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Digital Libraries in Africa: Challenges and Opportunities

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Abstract

Purpose

The paper explores the challenges faced by digital libraries in Africa and highlights solutions to curbing these challenges that bridge the digital divide in Africa.

Design

Research of Digital Libraries in Africa is reviewed in order to identify challenges and opportunities peculiar to Africa.

Findings

Findings from review showed sustainable funding, High Cost of Infrastructures, Digital Literacy, Copyright Issues and Equity of access are challenges facing digital libraries in Africa. It further proffered solutions by encouraging Library Consortia in Africa and promoting Open access policies

Research Implications

  The benefits of digital libraries are enormous and there is a need for African countries to leverage of these benefits to improve the accessibility and availability of these resources which provide opportunities for African countries to be abreast with current information, thereby bridging the knowledge gap.

Originality

This study provides solutions to challenges facing digital libraries in Africa.

Keywords: Digital Libraries, Africa, development ,information age

Introduction

Digital Libraries has caused a change in the access of information sources and has bridged the knowledge gap between the developed and developing countries. Digital libraries provide opportunities for African countries to be abreast with current information, thereby bridging the knowledge gap. To engender progress in Africa Digital Libraries are non-negotiable for African Countries UNESCO, 2006) .Prior to the advent of digital libraries, researchers and institutions in developing countries had limited access to articles published in developed countries due to high cost and challenges encountered in the distribution of these materials, but digital libraries has dispelled all these challenges making information accessible to all, currently universities around the world are migrating quickly towards digital libraries due to the increase in the development of these libraries (Bagudu and Sadiq ,2013). According to UNESCO digital libraries play key roles in creating an atmosphere of learning in Universities both for students and authors.

The need for the implementation of digital libraries is spurred from the challenges faced by traditional libraries Reducing the distance between the Library and the user is very important in the information age as patrons become more particular on accessing information at their convenience, also based on the growing collections of books there is a need to reduce the cost of purchase of materials and the cost of storage of these materials, In consideration of all these questions digital libraries has proven to be the answer to all these questions.

Digital libraries provide advantage of convenience in access, ease of update, advantages provided in online searching and recommendations, enabling collaborations and exchange of ideas. However, despite the numerous benefits that digital libraries proffer, developing countries are still faced with challenges in building and using digital libraries (Arunachalam,2003).The cost of building digital libraries is still very high as leaders of economies focus on more pressing needs in the economy, also knowledge has not fully been appreciated in the economy. These challenges involve the building, use and maintenance of these resources. Digital libraries in developing countries can be improved through a partnership between private institutions and funding agencies for sustainable funding, increasing the local content of digital publications, improving on infrastructural development in developing countries and investing in the training of library staff and users on digital libraries and literacy skills. Developing countries must leverage on its strengths so as to gain opportunities from the benefits of digital libraries.

Challenges of Digital Library

Sustainable Funding

Libraries in developing countries are seeking an alternative means of funding to meet up with technological advancements. According to Ogundipe (2008), the National Universities Commission has recommended that 10% of the universities recurrent budget be allotted to the Library but this is hardly complied with because poor funding has been noted as the major hindrance to digital libraries in developing countries. This is because funds allotted to Libraries have a major influence in the provision of qualitative and quantitative information materials. Ahmed & Nwalo (2013). Swayaden (2003) states that fundraising must become an integral part of libraries budget and a close cooperation between local, national and international libraries must be encouraged. A study by Rosenberg and Raseraka (2000) showed that financing of institutions in Africa is still lower than developed countries, with international countries financing at six percent of budget while Africa still finances at four percent. Afebende (2017) suggests that grants-in-aids and donations plays a vital role in supporting Libraries and there is a need for Librarians to be trained on grant proposal writing. Libraries in Africa are heavily dependent on the national governments for most of their budgets. University of Zimbabwe and University of Zambia suffered from budget cuts and were heavily dependent on gifts and donations in 2002. Also in 2005 University of Botswana suffered from budget cuts. It has become obvious that the challenge of budget cuts is recurrent in dwindling economies, also digital libraries are dependent on their parent organization, and inadequacy of funding is therefore linked to a depressed economy (Ofoegbu and Alonge, 2016). Emphasis has continually been made on decreased funding in developing countries, since digital libraries exists within the parent organization, consequently funding is dependent on the amount given by the institution.

