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Innovative Digital Transformation for Dynamic Information Service Sustainability in University Libraries in Nigeria

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Abstract. **Aim:** Technologies have ushered in a significant innovative digital transformation to sustain dynamic information services in modern libraries. This has prompted the assessment of innovative digital transformation for dynamic information service sustainability in university libraries in Nigeria. Specifically, the research examined the nature of digital transformation, universities and digital transformation, innovative digital transformation in university libraries, dynamic modern information services in university libraries for sustainability, and the essentials for dynamic information service sustainability in university libraries.

Conclusion: Libraries globally, and particularly in developing countries, must be re-positioned in this era of digital transformation due to technology adoption to offer valuable information services for their sustenance and to retain their relevance in the lives of the public. Moreso, there is a great need for innovative digital transformation in libraries to sustain modern information services as well as to increase their efficacy in information use as part of their mandate to leverage digital technology systems. The study, therefore, recommends that more sophisticated technologies are used in university libraries. University libraries in developing countries like Nigeria need more funding to fully exploit the opportunities introduced by digital technologies. Thus, university management should work hand in hand with libraries to enable them to fully connect to the opportunities of the digital era. The continuous human resource development is necessary to equip universities with appropriate digital competencies useful in the digital context.

Introduction

In recent years, technological revolutions have created a novel dimension in which constant change is visible and unmistakable. Thus, the technological revolution has triggered significant changes in all sectors around the globe. "The world has undergone drastic innovations due to technologies in the 21st century and today, it is referred to as the knowledge age or information society" (Ikenwe & Anaehobi, 2020, 2). However, the prime of this technological revolution is the "digital transformation (DT)." From Vial's (2019) perspective, digital transformation is a process aimed at improving an entity by triggering significant changes to its properties through combinations of information, computing, communication, and connectivity technologies. In other words, DT offers extensive opportunities for using advanced technologies. According to Ikenwe, Adetona, and Ose-Abame (2021), the DT, where technologies are now used for better services and activities, is the grassroots of transformation. Deja and Bell (2021) opined that a significant component of DT is using modern digital technologies to remain competitive. A vital sector influenced by digital transformation recently are universities. Their digital transformation was generated from a shift in policy at a "supranational level" (Deja & Bell, 2021). Consequently, adoption of digital transformation by universities may be traced to smart, intelligent, and sustainable development in a knowledge-based economy. However, the library as a knowledge-based institution is a crucial component of the university system and is referred to as the "university library." One must adjust to and integrate with the evolving innovative technologies brought

about by digital transformation if one wants to be relevant in the university system and experience in science.

Over time, university libraries have advanced in the technological revolution, introducing an innovative and transformative change in the library as an information center, influencing how their community users now use the library and its dynamic information services. The essence of this innovative transformation in university libraries is to sustain dynamic information services and retain their relevance as information centers in the modern society. Ilyasu, Usman, and Kasim (2019) posited that information service delivery is an activity of the library intended for providing information or assisting users in finding information within and outside the confinement of the library, delivered through face-to-face, web applications, social networking, or instant messaging applications.

Technologies have revolutionized the traditional information services and enhanced the productivity and sustainability in libraries to a more advanced level (Ikenwe, Adetona & Ose-Abame, 2021). The motor of this change is the digital transformation. As a result of this development, university libraries are continually responding to the opportunities of the digital era through re-thinking and re-tooling approaches for dynamic information services provided to satisfy the ever-changing information needs of their community members. Researchers like Anuradha (2018) identified external factors that forced the transformative information service innovations in university libraries as shifts in scholarly communication, access to information without intermediation via technology, and globalization. Accordingly, the innovative digital transformation in libraries is referred to as "Smart University Libraries" with five dimensions of "Smart Librarians," "Smart Users," "Smart Information Services," "Smart Information Resources," and "Smart Environment."

Some scholars, such as Ebert and Duate (2018); Deja, Rak, and Bell (2021), observed that organizations are embracing the digital transformation and integrating the digital technologies to improve their services. As a result, it is envisaged that all types of libraries, particularly university libraries, will continue to engage in cutting-edge digital transformation initiatives. Offering information services is the primary goal of university libraries as information hubs. They run the risk of losing their position if they do not change to meet the demands of their users in the digital age. This study revealed the need for this creative digital change for ensuring the sustainability of dynamic information services in university libraries.

