

CHANGING NATURE OF INFORMATION TECHNOLOGY AND INFORMATION WORKERS' ADAPTABILITY TOWARDS SATISFYING USERS' EXPERIENCE

By

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Abstract

The emergence of digital technologies as a primary means of communication has transformed how information is managed and disseminated, leading to changes like information technology (IT) in the world of work. The paper also discusses the importance of digital literacy skills, user experience or user-centric design, the need for training and development opportunities to support librarians' adaptability to IT, and the need for undergraduate students to develop appropriate skills to improve their employability. This paper uses a desktop literature review to explore the changing nature of IT, users' experience and satisfaction with the use of IT, as well as the adaptability of information workers towards IT to satisfy users' information needs. Librarians play a critical role in providing information services to users and must continuously adapt their skills to meet the growing demands of users in the digital age.

Keywords: Information Technology (IT); Information Workers; Users' Needs; IT Adaptability and User-Centric Design.

Introduction

In our today's 21st century world, technology has given rise to cyber culture, which has influenced the way we do things. The advent of modern communication technology has lessened barriers to human interaction and has widened the horizon for human progress. Information Technology (IT) has actually changed the way we do things for the better. Information technology skills and tools are very dynamic. They change/improve at an alarming rate. New versions of older technologies are emerging on a daily basis. For instance, the typewriter has given way to computer, the telephone landline has lost its place to mobile telephone, the post office has given way to email and the library is fast changing into the virtual library (Odachi, 2021). She contended that the rapid technological changes in the area of information technology

have been brought about by the contributions of telecommunications, computers and micro-electronics.

Information technology has actually made the world a global village. Through the satellite, networks have linked users in all parts of the world together. This has enabled them to communicate with each other easily. With telecommunication technologies, large volumes and varieties of information can be carried over long distances. People and organizations need information for effective planning. Today, the world is being swept by “info mania” - the belief that the person who possesses or has access to most information has an advantage over the person who has little or no access to it (Mbam and Odachi, 2014).

Information technology skills are needed in all fields of human endeavor. In advanced countries both large and medium scale industries heavily rely on cloud IT infrastructure. The library is no exception in the use of IT skills to drive its operation. According to Usman and Goperkumar (2018), the rapid development of IT is bringing about unpredictable changes in the field of library and information management. The leap from conventional manual library management system, to DC-ROM databases (Omaji, 1994a), and to electronic library management has paved way for great changes in the very structure and manner of library profession.

With all these information technology facilities and innovation put in place nowadays, information users, as expected, are supposed to access information without wasting any time. The above statement is true in advanced countries. In short, IT tools and skills have enhanced employment and employability situation in these countries by creating a new breed of IT workers. But can this be the case in Nigeria? Why is it that the use of IT skills to improve our everyday challenges does not seem to work in Nigeria in almost all sectors of the economy?

What can university libraries and information workers do to remedy the situation with respect to employment and employability of highly skilled Library and Information Science (LIS) undergraduates? What are the factors that influence satisfactory library user experience? These are the questions that this research tends to answer. A preliminary desktop research is suggesting that the gap may be in the ability to exploit UX knowledge to provide innovative user-centered services.

The Changing Nature of Information Technology Integration in Library Services

The rapid advancement of technology has transformed the nature of IT. Today's IT systems are more complex and sophisticated, and they require specialized skills to manage and maintain. The emergence of cloud computing, big data, and artificial intelligence has further increased the complexity of IT systems, making it challenging for information workers to keep up with the changing technology landscape. As new technology emerges, the usage of these technologies also presents challenges, particularly in ensuring the security and privacy of user data. The increasing use of mobile devices has also led to changes in the way people access and consumes information, with users expecting to be able to access information on the go (Gartner, 2018). In response to these changes, organizations, including libraries, need to adapt their services and systems to meet the changing needs of users by becoming user-centric.

