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# Cloud Computing: a tool for effective records and information management system in Nigerian academic libraries

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**A**bstract: Academic libraries, as part of their traditional responsibility, engage in the collection and generation of data and records with a various degree of sensitivity and usefulness. This study examined the importance of library record and advocates for the implementation of cloud computing technology as a viable alternative to other mode of record storage. Cloud computing as a record management tool will help preserve the myriad of records generated from the daily activities of libraries. The paper also identified the danger of paper or electronic method of information storage. It argued that information stored in this format is susceptible to loss by theft, fire or computer viruses, hard drive collapse as well as the destruction of local library internet server due to poor maintenance culture on the part of the personnel. Apart from the data backup function, remote accessibility of these record is another key consideration for cloud computing utility in library record management. In view of the vast potential, especially in the area of its elastic storage capability, it is highly recommended for all academic libraries in the country. However, it is observed that the cost of data and irregular power supply are some of the challenges facing its adoption in Nigeria, as along with the vulnerability to cyber-attacks which may lead to a partial or total loss of record. In these regards, it is further recommended that cloud computing, as a service platform, is adopted as a backup platform rather than a sole tool for record and data management in academic libraries.

## Introduction

An academic library is considered as one of the most essential components of an institution of higher learning. The library is often regarded as a sub-system of the larger academic system which interrelates with other units, to achieve the overall goals and objectives of the parent institution. According to Umoh (2017), academic libraries are generally known to serve two significant purposes; to facilitate information availability so as to aid knowledge development and to support the research activities of researchers within the institution. The goal of any academic library is to provide its users with all necessary and appropriate information resources in support of their academic pursuit (Arowosola, 2021). Thus, the supportive role performed by the library is vital in achieving the overall teaching, learning and research objectives of the institution.

As a repository hub, academic libraries ensure that all records and information resources acquired or generated within and outside the institution are pre-

serve to aid management in decision making. The medium for such a storage in most libraries has been in the form of cabinet file storage, computer storage, external hard disk drive storage and CD ROM storage.

Interestingly, with the advancement in Information and Communications Technology (ICT), library records and information can now be effectively managed using cloud computing. Cloud computing utilises software and hardware services provided by a third party within the digital space. This technology has had a major impact on library services, significant among them is the application of digital or web-based software platforms for the storage and retrieval of library records and information. The development of cloud computing technologies has helped to enhance the seamless collection, storage and retrieval of information within the library organisational system. Considering its enormous storage capability and the relative advantage of wide range of accessibility to the target users, the deployment of cloud-based technology in organisations such as the library has become essential, particularly as it pertains to the preservation of valuable official records which are prone to deterioration and susceptible to environment hazards. The deployment of cloud computing technology in this regard, eliminates the possibility of loss of data/document due to theft, fire, system crash or computer virus.

A number of studies on cloud computing have focused on examining the level of awareness of cloud computing usage in Nigerian libraries and others have been concerned with its uses in the discharge of its responsibility to users, few studies have considered it as a viable storage tool for the management of official information and records. The aim of this paper, therefore, was to examine the possibility and usefulness of adopting cloud technologies in Nigerian academic libraries as a tool for effective record management.

## **History of Record Management and Preservation in Nigeria**

The origin of the concept of record management could be conveniently traced to the era of paper explosion, where the use of paper for records was at its peak in the United States of America. Historically, the first attempt at the preservation of records in Nigeria was manifested in 1914 where the colonial office in London demanded from the Secretary of State to report to the colony as to what was being done to ensure the preservation of colonial records. In 1916 a similar query was made in which the colonial secretary noted that “the preservation of historical records must be regarded as one of the first duties of colonial government...” (Imeremba, 2007, 22).

According to Imeremba (2007), Kenneth Dike in the early 1950 carried out research involving the use of public records. In the process, the author came across some public records which were in deplorable conditions. Finding from the study was reported to the government, and the researcher further volunteered to carry out a survey of government records and the need for the preservation

of public records in Nigeria; which the government of the day approved. Consequently, in 1953, a report was submitted based on the findings and extensive recommendation. One of such recommendations was for the establishment of the public records office.

