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"Innovative Information Management : Towards a
Reading Nation"**



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A BRIGHT FUTURE FOR THE LIBRARY AND LIBRARY PROFESSIONAL

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ABSTRACT:

The purpose of this paper is to explore the future vision of library and librarians in the new technology demand referring new user needs, new skills for staff and services offered. The literature reveals that transformation of new technologies giving an implication towards library staff, library services and future user demands. It also shows that communities are still relying on libraries for a variety of services and activities. Hence, the needs for librarians to manage libraries and help users to search information are still relevant. The deliberations in this paper are surrounded by conceptualization of what the library products, services and librarians' roles will be in future libraries. Further studies are needed to investigate the opportunities and possibility for professional librarians and library to enhance their roles facing new era IR 4.0.

Keywords: *Digital Library, Embedded Librarian, Digital Marketing, Digital Resources, Collaboration*

1.0 INTRODUCTION

Modern and advanced technology greatly influences the dependence of users on libraries and librarians where users can easily get the information via online technology such as internet, Google, Yahoo etc. However, libraries should find ways to maintain their role as an information provider and reference services. There is research conducted to investigate the library and librarian's role in future. Yaman and Kultuca (2012) found that it is necessary for universities to adopt the concept of e-library and to take electronic librarianship into consideration while restructuring the services provided by universities via their libraries.

The invention of information technology (IT) and its integration with communication technologies subsequently led to information and communication technologies (ICTs) which have had a significant influence on the evolution of the digital world of modern libraries.

The introduction of digital libraries is a wise move to strengthen the existence of libraries in line with the 4.0 Industrial Revolution. Industry 4.0 stands for the fourth

industrial revolution defined as a new level of organization and control over the entire value chain of products. It is aimed at the increasingly requirements of individual customers (Vaidya et al., 2018). Hussain (2020), mentioned that the Fourth Industrial revolution changing how we live, work and communicate, for examples self-driving cars, online shopping, drone delivery services etc. Libraries and Librarians should also abreast itself with the latest technologies to provide optimal services in minimum time in data tsunami to survive.

Cherinet (2018) has revealed that some of the roles and skills needed by librarians are evolutionary, while others are transformative, but the overarching future role of librarians is to turn the knowledge revolution into community (to create an educated society) by re-socializing and shaping young generations. The outcome also suggested that the synergy of passion, experience, expertise and cultural intelligence has brought together librarians who match the future environment of the library.

2.0 LITERATURE REVIEW

Referring to Cornell University Library (2020), libraries are not a place to read books and journals but it also houses advanced electronic resources, including the Internet, digital library collections, remote access to a wide range of technology and instruction to support the teaching, learning and research activities. Most libraries offer services that focused on customer services (connecting users to the information they need), technical services (ordering, cataloging, and preparing materials), computers' services (maintain library databases, software programming, web page design) and administrative services (manage the library and services, negotiate contracts with vendors, supervise library employees, prepare budgets)

According to Meriam-Webster (2020) librarian is a specialist in the care or management of a library. A librarian is a professional trained in the field of information science. Normally, librarians work at a school, public library, university, colleges or even a government institution. Librarian serves and helps users that need the informational resources and services and at the same time, managing and organizing library resources. Librarians also responsible for a variety format of information, from the classic management of books and periodicals to more modern responsibilities involving audio and video recordings, as well as digital resources.

Digital libraries are organizations that provide the resources, including the specialized staff, to select, structure, offer intellectual access to, interpret, distribute, preserve the integrity of, and ensure the persistence over time of collections of digital works so that they are readily and economically available for use by a defined community or set of communities (Digital Library Federation, 1998).

Singh (2012) described digital library is a space which collection are stored in digital formats (as opposed to print, microform, or other media) and accessible by computers where digital content may be stored locally, or accessed remotely via computer networks. Ilahi et al. (2019) described the digital library is an information technology that is designed as a digital knowledge resources, or are often mentioned a medium that stores data on a large scale and is collaborated with the information management devices capable of displaying the data or information required by the user.