Research Objectives

The main aim of this study is to unravel the innovative digital transformation for dynamic information service sustainability in university libraries. Specifically, the research objectives are to examine the:
1. Concept of digital transformation,
2. Universities and digital transformation,
3. Innovative digital transformation in university libraries,

4. Dynamic modern information services in university libraries aimed at sustainability,
5. Essentials for dynamic information service sustainability in university libraries.

Concept of Digital Transformation

Scholars like Ebert and Duarte (2018) have indicated that the digital transformation can be shortened as DX. However, the researchers would use DT as an acronym for the digital transformation, which means integrating digital technologies into organizations or individual activities to improve processes and routines. Ebert and Duarte (2018, 1) asserted that DT focuses on disruptive technology adoption to "increase productivity value, creation, and social welfare." Mazurek, cited in Deja and Bell (2021), presented the digital transformation as an organizational change implemented in operations, services provision, technology use, information management, and internal and external corporations. Leszek and Bianka (2021) mentioned that DT does not mean digitizing information; instead, digitization is an indispensable component of DT, and DT uses digital data, but the transformation process begins with its use. In other words, DT focuses on technology usage to radically improve and change organizations' processes and boost customers' experiences and values using many digitally intensive methods (i-SCOOP, n.d). DT is geared towards increasing profitability, productivity, and outstanding value.

As reported by Westerman, Bonnet and Miafee (2014), the three building blocks of DT are: "digital modifications, digital globalization, and the creation of new digital businesses." As noted by Bukht and Heeks (2017), the foundation of DT is information and communication technologies. Wirtz and Lovelock (2018) presented two factors of DT innovation as "interconnectivity and interoperability," while Cassar, Health, and Micallef (2020) traced "hyper-connectivity" as its cornerstone. This shows that a vital element of DT is technology, enabling innovation associated with connectivity. Ebert and Duarte (2018) divided DT objectives into "social and economic." The social objectives focus on collaborative and innovative culture; new skill provision for better digital work; digital communication maintenance; improved service access and strengthened protection of the data; while the economic benefits are innovative and new organization models; increased productivity; income and value-added economy; and enhanced technical standards and regulatory framework. The Enterprisers Project (2020) highlighted some DT trends: the rapid adoption of digital operating models; big data; better use of AI and machines; continued acquisition of IT; digital partnership; cloud adoption; and digital initiative.

Universities and Digital Transformation (DT)

Recently, universities have experienced a significant transformation by keying into technological advancement through the digital revolution (Ikenwe, Adetona &

Ekpenisi, 2020). From this indication, DT of the university education is an integral part of the modern education system, which requires developing mechanisms for its digital transformation. The strategy for DT in the university system should involve modernizing corporate information technology architecture, executed as a cloud-based platform (Kaminskyi, Yereshko & Kyrychenko, 2018). Deja, Rak and Bell, (2021, 1) reported that studies on universities and DT identified two DT levels in universities: "the administrative level and influencing the degree of modern technology usage in learning." This learning may be through social media, e-learning, video conferencing, amongst others.

According to Sousa and Rocha (2019), learning in DT is defined by network involvement, collaborative learning, and cooperative learning. They also defined the learning as being done through e-learning, blended learning, and mobile learning. In addition, the essence of this learning is knowledge sharing, the development of staff, and competencies. Kaminskyi, Yereshko, and Kyrychenko (2018) opined that the impact of DT on the system involves: satisfaction of needs; retrieving, storing, and processing new business models and better relationships; creation of educational content; digital collaboration and interaction between staff and students. Other impactful elements are interactive classrooms, personalized learning, virtual learning, and cloud-based learning.

Innovative Digital Transformation in University Libraries

The principal purpose of any university library system is to support the mission and vision of its parent institution. However, in an educational environment changing at a breakneck pace triggered by technology, the purpose of the university library has been enhanced. Furthermore, innovative technologies have entirely changed the trends in university libraries due to users' ever-evolving information needs and the digital era, forcing the libraries to change their pattern of services. Anuradha (2018) asserted that university libraries must now remodel and reimagine how they create and deliver services and programs. Ebert and Duate (2018) pointed out that organization such as libraries have re-organized their functions into two modes: "standard mode" (traditional operations) and "disruptive mode" (innovative technologies). Idhalama and Ikenwe (2021) asserted that technologies today have brought numerous benefits and assistance to universities, affecting how information is handled and is now used to aid their services.

