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## Assessment of Reengineered Library Services and Spaces for Improved User Experience in Universities in Kenya

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### ABSTRACT

Innovation and transformation have been synonymous with the library environment, as they strive to rethink the services they offer amidst the changing information landscape. This paper assesses the reengineered library services and spaces in universities. The paper demonstrates how university libraries in Kenya have reengineered their services and spaces variably in order to cope with the changes in the information landscape and for improved user experience. However, despite the strides made by libraries in responding to the changes in information landscape, there is reported mixed user experience on the reengineered services and spaces. A multiple case study approach of six purposively selected private and public university libraries in Kenya based on Webometric ranking as an indicator of reengineering was used. Data was collected through face-to-face interviews with 30 librarians and 25 focus groups of students. The study established that university libraries have reengineered their services to respond to the changes and nurture a competitive advantage, but users still associate libraries with the traditional services. Additionally, reengineering has not had an effect on the satisfaction levels and usage of the library. The authors conclude that reengineering library services and spaces in universities has not improved user experience. The study recommends continuous reviews of the reengineered services for improvements or redesign; involvement of library users in the redesign of the services, and promotion of the reengineered services.

**Keywords:** Information Landscape, Kenya, Reengineered Services, University Libraries, User Experience.

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### 1. Introduction

The university education landscape in Kenya has for the last ten years been expanding with an increase in the number of universities. The major mandate of universities is teaching, research, dissemination of knowledge and community development. These tasks cannot be accomplished,

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without a university library (Nnadozie, 2013). This aptly underscores the major role a library plays in an institution of higher learning.

Innovation and transformation have been part and parcel of the library environment, as they strive to rethink the services they offer, thereby calling for a radical change in library and information services. Johnson and Gutiérrez (2010) argue that when a business is experiencing changes in business trends, emergence of disruptive technologies, and there is a shift on the basis of competition; all these are key signs and pointers to the need for reengineering. Similar signs are being witnessed in the library environment today. For instance, there are changes in information and data which are increasingly becoming digital and decentralized in access; rapidly changing technologies with enhanced facilities; dynamic and mixed demographics and skills of users; and the services context with certain services such as collecting, storing, disseminating physical book stocks, local discovery systems and interlibrary loaning becoming less relevant, services which are not rooted in technology and do not allow for social connections are becoming less preferred in libraries (Zickuhr & Purcell, 2013).

In spite of these changes, libraries have continued to thrive by transforming themselves to become hubs of imaginations, research and networking. Similarly, university libraries in Kenya are transforming to respond to changes in the learning and research environment as well as address the changes in the behavior of library users (Nyamache, Munyao, Songok, Nyambura, & Nyamboga, 2015).

Rendon (2015) observes that the changes in the information arena have compelled libraries to shift from the conventional library to the electronic library requiring rethinking and new service models. This explains Massis' (2014) acknowledgment of the numerous threatening cautions for libraries to look toward their own future and sustain themselves through constant reinvention of their products and services. It is not surprising that several authors are opined that, in order for libraries to remain significant to their users, it is essential they adhere to the fundamental principles as practiced in business; that is, offer services which are required by their users (Xiaobin & Jing, 2009; Spencer, 2006; Soules, 2010; Kajewski, 2007; Scupola & Nicolajsen, 2010).

This article presents an exhaustive review of the reengineered library services and spaces in university libraries in Kenya and suggests strategies and approaches for librarians to consider when reengineering.

## 2. Literature review

### 2.1 Emerging trends in library services and spaces

There are notable changes in the way university libraries have designed and responded to the changes in information landscape; adoption of technologies in the libraries as well as the dynamic information needs of the current generation of users. Konata (2009) claims that the conventional perspective of the library as the only source of information needed for teaching, learning, and research is no longer sufficient. Information is now available in and via many different media, and in various locations. Now, there is a paradigm shift from information collection to information discovery and access. These changes have had profound and wide-ranging consequences on how university libraries design and deliver services. Essentially, university libraries continue to take appropriate actions to ensure that they maintain their position as the preferred source of information.

Tee (2007) conducted a study among the members of the Australian Academic and Research Library Network (AARLIN) on how the libraries were responding to the changing information environment and found out that they are creating library portals, incorporating web 2.0 technologies, setting up information commons, and embracing digital collections among other ways. Lukanic (2014) gave ways on how academic libraries are adapting to changes in the information landscape. He pointed out that libraries are providing flexible learning instruction areas, collaborative group-study rooms, 24-hour zone cafes and computer labs; robust access to technology and digital content, changes in seating types and individual research spaces. Wenborn (2018) looks at the changes to be seen in academic libraries to include use of innovating technologies for learning, research and information; students requiring continuous access to learning materials and one another for collaboration which places more demand for accessible internet and redesign of the physical spaces. The various ways libraries have responded to the information landscape changes show that they are striving to maintain their essential

place in the community as they evolve to be places where people, technology, knowledge and research intersect. However, despite these strides made by libraries in responding to the changes in information landscape, there is reported mixed user experience on the reengineered services and spaces.