In view of the recommendation, the Nigerian record office was established in 1954 and Kenneth Dike was made its supervisor. By the promulgation of the 1957 Public Archive Ordinance, the Nigerian record office was changed to the National Archives of Nigeria. In 1958, a permanent office was opened at the University College Library Ibadan, presently called Kenneth Dike Library, University of Ibadan.

## Records: A Conceptual Explanation

The term record has its origin in a Latin word *recordari* which means to be mindful of, or to recall. Charman cited in Abdulrahman (2015) refers to a record as information captured and preserved in any recordable form or medium, and conserved by an institution, organisation or individual in pursuance of its official responsibilities or in the transaction of business. Thus, records are carriers of information that may be in any medium or format. These may include, paper, photographs, drawings, electronic records, microfilms, maps and files (Ikenna, 2021). These records are of a great value to the business transaction of the library hence, must be retained for future use. Abdulrahman (2015) noted that records constitutes an essential instrument of administration without which operational processes and function may be greatly hindered. Future planning cannot be successfully carried out without a reference to previous records, and for any effective decision making to be possible, there must be a timely access to such records. Academic library, beyond serving its innumerable clientele in the academic community, must pay attention to the records in its custody for proper administrative functioning. The records obtainable in an academic library includes: staff file, minutes of meeting, user's personal data, cataloguing sheets, correspondences, student's registration records, entries of book borrower, receipts and inventory of facilities. In similar manner, Akporhonor (2011) identified the following as records emanating from university libraries: budget request, actual budget allocation, statement of expenditure, shipment receipts, receipt of money received and expended, periodical appraisal/promotion/confirmation records, personnel records, releases and retiring, taxes paid, reports, directives and policy statement.

To put it into another perspective, records are information carrier resources, created for the use and the benefit of the institution, specifically to support administrative decision making of the library. A good record management system, therefore, must promote easy storage, access and provides a clear direction for a successive administration. The availability of records will help a successor to determine what course to take either to adopt previous program, change techniques or practices (Touray, 2021).

## Record Management System

Record management is that area of general administration and management which is concerned with achieving economy and efficiency in the creation, use, maintenance and disposition of record (Imeremba, 2007). Record management entails the systematic handling of recorded information for daily application. Basically, there are two types of records which are paper-based and electronic records. The main goal of any management system is to ensure ease, efficiency and economy in creation, use and access or retrieval of recorded information. Ikenna (2021) refers to record management as a range of activities that an organisation should perform properly to manage its records. The following are key activities included in any record management system; setting of records management policy, assigning responsibilities, establishing and promulgating procedure as well as designing, implementing and administering record keeping systems.

The concept of record management involves the handling of information throughout its life cycle which begins at creation, appraisal, retention, preservation, conservation, arrangement, accessioning and access to records. With cloud computing, records could be retained as long as the institution desires. To ensure effective record management in this age of technology and information explosion where speedy access to information is key to relevance, it is necessary for such recorded information to be converted to medium that may be preserved or stored using cloud technology. Admittedly, not all record can be stored in the cloud, for instance only documentary records can be stored in the cloud.

As noted already, effective record management system is a tool for achieving the legal, social or corporate goal of the institution. However, certain factors have been identified by researchers as reasons for the poor level of development of records management in Nigeria: shortage of personnel; financial problems; insufficient information infrastructure; poor information processing materials and application of appropriate modern information technology. However, to circumvent these challenges, library institution could adopt cloud technologies and migrate their services online. A number of studies have pinned down the popularity of cloud computing to its relative cost advantage.

### Objectives of Effective Records Management

1. To provide accurate and timely information when required for organisational use
2. To adopt the most efficient procedure or processes for handling recorded information
3. To ensure the provision of information at the lowest cost
4. To ensure easy and timely access to records
5. To support the strategic planning and the overall goal of the institution

## The Concept of Cloud Computing

Cloud computing is a modern information technology that allows for service delivery over the internet. Wada (2018) opined that cloud computing is a mega change that has robbed information technology of its traditional obligations and empowered end users with on-demand utility computing. Scholars like Suciu, Halunga, Apostu, Vulpe and Todoran (2013) postulate that cloud computing is conceptualised as the delivery of computing and storage capacity as a service to a group of end users. Yuvaraj (2013) defined cloud computing as nothing more than a collection of computing software and service made available and accessed through the internet rather than residing on a desktop or a local internet server. According to Pandya, cited in Wada (2018), cloud computing uses the web and central remote servers to achieve intended goals, locate clientele and coverage of services, which has the capacity of supporting different users. Cloud computing as a term refers to all software application or other resources available online for the benefit of multiple users over the internet.

