New Paradigms in Cataloguing in the 21st Century: A Review of Implications and Adoption of New Strategies for Nigerian Libraries

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Abstract

The purpose of this paper is to discuss new paradigms in cataloguing in 21st century and its implications and challenges for libraries in developing countries like Nigeria. The authors recommended the adoption of new strategies. The paper adopted four dimensional approaches in the discussion of issues. In the first part, the paper introduces the concept of 21st century library. The second approach focused on the role of information and communication technology in cataloguing and recent cataloguing practices. In the third approach, the paper compared cataloguing practices in developed countries with Nigeria. The fourth and final approach discussed implications, challenges and strategies for Nigerian libraries to adopt. The paper listed some challenges and strategies that Nigerian libraries and other developing countries should adopt, such as funding, training of staff, provision and maintenance of infrastructure, eradication of corruption, and so on. While there is numerous literature on the challenges of application of ICT to library operations in Nigeria, very few recommend practical and workable strategies to solving the problems. This paper proposed the adoption of new and workable strategies to efficient and effective application of ICT to cataloguing operations.

Keywords: Cataloguing, 21st century library, cataloguers, Nigerian libraries, ICT in cataloguing

Introduction

The library is an indispensable and vital subset of any institution of learning or organization. This is simply because the library houses various information resources that are of relevance to the parent institution, hence the library is often referred to as the "life blood of any institution". It is also known as the hub of knowledge. The Library acquires, organizes, stores and then disseminates to various library clientele in order to satisfy their diverse cultural, religious, educational and information needs.

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The primary objective of any library is to disseminate the right information to the right user at the right time. This objective can only be achieved if the information materials contained in the library are properly organized through the technical processes of cataloguing. Hence the role and activity of cataloguing in library operations cannot be taken with levity. Nwalo (2013) posited that cataloguing have been at the center of the effort to organize information resources for easy identification, organization, storage, access and use. Cataloguing brought about the remedy for the chaos that would have been the case in libraries if the resources are not organized. Ola (2001) averred that the process of cataloguing entails the preparation and maintenance of a catalogue including classification, assigning subject headings and subject indexing. The essence of cataloguing is essentially to organize information resources in such a way that users can easily locate them.

Among the 20th to 21st century revolutions in information technology was the advent of library automation. This brought about the use of computers and communication networks in library services and operations. The emergence of this phenomenon has brought important changes to the processes and practice of cataloguing. This paper explores the emerging paradigms and examines the implications for Libraries in Nigeria.

The 21st Century Library

The 21st century automated library is fast drifting away from the use of manual to automated means for carrying out its operations and services. The advent of library software and internet has facilitated library automation. Library software help librarians carry out operations and services through computer systems and network. Thus, cataloguing and classification processes are now carried out through the use of computers and the internet. Library automation can be defined as the utilization of digital means usually computer systems and other information technology tools for carrying out the major house- keeping operations of a library; these housekeeping operations include acquisition, cataloguing, classification, circulation, reference services, serials services, etc. The utilization of automated means in carrying out library operations provides a platform for efficient services (Raval and BankLaw, 2013, Idiegbeyan-ose and Ilo,2013). Libraries and Librarians are able to do more work within a shorter time, with less physical energy. Beside the increased level of productivity, automation also facilitates uniformity amongst libraries, ensures standardization of the cataloguing process and enhances the process of information resource sharing.

Role of Information and Communication Technology (ICT) in Cataloguing

Before the introduction of computers into library operations, cataloguing was done manually using the AACR2 rules as a guide in order to achieve uniformity and

maintain standards. During this era, cataloguing was looked at as a stereotypical image of typewriters, 3x5 cards and books of convoluted rules, while Cataloguers were described as Librarians who had to work hard with rules, in dusty offices surrounded by books and catalogue cards (Ajulo 2007). Eguaveon (2013) posited that cataloguing and classification exert much energy, requires great concentration, commitment and application of high intellectual ability; it is also described as being dull and uninspiring. Today, cataloguing has emerged as one of the most interesting areas of library work as a result of ICT. Omekwu, Egberongbe and John-Okeke (2006) posited that computer based cataloguing are among the most successful large-scale applications of ICT in libraries. It is technically possible for librarians to derive and preserve cataloguing records using ICTs. The benefits of ICT to cataloguing according to Oladapo (2006) are as follows:

◊   It standardizes efficient cataloguing of records produced for libraries

◊   It allows the formation of networks for resource sharing (online access to cooperative databases)

◊   Machine Readable Cataloguing (MARC) allows libraries to share bibliographic resources with those that use it

◊   It helps libraries to easily migrate to commercially available library automation system

◊   It joins and shares online access to cooperative databases/bibliographic utilities.