## 2.2 Reengineered library services

To leverage on the changes in the information environment as well as to continue connecting library users to the more digitized and omnipresent information, libraries have benefitted from the opportunities present in the 21<sup>st</sup> century. Some of the ways libraries have responded to the changes include:

i. Creation of library portal which is a web-based site created using interactive technologies such as web 2.0 which are “social” and web 3.0 which are considered "intelligent". The portal has the ability to provide a "human interaction" feeling through provision of instant messaging, email, video conferencing facilities, and giving a user a "Google like" search experience through the use of meta-searching or federated searching systems.

ii. Use of Web 2.0 technologies in academic libraries. Such tools include instant messaging (IM), Really Simple Syndication (RSS), blogs, tags, wikis, chats, YouTube, and Facebook among others (Aharony, 2009; Lihitkar & Yadav, 2010; Linh, 2008; Shoniwa & Hall, 2017).

iii. Information commons is also a feature being witnessed in academic libraries. Makori (2009) acknowledges that the changing information landscape and unending technological revolutions have an influence on the physical library makeover to create a communication-based library rather than a collection-based one. Such new libraries are referred to as learning resource centers due to the central role they play in enhancing learning, placing more attention on reader spaces, information technology, media centers, and information skills rooms. This has seen university libraries provide spaces for informal learning, group discussions and laptop use, and social spaces including catering facilities with coffee dispensers and snacks, features which were unheard off in the conventional libraries.

iv. Libraries are embracing digital collections or electronic resources which now form a major part of the library collection. Tawfeeq (2015) claims that in order to provide users with information at their convenience and to meet the ever-growing demands for remote access to information, university libraries are subscribing to electronic resources such as electronic books, electronic journals and other online bibliographic databases.

Although these reengineered services and spaces in academic libraries have continued to develop and spread rapidly, several studies on students’ use of some of the reengineered services show that they are regular users in their personal online spaces but are skeptical about the usefulness of the same in libraries (Connell, 2008; Epperson & Leffler, 2009; Fujita, Harrigan, & Soutar, 2018; Shafawi & Hassan, 2018; Si, Shi, & Chen, 2011).

In terms of effect of the reengineered services and spaces on library usage, Joint (2011) argue that redesigned libraries increases usage since the improvements change the library’s image. For instance, repurposing of library spaces into learning spaces or information commons at Sheffield University library changed the relationship between the library and its users, where the library created a perception to students that it is the primary provider of innovative technology and study space (Hurst, 2013). Similarly, Chongqing University library introduced a mobile library service platform called ‘WeChat’ library and it is reported that within the first 20 months of its operation, the utilization rate had increased by 11% leading to a growth in the number of users accessing the library by 25 people daily (Wei & Yang, 2017). On the other hand, from survey findings done at The University of Western Australia, majority of the suggestions for improvements border around the reengineered services and spaces including e-books, study spaces, library portal and the library seating.

From the literature reviewed, it has been found that university libraries have and continue to reengineer their services and spaces due to emerging user demands. With the reported changes in library services and spaces, there is need to assess the extent of reengineering in libraries in Kenya so as to provide valuable insights for planning and implementing reengineering initiatives. However, there is

mixed user experience with reengineered library services (Mutua, 2010; Seyram, 2016). Therefore this study assesses the reengineered library services in universities in Kenya with a view to providing guidelines to libraries wishing to reengineer their services for improved user experience.

This research study assessed the reengineered services and spaces that university libraries in Kenya have embraced to cope with the changing information landscape for improved user experience. It was guided by the following research questions:

1. What reengineered services and spaces have university libraries implemented in the changing information landscape for improved user experience?
2. What is the effect of the reengineered services and spaces on library user experience?

### 3. Methodology

This research study assessed the reengineered services that university libraries in Kenya have embraced to cope with the changing information landscape for improved user experience. The study adopted a multiple case study research design. This is a methodological research approach used when a researcher aims at an in-depth examination of people or even an institution (Saunders, Lewis, & Thornhill, 2007). This study aimed at determining the reengineered services in selected university libraries and the experiences of the library users in relation to their satisfaction. The research questions employed were; 'what reengineered services university libraries had implemented' and 'what was the effect of the reengineered services on library usage'. Such questions are well answered by a qualitative research design.