Therefore, digital libraries need to maintain, store and preserve in ways not envisioned in traditional library set-up (Baker and Evans, 2013). Digital library elements may consist the conversion of existing services into digital form or the creation of new services, for example online delivery, portals, personalized services, online teaching

modules, online reference, digitized collections or electronic publishing (Poll, 2005, cited in Baker and Evans, 2013).

According to Nagarkar and Murari (2010), embedded librarians are assigned to teach the user of research skills and wherever instruction is needed. There are three common categories of users which are in university, users are in the classroom or online classroom, meanwhile in business they are in the research lab or office and in hospitals, they are with doctors and nurses.

As mentioned by Cox (2020) librarians can help faculty members create course content, co-teach, provide research consultations, hold virtual office hours and assist in the identification and linking of course content. This skill set will help the librarians to work closely with faculty and at the same time build strong collaboration. In addition, it will help promote the library services and strengthen its visibility while users gain information literacy skill.

Bell and Shank (2004) defined the 'blended librarian' as an academic librarian who combines the traditional skill set of librarianship with the knowledge technologist's hardware/software skills, and the instructional or educational designer's ability to apply technology appropriately within the teaching-learning process.

3.0 METHODOLOGY

This section justifies the method applied in producing the paper. This paper uses conceptual paper so that literature review technique is chosen. Applying literature review technique, this paper retrieves several authentic databases subscribed by UiTM namely Web of Science, Emerald, Science Direct, Ebsco, Proquest and Google Scholar. The keyword for search were "digital library", "library future", "embedded librarian", "digital marketing" and etc. The search using that keyword returns 150 related articles, in total. However, about 32 articles were used. Those papers offer the theme/subject/idea related to and conforms to ideas presented in this paper.

4.0 FINDINGS AND DISCUSSION

Embedded Librarianship

In general, library plays an important role to support community in teaching, learning and research activities. Without library as an information center, it's hard for the community to search information and resources that are steadily valid and relevant. Nowadays, most libraries especially academic libraries offer online services to meet their users' demands.

As mentioned by Mwaniki (2017) to cater to technological advances, librarians need to take a critical check out of the conventional library services and what they entail, then analyses the digital library and therefore the modifications or enhancements that are developed and ultimately, project what's in situ for the longer-term library system.

O'Connor (2013) mentioned that leadership is always important but it is essential times of rapid and even fundamental to change. They are the people who will help the library achieve its purpose; but they can also be the force resisting change with potentially fragmentation of clear directions. So, it is important to engage our staff in why change is important, to embed the staff in the process of change, to openly and transparently infuse the process with their own ideas. Staff is invariably responsive to this kind of inclusion. The library organisation for the longer term requires not only professional librarian expertise

but professional expertise from other disciplines. These disciplines include, database managers, web designers, graphic artists and marketing professionals.

Farooq et al. (2016) in their research found that there is a significant gap between academic librarians' expectations of their current professional and personal competencies compared to required skills where there are not satisfied with their present level of skills. The competencies include managing information resources, personal competencies, managing information organizations, applying tools and technologies and managing information services in their routine as an academic librarian. Withal, Pakistan's academic librarians are aware of the need to transform in line with digital technology and take the opportunity to improve their potential and credibility as well it's useful for the universities management in planning the requirement, management and training of their librarians on the basis of required skills.

Previous study of Miller et al. (2020) have identified that reflective practice is a technique promoted as a strategy to enhance professional performance and to develop expertise. Intentional reflection on work situations can lead to improved understanding of a specific situation, identify strategies for similar situations in the future, and uncover assumptions that hinder service to patrons. They also introduce the use of intentional reflection at work: what it is, how it helps, and how it can be applied in librarianship. The reflective practice comes with variety of formats that can be used with a model, combination of models, or no model depending on organization requirement.

Library Science professionals ultimately have to upgrade the skill and knowledge in order to deal with technical change user demands. In order to achieve this, the existing curriculum of library science needs to be modified with the introduction of new subjects such as business and data analytics, psychology and entrepreneurship, aside from domain knowledge and soft skills. There is also a need for an industry strategic partner to collaborate in hands-on research and learning.