University libraries have emerged in the digital transformation era as collaborators, experts, and connectors to resources and services in the university (Longmeier & Murphy 2021). Anuradha (2018) outlined some DT requirements for university libraries, including developing innovative services, catering to users' needs, supporting innovative research, offering user-friendly technology and services, promoting the institution's mission and academic culture, and encouraging private learning. Other needs of DT in a university library are to satisfy users' information curiosity and needs; provide innovative services; promote independent learning;

facilitate collaboration; and easy access. Innovative digital transformation efforts are continuously evolving and ongoing in university libraries, particularly in developed countries compared to developing countries. Some innovative digital transformations in university libraries are discussed below.

1. **Internet Of Things (IOT):** Pujar and Satyanarayana (2015) stated that the concept moved from "internet of communication to Internet of Things, due to broadband, WIFI, and technology." Nag and Nikam (2016, 181) defined "Internet of Things" as "the use of intelligently connected devices and systems to obtain data gathered by embedded sensors, actuators in machines, and other physical devices." "Internet of Things," shortened as IOT is advancing in this digital era as a global technology for a knowledge society facilitating modern services, and it uses smart technologies and the internet to provide innovative services in libraries. It also helps to connect with the users. According to Patel and Patel (2016), IOT are wireless sensor networks, microcontrollers, WIFI, GPS, RFID, GPRS, GSM, and 2/3/4 G. Bansal, Arora, and Suri (2018, 3) identified ways IOT can be applied in libraries as: "inventory control, theft management, fire detection and prevention, mobile reference, tracking the movement of resources, virtual library, reservation of books, user identification, and circulation desk." In addition, IOT can also be applied in libraries through communication and transfer of information, access to library services and resources, OPAC, overdue notices and fines, resource verification, resource management, user education, information literacy, current awareness services (CAS), Selective Dissemination of Information (SDI), and statistics. Princh (2020, 1) listed other applications of IOT to include: "Radio frequency identification for item identification and security, machine to machine communication; semantic search technologies including discovery tools and metadata."

2. **Information and Communication Technologies (ICTs):** ICTs, as innovation adopted in university libraries, have improved information services to enhance sustainability in the knowledge economy. ICTs are technologies used for information creation, preservation, access, and dissemination. According to Ikenwe, Adetona, and Ose-Abame (2021, 399), "ICT continues to exist as a major constructive energetic force in the digital economy and there has been a steady headway in ICT utilization in libraries." Ikenwe, Idhalama, Elogie, and Saliu (2017) opined that ICTs are increasingly used in university libraries to acquire, process, manage, store, and disseminate information and other information services. Aiyebelehin, Ikenwe, and Okpetu (2017) posited that ICTs have changed information management in university libraries and determined that the ICTs used

for service delivery by university librarians in Edo State in Nigeria were computers, printers, and telephones.

3. **Cloud Computing (CC):** This is a web-based computing application available to many users on the internet. Suman and Singh (2016, 125) defined cloud computing as a "service where cloud resources are dynamically allocated to multiple users as per demand over a network." Cloud technologies enhance cloud learning through data, software, and storage provision and access in the online environment. Subscriptions are required in cloud environments because they allow paying on the go and provides= users with quick services. Examples of CC applications in libraries as stated by Bansal, Arora, and Suri (2018) are OCLC, Ex-Libris Cloud, Dura Spaces, Dura Cloud, and OSS Labs. As a result, CC necessitates the use of computers, laptops, or smartphones, as well as the internet, a remote server, users, electricity, a host provider, infrastructure, or software. According to Suman and Singh (2016), CC can be used in university libraries for acquisitions, cataloguing, process systems, digital content, digital media, cutting-edge technology, supporting standards, digital library hosts, web conferences, e-mail, and OPAC. Dutt (2015) identified the services CC enhances as e-book lending, shared catalogue, CAS, document sharing, downloading, digital preservation, scanning, social interaction, and collection development. CC helps libraries to uphold data records and have an easy access to e-resources.

4. **Social Media:** Social media is a recent major innovative technology that has changed human communication and information sharing (Idubor, Elogie & Ikenwe 2016). Idhalama and Ikenwe (2021) defined social media as networking sites where people connect with each other for knowledge advancement and to effectively perform a task. Examples of social media platforms are Twitter, Facebook, e-mail, YouTube, Instagram, Myspace, blogs, web, WhatsApp, wikis, and LinkedIn. Social media is helpful in promoting services and resource usage, information and knowledge sharing, interaction, user service, information literacy, and user education. Omekwu (2019) supported this stance by stating that social media provides a vast and flexible channel for communication, connection, cooperation, and friendliness.