High Cost of Infrastructure

In developing countries, a clear digital divide exists in the access to information communication technology. These challenges include inadequate network infrastructures, bandwidth issues amongst others. Aluoch (2006), states that internet connectivity in Africa is still very poor, unreliable and very expensive. It has been noted from the African Tertiary Institution Connectivity survey that universities in Africa much higher fees for internet connectivity than the developed world. The high cost of internet connectivity has been in relation to the limited availability and capacity on the national fibre backbone Reliability and fast internet connection is required to access scholarly publications in the world. Christian (2008) observed that bandwidth allocation is too expensive and this makes it difficult to access academic resources in Nigeria. The findings from a survey by Echezona& Ugwanyi (2010) showed that African University have low speed internet connection and the challenges with power supply in Africa has grossly endangered internet connectivity, and further noted that slow bandwidth is the main limitation to assessing digital libraries in developing countries .Omekwu and Echezona (2007) noted that the North South divide is skewed against Africa making access to information faster and diverse in developed countries than developing countries .In order to improve information access in spite of these challenges. Developing countries are encouraged to bridge this gap in the divide to ensure information and research exchange (Adekunle, Omaba and Tella, 2007). Also Information Technology policy makers must intensify effort in bridging this divide.

Building Digital Collections

Developing countries should be empowered to produce digital collects not just being majorly consumers. In the developed world huge investments have been made in the establishment of digital libraries. For instance the Library of Congress made a initial investment of sixty million dollars in the development of the American National Digital Library. Though building digital libraries is financially demanding. Developing countries can take advantage of partnerships and subscribe to open access software's as tools in building their digital collections. Also developing countries should subscribe to open access initiatives. Nwagwu (2016) noted that only three universities in Nigeria had subscribed to open access digital libraries. Adebayo et al. (2018) highlighted challenges in digitizing to include increased expenditure, staffing issues and preservation challenges as major challenges encountered when building digital libraries in

developing countries. African countries can take advantage of institutional repositories in the digitization of African content on the web. Proffering solutions to the challenge of insufficient funding there is a need for African countries to collaborate with institutions in their region to proffer solutions to these challenges.

Insufficient Digital Local Content

Local content in developing countries is still relatively low and this invariably affects digital libraries. In Africa, it has been noted that Africa produced content accounts for less than 0.05 percent of the global content (Taylor, 2002). Factors affecting the dearth of digital content include the high cost of building digital content, inappropriate training of content creators and being abreast with the latest technologies in content creation (Khan, 2007). Mutala (2008) noted that there is limited availability of information and knowledge systems that address African needs. Though local content is readily available in developing countries, these countries are still plagued with the challenge of capturing, repacking and disseminating this information. Most local contents in African countries are still in their traditional form and there is need for African countries to make these contents more accessible by taking advantage of digital libraries and the latest advancements in computer applications development. Mutulu (2008) stated that factors such as poor policies, lack of electricity, low technology penetration, lack of content development, poor reading habits and brain drain still limited content development in Africa. In 2003, it was noted that 900,000 books are estimated to be published every year in the world of which only 1.5percent is published in Africa (Sapova, 2003). A large amount of indigenous knowledge is currently available in African countries and there is a need for developing countries to wake up to this challenge and increase the local content available. Developing countries should focus more on building standard databases with local content. In Africa currently an organization named African Journal Online provides access to African research, though AJOL is not open access. This is a welcome development to organizations in developing countries to focus on building digital libraries with local content.

Lack of Digital literacy

The information age demands the ability to identify, organize, understand and create information. Based on the enormous information available on the web, adequate skill is required. Several studies have shown that a lack of digital literacy is responsible for the underutilization of digital libraries. There is therefore a need for information literacy skill to be taught to all categories of users as general internet searches compete greatly with these resources. It is important for users to be taught the value of authoritative information. Digital libraries deliver library caliber knowledge and these enable users to be free from unauthoritative information. (Ekere, Omekwu and Nwoha (2016). Library professionals should continue to intensify efforts on user education. Also as suggested by Igun (2006), 21st century librarians should be trained on the relevant ICT skills. This is paramount because the capacity of use and access to digital libraries by users depends largely on literacy and mastery of these emerging technologies Ugwuanyi (2011).

Copyright Challenges

Digital Libraries recognizes the protection of legal rights such as copyright, intellectual property rights, privacy amongst others. A copyright is the legal exclusive right granted by owners of an intellectual property for economic reasons. However, there are legal issues that make management difficult in digital libraries. An example of this is the impact of the social media on digital libraries. Academic social media websites request researchers to deposit their research output, without proper understanding of these laws; this could pose a great challenge in digital libraries. Also in the building of institutional repositories copyright laws must also be considered before research outputs are uploaded. Other Legal issues include issues defining the use of intellectual property and how fair use applies to intellectual property. Managing intellectual property is one of the greatest challenges facing digital libraries in developing countries. Digital Librarian must protect digital content from unauthorized access, copying and inappropriate use.