There is no denying that academic libraries have undergone many changes due to the increasing use of digital information as well as changes in user demands. To extent, most of users relying on Google, Google Scholar and other search engines on the Internet when they search for information rather than refer to library resources or reference librarians and this number increasingly decreased. This situation drives Bandyopadhyay and Boyd-Byrnes (2016) investigates the continuing need for mediated reference services in the technology-driven environment in academic libraries. Mediated reference services are required to succeed in bent remotely located users, distance learners and library-shy population where academic libraries are providing e-mail reference service and VRs using chat, IMS, texting, video conferencing software and social networking sites to get connected with the users.

Digital Library

Empowerment of digital libraries is also important in order to sustain the library existence. In line with the government's aim to make the country a hub for world education, libraries need to transform library services through increased efficiency and effectiveness of integrated services to the people (Malaysia Education Blueprint 2015-2025). Focus on improving digital implementation, offering more innovative services and expanding services that are readily available to the public.

For example, PNM Strategic Planning 2019-2023 also highlighted that strengthen of digital library as one of their core strategic planning. PNM's intention is to transform library services through increasing the efficiency and effectiveness of integrated services to the people. Therefore, the focus is on strengthening the implementation of digital libraries, providing more innovative services and expanding services that are easily accessible to the people. This strategy can be accomplished by enhancing the national information hub, promoting the country's digital content and boosting the National Depository System (SDK) as the National Clearing House.

Ilahi, R. et al. (2019) in their paper found that the implementation of the Digital Library is very helpful education: to get information quickly and dynamically, students can learn and create a digital library, assist in the process of learned teaching, and the university can help in getting catalogues, references and information about research. Apart from that, the implementation of the Digital Library vastly benefits the public in access information more quickly, to retain the cultural and historical relics that can be referred and used in the future while the company can create a library and provides information on its products.

Generally, in the virtual space, libraries mostly provide e-books, audiobooks, podcasts, online courses and databases, as well as online community space through social media platforms. The New York Public Library has now revealed that it would supply digital video rentals, following the Boston, Los Angeles, and San Francisco libraries.

Yalman and Kutluca (2012) stated that providing sources of information is more important than libraries physical. However, considering the increasing capacities of universities, the difficulties that libraries face with are rising day by day. This situation is a sign that universities needs to consider by adopting the concept of e-library, electronic librarianship while restricting the resources and services provided by universities via their libraries. Meaning that, there are hopes for libraries to stay relevant in the future by improving and enhancing the library resources and services. E-library is one of solution that can help the library maintain its existence and to make it successful, support and cooperation from top management are needed. The library must determine of e-library interface features, differences, ease of use, comprehensibility for users and therefore the advantages and drawbacks of the system within the processes of e-library designing. Hopefully, with the implementation of e-library, it will able to improve the quality of education and increase the use of e-library among the students.

According to Mikkelsen and McMunn-letangco (2015), the digital library must work collaboratively with faculty staff and pupils to support scholarly publishing and open access repositories for their outcomes. Furthermore, future libraries shall encrypt anti-plagiarism software to monitor the academic research of their students to avoid any plagiarism or replication of research work. The digital library must be configured with mobile websites where the library audience could reach the online public access catalogue via device-optimized websites (such as instant messenger to library members and blogs).

Collaboration

Library itself, have a potential to entrust its roles and visibility within the community. However, to make it real the library should actively engage with another stakeholder and the user. For example, Cornell University Library aggressively collaborates with faculty, publishers, artistic designers, students, staff, companies, and others in creating these digital projects. In addition, Cornell University Library also develops digital projects to enhance its resources and services and hires several people to organize and serve the digital collection. One of the digital projects that the library employs people is the Kinematic Models for Design Digital Library (K-MODDL). K-MODDL is a platform for learning and teaching the principles of kinematics. This model specifically designed includes moving mechanical models. In addition, this project is supported by the National Science Foundation, Cornell University Library and listed in the National Science Digital Library (Cornell University Library, 2020).

