

# **STRATEGIC APPROACH TO BUILDING VIABLE ELECTRONIC LIBRARY**

## **SYSTEM**

**BY**

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### **Abstract**

*The paper highlighted on the impact of ICT and Network technologies on the landscape of traditional library systems. Operations and services. It discusses the importance of Electronic Library and the Strategic steps to take towards building a viable e-library. It concludes that in view of the non-advancement of the developing countries technologically, what is needed contemporarily is a hybrid library system containing both the printed and digital information resources.*

## **Introduction**

It is generally agreed that there is no common denominator in the understanding and conception about the concept 'electronic library' by the stakeholders in information management such as the computer scientists, information scientists, publishers, vendors, etc.

'Electronic Library' (e-library) is synonymously conceived as 'multimedia library, Gateway Library, Netlibrary, Virtual Library, Digital Library, Library of The Future, and sometimes Library Without Walls, to denote library without physical collection. Simply put, electronic library can be conceived as conceptual library environment with no physical information resources, accessed and used using the Information and Communication Technologies (ICTs). It could also be said to be a social and veritable agency or system for acquisition, organization, Preservation, digitization of digital information resources and making available information in variety of electronic /digital formats for access and use.

What is essential about an electronic library is its capacity and potential to create, produce and acquire digital collections and organize, categorise, index, store, preserve, digitise and maintain them for easy access and use directly and remotely irrespective of time of access and location. David and Rawlads (1999) observed that the term 'electronic library' first appeared in the literature pre- 1980 while 'digital library' appeared in 1990 and its occurrence has grown rapidly.

## **Electronic Library**

The emergence of electronic library or rather 'virtual' or 'digital' library can be seen to be the by-product of the impact of ICTs on the landscape or paradigm of the traditional library settings which are predominantly manual in nature, characteristics, operations and managements. There is no doubt in the fact that the ICTs affected the mode of publishing, distributing, preserving, storing, retrieving and handling information and all forms of information resources as well as data management. The systems structure, operation, processes and services have been shifted from analog to digital mode. Information are not only produced electronically in variety of formats but are also accessed and used irrespective of the location of the user and the time of access with the aid of ICT and network technologies and facilities.

Characteristically, an electronic library should:

- Have its digital collections, irrespective of format, resident within and outside its physical and administrative location or boundary;
- Provide electronic version of the traditional library collections, operations, services and processes;
- Provide open/(on-line) information on its content;
- Operate in both stand alone and network environments
- Have on its staff ICT skilled personnel;
- Provide opportunities for its immediate and remote customers to access its facilities and services at convenience and on real-time regime.

In view of the importance of electronic library especially in the contemporary digital ages, what seems to be the vogue is the emergence of hybrid libraries in institutions and organizations with both printed and electronic documents in different formats, operating and providing both analogue (manual) and electronic (digital) based services.

### **Building Viable Electronic Library**

The success or otherwise of any institution or organization is largely dependent upon the type and quantum of information available to it and the extent to which it is able, willing and capable of utilizing it to its advantage. Hence, the need for the establishment and maintenance of not only the traditional library system and services, but also the electronic library system and services to cope with the exigencies of the digital age as a precursor to gradual shift to virtual landscape in information service delivery. It is therefore necessary that strategic approach is observed and maintained to come up with viable electronic library.

The first step toward establishing a viable electronic library is to formulate its **vision, mission, goals and objectives**. This is usually dictated by the nature and type of the institution or organization. Essentially, the basic objective of a typical electronic library (e-library) is to see to the overall development, advancement and success of an institution or organization its meant to serve through the provision of relevant electronic/digital information resources, irrespective of the format, and services for the use of its stakeholders. It serves to collect, organize,

preserve, deposit and make available all relevant information issued by the organization/institution, for the institution/organisation, and on the organization/institution in variety of digital formats irrespective of the source for access and use. Also, it serves as the organisation's/institution's digital repository responsible for the overall management of its digital collection and provision of relevant services useful to its customers.