Studies have revealed that cloud computing is a cheaper means of storage, because its usage is based on either “subscription” or “pay as you go”. Besides, Nag and Nikam (2016) observed that 91% of organisations in the United States of America and Europe maintained that a reduction in cost is a major reason for migrating to cloud environment. Azubuike and Igbikele (2019) summarised the benefits of cloud computing as follows: lower cost of maintenance, easier manageability, quicker time-to-market for application development and reduction in the development cost. Enefu, Gbaje and Aduku (2015), in their study, posited that libraries can apply cloud computing in various areas, such as in building a digital repository library, in search for scholarly resources, library automation, searching library data, hosting of websites and importantly for file storage.

However, according to Aiyebelehin, Makinde, Odiachi and Mbakwe (2020), the most important cloud computing-based library services are provided for accessing journals, e-books in a library as well as OPAC. The most common cloud computing service providers to libraries are World cat, Summon (Exlibris), Google Docs, Discovery service, Polaris Library System, Open Source Software (OSS) labs, Scribd and Online Computer Library Centre (OCLC).

The biggest benefit in migrating to cloud environment is the elastic storage capacity coupled with the remote accessibility of data content obtainable via subscription to the service providers. Cloud technology is most relevant in preserving academic libraries vast collection of materials and recorded information accessible via the web to their innumerable clientele without the usual time and space barrier. Enefu, Gbaje and Aduku (2015) agree that with cloud computing, waste of finances in the library can be prevented, technological problem associated with computer devices like computer viruses, system crashes leading to a loss of data could be averted, more so because the servicing server is located in the “cloud”

and not within the library. Therefore, the need for maintenance does not arise. Geoffrey cited in Enefu, Gbaje and Aduku (2015) added that when data are stored in the cloud, it offers several advantages such as common accessibility and usage by various users, the need for back up and local storage maintenance is removed. Their study carried out in the NOUN library revealed that cloud computing can be implemented in areas such as cataloguing and metadata storage.

However, cloud computing services in the library may include: online file storage, webmail, OPAC system and social networking sites.

## Categories of Cloud Computing

Cloud computing services are usually divided into three major categories which are software as a service (SaaS), infrastructure as a service (IaaS) and platform as a service (PaaS) (Irenoa, Tijani & Bakare, 2018). However, other service delivery models may include: desktop as a service (DaaS) and database as a service (DBaaS).

- a) Software as a service (SaaS) is also called “software on demand”: In this service model, the cloud service providers make their software and applications available in the cloud allowing users upon registration or subscription to access its contents using a web browser. An example is Amazon, Google Apps, Hotmail, office software, Facebook and Skype. The use of software such as Hotmail for hosting library email, as well as Facebook and Twitter as channels of information dissemination, are examples of the application of SaaS in libraries (Chudasma, Bhatt & Trivedi, 2019). The benefit of this service is that it allows consumers (libraries) to use the service while management and maintenance are carried out by the service providers.
- b) Infrastructure as a service (IaaS): This model, which is also known as Hardware-as-a -service (HaaS), enables libraries to utilise the IT infrastructure such as networking, server, storage and other computing resources provided by the service provider (Irenoa, Tijani & Bakare, 2018). IaaS allows libraries access to this service via computers, or more often virtual machines. Examples are Google computer engine, Rackspace, Amazon web services, digital ocean and Microsoft Azure, firewalls, load balancers, IP addresses, virtual local area networks (VLANs) and software bundles (Aiyebilehin et al.,2020)
- c) Platform as a service (PaaS): this model of cloud computing provides customers with hardware and software tools to perform operation on the internet. Typically, they include an operating system, programmes, database and web server. The platform allows users to develop applications, run their software solutions on the cloud platform. The major benefit of this model is that it saves the user the cost and complication

of buying and managing the hardware and software infrastructures. In the library space, PaaS provides library professionals free tools to work with, for example, Google Apps enable librarians easy access to information, free online solutions such as Gmail, for communication; Google docs for documents; and spreadsheets for presentations. Furthermore, libraries through a Google platform can create their own Web applications (Chudasma, Bhatt & Trivedi, 2019).