The proliferation of mobile devices and social media has changed the way users interact with IT. This generation of users expects instant access to information. They want information immediately from anywhere and at any time, which puts additional pressure on information workers and librarians to not just provide the necessary infrastructure, but the expertise to meet the variety of needs in various formats.

With the introduction and implementation of Information and Communication Technology (ICT) in various library activities, the majority of the transactional and other important services are done digitally or electronically by the Library and Information Science (LIS) professionals (Kamble, 2022). With the advent and implementation of different IT techniques in various walks of life, library of different types also found it useful as driving force to serve users' need, bringing efficiency in transactions (acquiring, organization, storing, retrieving, and dissemination of information), and security of its environment.

In the library world, IT has revolutionized the way information is accessed and shared. Libraries are no longer places for the storage of physical books, but now provide access to digital resources through online databases and other electronic resources. Libraries have also adopted web 2.0 technologies, such as social media platforms, to engage with their users (Johnson et al., 2015). However, the changes in IT have also brought about new challenges, particularly in meeting users' information needs and expectations.

What is User Experience (UX)?

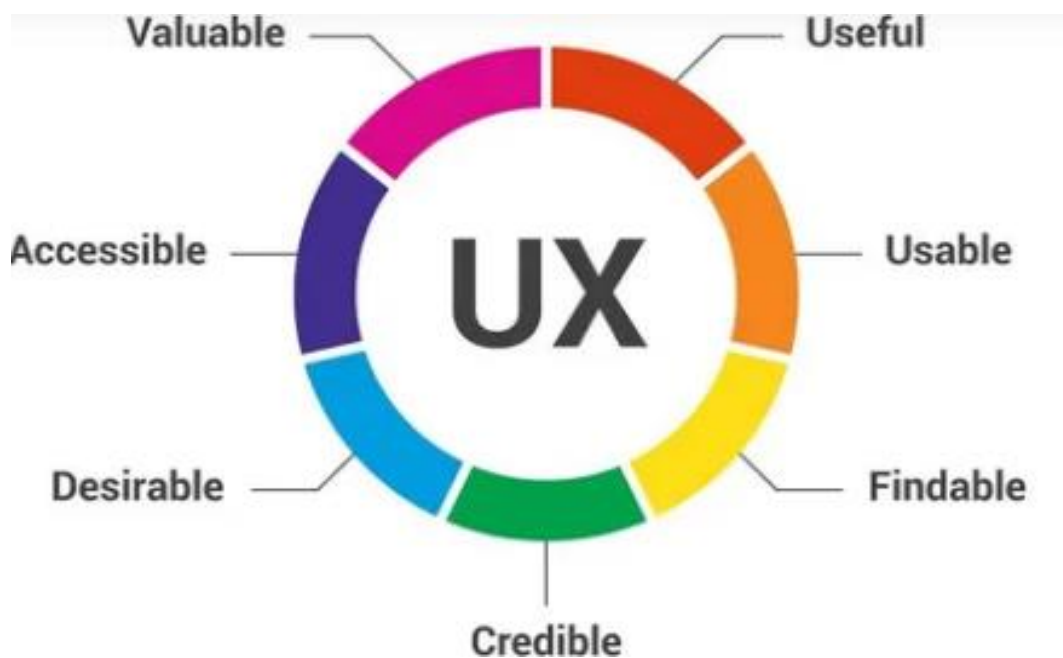
Norman (2005), defined user experience (UX) as encompassing all aspects of the end-user's interaction with the company, its services, and its products. User Experience is also viewed as the overall experience involving emotions, thoughts, perception, reactions felt by the user and thinks by his/her usability of that product or service (Tiwari and Sharma, 2021.). The International Standard Organisation (2010) views user experience as the users' perceptions and responses that result from the use and/or anticipated use of a system, product or service. Furthermore, user experience can be described as a consequence of brand image, presentation, functionality, system performance, interactive behaviour, and assistive capabilities of a system, product or service. It also results from the user's internal and physical state resulting from prior

experiences, attitudes, skills, abilities and personality; and from the context of use (International Standard Organisation, 2010).

