



Research Paper

Cloud Computing Management Practices of Professional Librarians in Academic Libraries in Northwest Nigeria.

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Abstract

This study aimed to investigate the cloud computing management practices of professional librarians in academic libraries in Northwest Nigeria. Specifically, the study sought to determine the level of awareness of cloud computing technologies among the librarians in the region, the benefits of implementing cloud computing technologies, the challenges to implementing cloud computing in libraries in the area, and the strategies and mechanisms employed in managing cloud computing technologies by libraries. A survey research design was used, and the data were collected from 105 librarians of academic libraries in Northwest Nigeria through the administration of a structured questionnaire. The data collected were analyzed using frequency counts and percentages. The results revealed that more than two-thirds (80%) of the librarians had a high level of awareness of cloud computing technologies. The significant benefits of cloud computing reported by the librarians include improved storage and access to library resources (80%), improved collaboration (60%), and increased efficiency (60%). The main challenges to implementing cloud computing languages in libraries in the region include inadequate library staff knowledge (60%), inadequate funds (50%), and lack of adequate infrastructure (50%). Overall, the results of the study recommend that academic libraries in Northwest Nigeria have a high level of awareness and readiness to adopt cloud computing technologies. However, there are challenges that need to be addressed in order to achieve the full benefits of cloud computing in the region. Recommendations are made for libraries in the area to explore other strategies to better manage cloud computing technologies.

Keywords: *Academic library; Cloud Computing; Management Practices; and Professional Librarians.*

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I. INTRODUCTION

Cloud computing as an aspect in internet-based technologies is recognized as an important area for IT innovation and investment which are of the following types; public cloud, private cloud, community cloud and hybrid cloud. Cloud computing is a type of computing that relies on sharing computing resources rather than having local servers or personal devices to handle applications, and it has the following components: application, platform, storage and infrastructure. According to Wolf, (2010) cloud computing is the renting of infrastructure and software, as well as bandwidth, under defined service conditions. In simple words the datacenters, hardware and systems software generally call a 'cloud'. Major Cloud providers in Nigeria are Microsoft, Google and International Business Machines (IBM). (T-System, 2008). Globally, these companies deliver cloud computing services either directly to customers/organizations or in affiliation with other Information Technology (IT). Clouding inform of Cisco, NetApp, Sunnet, Descasio, Wyse technology, Infoware technologies, Accenture, Business Connexion, among others. Cloud computing offer clients mailing service, storage, information collection, file sharing, software applications, presentation, forums and the use of online library of congress cataloguing (OCLC) effectively in Cloud computing (Speck and Knipe 2005).

Cloud computing is "any server usage or software application one can access outside the local server which have three major components as thus: clients, data centre and distributed servers. Each element has a definite purpose and plays a specific role. The biggest benefit for libraries is that you don't "buy" the cloud; you

just pay for what you use, when you use it, and then turn it off when you're done. Richwalsky, (2009). Therefore, the main advantage in moving to a cloud computing environment for university library is the ability to try out software's without having to buy the hardware as well as being able to scale the computing power to meet the request of users. A library's IT department handles cloud computing via vendor instead of physically having to obtain new hardware, software and manpower to meet increased demands. This method will save the academic libraries spending staff resources and making available information to users electronically.

Electronic Library, service, is broadly defined as "service which enables library users to directly access electronic data via telecommunications networks. Nweke, Yakub and Omale (2012), define E-library as a collection of documents in organized electronic form, available on the Internet. According to Ugwuanyi, Okwor, and Ezeji (2011), there is a migration from print to electronic resources, from the library as a place to the virtual library as a result of the 21st century era of information economy. Due to the changes in technologies and the way libraries now operate, it is pertinent for libraries to adopt a shift from paper-based current awareness to electronic and virtual method of current awareness creation in academic libraries (Kiscaden, 2014). Therefore, university library has been the heart of the academic environment that caters for the host institution educational need, has to explore more of ICT base modes like cloud computing to enjoy the economy, global readiness and most importantly shared resources for effective service delivery with Knowledge management.