Other steps to consider in building viable e-library include the identification/determination of:

**(i) Functions of the e-library**

A typical e-library should aim at:

- Providing electronic publications online and off-line for access and use;
- Digitizing printed publications relevant to the organization/institution;
- Providing facilities to access digital collections beyond its physical and administrative environment especially through the use of network facilities;
- Collaborating with other relevant e-library systems for access to wider digital collection and provision of enhanced services; and
- Serving as digital repository.

**(ii) Stakeholders of e-library**

It is important that decisions are taken on the nature, category and composition of the e-library stakeholders especially in relation to the:

- Users/Customers
- Staff
- Sponsors/financiers
- Community members

### **(iii) The Nature and Content of e-library**

It is expected that a typical e-library collection should contain basically:

- Primary information resources generated on, by and for the organisation/institution in variety of electronic formats held within the system,
- digital archival documents resident in both the system and in the network environments including the Internet databases,
- publications by the organization/institution such as serial publications, scientific and technical reports, statistical data, financial/business transactions, programmes of activities and accomplishments; strategic plans, community relations and services, annual reports, receipts and vouchers; financial and management policies,

operations manuals, minutes of meetings; business agreements, etc. (Mohammed, 2009).

- Secondary information resources such as bibliographic data and search tools in form of Online Public Access Catalogue (OPAC), Indexes, Union Catalogues, Abstracts, etc in digital formats.

#### **(iv) Document Preservation Process**

A typical E-library should have the potentials to preserve its collections by digitization in order to guarantee their perpetual access and usage. Digitised printed documents can be in:

- ❖ Packaged electronic publications contained in CD-ROMs and DVDs; and in
- ❖ Networked electronic publications in databases, Internet and other network environments.

The choice of which format and media to be used for the storage and preservation of digitized printed documents will be dependent on the digital technology available for use.

#### **(v) E-Collection Building:**

By and large, the E-collections for e-library can be built through:

- ❖ In-house digitisation of fixed and printed media such as books, paintings, microforms, pictures, etc into electronic form especially through scanning.
- ❖ Acquisition of original electronic publications such as e-books, e-journals, e-databases from publishers, vendors, authors, associations, organizations, gifts and exchange etc through purchase, donations.
- ❖ Engagement in network projects and services provision with other relevant institutions and organization to enhance the scope and access to their collections and databases severally and collectively.

**(vi) Metadata Descriptor:**

Metadata can be described as the list of the attributes used for the access and retrieval of electronic publications in digital environment. Like the Conventional Catalogue, it contains the records that describe documents in the e-collection. What is most important is the maintenance of consistency and standard such as the 'Dublin Core' used to determine the core elements needed to access, retrieve or describe e-documents.

**(vii) Document Identifiers:**

This refers to the provision of unique naming identifiers to electronic objects to allow for their easy

citation, retrieval, make links with others and maintenance of copyright requirements. Like the ISBN and ISSN for printed publications, naming in e-library provides e-publications and objects with unique identification. Names allocated to digital objects/documents must be indefinitely permanent and remain valid regardless of the movement of such documents from location to locative and migration from one storage medium to another. Examples of persistent naming schemes are:

- ❖ The Persistent Uniform Resource Location (PURLS) developed by the OCLC;
- ❖ Uniform Resource Name (URN) developed by the Internet Engineering Task Force (IETF); and
- ❖ Digital Object Identifier (DOI) system developed by the Association of American Publishers and the (American) Corporation for National Rural Initiatives (CNRI).

**(viii) Copyright/Intellectual Property Right Management**

Though difficult to apply in digital environment due to the potentials of remote access to and use of electronic documents especially in an online network regime, rights must be seen to have been observed by the users through using such strategies/facilities as:

- ❖ Users identification and authentication facilities;

- ❖ Tracking and monitoring of usage and access facilities;
- ❖ Provision of rights status on the relevant publications and objects;
- ❖ Placement of restrictions on usage of digital documents;
- ❖ Institutionalization of usage fee for some e-documents;
- ❖ Placement of restrictions on usage of specialized e-documents;
- ❖ Institutionalization of usage fee especially for specialized e-collections; and
- ❖ Placement of restrictions on pages to be downloaded or copied at a time from e-resources.