5. **Block chain:** Block chain stores a list of records as blocks in several databases referred to as chains in a connected network. Block chain applications in libraries, according to Hassan (2021, 29), involve "digital preservation and tracking, library cards, library records keeping, data management, intellectual properties, information literacy, inter-library loan and financial transactions." Similarly, Chingath and Rajenara (2020) suggested that block chains can be used in libraries to protect digital-first sales rights, for digital peer-to-peer sharing, to enhance metadata systems,

to build a network of library connections, and to share partnerships across the organization.

6. **Robotics:** Robotics is a subset of Artificial Intelligence that performs automatic tasks as a robotic technology based on pre-conceived programs or unmediated human control using the artificial intelligence approach. As mentioned by Vysakh and Rajendra (2020), the three parts of robots are "controller, sensor, and mechanical controller (the brain)." Robotics has a direct effect on libraries' information delivery, librarians, and the library environment (Abram 2019), and robotics is increasingly advancing libraries, particularly in developed continents. A good example, as stated by Harada (2019), are Japanese libraries. Harada further presented the types of robots as human pepper robots, guidance robots, koro robots (installed at the entrance of Konan library in 2016), Sofa (questions and answers for library use, learning, and material search), rabbit type library guidance, robot suit hal (interlibrary loan), THOUZER, and Automatic Tracking Book-Transport Robot. Some robots work behind the scenes in libraries, like the technical division of libraries. Examples, as given by Harada, are auto-tracking book tracks and the robot suit Hybrid Assistive Limb. At the same time, some are installed at the library entrance to protect against theft by the users; some for users' conversation; the guidance in library use; there also are interactive robots (a practical example is the University of Electro-Communications).

7. **Artificial Intelligence (AI):** AI is a promising new technology with colossal prospects when applied in libraries. The reasons for AI application in libraries include natural language processing, expert systems, and robotics (Sridevi & Shanmugam, 2017), it being less prone to errors, working 24 hours/7 days, maximizing speed, efficient and effective library resource processing, information retrieval, subject indexing, radio frequency identification, research development, and enhanced services (Omame & Alex-Nmecha, 2020). Thus, AI applications in libraries lead to efficiency of library operations; enhance research visibility and productivity; provide a quick and round-the-clock access to information sources; save space; maximize staff effort; and promote a better user experience. Harada (2019) reported that AI technologies are now used in programming classes and for reading assistance in libraries.

8. **Big Data (BD):** Kamupunga and Chunting (2019) described big data using 3 V's as "volume, velocity, and variety." BD is not processed with the conventional data management tools because of its size. Its scale needs new tactics, architectures, explicates, and algorithms to manage and its embodiments include the amount of data, speed of data creation, processing, and analysis, managing multiple data sets, and reliability of data. For example, Harada-Japan uses BD rapidly.

Garoufallou and Gaitanou (2021) asserted that BD in libraries helps with user experience improvement, user recommendations, user data management, library service satisfaction, innovative decisions, and cost-effectiveness. According to Weining (2020), BD application in libraries enhances information management of books, book enquiries, recycling, and sorting, and enhances service and work efficiency. Big data can be used to develop library resources, improve services, track library materials usage, retrieve information, manage libraries, analyze data, and make data-driven decisions.

9. **Makerspace:** Makerspace is a space created for "people to share creative intelligence, which, by extension, leads to new knowledge" (Idhalama, Ikenwe & Omigie, 2020). Wong and Patridge (2016) asserted that makerspaces are established to invent, create, recreate, explore, tinker, and use different materials to attain specific skills. The space should be attractive and inviting to library users, and it should be goal-driven to satisfy the ever-changing information needs of users.

10. **Smartphones:** Smartphones are technologies that allow people to connect socially with one another. In libraries, they can be used for voice calls, text messaging, interaction among staff, and between staff and the users; information sharing; staff/user training; educational purposes; recording videos, and so on. According to Elogie, Ikenwe, and Idubor (2015), one popular feature of smartphones is its inclusion of social media platforms like YouTube, Facebook, WhatsApp, Twitter, and others.

