Prospects and Challenges of Web 3.0 Technologies Application in the Provision of Library Services

Promise Ifeoma Ilo

University Library, Pamo University of Medical Sciences, Port Harcourt, Nigeria

Christopher Nkiko

Elizade University, Nigeria

Cyprian Ifeanyi Ugwu

University of Nigeria, Nsukka, Nigeria & University of South Africa, South Africa

Justina Ngozi Ekere

University of Nigeria, Nsukka, Nigeria

Roland Izuagbe

https://orcid.org/0000-0002-1697-0242

Covenant University, Nigeria

Michael O. Fagbohun

https://orcid.org/0000-0002-3114-3333

Covenant University, Nigeria

INTRODUCTION

Information and Communication Technologies (ICTs) have continued to redefine and transform the way and manner library and information services are conceived, perceived, offered and used. While it was a subject of debate that the attendant effects of the emergence of the internet and web technologies would mean the devaluation of library and information services and perhaps the demise of the profession, events shaping the information sector have proved that like technology, the field of librarianship is adaptive and evolving. Definitions, concepts, theories and practices once considered "core" or "modern" or "of international best practice" have become obsolete, inadequate and unacceptable due the various paradigms swings that have greeted the profession overtime (Izuagbe, 2017). This further strengthens the argument that the library profession is moving from "building collections" and owning them forever to "renting access" and having 'connections' (Hielmcrone, Maiello, Bainton & Bonnet, 2012).

The wide acceptance and adoption of technological innovations in the 21st century libraries is placing emphasis on the application of web technologies due to speed and accuracy (Govanakoppa & Kumara, 2014). Accordingly, libraries that are currently blazing the digital trail are striving towards web services. A web service is a modern application of computing technology aimed at the facilitation of exchange of communication between or among interconnected computers that is internet-based (Amrohi, Garg & Chauhan, 2015). While this service best describe the principles of web 1.0 and 2.0 respectively, it omits

the unification of these technologies and users for an all-inclusive problem-solving and knowledge-creation efforts which web 3.0 entails. It is on this note the article sets out to examine the prospects and challenges of web 3.0 application in the provision of libraries services. Specifically, the paper gives insights into the principles and features of the technology, explore areas of applicability relative to library services, highlight the prospects of the technology as well as its challenges within the precincts of library services.

BACKGROUND

The sophistication and rapid dynamism that characterize the ICT have necessitated the need to leverage on latest discoveries in searching, tracking, accessing, disseminating and sharing from the global information network as well as connecting with people and communities for mutual benefits. The World Wide Web has made possible the instant linkage of information resources and people on the cyberspace. It began with the advent of web 1.0. This is a system of interlinked, hypertext documents through the internet. It was a read only platform having focus on one way communication. Users were allowed to search for information and read same with little interactivity and contribution to content. It was aimed at providing online presence for requisite information through websites (Kadyan & Singroha, 2014).

The improvement over this phase resulted in the emergence of web 2.0 in 2004. This version foisted a truly virtual global community where users could share, interact, and collaborate with others on the social media platform. This gave birth to networking sites such as Facebook, YouTube, Blogs, Wikis, Flicker, Twitter and WhatsApp. As a result, the technology has been described as a veritable tool for internet marketing of product and services (Ekwueme & Ilo, 2019). Following in the rapidity of the heightened developments in the programming world, John Markoff mooted on the idea of Web 3.0 in 2006 (Morris, 2011). A web 3.0 is a centric delivery pattern in which relevant data are provided to end users on different platforms and devices in a most usable manner. It has the ability to aggregate information from multiple sources and establishing semantic relationship between all available contents to ensure seamless accessibility, searchability, availability, and usability. It allows interoperability with other devices such as tablets, smartphones, and desktop computers, iPads. It also supports offline use or consumption of downloaded data, therefore making it possible for the exploitation of information in a low bandwidth conditions.

This is made possible by the use of web cookie and client side storage facility present on client device. Kadyan and Singroha (2014) summarized the features of web 3.0 as constituting: intelligence, interoperability, personalization, and virtualization. Web 4.0 also known as symbiotic web aims at interaction between human and machines. It is an open, linked, and intelligent web. It is the basis for the Internet Of Things where smart appliances connected to the internet will be able to perform tasks without human involvement based on the use of radio frequency identification tags (RFID) (Kang & Yong, 2007; Kodyan & Singroh, 2014; Letts, 2018)

The need for the application of web 3.0 technologies in the provision of library services is premised on the ever increasing effect of emerging technologies on education and the growing demand on the capacity of librarians as well as the need for higher strategies in meeting the sophisticated expectations of the ICT-savvy clientele of the 21st century. The present library patrons are desirous of federated library databases that collocate relevant contents from multifaceted sources and facilitate interactive information exchange, scalability, and collaboration on the web. The information seeking behaviour of an average library patron has been revolutionalized by the limitless scope of the Internet and the World Wide Web

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