.
- Storage of digital content and metadata in an appropriate multimedia repository. The repository will include rights management capabilities to enforce intellectual property

right, if required. E-commerce functionally may also be present if needed to handle accounting and billing.

- Client services for browser, including repository querying and workflow.
- Content delivery via file transfer or streaming media.
- Patron access through a browser or dedicated client.
- A private or public network.

These components might not all be a part of a discrete digital library system, but could be provided by other related or multi-purpose systems or environments. To interoperate with the existing library infrastructure, the digital library must be designed to work with existing library catalogs and incorporate industry standards, formats and protocols. These digital library components must also be tailored to capture, encode, and deliver information according to the standard practices adopted by the library industry. Because of the rapid pace of technological change, some standards are concrete and others are emerging.

## THE OPEN DIGITAL LIBRARY

### *Technology platform requirement*

In nature, digital library collection development requires use of technological resources where variety of hardware and software are utilized. The growth of collection online will require big storage capacity and can be as large as petabytes. Patron expects high service levels, which means that downtime and poor response time are not tolerated. Storage capacity must be scalable to adapt to rapid growth in demand, and must be adapted to the mix of media types that may be stored in digital library, such as:

- Text, which is relatively compact
- Graphics, which can be data-intensive
- Audio, which is highly dynamic
- Video, which is highly dynamic and data intensive.

Storage capacity should be expandable in economical increments and should not be requiring redesign or re-engineering of the system as requirement grows. Digital library should be robustness and scalability to maintain and upgrading its services. Digital library

implementation required a scalable enterprise –level technology with built-in reliability, availability and serviceability feature. The education portal is one of the application created to support that feature besides give advantages to of off-campus, lifelong learners. In a portal environment, the users connected to portal server via a browser or other device. The portal server presents an authentication screen to user where user name and password are needed. These to information need to verify by system before users are available to access. This educational portal makes information reach to user easily without need user to come to library to search their information needed.

### *Evaluation of reference services*

The role of reference librarian has changes greatly as technologies development grow. Traditionally, the librarian's function was to assist in the collection development and acquisition, cataloguing and classification, circulation, provision of reference services and preservation, conservation and archiving. As library evolution towards digitalized, the function of reference librarian have been considering how to adjust reference services to the new environment and new information needs. The role of reference librarian was change into teaching, consultancy and researching besides providing access to information skills and tools, organizing information resources, search strategies and basic references works. It is necessary for the reference librarian to be involved in research by facilitating access to information, such as finding, delivering and summarizing information. Bunge and Bopp (2001) noted that such personal assistance in the essence of reference services and is the fundamental role of the reference librarian. Bunge (1999) also categorized reference services into three broad groups

1. Information services that involve either finding the required information on behalf of the users or assisting users in finding information
2. Instruction in the use of library resources and services
3. User guidance, in which users are guided in selecting the most appropriate information sources and services.

As library is being transform into digitalization, the effectiveness of reference services need to evaluate and improve. It is affected by a few factors or circumstances of library phenomena today. The phenomena involve are:



1. An increase in the number and variety of information resources available in libraries and outside
2. An increase in the complexity of those information resources
3. These increase in the complexity of those information resources combine together made it difficult for people to find the resources they a looking for, and to find the information they need within that resources
4. An increase in the number and diversity of people using libraries (particularly public libraries), leading to a wider range of information needs, enquiries, and sophistication in the research for information ( Janes, 2002)

Due to that, from the article of Green (1876) introduced the four main functions of the reference librarian which remain as the basic tenets of reference librarian service the basic tenets of reference services today:

- Instructs patrons how to use the library
- Answers patron queries
- Aids the patron in selecting resources
- Promotes the library within the community

Green in his article state the changes functions of references library where their need to help patron and teach patron how to use the new interface of library system. Librarians at this age also need to be a teacher and conducting training to new user to ensure the facilities provided are used effectively.

Besides references librarian in information age, digital library also built in digital reference services. Digital references services refer to a network of expertise, intermediation and resources put at the disposal of a user seeking answers in an online/networked environment. A digital reference occurs when a question is received electronically and responded to electronically (Bertot, McClure and Ryan, 2000). A digital service generally comprises the following elements:

- The user of service,
- The interface (email, web form, chat, video conference)
- The information professional

- Electronic resources (including electronic or CD-based resources, web resources, local digitized material), as well as print resources (Berube, 2003)

Actually nowadays, there are two modes of Digital Reference Services used in digital library. There are Asynchronous and Synchronous transaction. Asynchronous transactions involve time delay between the question and answer for instance email, Web forms and Ask A services. By using all these services, patron need to wait for the answer a few hours or may be a few days or the answer. Synchronous transaction is differing from asynchronous transaction. The answer of question is delivered on time at real time. Today, patrons are preferable to use chat as communication medium besides using video conferencing or web-cam services, and Digital Reference Robot to get quick solution of enquiries.

As a result of technologies which influence the development of library, physically we will able to see the transformation of libraries in Malaysia. All academic libraries in Malaysia are completed with Remote Enquiry Services, Catalogue on Web, Dedicated Website, FAQs page, Interactive Services, Resources Remotely available and link to OPAC.

## CONCLUSION

There is no doubt digital library is an excellent way of managing information growth today. It fulfill user requirement of information needs and follow the development of technology, ICT which lead information works nowadays. Technology today, makes information dissemination easier and faster with internet and information networking. Global information is available and easy to access. The way to becomes knowledge/information society is not impossible to achieve as library today was adapted to current technology of transformation.

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