Another project that library can collaborate is partnered with Google Inc. namely the Library Project. The Library Project allows users to flick through many books published in several different languages on Google, including books that are rare, out of print, or usually unavailable outside of the library system. For example, University of California Library carried a project called Mass Digitization of UC Library Collections in collaboration with Library Project founded by Google Inc. Since 2005, UC libraries have digitized numerous of books through participation in mass digitization projects with Google and Internet Archive. As of early 2020, nine of ten UC campuses and both Regional Library Facilities have participated in these system-wide mass digitization efforts (University of California Library, 2020).

Digital Marketing and Communication

Effective marketing in promoting library resources, services and facilities need to be considered as the physical libraries are starting to fade and high competition between e-libraries. Library professionals must have some marketing skills to help to tell people about your library. Marketing will also help to improve the Library's performance, achieve strategic priorities and deliver against targets.

Research shows relationship marketing offers specific benefits to libraries and might be applied to particular effect in marketing digital library services. Relationship marketing is broadly about fostering good relationships between staff and existing customers and maintaining those relationships will retain customer loyalty. (Henderson, 2005). However, good in customer service is at the core of profession meanwhile relationship marketing is an option when considering marketing digital services, thus use technology to reach and communicate more easily with customers.

The librarian needs to decide what exactly type of digital service is going to promote and which target user. For example, Library of Congress establishes American Memory and markets it to focus target users such as congress, academicians, researchers, teachers, students and public. American Memory is a gateway to rich primary source concerning to the history and culture of the United States. The site offers over 7 million digital items from over 100 historical collections.

Managing Digital Resources

Although research data management activities are plentiful but inadequacy of research data-management policies, lack of incentive, lack of skills and unavailability of data infrastructure will become constraints to manage all the data. This situation shows that library has a potential to provide a holistic data research management system for collecting

data. This can be achieved by sending librarian for a structured training such as data analysis, IT and software technology in order to improve and enhance their skill to cater the opportunity.

In the digital era, library professionals must be able to manage digital resources, such as digital copies of journals, ebook, audio book, rare, special and fragile materials. Librarians must learn how to disseminate, filter and organize digital information according to their relevance, value and formats. Before deciding to initiate such a digitization project, need to considered following issues such as the selection criteria for digitization of rare and fragile materials, appropriate digitization methods, conservation issues which must be addressed before digitization can take place and community-accepted 'good practice' for the digitization (Hughes, 2004).

Digitization and managing rare and fragile materials are challenges and expensive as we need to handling the materials in structured way without harming it. Primary resources materials in museums, archives and libraries consist of variety of rare and fragile format, many of which will present special challenges for digitization. Manuscripts of all periods and languages are represented and a variety of formats, including paper, parchment, birch bark, papyrus, lead tablets, wood, stone, aging newspapers or palm-leaf manuscript, etc are too fragile to be consulted (Hazen et al., 1998; Hughes, 2004). Digitization equipment and practices will have to be customized to deal with a range of specialized formats and unique materials that may also need special attention or conservation treatment (Hughes, 2004).

Knowledge of Research

Chawinga and Zinn (2020) in their study mentioned that researchers are regularly engaged in research operations, producing vast volume of research results. While researchers are eager to share their results, only a few follows through. They also described that data preservation is low since the university uses high-risk data storage such as personal computers, flash discs, emails and external hard drives. Researchers and librarians were lacking core research data-management capabilities due to lack of structured and information training opportunities.

Savedge (2017) described that the modern library is not made obsolete in a digital era but it becomes a new point of tune. The author added that Americans need access to free content from the internet as well as they do from books, and the library is there to satisfy the need and help teach us how to get it. Maybe that's why libraries are the only thing millennial doesn't wipe out.

Chawinga and Zinn (2020) said that many research stakeholders have joined force to establish framework for preserving it, given that research data progressively hailed as crucial raw material for current and future science discoveries. Yet, despite producing rich research data, Africa is lagging behind in the management of research data, potentially losing much of this valuable data. Hence, this study was performed at a Malawian public university to examine research data management activities in order to propose effective data management strategies.