Dynamic Modern Information Services in University Libraries for Sustainability

Generally, university libraries as information centers are primarily established to provide information services. In this regard, university libraries are at risk of slipping into extinction if they fail to transform into modern information services regarding users' demands and expectations (Flexiprep.com, n.d). Thus, the needs for modern library and information services in universities are driven by increased user expectations and demand; shifts in users' information behavior; availability and access to modern technology; and maintenance and survival as information centers to remain competitive in the conditions of the technological revolution. Anuradha (2018) asserted that additional library services through technology are now offered by university libraries, such as managing and maintaining online reading lists. Longmeier and Murphy (2021) listed university library services like digital and information literacy, data analysis, digitization, scholarly communication, teaching and learning, innovative resources, and technology experience. Other services are:

Document Service Delivery: Document Service Delivery is of paramount importance to university libraries. It focuses on providing information documents to users

based on demand. According to the Library and Information Science Network (2021), Document Service Delivery is the process of locating required documents and supplying them to users in the desired form. There is digital document service delivery in modern libraries, which provides an opportunity to use technology to deliver information documents anytime and anywhere.

Web OPAC: Web OPAC is the current information technology in the modern era. It can simply be defined as a web-enabled catalogue that allows users to search and access specific documents anytime and anywhere. Hence, users can search for any information or document with internet connectivity via Web OPAC in a particular library of their choice. Kumar (2021) opined that web OPAC facilitates "library member's access to OPAC through their search for the ease of borrowing instead of searching through card catalogue." He further identified three requirements of Web OPAC as "web technology, computer reader catalogue and computer networking technology".

Digital library services: Ikenwe, Adetona and Ekpenisi (2020) mentioned that many university libraries introduced digital libraries with the use of ICT. This introduction of digital libraries has brought along so many services such as virtual reference services, e-journal service, e-books service, electronic theses and dissertations, subject gateways, digital archives, institutional repositories, and so on.

Other modern services are OPAC, marketing Services, ICT services, Information Literacy Education, Current awareness services, reference services, information services, referral services, inter-library loan services, internet services, selective dissemination of information, user ICT training services, helpdesk services, web-based services, etc.

Essentials for Dynamic Information Service Sustainability in University Libraries

If libraries are to thrive in the scenario of digital transformation supported by cutting-edge technology, they must plan to adapt to the requirements of modern information services. The following success factors were listed by Osmundsen, Iden, and Bygstad (2018) as essential for achieving digital transformation: supportive organizational culture; developed strategy; developed dynamic capabilities; engaged employees and managers; leveraged knowledge; well-managed transformation activities. Other essentials are:

1. **Information/digital literacy:** Information/digital literacy is the basis for empowerment and self-efficacy, which are crucial for personal success in the face of technological changes. Information/digital literacy focuses on a set of skills to access, evaluate, find, create and use, handle, program, manage, and disseminate digital content. Ikenwe and Anaehobi (2020, 265) opined that information literacy "homogenizes a set of skills nexus to embark on an information-related task, and to function efficiently in the

information/digital environment." Information/digital literacy empowers and underlies the high-level of sustainability of current information services, translated directly or indirectly into the digital transformation. Therefore, the effective use of technologies for information services depends on the level of librarians' information/digital literacy.

2. **Human Resource Development (HRD):** HRD involves support, training, and continuous training. HRD is about enhancing the capabilities of staff through knowledge or skills acquisition, either formal or informal. Examples are mentoring programs, on-the-job training, online programs, and teamwork. The achievement of the objectives required to reposition university libraries to sustain dynamic information services and handle the current inventive digital transformation is crucial for human resource development. In order to handle knowledgeable library customers who are "digital immigrants" or "digital natives," librarians must be prepared to land library activities.

3. **Service Quality (SQ):** In the library context, SQ is viewed from the perspective of library services that satisfy users' expectations, information needs, or demands. According to Partap and Neogi (2021, 35), SQ is the "difference between the outcome of the service and what the customer expected prior to the service." Libraries are service-oriented and must ensure high service quality. Thus, SQ is measured from the perspective of users' needs. Udem, Ikenwe, and Ugwuamoke (2020) asserted that the better the users' needs are met, the more satisfied they become with the services, and users' satisfaction is an indicator of value and quality services in libraries**.** Additionally, according to Ikenwe and Adegbilero-Iwari (2021), it is crucial for libraries to provide users with pertinent information sources and services in order to meet their information needs. Even if the users' information needs are partially or completely met, they may not be satisfied if the services provided are not pertinent. Quality, as noted by Partap and Neogi (2021, p. 6), is anchored in library activities, practices, and beliefs. This relates to the five laws proposed by the renowned Indian librarian Ranganathan.