Mosuro (2000) captured all these benefits when he submitted that ICT has turned the world into a global village and everyone to an electronic neighbor. Internet connectivity has made it easy to log on to the databases of libraries all over the world, especially the Library of Congress and the OCLC to view their catalogues and then import records available which are relevant to collections in your library.

Computerization of cataloguing process according to Ugoji (2001) has become fashionable in order to enhance efficient and effective service delivery. Most libraries now rely on various software packages to manage their day to day operations in order to meet their users' needs. All these software have cataloguing modules embedded in them.

In the words of Nwalo (2013), copying of cataloguing in publication (CIP) data from either the printed book or MARC tape by the librarian onto a cataloguing worksheet marked the first phase of computerization in the library. CIP records help in improving library services to users since it provides all the information cataloguers need to create a record for a particular material into their databases or card catalogue. Most of the procedures in cataloguing have been greatly simplified by the application of information technology.

As a direct and indirect result of the involvement of ICTs in library operations, new trends and paradigms have emerged. These include online public access catalogue (OPAC)/web-based public access catalogue (WEBPAC), online/copy cataloguing and use of resource description and access (RDA).

OPAC/WEBPAC

The transformation of the library card catalogue into the Online Public Access Catalogue (OPAC) is perhaps one of the most important gains of library automation. OPAC is an online bibliography of a library's collection accessible to the public through computer terminals. Guha and Saraf (2005) reported that OPAC first emerged in the developed world of North America, Europe and parts of Asia in the late 1970s and early 1980s. It has gone through subsequent generations of developments, resulting in what is now called WEBPAC (Web Based Online Public Access Catalogue). The WEBPAC is an online library catalogue that can be viewed over the internet by graphical browsers. It appears in hypertext format which can link users from the library catalogue to full text electronic resources where available. Omoike and Oke (2014) observed that though most libraries in developed countries adopted OPAC in the early and mid 1980s, libraries in Nigeria did not join the trend until recently. Sadly, only a few libraries in Nigeria are fully automated, with functional OPAC/WEBPAC deployed. Some of the benefits of OPAC/WEBPAC in a library include:

◊   It provides users with more search or access options, especially with the use of keywords. In addition, searching is made easier with the use of Boolean operators (AND, OR, NOT)

◊   OPAC allows for hyperlink searching, thus helping users to access related information resources.

◊   It allows users to search the libraries catalogue from remote places, outside the library building. WEBPAC provides an internet based platform that allows the library's catalogue to be viewed from anywhere in the world.

◊   It provides users with details such as availability, number of copies and location of an information resource.

Indeed OPAC/WEBPAC makes searching the library's catalogue an exciting experience.

Resource Description and Access (RDA)

The creation and subsequent acquisition of digital or electronic resources in libraries have necessitated the introduction of an international standard, to ease the description and accessibility of these resources. The Anglo-American cataloguing rules, 2ⁿᵈ edition (AACR[2)] which hitherto was used in description of library materials had no adequate provision for electronic resources. RDA is a new standard for description and access

designed to overcome challenges observed in AACR[2]. RDA is a collection of guidelines and instructions used to describe and create access to all kinds of information resources including digital or electronic materials. The adoption of RDA as an international standard for resource description and access has created a new frontier for libraries to fulfill their objective of providing the right material for the right user at the right time. Again, this is a developing trend which many libraries in Nigeria are yet to embrace (Esse, 2013)