Equity of Access

One of the challenges still facing digital libraries in developing countries is equity of access. Despite of movements on open access initiatives in developing countries, researchers still find it difficult to access scholarly publications in digital libraries .Researchers are still required to pay a processing fee to access articles. Universities in developing countries periodically subscribe to

electronic resources but researchers are still required to pay for access to some scholarly articles especially in sciences. This causes a digital divide making a clear gap between the developed and developing countries in research and development. Most countries in developing countries do not have an open access policy that guides the sharing of resources in their digital libraries. Only few institutions in Nigeria have open access institutional repositories. There is a need to promote effective access by making digital library collections easily accessible for use.

Digital Preservation

Digital preservation is the planning and application of preservation methods to ensure that digital content remains accessible and useable in the long-term. Preservation of digital materials has been in the fore-front of research in the recent time. The preservation of digital resources aims at making local content accessible at a later time. Also Jantz and Giarlo define digital preservation as managed activities for the long-term maintenance of a document and for continued accessibility in spite of changing technologies. Digital Libraries are still faced with numerous challenges in the preservation of digital content which includes inadequate funding, insufficient institutional support, lack of support from stakeholders and no clear policy on the preservation of digital content. In developing countries preservation policies must be established to enable libraries preserve digital collections effectively. Challenges in the preservation include the nature of digital materials, dependence on hardware and software technologies which are fragile and also the short life span of digital media, formats, and styles in digital preservation amongst others. In the preservation of digital libraries, library professionals should take advantage of advanced technologies and ensure that clear policies are put in place for seamless operations in the future.

Recommendations

1. Implementing Library Consortia in Africa

   Library Consortium is the sharing of resources between two or more libraries. Islam (2013) declared that collaboration in academic libraries have been ongoing for several years. Africa as a region is plagued with economic challenges and budget cuts. The

economic challenges in African countries have affected the building and access to digital libraries in African countries. Library consortium serves as a solution to these challenges enabling libraries in African countries to share resources. Thereby bridging the digital divide in Africa .Kenya and Uganda have implemented consortia which has engendered great benefits (Rosberg, 2005). Implementation of Library consortia in Africa is still very low as South Africa takes the lead in the implementation of Library Consortia in Africa; though several consortia were created there are only few functional consortia in Africa. In Nigeria, only five libraries are currently participating out of all that joined at inception (Obijiofo (2011). There is a need for more African countries to be involved to bridge the digital divide in African countries as high costs of digital libraries reduces access to information in Africa. There is a need for academic libraries in Africa to collaborate so as to make information accessible

2. Training of Library Professionals and End Users

The digital environment demands new skills from Librarians and there is a need for competence in the use of information and communication technologies in Libraries .Barden (2005) states that the 21st century librarian must be grounded in order to perform effectively in the work environment. It is essential for Librarians in Africa to update the required knowledge in information search skills to ensure efficient retrieval of relevant resources hence a need for continuous training of Librarians and End-Users to improve access to information.

3. Increase in Local Content

The local content available in Africa is still relatively low and there is a need for African countries to make African information readily available. More involvement in research will invariably encourage development in Africa. In the building of digital libraries in Africa, there is a need for local content to be readily available and accessible. African Journal Online Database is one of Africa's foremost digital library which provides local content on African research which has be fully accepted in Africa but there is a need for more collaborations in building digital libraries in Africa. There is also a need for the

standardization of African journals. Also, in encouraging local content, institutional repositories need to be more functional in Africa for easy access to these resources.

4. Encouraging Open Access Policies in Africa

Digital libraries are inaccessible to scientist in sub-Saharan Africa as academic libraries pay high subscription costs to access these resources. This constitutes a great challenge to Africa as without knowledge there can be no development and accessibility of information is a major requirement in gaining knowledge.. There is need for government to build required infrastructures for open access initiatives in Africa and also for private organizations to contribute significantly to the funding of digital libraries in Africa. Also developed countries are encouraged to provide a leadership role to African countries so as to improve the flow of information globally.

5. Policies on Copyright in Africa

The African continent is still plagued with a weak framework on copyright on digital information which constitutes a challenge in the building and use of digital libraries in Africa. There is need for change of policies to enable librarians pursue objectives yet protecting owners of intellectual property (IFLA, 2001). Digital libraries in Africa should be established on clear principles that enable access to information sources yet protecting the intellectual property of owners.

Conclusion

Based on the failure of traditional distribution channels in the access to information, it has become obvious that digital libraries are not negotiable in developing countries. However, most leaders in developing countries still focus on meeting the basic needs of its people which lead to difficulties in building, use and sustenance of digital libraries. Also, factors such as high cost of infrastructure, insufficient digital local content lack of digital literacy, copyright Issues, equity of access and digital preservation challenges still hamper digital libraries in developing countries. There is a need for stakeholders to address these challenges and take advantage of the freely

available online digital libraries and open source software in the building of digital libraries in developing countries.

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