## **Cloud Computing as a Tool for Effective Record Management in Nigeria Academic Library**

Several studies on the adoption of cloud computing in Nigeria academic libraries indicated that librarians and library staff are aware of cloud computing usage (Aiyebilehin et al., 2020). Omwansa, Waema and Omwenga, (2014) in their study, revealed that Nigeria alongside South Africa and Kenya were the foremost nations in the use of cloud computing in Sub-Saharan Africa. Similarly, Aiyebilehin et al. (2020); Zabiru, Akiola and Hamzat (2021) reported a high level of awareness of the concept and use of cloud computing services by librarians in information service delivery in Nigeria. Their study also revealed that librarians use cloud computing chiefly for cataloguing, assisting users in information retrieval, reporting management decision and storage of files. The studies correspond with Onwubiko, Okorie and Onu (2021) who noted that cloud computing technologies can be used for various purposes in the library, such as sharing of cataloguing information or OPAC, preservation of library collection in a digital form, library orientation/information literacy and current awareness services (CAS). Cloud technologies have been adopted in most academic libraries in Nigeria in areas such as Library Management Software (e.g. KOHA & Librarika), Acquisition, Cataloguing and Classification (Zabiru, Akiola & Hamzat, 2021), resources repository and preservation (Ifijeh, 2014) as well as for storage of data and files (Aiyebilehin et al., 2020).

Notwithstanding its great potential, it has been observed that very few academic libraries in Nigeria have fully explored the storage potentials of cloud technology particularly for recording management services delivery. In fact, several scholars have attributed this anomaly to certain perennial challenging factors.

## **Challenges Facing the Adoption of Cloud Computing in Nigerian Academic Libraries**

Given its robust benefit in library service delivery, particularly in reinforcing smartness in library functions of academic library in Nigeria, cloud computing has proved to be a viable tool for record management in academic libraries. However, there are perennial and peculiar challenges faced by academic libraries in third



world countries like Nigeria, hindering the effective deployment of cloud-based technologies in the area of information and record management. Ifijeh (2014); Aiyebilehin et al. (2020); Chudasma, Bhatt and Trivedi (2019); Omoyiola (2019) and Okuonghae, Igbinovia and Adebayo (2022) observed that data security and privacy, poor funding of the library, high cost and poor internet connection, unreliable power supply are some factors that may hinder the effective deployment of cloud computing technology in academic libraries. Others include: loss of job for library staff and information professionals, technical problem associated with the use as well as negative attitude of staff to technological innovations.

**Loss of Job for Library Staff and Information Professionals:** Library staff and information professionals working in the library will face a stiff competition in terms of a loss of job as a result of such a technological deployment. Thus, the need for IT support staff in the maintenance of local internet server would have been eliminated. Similarly, the hosting of library resources for student remote accessibility may also be a factor in downsizing the number of library staff. These no doubt pose a serious concern for the information professionals who perhaps are already facing low user patronage. According to Gbaje and Aliyu (2014), adopting cloud computing technology is usually important where there is no desire to invest in new infrastructure or engage in training of new library staff.

**Poor Funding of the Library:** Several studies have shown that the funds allocated to academic libraries have been consistently low over the years (Ifijeh, 2014; Ishola, 2014; Babayi, Makintami & Tumba, 2019). These funds may plummet further if cloud computing is fully implemented.