Online/Copy Cataloguing

Online or copy cataloguing is a relatively new development in the process of cataloguing. It entails the systematic utilization of information and communication technology in finding an existing cataloguing record (bibliographic record) for an item in hand, editing the retrieved information in order to suit required standard of the library in question. Orbih and Aina (2014) defined copy cataloguing as 'the process of cataloguing items by using existing bibliographic records obtained from various sources and altering those records to conform to local cataloguing standards'. Copy or online cataloguing is sometimes referred to as derived cataloguing; this is s a result of the process involved in getting the details of the bibliographic records. Similarly, Beall and Kafadar (n.d.) defined copy cataloguing as the process of copying the bibliographic records from a source database such as Online Computer Library Centre (OCLC) WorldCat, Library of Congress, etc. They also opined that this systematic process of copying and editing bibliographic details from already existing catalogues entries helps to heighten the level of efficiency achieved. Online cataloguing process eliminates unnecessary duplication of efforts. It is also imperative to note that cataloguers need requisite computer skills in the process of online and copy cataloguing so as to avoid copying possible typographical errors as sometimes this could be rampant. When typographical errors are not corrected during this process, the whole activity of cataloguing may be in futility as the resource may not be retrievable by prospective library clientele.

Bhatt and Mishra (2012) noted that the process of copy cataloguing may not be considered 'professional' level work because it involves making use of records already created by someone else, although they also noted that this form of cataloguing could also include some level of upgrading and improving on the minimum records retrieved.

Advances in Developed Countries Compared with Nigeria

Trends in developed countries of North America, Europe and parts of Asia show that the use of ICTs in libraries has grown from management of internal operations to providing access to information in different forms and locations (Borgman, 1997). Libraries in these countries have moved from ownership to provision of access to information resources through electronic means. Thus, library services are made available to users in different locations at the same time. The concepts of online cataloguing, WEBPAC and

subsequent creation and adoption of RDA (as an improvement on the Anglo-American Cataloguing Rules) were meant to expand the frontiers of access and globalized library services. These libraries have gone beyond provision of basic automation infrastructure and facilities to maximizing the opportunities available through the internet in the provision of globalized information services that transcend beyond their immediate environment. Unfortunately, their counterparts in developing countries like Nigeria are still struggling with the provision of basic facilities for automated library operations.

A review of literature has shown that the state of ICT deployment in Nigerian Libraries is poor (MacArthur, 2005; Womboh and Tukur, 2008; Abbas, 2014). The first attempt at automating library operations and services was made in the 1970s by the Ahmadu Bello University Library. That attempt was not successful. Subsequent attempts failed largely due to lack of funds, infrastructure and competent personnel. There was an effort by academic libraries to catch up with their counterparts in the developed world in the late 1980s. The effort which was coordinated at the University level by the National Universities Commission was aimed at automating library services and operations across the country. Unfortunately, the pace has been very slow with none of the libraries fully automated (Abbas, 2014). In many academic libraries, the traditional public card catalogue remains the search tool for library materials; while indexes and abstracts are compiled manually. However, a few private Universities have fully automated their library services. Notable among them are Covenant University Library and American University of Nigeria Library (Ifijeh, 2011). Iroaganachi, Iwu-James and Esse (2015) analyzed the level of automation among selected academic libraries in Southwest Nigeria and summarized their findings in the table below:

Institutions	Extent of automation	Software in use
University of Ibadan	PAWLS	VTLS
Olabisi Onabanjo University, Ago-Iwoye	PAWLS	Alice for Window
Covenant University, Ota	FAWLS	MILLENIUM
University of Lagos	PAWLS	MILLENIUM
The Bells University of Technology, Ota	LAWLS	
Fountain University, Oshogbo	LAWLS	
Mcpherson University, Seriki Sotayo, Ajebo	PAWLS	Liberty 3
Redeemers University	PAWLS	KOHA
Lagos State University	PAWLS	Alice for Window
Achievers University, Owo	LAWLS	
Pan-African University	LAWLS	

PAWLS: *Partially automated with library software,* **FAWLS:** *Fully automated with library software,* **LAWLS:** *Low automation without library software.*

Similarly, a few research libraries in Nigeria have gone far in the computerization project. Abbas (2014) posited that one of the successful and most comprehensive computerization programs of an indigenous Nigerian library is that of the International Institute for Tropical Agriculture (IITA) library Ibadan, which was accomplished in 1984.