Gylje (2022) identified components of UX to include usability, Human-Centered Design (HCD), user interface (UI), Design Thinking, and Service Design. These concepts are further described below in the factors that influence UE. Research has shown that users' initial trust in a technology has a significant impact on their subsequent behavior (Chen & Barnes, 2007). Additionally, UE with a technology can have a significant impact on their satisfaction levels. User experience is critical to the success or failure of a product in the market with implication for user satisfaction. It becomes important to develop some initial knowledge of UE components.

The 7 Factors that Influence User Experience

Peter Morville a pioneer in the UX field identified 7 factors that influence user experience as demonstrated in the diagram below.



Source: <https://www.interaction-design.org/literature/article/the-7-factors-that-influence-user-experience>

Library user experience and satisfaction have attracted a lot of attention in recent times but it is also becoming clear the need to define user experience as it means different things to different people. It is scenarios like this that UX can help to inform, and lead information workers to develop better user-centric solutions services, and practices.

Information Workers and Librarians' Adaptability To It

The 21st century is the millennium of information. In this century, the meaning of knowledge has changed. Knowledge is no longer what is stored in the minds of experts, represented in books and classified in disciplines. It is now thought of as being like a form of energy, as a system of networks and flows – something that does things or makes things happen. In the knowledge age, change not stability is a given. Knowledge workers need to be able to locate, assess and represent new information quickly. They need to communicate this to others. They need to be adaptable, creative and innovative and be able to understand things as a system or big picture level.

Tennant (1999) identifies important personal professional traits to include, the capacity to learn constantly and quickly; flexibility; innate skepticism; propensity to take risks; abiding public service perspective; good interpersonal skills; skill at enabling and fostering change; and capacity for and desire to work independently. Omekwu (2003) mentions basic knowledge of computers and their capabilities; Competency with search engines; internet facilities; e-mail; internet navigator tools, web browsers and web file formats; database software; internet development and management know-how. Also, some of the 21st century skills according to

Krishnan (2011) include critical thinking and problem solving, communication, collaboration, and creativity and innovation, in media literacy, ICT literacy, flexibility and adaptability.

By implication, 21st century librarians must learn to be the gateway to knowledge by represent or advocating for the service users by partnering with product producers, service designers, critical stakeholders in their organizations and showcase the outcome of their services.

The 21st century library patrons no longer depend on the academic library as an essential part of their learning and research rather they are beginning to see the library as one of those facilities a university or college should have. Libraries must of a necessity strive to retain their patrons and be at the peak of providing information sources that suit the demands of present-day information seekers. There is a need therefore to ensure that the academic library continues to soar high in information generation, provision, and dissemination.

The librarians must learn to follow the information user wherever they are and become relevant at the point of information need by creating collaborative opportunities using Facebook, online book clubs, social media, the internet, WhatsApp, websites, Instagram, TikTok, etc, The library cannot function effectively without the librarians who are the human resources that determine effectiveness in service delivery. However, the notion of a library being a building must change to meet the new type of information users. It is against this background that this article aims to suggest to 21st-century library professionals a useful UX Framework that could improve library services.

Adaptability is an essential skill for information workers, and it involves the ability to learn new technologies and processes quickly, identify problems, and find solutions.

Information workers, including librarians, play a crucial role in ensuring that users' information needs are met. To do this effectively, information workers need to be adaptable and keep up with

the changing nature of IT. There is need for Librarians to be proficient in using electronic resources, including online databases, e-journals, and e-books, to meet the growing demands of users. They must also be familiar with emerging technologies such as social media, mobile devices, and cloud computing, which have become important channels for accessing and sharing information.