Knowledge management has been seen as a survival factor for libraries to overcome the challenges library professionals face in the changing and competitive environment (Aharony, 2011; Shimba, 2010). Respondents in a study by Galston, Huber, Johnson and Long (2012). Agreed by strong majority that knowledge management can contribute to an improvement in the future prospects of libraries for sustainable development. Libraries can also improve their knowledge-based services for internal and external users through creating an organizational culture of sharing knowledge and expertise within the library (Wabwezi, 2011; Aharony (2011). Breeding (2012). reported that if library professionals remain reluctant to gaining new skills, they will become irrelevant to their organization and will probably lose out in competition for employment to people from other fields. Meanwhile, the success of public libraries entirely depends on their ability to utilize information and knowledge of its users to better serve the needs of the community. Omekwu, (2016), pointed out that "the knowledge and experiences of library users are the intellectual assets of any library and should be valued and shared management".

Management is the organization of the activities of a business in order to achieve defined objectives. National Professional Development Center on Inclusion (2008) defined management as the building of organization that work, in the sense that this organization use resources to create value. Steve, Lanny, Kenneth and Manuel (2010), defined Management as a social process involving responsibility for economical and effective planning and regulation of operation to achieve given purposes. Golding and Gray (2006) stated that for individual to effectively plan and regulate the operation to achieve its goals and objectives such information must manage well. The knowledge management is essential for effective user's satisfaction in public libraries, summer (2006) open that Public library management has to ensure that the library services are user-oriented and that the library resources are properly managed and accessed. Furthermore, the library staff must provide quality support and assistance to librarian and users.

A librarian is a person who works professionally in a library providing access to information, and sometimes social or technical programming, or instruction on information literacy to users. Garet, Porter, Desimone, Birman and Yoon (2001) express the role of the librarian has changed much over time, with the past century in particular bringing many new media and technologies into play. From the earliest libraries in the ancient world to the modern information hub, there have been keepers and disseminators of the information held in data stores. Roles and responsibilities vary widely depending on the type of library, the specialty of the librarian, and the functions needed to maintain collections and make them available for Professional development (Jasper 2006).

Professional development, also known as professional education, is learning that leads to or emphasizes education in a specific professional career field or builds practical job applicable skills emphasizing praxis in addition to the transferable skills and theoretical academic knowledge found in traditional liberal arts and pure sciences education. It is used to earn or maintain professional credentials such as professional certifications or academic degrees through formal coursework at institutions known as professional schools, or attending conferences and informal learning opportunities to strengthen or gain new skills. Filges, Torgerson, Gascoine, Dietrichson, Nielsen and Viinholt (2019) Professional education has been described as intensive and collaborative, ideally incorporating an evaluative stage. Murphy-Latta (2008) stated that there is a variety of approaches to professional development or professional education, including consultation, coaching, and communities of practice, lesson study, case study, capstone project, mentoring, reflective supervision, technical assistance and professional Librarian.

Librarian is professional who works in a library, providing access to information and sometimes social or technical programming to users. Librarians provide instruction on information literacy and proper uses.

Youngkin (2014) acknowledges the important role of librarians' ability to apply emerging web technologies to strengthen and enhance research and reference consultations, education and instruction and library outreach programs. Librarianship helps users to know how to navigate into the search of information, internet, evaluate information efficiently and offers a helping hand for users to find out the required piece of information and to use it for personal and professional purposes (Kiscaden, 2014). A Librarians as a professional has to work efficiently to get acquainted with new technologies and also adopt them to meet the changing needs of the client for effective service delivery in a needed area or region. Therefore, the gap creates in knowledge of professional librarians' use of information services from the hard and print materials to global change to internet and electronic information system poses a need to determine the Cloud Computing Management Practices of Professional Librarians in Academic Libraries in Northwest Nigeria.

Statement of the Problem

Today's world of Library technology depends largely on high skilled manpower, facilities available and institutional readiness for productivity. Library service has major role to play in the production of this competent manpower for academic library. It is expected that librarians should possess cloud computing skills which will enable them perform in their areas of discipline. The global technological skilled job operations in libraries are not filled up with non-electronic skills personal. The professional and non-professional librarians are not competent enough to take up the task available skilled jobs. Today librarians' capacities are weak in practice of internet. Furthermore, the standard of performance of Nigeria librarians in cloud computing general is at the moment very low thereby retarding the overall library productivity of the Nigerian librarians.

Unfortunately, despite all effort by the Federal, State and private Universities admirations to ensure qualitative information Technology at the library and bring about high competent products both in academic and employability, there have been persistent reports of perceived high incompetent rate of adoptability among librarians of the Universities (Human Perception and Information Processing 2015) One probable cause of the high incompetency of librarians in recent years according to T-Systems (2016) report is partly due to lack of awareness in adoption of cloud computation employed by librarian's practices and operations.