Nigerian Public Libraries are in a very poor state. Many of them do not have comfortable reading environment and current reading materials; they do not have functional information and communication facilities. Eze (2013) observed in a study conducted on the state of public libraries that though some public libraries especially in South East Nigeria have installed internet facility through dial-up servers and providers, none of them is functional. This is due to lack of maintenance and fund to cater for the facilities.

Implications, Challenges and Strategies for libraries in Nigeria

Funding

Installation and maintenance of computer hardware and software as well as networks are very expensive and unaffordable due to the poor financial state of most libraries in Nigeria. Daniel (2013) posited that lack of funds is the major reason for the underdevelopment of libraries in Nigeria. He further averred that unless the problem of funding is resolved, any attempt to modernize libraries in Nigeria will remain a mirage. Though academic and research libraries appear to be doing better than other libraries, their facilities remain a far cry from what obtains in Europe and America due to poor funding.

Presently, in Nigerian academic institutions, the main source of fund for libraries is the 10% recurrent budgetary allocation of their parent institutions as stipulated by the Government (Okiy, 2005). This is not sufficient if indeed the library wants to meet up with global standards. Public and School libraries are funded by the Government; with the recent economic recession in the country, these libraries have experienced substantial cuts in their budgets. Funding for trainings and other essentials like user group meetings are hardly mentioned in the meager budgets provided for libraries. It has therefore become necessary for libraries to seek for alternative source of funding. Some libraries have ventured into charging users for overdue fines, lost books, reprography services amongst others. Despite all these efforts made to make more money available, these libraries still lag behind financially. Perhaps, they should begin to explore the option of seeking for funds from philanthropists, industrialists, non government and international organizations.

Big industries and companies in the same location with libraries must be made to help to fund and develop such libraries. This should be made compulsory by the Federal Government and it must be at a certain percentage to ensure uniformity and consistency. Nigerians have embraced the emergence of global system mobile

phone networks, operated by big telecommunication companies. It was reported that Nigeria is one of the highest user of this technology in the African continent (World FactBook, 2007); therefore such telecommunication companies can be called upon to provide computer systems and basic network infrastructure, set up the media section of libraries, offer to sponsor library staff to conferences, seminars workshops or short term training courses and User group meetings.

Some libraries (especially academic libraries) have bindery sections which help to repair torn and mutilated library books. It is important to put these bindery sections to commercial use. Students can bind their final year projects and theses for a fee, while other users can be provided with bindery services at a fee. This will help to generate extra funds for the library.

Training of Staff

To effectively and efficiently apply ICT to cataloguing practices, it is paramount for the Library Management to employ, train and deploy competent staff to handle both technical and professional operations. Ironically, Library Schools in Nigeria are not equipped with the necessary facilities to train librarians that can fit into computerized workplace. In support of this point, Atinmo (2013) posited that libraries would need to train and retrain staff that will handle the dynamics of 21st century information landscape. Bello and Thomson (2013) averred that the lack of Staff with requisite ICT skills was a setback to library automation in Nigeria. Staff training for automation purpose would range from acquiring basic computer skills and competence in the use of library software, to training of systems librarians in the installation and maintenance of computer hardware, library software and other network infrastructure.

Bello and Mansur (2011) stressed that aside formal education, training could be through internship, attendance of conferences, workshops, job exchanges and self directed study. The Library Association has an important role to play in bridging the training and competency gaps for cataloguers in an era of automation. The Association could organize conferences, workshops and seminars from time to time on current trends in cataloguing and classification; the library association can secure sponsorships for such trainings from corporate bodies, non government agencies and international development partners. The library association could also work closely with parent organizations of libraries; it should sensitize them from time to time on the need to fund the training and retraining of cataloguers for effectiveness and efficiency in an automated library system. The Nigeria Library Association signed a memorandum of understanding with the Polish Library Association a few years ago in this regard. The Memorandum created an opportunity for one Nigerian librarian to visit and understudy selected polish libraries every year. Such memoranda should be signed with other Library Associations, which could afford many more librarians the opportunity to under

study established libraries around the world. Ossai-Ugbah (2013) and Gbaje (2013) posited that the Nigeria Library Association must take up the challenge of training and retraining Nigerian cataloguers to meet up with current trends and best practices in the profession.