Interestingly, as these adaptations are made and problems are solved, more jobs would be created. In addition, librarians must have excellent digital literacy skills to support users in navigating complex information systems and to facilitate information retrieval. Digital literacy involves the ability to use technology to find, evaluate, and use information effectively.

From literatures reviewed, the researchers have discovered the Librarians, who are information workers have responded to the changing nature of IT by acquiring new skills and competencies. For instance, librarians have acquired data management skills to manage and preserve digital collections, as well as to support research data management (National Information Standards Organization, 2018). Librarians have also embraced web 2.0 technologies, such as social media platforms, to engage with users and promote library services (Johnson et al., 2015). Additionally, librarians have adopted new tools and systems to improve user experiences, such as the adoption of discovery tools and integrated library systems (Breeding, 2017). This is in line with Ogbomo, Ebhonu and Etagbedavwe (2023) who noted that Library Management Software not only helps librarians to effectively manage their library collection, gives users self-service opportunity to navigate and access a library's collection independently, but also provides libraries with a user-friendly device to accommodate the evolving needs of library patrons. Notice the emphasis on users.

Furthermore, information workers and librarians must continue to bring the changing needs and preferences of their users when designing and delivering information and IT related services. User-centric design and development approach can improve the usability and effectiveness of information services and enhance users' experience and satisfaction.

Recommendations

There is the need to enhance digital literacy skills among library workers and library users alike. Training and development opportunities should be created to support librarians' adaptability to IT. Librarians need to develop adequate technical know-how in the collection of feedback from library users and be able to utilize such user-generated data to ideate and implement library service innovation. In the same vein, there is a need for undergraduate students to develop appropriate skills for improving their own employability.

User experience or user-centric design should be institutionalized in the teaching curriculum to enhance better understanding and implementation in the place of work. To that end, Admiralty University of Nigeria plans to establish a *Centre of Excellence for User Experience* as a way of bridging the skills gap of information workers in the area. The Centre would foster linkages and partnerships for the development of current knowledge and skills in UX, design thinking, and service innovation, which would enhance employment and employability of information workers in the 21st-century Nigeria.

Library professionals need to acquire new information skills and knowledge as a matter of urgency. The requirement for IT skills in conjunction with balanced combination of knowledge, skills, aptitudes, and personal qualities include: hardware, familiarity with software (not only library software), critical thinking when evaluating software, data communication and

networking, internet basics and tools, electronic information services flexibility and ability to adapt to complex user service changes.

The 21st century librarian will have to be armed with competent skills that will enhance the provision of effective library services to meet client's changing information needs.

Conclusion

This deeper interest from universities in student experience is naturally in part monetary, due to competition to fill university places, but a shift in societal expectations of service has also played its part. The choices that new technology, online retail and social media have given us have markedly increased all of our expectations, not only of how much better a service should be and the range of products available to us, but also of our ability to influence and interact with service providers. It is more than just a shift from writing letters of complaint to writing reviews on TripAdvisor or sending disgruntled tweets; it is a fundamental change in how individuals perceive their power and how they expect to be treated. The opportunity to have one's voice heard is now actively anticipated, as is the immediacy and seamlessness of the platform through which one can do that.

Today's users are incredibly complex. Their information-seeking behaviours have changed, and their engagement with and perception of our services are vastly different. By adopting UX research techniques (by which we chiefly mean ethnography, usability, and service design) we can uncover the sort of users our libraries have today: users who do things in ways that we do not understand, that we find frustrating, or even condemn. The crucial point is that we are not our users, and just because they carry out tasks in a way that is alien to us does not mean that their way is wrong or broken. Instead, we need to see their approach as an opportunity to learn and discover. A user choosing to sit and photograph a 300-page reference only book with a

smartphone, thereby effectively creating their own unwieldy e-book, might seem ludicrous to us when they alternatively could sit and read it in the library or photocopy it (within legal limits, naturally). However, it is a scenario that bears some analysis and would reveal significant issues around convenience and preferred study environments were follow-up explorations to take place.

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