**Data Security:** Usually library records with sensitive information are secured within a safe in the office of top management staff or in a special computer in the library. However, cloud technology handles this task and offers a more secure solution in the cloud. It is important to note that these cloud companies such as Microsoft, Yahoo, Amazon, Alibaba and Google also need a strong security architecture to secure their data from theft. However, reports show that these infrastructures are not impregnable as they are continuously subject to a cyber-attack. Bisong and Rahman (2011), in their study, highlighted the risk and threat cloud users face in adopting cloud technology. According to them, cloud computing system faces several vulnerabilities such as: listening in, hacking, cracking, malicious attack and outages. In fact, Hoover, cited in Bisong & Rahman (2011), reported that there have been instances when a cloud service like Ctrix's GoToMeeting, Google's Gmail and GoToWebinar were temporarily unavailable for a couple of hours due to bugs. Bisong and Rahman (2011) noted that it will be catastrophic for any organisation that depends solely on cloud computing service to experience disruption for hours or days. An issue ancillary to cyber threat is the challenge of coping with a host cloud company having no adequate law protecting sensitive data and information.

**High Cost of Data for Internet Access:** Nigeria is one of the biggest users of internet in the world, the cost of internet data in Nigeria is overpriced (Tayo, Thompson & Thompson, 2016). In fact, Nigeria has been said to have the least affordable internet globally. Several studies have also indicated that low internet bandwidth, epileptic internet services are some of the barriers affecting internet usage in Nigeria. Expectantly, this will perform a crucial role if cloud computing will be deployed in academic libraries in Nigeria.

## Summary

Cloud computing has been presented as an information technology that allows service delivery over the internet. With service models such as SaaS, IaaS and PaaS, cloud computing technology offers a wide range of services and enhances library's functions such as cataloguing and information retrieval. However, the paper has focused on the unlimited benefits of adopting cloud technology for storage service delivery in the library. It noted that library records stored in the cloud are safer and allow library staff remote access at any time of the day. In addition, it was observed that cost reduction, increasing volumes of data, records and documents generated in library make the cloud technology storage a practicable option, because it solves the problem and challenges associated with physical storage. Cloud computing usage is most beneficial to academic libraries in Nigeria, because it offers a lower cost of maintenance, is easier to manage and enables remote access to records.

## Conclusion

Academic libraries, as a part of their daily routine of information service delivery, generate a lot of information and records. Studies revealed that the main medium of storage of records in these libraries are file cabinets, computer storage, external hard disks and CD ROMs. The study has also shown that these media of record storage are not sustainable as they are prone to decay and, sometimes, the documents or records stored on them are prone to system or environmental hazards. Therefore, the study argues that deployment of cloud computing technologies for storage functions will help eliminate the possibility of a loss of records occasioned by these hazards such as theft, fire or system virus. Furthermore, embracing these technologies will help enhance service delivery in the library space, particularly with respect to the need of maintaining confidentiality of sensitive official records.

## Recommendations

It is helpful to recommend the following, given the findings on cloud computing:

1. Library proprietors and Library Management should provide a policy framework on how to deploy cloud technology in managing libraries' files, records and documents.
2. Cloud computing should be adopted as a backup storage system rather than the sole device for libraries records, given the fact that cloud companies and service providers are susceptible to attacks either by bugs or viruses or individual hackers with the aim of accessing secured documents
3. Library management should also seek ways of addressing some of the challenges that may affect the deployment of this technological innovation to libraries. This may take the form of training the staff in the use of ICT; leverage on a cheaper source of power like solar to meet the library's energy needs. In addition, they should engage in info-preneurial activities (large scale binding and reprographics), that may serve as alternative sources of funds to help them meet the financial needs of the department.

## Impact of the study

1. The practical implication of this paper is that it is meant to inform proprietors and library management of academic libraries in Nigeria of the boundless benefits of adopting cloud technology for the preservation of official data, records and information as well as its vast collection of resources.
2. Adopting cloud computing technologies enables librarians and library staff to keep up with trending technological innovation, as well as to enhance smartness in the business of information service delivery to their clientele.
3. Essentially, if fully embraced, cloud computing is a tool that has the capacity of changing the perception of library patrons towards the library, considering the fact that it enables a library to reach more patrons and provide real time access to information, thereby giving the library the opportunity to extend its impact to the user and the society at large.