The role of user group meetings is very important in the training process. Regular user group meetings should be attended by cataloguers. User group meetings are simply meetings of all users of particular software. The regular attendance of these kinds of meetings provides a suitable platform for cataloguers and classifiers to rub minds with other colleagues who make use of the same library software; they can share issues of challenges and also discuss new ways forward. Most times, these meetings are organized by the software manufacturers, who use such fora as avenues to get feedbacks from users (Nadeem and Khalid, 2014). However, libraries must source for funds to cover transport, accommodation, feeding and other miscellaneous expenses.

Provision and Maintenance of Infrastructure

The bedrock of any automated system that will aid the process of organization of resources in libraries is availability and maintenance of infrastructure. Basic infrastructure such as computer hardware and software, internet and intranet facilities, constant electricity and so on is paramount to automated cataloguing processes. Jan and sheikh (2011) found out that computer hardware and software, internet connectivity and other resources in such as human, finance are inevitable in automation of the library. Neelakanda, Duraisekar, Balasubramani and Ragavan (2011) discovered that the problems facing implementation of automated library management system in India are lack of infrastructure, such as hardware, software network facility and financial resources. The Indian scenario depicts the Nigerian situation. There are reported cases of Libraries which are connected to computer networks, but could not function due to lack of stable electricity, virus attacks, inadequate internet bandwidth and other sundry reasons (Orbih and Aina, 2014). The major reasons for these sad developments remain poor funding and lack of competent staff. As earlier suggested, Libraries must explore external sources of funding and engage in employment and retraining of staff.

Eradication of Corruption

In most developing countries like Nigeria, corruption has become a growing phenomenon and has taken a dangerous dimension. It is wide spread and part of everyday life (Khan, 2006). Public or official decisions, for instance, on the award of contract for the procurement of ICT facilities are compromised by corrupt practices.

Corruption maybe defined as a process through which public officials break the law in pursuit of their private interest. The most common forms of corruption are bribery and extortion. It could also include the allocation of resources sentimentally based on

private interest on the short or long run. Corruption operates at a great cost to libraries, including the subversion of development plans, diversion of funds or resources that would have been invested or spent judiciously, loss of professionalism as well as engagement of unqualified personnel to handle jobs that are highly technical in nature.

Automation in any library involves short and long term planning. Corrupt public officials (librarians inclusive) may scuttle such plans for selfish gains. For instance, strategic plans to acquire certain facilities at a given period maybe jettisoned. When this occurs, libraries may lack the basic facilities to run effective and efficient automated processes and services. Interestingly, many corrupt officials prefer worst case scenarios, as more funds (some of which will go into private pockets) will be made available by the authorities to remedy seemingly preventable network breakdowns. Officials charged with the responsibility of managing these libraries divert the funds under various disguise to satisfy their own interests. In many cases, the library is left with very little, perhaps to pay for personnel (where they are available) salaries; libraries may not be able to install anti-virus 'as and when due', and sometimes unable to renew licenses and agreements with vendors. Professionals (including librarians and other ICT personnel) are frustrated by corrupt practices. For instance, staff may be forced to quit their jobs when the workplace does not support professionalism. Sometimes, unqualified personnel are employed to perform tasks that require highly skilled professionals, thus undermining efficiency and effectiveness.

Corruption has been adjudged as one of the major reasons why corporate bodies do not play their corporate social responsibility roles towards Government Institutions like Libraries (Khan, 2006). Corporate organizations and international agencies want to be sure that their counterpart funds will be judiciously used.

The Nigerian Government has been making efforts to eradicate or at least minimize corruption. The efforts of the Government appear to have produced no positive results, largely because those saddled with the responsibility of enforcing anti-corruption laws have been compromised. We can only hope that the Government would do more to eradicate this negative phenomenon.