4. **Good Public Relations and advocacy.** Public relations are a series of carefully planned efforts to establish a positive reputation, sustain awareness, and better understanding between libraries and the public. Advocacy, on the other hand, is the act of persuasion for more library support to enhance better information service delivery to the public. Some tactics that can be used are outreach, branding, marketing of information services, branding and special programs like news talks on television, radio, or any electronic medium. Some public relations media are library websites, public lectures, direct mail, social media, electronic media, notice boards, spoken words, exhibitions, and display.

5. **Physical facilities and Equipment:** Facilities and equipment like modern chairs and tables, computers, printers, internet connectivity, cables, high power UPS, servers, scanners, routers, hubs, switches, inverters, power supplies, and software are very essential for dynamic information service sustainability in university libraries.

6. **Financing:** Financing is crucial and the bedrock of achieving the afore-mentioned essentials for dynamic information service provision. Financing (money) is needed for the acquisition of modern facilities and equipment (hardware and software), relevant information resources (both print and electronic resources), training of staff, and hiring technical experts, amongst others.

Conclusion and Recommendation

Libraries globally, and particularly in developing countries, must be re-positioned in this era of digital transformation through the adoption of technology to offer up-to-date information services to ensure sustainability and to retain their relevance to the public. There is a great need for innovative digital transformation in university libraries to sustain modern information services as well as to increase the efficacy of information use, as their mandate is to leverage the digital or technology systems.

The researchers recommend the following:

- More sophisticated technologies should be used in university libraries.
- University libraries in developing countries like Nigeria need more financing to migrate fully into the opportunities introduced by digital technologies. Thus, university management should work hand in hand with libraries to enable them to fully connect to opportunities of the digital era.
- There is room for university libraries to re-assess their priorities in the digital transformation to sustain modern information services.
- Continuous human resource development is necessary for the library staff to be equipped with appropriate digital competencies useful in the digital context.

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Innowacyjna transformacja cyfrowa na rzecz zrównoważonego rozwoju dynamicznych usług informacyjnych w bibliotekach uniwersyteckich w Nigerii

Dr Iguehi Joy Ikenwe jest starszym wykładowcą i pracownikiem badawczym w Instytucie Bibliotekoznawstwa i Informacji Naukowej Uniwersytetu Ambrosego Alli, Ekpoma, stan Edo (Nigeria). Posiada tytuł licencjata w zakresie Bibliotekoznawstwa i Informacji Naukowej (Uniwersytet Stanowy Delta, Abraka), tytuł magistra w zakresie Bibliotekoznawstwa i Informacji Naukowej (Uniwersytet Ibadan) oraz doktorat (Uniwersytet Nnamdi Azikiwe w Awka). Jest dyplomowanym bibliotekarzem przy Radzie Rejestracji Bibliotek Nigerii i członkiem Stowarzyszenia Bibliotek Nigerii. Napisała wiele rozdziałów książek i artykułów w renomowanych czasopismach krajowych i międzynarodowych oraz wygłaszała referaty na konferencjach krajowych i międzynarodowych. Jej zainteresowania to: informacja/umiejętność cyfrowa, biblioteki cyfrowe, zachowanie informacyjne, technologie informacyjno-komunikacyjne (ICTs), zarządzanie bibliotekami/informacjami, zarządzanie wiedzą i nowe technologie w bibliotekach.

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informacyjno-komunikacyjne (ICTs) w bibliotekach, alfabetyzację informacyjną/cyfrową, media społecznościowe i biblioteki cyfrowe.

Słowa kluczowe: cyfrowa transformacja; dynamiczne usługi informacyjne; usługi biblioteczne; zrównoważony rozwój; biblioteki uniwersyteckie; Nigeria

Streszczenie. Cel: Technologie zapoczątkowały znaczącą innowacyjną transformację cyfrową w celu utrzymania dynamicznych usług informacyjnych w nowoczesnych bibliotekach. To skłoniło do oceny innowacyjnej transformacji cyfrowej dla dynamicznego zrównoważenia usług informacyjnych w bibliotekach uniwersyteckich w Nigerii. W szczególności zbadano kwestie: transformacji cyfrowej uniwersytetów, innowacyjną transformację cyfrową w bibliotekach uniwersyteckich, dynamiczne nowoczesne usługi informacyjne w bibliotekach uniwersyteckich pod kątem zrównoważonego rozwoju oraz podstawy dynamicznego zrównoważonego rozwoju usług informacyjnych w bibliotekach uniwersyteckich.