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# Cloud computing: narzędzie do skutecznego zarządzania dokumentacją i informacjami w nigeryjskich bibliotekach akademickich

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Nosakhare Okuonghae obecnie pełni funkcję dyrektora Biblioteki Prawa na Glorious Vision University w Ogwa, Edo State, Nigeria. Posiada tytuł LL.B w dziedzinie prawa uzyskany na Uniwersytecie Benin w Beninie. Obecnie kontynuuje studia magisterskie z bibliotekoznawstwa i informacji naukowej (MLIS) na Lead City University w Ibadanie. Nosakhare publikował z powodzeniem w czasopismach lokalnych i międzynarodowych. Pasjonował się bibliotekarstwem prawniczym, nowymi technologiami, własnością intelektualną i umiejętnością korzystania z informacji. Nosakhare jest członkiem różnych grup zawodowych, w tym Nigerian Bar Association, Nigerian Library Association oraz British Project Management Professionals i Wikimedia User Group Nigeria.

Oluwabunmi Dorcas Bakare-Fatungase jest specjalistką ds. Informacji/badaczem na Wydziale Informacji i Zarządzania, Wydział Komunikacji i Nauk Informacyjnych, Lead City University. Jej zainteresowania badawcze obejmują nowe technologie, biblioteki cyfrowe i wirtualne, wykorzystanie informacji i społeczności użytkowników, zastraszanie i zastraszanie przy użyciu urządzeń mobilnych itp. Pasjonuje się podkreśleniem znaczącej roli bibliotekarzy w rozwiązywaniu różnych problemów społecznych z arsenalem informacji, którym dysponują. Jest członkiem Rady ds. Rozwoju Badań nad Naukami Społecznymi

w Afryce oraz stypendystką Queen Elizabeth w programie Advanced Scholars West Africa (QES-AS-WA) na Uniwersytecie Carleton (Kanada).

**Słowa kluczowe:** zarządzanie dokumentami i informacjami; Cloud Computing; biblioteki akademickie

**S****trzeszczenie:** Biblioteki akademickie w ramach swoich tradycyjnych zadań, angażują się w gromadzenie i generowanie danych i dokumentów o różnym stopniu wrażliwości i użyteczności. W badaniu tym zbadano znaczenie zapisów bibliotecznych i opowiedziano się za upowszechnieniem technologii przetwarzania w chmurze jako realnej alternatywy dla innego trybu przechowywania rekordów. Chmura obliczeniowa jako narzędzie do zarządzania rekordami pomoże zachować ich niezliczoną ilość generowaną podczas codziennej działalności bibliotek. W artykule zidentyfikowano również niebezpieczeństwo związane z papierową lub elektroniczną metodą przechowywania informacji. Zastosowano argument, że informacje przechowywane w tym formacie są podatne na utratę w wyniku kradzieży, pożaru lub wirusów komputerowych, uszkodzenia dysku twardego, a także zniszczenia lokalnego serwera internetowego biblioteki z powodu złego sposobu konserwacji ze strony personelu. Oprócz funkcji tworzenia kopii zapasowych danych, zdalny dostęp do tych rekordów jest kolejnym kluczowym czynnikiem dla narzędzia przetwarzania w chmurze w zarządzaniu rekordami bibliotecznymi. Ze względu na ogromny potencjał, szczególnie w zakresie możliwości elastycznego przechowywania, jest wysoce zalecany dla wszystkich bibliotek akademickich w kraju. Obserwuje się jednak, że koszt danych i nieregularne zasilanie to niektóre z wyzwań stojących przed jego przyjęciem w Nigerii, razem z podatnością na cyberataki, które mogą prowadzić do częściowej lub całkowitej utraty danych. W związku z tym zaleca się ponadto, aby chmura obliczeniowa jako platforma usługowa została przyjęta jako platforma kopii zapasowych, a nie jako jedyne narzędzie do zarządzania dokumentacją i danymi w bibliotekach akademickich.