National Library of Malaysia (PNM) also designed a strategic plan to empower the library research activity and development in order to support the process of new knowledge creation for academic and commercial use. This can be achieved by enhancing the study of librarianship, expanding national and international collaboration, strengthen the

transformation analysis and preparing for the new knowledge creation and empowerment of library infrastructure development in Malaysia (Pelan Strategik PNM 2019-2023)

Creating and Managing Space

Providing conducive and comfortable yet interactive spaces is also important if want to stay relevant. The spaces not only for keeping the books but also provide area for discussions, reading corner plus area to serve therapy for elders and meditation for all including children interest (Mishra, 2019).

Online teaching and learning will take place in near future where variety of media platforms such as Google classroom, Zoom, Webex, Google Meet are mostly considered medium to perform the teaching and learning processes. To extent, libraries are perfectly positioned to assist faculty in the development of online courses. Library instructional technology game is strong, with comprehensive knowledge of tutorial and instructional video production, course management systems, OER and the like (Cox, 2020).

Conclusions

According to Mishra (2019), libraries have been known as a place for preserving the books, information provider and reading space for the users. Information overload rapidly changing the way of people search for information, but then still we are not sure whether the information that we search for is authentic or not and helps from the librarians are needed. This situation shows that libraries and librarians' role is still there even though users can search and access the information in digital form easily. Apart from that, libraries are encouraged to invest to provide more resources, services and facilities that meet the users' need in line with industrial revolution (IR) technology development.

The librarians must be equipped with advanced computer skills by sending them to professional trainings. For instance, providing job training, participate in workshops, seminars and conferences are a must to be considered. The academic libraries may take advantages on emerging technologies by endowing themselves with high-level knowledge, analysis skills and digital literacy. Librarians need skills to analyze these subscription models to ensure the maximum usage of the resources, be able to truly comprehend the database and completely understand licensing models. This is to ensure that the future librarians are abreast with ample knowledge of advancing tech to fulfil the new user needs (Mwaniki, 2017).

Mwaniki, P. (2017) said that to cater to technological advances, librarians ought to take a critical look at the conventional library services and what they are encompassed, then analyze the digital library and the modifications or enhancements that have been developed and ultimately project what is in place for the future library system. These had given rise to new roles for librarians in academic libraries including coordinating and promoting access to electronic information resources and assisting further interactive customer services as conducting intensive literacy skills to their users in particular on access and retrieval of e-resources.

As educators, they may broaden their expert knowledge on educating their clients using an online platform, access e-journals and navigate them by web-based instructions and course materials. Digital libraries should strive to meet the needs of users per technological developments by facilitating users' places that spur participatory learning

and enhance the efficacy of the information from a plethora of sources, to connect and acquire knowledge with each other.

Todorinova (2018) in her research found that profession interest within undergraduate and first year librarian in United States is limited about what the undergraduate librarian does, how the work is structured on a daily, and the way its goals are negotiated and accessed. To extent, undergraduate librarians also facing a number of issues, as well as navigating vaguely defined roles, building their professional skills, and promoting their role within the library and to the university. Therefore, result also reveals some of the reasons why undergraduate and first year librarians were attracted to the career. They enjoy collaborating with undergraduates, interesting position/provides variety, the position's knowledge literacy emphasis, empathizes with experience at the undergraduate level, position encourages outlet for creativity and prior interest or background of the philosophy of education and teaching.

There are number of difficulties and challenges that libraries and future librarians encountered involving budgetary resources, time and emotions overwhelmed by the number of tasks involved in education and outreach of undergraduates which is often required without the support of a department or a team. The respondents articulated a desire for further cooperation at the library with their colleagues and a lack of faculty support was perceived. A few respondents claimed that they felt stifled in a creative way while often portrayed their role as having limited advancement potential. Somehow, undergraduate librarians have the daunting task of navigating the priorities and obligations of their role because they are not properly and clearly formulated (Todorinova (2018).

In a nutshell, further studies are needed to investigate the opportunities and possibility for professional librarians and library to enhance their roles facing new era IR 4.0.

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