Wniosek: Biblioteki na całym świecie, a szczególnie w krajach rozwijających się, muszą ulec reformie w erze transformacji cyfrowej ze względu na przyjęcie technologii, aby oferować cenne usługi informacyjne dla ich utrzymania i zachować ich znaczenie w życiu publicznym. Co więcej, istnieje duże zapotrzebowanie na innowacyjną transformację cyfrową w bibliotekach, aby utrzymać nowoczesne usługi informacyjne, a także zwiększyć ich skuteczność w wykorzystaniu informacji w ramach ich mandatu do wykorzystania systemów technologii cyfrowych. W związku z tym badanie zaleciło stosowanie w bibliotekach uniwersyteckich bardziej zaawansowanych technologii. Biblioteki uniwersyteckie w krajach rozwijających się, takich jak Nigeria, potrzebują więcej funduszy, aby w pełni wykorzystać możliwości oferowane przez technologie cyfrowe. W związku z tym kierownictwo uczelni powinno współpracować z bibliotekami, aby umożliwić im pełne wykorzystanie możliwości ery cyfrowej. Ciągły rozwój zasobów ludzkich jest niezbędny, aby wyposażyć uczelnie w odpowiednie kompetencje przydatne w kontekście transformacji cyfrowej.

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Die innovative digitale Transformation zur nachhaltigen Entwicklung der dynamischen Informationsdienste in den Universitätsbibliotheken in Nigeria

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Folia
niensia

Interesse umfasst die Informations- und Kommunikationstechnologien (ICTs) in den Biblio-
theken, die Informations-/Digitalalphabetisierung, soziale Medien und Digitalbibliotheken.

Stichworte: digitale Transformation; dynamische Informationsdienste; Bibliotheksdienste;
ausgeglichene Entwicklung; Universitätsbibliotheken; Nigeria

Zusammenfassung. Ziel: Die Technologien begannen eine bedeutende innovative digitale
Transformation genau mit dem Ziel, die dynamischen Informationsdienste in den modernen
Bibliotheken aufrechtzuerhalten. Das führte dazu, dass die innovative digitale Transformation
zur dynamischen Ausgleichung von Informationsdiensten in den Universitätsbibliotheken
in Nigeria bewertet werden musste. Man untersuchte vor allem die Fragen der digitalen
Transformation, den Zusammenhang der Universitäten und der digitalen Transformation,
der innovativen digitalen Transformation in den Universitätsbibliotheken im Hinblick auf
die ausgeglichene Entwicklung und die Grundlagen einer dynamischen ausgeglichenen
Entwicklung der Informationsdienste in den Universitätsbibliotheken.

Schlussfolgerung: Die weltweiten Bibliotheken, und zwar insbesondere in den sich ent-
wickelnden Ländern, müssen sich in der Zeit der digitalen Transformation ändern, um
die wertvollsten Digitaldienste zu bieten und ihre Bedeutung im öffentlichen Leben zu
bewahren. Es gibt eine große Nachfrage nach einer innovativen digitalen Transformation in
den Bibliotheken, wodurch die modernen Informationsdienste aufrechtzuerhalten sind und
ihre Effektivität im Bereich der Informationsnutzung im Rahmen der Systeme von digitalen
Technologien verbessert werden kann. Aus diesem Grund empfahl die Untersuchung, die
mehr fortgeschrittenen Technologien in den Universitätsbibliotheken anzuwenden. Diese
Bibliotheken in den sich entwickelnden Ländern wie Nigeria brauchen mehrere finanzielle
Mittel, um die Möglichkeiten, die sich vonseiten der digitalen Technologien bieten, vollständig
zu nutzen. Die Führung der Hochschulen sollte mit den Bibliotheken zusammenarbeiten, um
ihnen die vollständige Nutzung der Digitalepoche zu ermöglichen. Die ständige Entwicklung
der Humanressourcen ist notwendig, um die Hochschulen mit den entsprechenden digitalen
Kompetenzen im Bereich der digitalen Medien auszustatten.