**(ix) Document Preservation**

Comparatively, the potentials for making available information resources in perpetuity through preservation methods is better realized in digital environments than in the pre-digital. The major challenge in the digital preservation of documents is the issue of technological obsolescence especially in the areas of preservation of storage medium, access to content and digitization of fixed-media collections using digital technologies for archiving digital information.

Chepeduik (1997) remarks that digital standards are required to consistently store and share materials preserved digitally. What is therefore needed is:

- ❖ Establishment of standards for document preservation for consistent storage and sharing of digitally preserved information resources;
- ❖ Storage of redundant digital copies at designated locations and sites, and
- ❖ Institutionalization of policies on long-term preservation of digital collections.

**(x) E-library Project Plan and Design**

Electronic Library Project plan and design for adoption and implementation must provide vital information on:

- Objective of the e-library;
- Potential benefits to be derived and the beneficiaries;
- User needs to be met by the e-library;
- Cost implication of the project from the start to the end;
- Sources of funds for the systems sustenance on completion of the project;
- Comparative analysis report of similar projects executed successfully;
- Potentials for Complementary digital resources and services provision from elsewhere;

- Comparative and network potentials;
- Potentials for continuous availability of documents for digitization and preservation;
- Availability of contemporary ICT and digital technologies for the implementation and sustenance of the e-library;
- Phasing and workflow for the implementation and sustenance of the project;
- Report on choice standards for data interchange across networks, data documentation for resources' management among stakeholders (e.g. MARC, Dublin Core and Computer Information of Museum Information (CIMI) and Controlled Vocabularies such as the AACR2; and
- Systems architecture and other related features.

**(xi) E-Library Policy**

This refers to the administrative guidelines and procedures for using the e-collections:

- type of services,
- funding and finance,
- systems features and sustenance;
- collaboration and co-operation,
- system security,
- nature and category of users
- criteria for selecting and weeding digital documents,

- type, size and nature of collection,
- hours of operation, staff and staffing,
- staff education and training requirements;
- systems maintenance, update and preservation;
- information/data security, recovery and backup;
- systems maintenance, access and use;
- software and hardware requirements; and
- administrative structures.

**(xii) E-Services**

A typical services e-library may provide include:

- ❖ Print-on-demand publication;
- ❖ Print run of CD and DVD based documents;
- ❖ On-demand document scan;
- ❖ Document screen view/show;
- ❖ Multimedia media services provision;
- ❖ Screen short on-demand;
- ❖ Document uploading and downloading;
- ❖ Electronic document search;
- ❖ E-database search, etc.

**(xiii) E-Library Infrastructure and Facilities**

As an ICT and network based system/outfit, some vital infrastructure and facilities are needed for its successful take-off and operations, management,

sustenance and use. Some of the facilities required include:

- Robust computer server and external harddisk.
- Network environments such as LAN, WAN and Intranet.
- Internet Connectivity
- Website/webpage and URL,
- Robust network Printer and Scanner.
- ICT skilled, experience and competent staff;
- Computer/ICT consumables.
- Dedicated computer software platforms.

### **Conclusion**

It is a known fact that a majority of the libraries in the developing countries are manually based. However, the advent of ICT and network technologies with their consequent impact on the landscape of the traditional library and information Centre systems, operations and services, all the libraries and information centres established pre-ICT their advent have to gradually shift their paradigm from analog to digital. This results into the emergence of hybrid Libraries and information Centres found in the contemporary digital age in the developing nations. Suffice it to say that this is a welcome development in the scheme of library and

information service delivery that could best fit the less-technologically developed societies, countries and nation.

Attempt has been made to highlight on the strategic approach to building a viable e-library. What is required is not only to painstakingly pursue their implementation to the later, but to put some administrative structures to monitor and evaluate implementation for its successful take-off and sustenance. Such structures include:

- ❖ e-library project committee;
- ❖ e-library management committee;
- ❖ user support administrator/manager;
- ❖ e-library content developer and manager;
- ❖ e-library systems Administrator/Manager; and
- ❖ e-library public relations officer
- ❖ Sound and veritable e-library management structure.

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