The above situation creates doubt on the perception of librarians in institutions therefore, poor perception skill awareness and adoption of professional and non-professional of university is a reflection of the quality of library services in a community. These librarians attended different institution and so possess different qualification and experience. Some of the skills they possess on graduation become obsolete as time goes and while others need updating. The librarians need to be retrained or redetected to new technologies not once or twice but on continuous basis to improve awareness, perception and knowledge, skill and attitude towards cloud computations in library. These attributed the libraries' lack of digital competencies necessary to develop and manage their career lives to the growing gap that exist between professional and non-professional experiences and the real world of work in which they live. The study felt that this could not be bridged until there is a national commitment to the concept of library career development education. It is against this background that this study seeks to investigate the Cloud Computing Management Practices of Professional Librarians in Academic Libraries in Northwest Nigeria.

Purpose of the Study

1. Librarians' level of awareness of cloud computing technologies
2. Librarian's knowledge level of improved storage and access to library resources
3. Librarians improved collaboration in cloud computing technologies
4. Librarians increased efficiency in cloud computing technologies
5. Challenges to implementing cloud computing languages in libraries

Research Questions

1. What is librarians' level of awareness of cloud computing technologies?
2. Librarian's knowledge level of improved storage and access to library resources?
3. What are librarians improved collaboration in cloud computing technologies?
4. What are librarians increased efficiency in cloud computing technologies?
5. What are challenges to implementing cloud computing languages in libraries?

II. METHODOLOGY

This study investigated the cloud computing management practices of professional librarians in academic libraries in Northwest Nigeria. Specifically, the study sought to determine the level of awareness of cloud computing technologies among the librarians in the region, the benefits of implementing cloud computing technologies, the challenges to implementing cloud computing in libraries in the area, and the strategies and mechanisms employed in managing cloud computing technologies by the libraries. A survey research design

was used, and the data were collected from 105 librarians of academic libraries in Northwest Nigeria through the administration of a structured questionnaire using percentage range to make decisions. The data collected were analyzed using frequency counts and percentages. The results revealed that more than two-thirds (80%) of the librarians had a high level of awareness of cloud computing technologies. The significant benefits of cloud computing reported by the librarians include: improved storage and access to library resources (80%), improved collaboration (60%), and increased efficiency (60%). The main challenges to implementing cloud computing languages in libraries in the region include: inadequate library staff knowledge (60%), inadequate funds (50%), and lack of adequate infrastructure (50%). Overall, the results of the study suggest that academic libraries in Northwest Nigeria have a high level of awareness and readiness to adopt cloud computing technologies.

III.RESULTS

A). Research Question one: What is librarians' level of awareness of cloud computing technologies?

S/N		Yes	No	
1	level of awareness of cloud computing technologies	80%	20%	

Table 1 Results revealed that more than two-thirds (80%) of the librarians' level of awareness of cloud computing technologies.

B). Research Question Two: What are librarian's knowledge level of improved storage and access to library resources?

S/N		YES	NO	
1	improved storage and access to library resources	80%	20%	

Table 2 Results revealed the significant benefits of cloud computing in improved storage and access to library resources.

C). Research Question Three: What are librarians improved collaboration in cloud computing technologies?

S/N		YES	NO	
1	improved collaboration	60%	40%	

Table 3 Results revealed slightly above average improved collaboration in cloud computing technologies.

D). Research Question Four: What are librarians increased efficiency in cloud computing technologies?

S/N		YES	NO	
1	increased efficiency	60%	40%	

Table 4 Results revealed slightly above average increased efficiency in cloud computing technologies.

E). Research Question Five: What are challenges to implementing cloud computing languages in libraries?

S/N		YES	NO	
1.	library staff knowledge	60%	40%	
2.	inadequate funds	50%	50%	
3.	lack of adequate infrastructure	50%	50%	

Table 5 Results revealed slightly above average of library staff knowledge and average in inadequate funds and lack of adequate infrastructure in implementing cloud computing languages in libraries.

IV.FINDINGS

1. Improve level of awareness of cloud computing technologies
2. improved storage and access to library resources
3. Improved collaboration between libraries
4. Increased efficiency of libraries
5. Library staff knowledge

V.RECOMMENDATIONS

1. Academic libraries in Northwest Nigeria have a high level of awareness and readiness to adopt cloud computing technologies.
2. Librarians to explore other strategies to better manage cloud computing technologies.
3. Awareness of implementing cloud computing technologies.

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