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# Cloud-Computing: Ein effektives Werkzeug für das Dokumenten- und Informationsmanagement in nigerianischen Hochschulbibliotheken

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Nosakhare Okuonghae ist derzeit der Leiter der Juristischen Bibliothek an der Glorious Vision Universität in Ogwa im Bundesstaat Edo, Nigeria. Er hat einen Bachelorabschluss in Jura von der Universität Benin (Benin City, Nigeria) und absolviert derzeit ein Masterstudium in Bibliotheks- und Informationswissenschaft an der Lead City Universität in Ibadan. Nosakhare hat in lokalen und internationalen Fachzeitschriften veröffentlicht. Er ist ein leidenschaftlicher Anhänger von juristischer Bibliothekswissenschaft, neuen Technologien, geistigem Eigentum, Informationskompetenz usw. Nosakhare ist Mitglied verschiedener Berufsverbände, darunter der Nigerianischen Anwaltskammer (Nigerian Bar Association), des Nigerianischen Bibliotheksverbands (Nigerian Library Association), der Britischen Fachleute zum Projektmanagement (British Project Management Professionals) und der Gruppe der Wikimedia-Nutzer Nigeria (Wikimedia User Group Nigeria).

Oluwabunmi Dorcas Bakare-Fatungase ist eine Expertin/Forscherin im Bereich Informationswissenschaft am Lehrstuhl für Information und Management an der Fakultät für Kommunikation und Informationswissenschaften der Lead City Universität. Ihre Forschungsinteressen umfassen neue Technologien, digitale und virtuelle Bibliotheken, Informationsnutzung und Benutzergemeinschaft, mobiles Lernen und mehr. Ihre Leiden-

schaft liegt darin, die bedeutende Rolle der Bibliothekare bei der Lösung verschiedener sozialer Probleme durch ihren Informationsarsenal hervorzuheben. Sie ist Mitglied im Rat für die Entwicklung der Sozialwissenschaftlichen Forschung in Afrika (Council for the Development of Social Science Research in Africa) und eine Stipendiatin des Stipendienprogramms Queen Elizabeth Scholar Advanced Scholars West Africa (QES-AS-WA) an der Carleton University in Kanada.

**S**chlüsselworte: Dokumentations- und Informationsmanagement; Cloud-Computing; akademische Bibliotheken

**Z**usammenfassung: Akademische Bibliotheken haben im Rahmen ihrer traditionellen Aufgaben die Sammlung und Generierung von Daten und Aufzeichnungen unterschiedlicher Sensitivität und Nützlichkeit übernommen. In dieser Studie wurde die Bedeutung von Bibliotheksdokumentation untersucht, und es wurde die Einführung von Cloud-Computing-Technologie als realistische Alternative zu anderen Speicherungsmethoden für Dokumentation befürwortet. Das Cloud-Computing als Werkzeug zur Dokumentenverwaltung kann dazu beitragen, die unzähligen Aufzeichnungen, die im Rahmen des täglichen Bibliotheksbetriebs generiert werden, aufzubewahren. In dem Artikel wurde auch auf die Gefahr hingewiesen, die mit der papierbasierten oder elektronischen Speicherung von Informationen verbunden ist. Es wurde argumentiert, dass Informationen, die in diesem Format gespeichert sind, anfällig für Verluste durch Diebstahl, Feuer oder Computerviren, Festplattenausfälle und die Zerstörung des lokalen Bibliotheksservers aufgrund schlechter Wartungskultur des Personals sind. Neben der Funktion der Datensicherung ist der Fernzugriff auf diese Aufzeichnungen ein weiterer wichtiger Faktor, der bei der Verwendung von Cloud-Computing-Werkzeugen zur Verwaltung von Bibliotheksdokumenten berücksichtigt werden sollte. Aufgrund des erheblichen Potenzials, insbesondere in Bezug auf flexible Speichermöglichkeiten, wird dies insbesondere allen akademischen Bibliotheken im Land empfohlen. Es wurde jedoch festgestellt, dass Kosten für Daten und unregelmäßige Stromversorgung nur einige der Herausforderungen sind, die der Einführung von Cloud-Computing in Nigeria im Wege stehen, sowie die Anfälligkeit für Cyberangriffe, die zu teilweisem oder vollständigem Datenverlust führen können. Daher wird empfohlen, dass Cloud-Computing im Sinne einer Plattform für Dienste als Backup-Plattform, und nicht als das einzige Werkzeug zur Verwaltung von Dokumenten und Daten in akademischen Bibliotheken verwendet wird.