Digital Divide

There is relative disparity in the level of acquisition and utilization of information and communication technology (ICT) between developing and developed nations of the world. It is this disparity that evolved into the concept of digital divide. The International Telecommunication Union (2005) defines digital divide as 'the uneven distribution difference or gap that exists in opportunities to access and use of information and communication technologies amongst diverse groups or nations'. Digital divide is evaluated through the Digital Opportunity Index (DOI). DOI measures three sequential classifications of the digital divide, which are opportunity (encompassing accessibility

and affordability), infrastructure (network indicators and indices) and utilization (ICT usage and quality).

 Nigeria falls within the countries with low digital opportunity index scores. The digital opportunity index scores released by International Telecommunication Union (2005) revealed that Nigeria was ranked 31 in the African continent with very low score of 0.41, 0.03 and 0.01 for opportunity, infrastructure and utilization respectively. In support of the International Telecommunication Union rankings, Ogege (2010) posits that Government Ministries, agencies and institutions like libraries do not have access to adequate internet bandwidth necessary for information and communication technology services and operations. Nigeria ranks among the lowest in terms of internet availability and accessibility globally (Ogege, 2010).

For Cataloguers to engage in copy cataloguing for instance, they need access to adequate internet bandwidth and assurance of data protection (to ensure there are no security breaches). Here again, there is need for telecommunication industries in the country to generate adequate bandwidth and provide access at affordable rates to public institutions like libraries. Though, in recent times, the Government appears to be taking up the challenge of providing needed infrastructure for ICT development in the country. The Federal Ministries of Power and Communications budgeted about $150 million on improvement of electricity supply and ICT infrastructure in 2014 (Eboh, 2014). It is hoped that the efforts of the Government would yield positive results.

Management Support

As earlier mentioned, running an automated library is capital intensive. It is impossible to run such a system without the support of relevant Management and their governing Boards. This is very pivotal to the success of any project. Without Management support, it will be difficult to get funds to execute any project. Attempts by libraries to raise funds from external sources cannot be successful without the support of the Managements of their parent institutions. Libraries and Librarians will have to liaise with Management and also furnish them with information on why it is important to embark on automated services. Heads of libraries must learn the act of diplomacy and advocacy especially in their relationships with the Management of their parent bodies and supervising Government Ministries.

Conclusion

The library has been referred to as the heart of any institution and its primary aim is to acquire, organize, store and disseminate information to its users. Information needs of library users can only be met if the resources available are well organized through the process of cataloguing and classification. This makes the role of cataloguers and classifiers an all important one. Cataloguing and classification is an intellectual activity

and has brought about the remedy to chaos that would have been the case in libraries.

The world has become a global village and this has affected the process of cataloguing and classification. Cataloguing and classification have become simple, easy and fast as cataloguers now engage in online/copy cataloguing. Online/copy cataloguing helps libraries to create faster access to information resources, while maintaining uniformity and standards. Despite the outlined advantages of automation, Libraries in Nigeria are yet to be fully involved in the global trend. Except drastic steps are taken, Nigerian libraries may remain far behind their counterparts in developed countries. It is hoped that relevant authorities and Policy Makers would consider and implement the strategies outlined in this paper.

Recommendations

Drawing from the Nigerian situation and perhaps other developing countries, there is need for consortium building among libraries. Consortium building, also known as alliance, association, co-operation, resource sharing, confederation and networking refers to a formal arrangement by a group of organizations (in this instance, libraries) with common interests in order to pool their material and human resources together to meet the needs of their users much more than they could have done were they to depend on individual efforts (Nwalo, 2008). The underlying assumption of any library cooperation is that by working together through consortia arrangements, members can achieve more than could be achieved individually. This will help to cut costs of acquisition of software and other ICT facilities; a consortium of libraries would acquire software and other network facilities at a reduced price from same vendor. Sharing of experiences among library staff in a consortium would contribute substantially to competence and training.

Library Managements must engage in advocacy. It is obvious that libraries can no longer depend on their meager budgets to run professional services. They must begin to partner with corporate bodies and international agencies, in order to raise required funds for ICT based operations and services. Corporate bodies could use the libraries as platforms for branding and selling their products, while providing infrastructure and sponsorship.

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