Primary data for this study was collected from 30 librarians and 25 focus groups of students in six universities comprising of three public and three private. The six universities were purposively sampled to include the top three universities public and private based on the January 2017 webometric ranking. This is because web-based library services, which tend to be the reengineered make a significant contribution to the rank attained as explained in the methodology for webometric ranking. This sampling technique did not lay emphasis on representativeness but on the richness and relevance of data collected. Data was collected through structured face-to-face interviews with the librarians, who were the key informants as they are the initiators and implementers of the reengineered services; and through focus group discussions from 25 focus groups of students who are the consumers of these services. The interviews and focus group discussions were structured, guided by an interview schedule. This approach gave the respondents an opportunity to express their views on the reengineered library services and spaces. In addition to the interviews, secondary data was collected through the review of library websites to confirm existence and usage of the reengineered services because most of them are web-based; and through document analysis of relevant literature. Data collected was analyzed qualitatively using content analysis approach, where text was classified into a number of categories or themes that represented similar meaning.

### 4. Findings

The first research question was to determine the reengineered services and spaces in university libraries in Kenya. It was found that university libraries in Kenya have reengineered their services and spaces in the following ways.

- i. All the six universities sampled were found to have established an institutional repository, which respondents noted that they archive the research outputs of the university.
- ii. What was previously known as library orientation was reported to have been transformed to information literacy in four universities. The mode of delivery of information literacy skills was found to involve use of online tutorials, do-it-yourself (DIY) videos, subject guides and webinars.
- iii. In one university the training room where information literacy sessions are conducted was equipped with interactive smartboards.
- iv. In addition, information literacy sessions were found to be conducted in a computer laboratory where the users had hands-on experience during the training.
- v. In another university they had provided for online booking of information literacy sessions at ones convenient time and even indicating the topics to be trained on.

vi. Access to e-resources from off-campus was found to be provided in four universities. Two universities were using EZ-Proxy software while the other two were using virtual private network (VPN) which they noted had limitation on the number of concurrent users logged in.

vii. Virtual reference service was found to be offered in all the six universities but in various formats. An email address was provided on the library's website for users to send their inquiries. One university had provided an online form christened ask-a-librarian for users to fill in case of an inquiry. Three universities had an online chat powered by JLive, Libchat or Livezilla.

viii. Social media was found to be used in all the six universities. The social media tools used were Facebook (6), Twitter (4), Youtube (5), LinkedIn (1) and Instagram (2).

ix. All the universities were found to have an online catalogue which was web-based and with web 2.0 capabilities such as tagging, sharing, allowing comments, likes, self-renewal, and linking to Amazon.com enabling viewing of book reviews, cover images and even option to purchase books.

x. It was found that in the university libraries there were wireless hotspots for internet connection. One respondent stressed that "in the university, library has the highest bandwidth because that is our business, otherwise users will be frustrated with slow downloads". One university library had gone an extra mile to offer their wifi access through Eduroam, where any user using similar internet service provider (ISP) would connect automatically without necessarily having to be authenticated. This meant that since most educational institutions in Kenya use the same ISP, it is possible for a library user to access internet in that library without necessarily being part of the university community.

xi. In four universities the physical spaces had been transformed in that there were discussion rooms or learning commons as some referred them fitted with cozy seats and round tables to allow for collaboration and networking.

xii. The reading tables in one university were advanced in that there was provision of power and internet connection ports.

xiii. In one university there was use of electronic notice boards placed at strategic places in the library building, the librarian here noted that "these notice boards can send online messages to the users email address and even their phones".

xiv. Use of QRcodes to conduct library surveys was found in one university. An online survey is developed and generated as a QRcode which is printed and pasted on all service points and on the reading tables for users to scan and respond.

xv. Web-scale discovery services were found to be used in two universities, while the other four universities were using federated search tools. The web-scale discovery tool used was EBSCO discovery while Custom Search Engine (CSE) was used to federate searches.

xvi. A self-service system was found in one university where users could self-register and conduct library transactions such as check-ins and check-outs, item renewals and payment of overdue fines.

xvii. A library app (BookMyne) was found to be in use in one university where students manage their library accounts through a mobile phone.

The second research question was to establish the effect of reengineered services and spaces on user satisfaction. All the respondents interviewed were satisfied with the reengineered services the libraries offered. However, on inquiry whether the reengineered services had led to an increase in the usage of the library, majority of the librarians 18 (60%) said that reengineering had not made any difference, while 12 (40%) noted that reengineered services had led to an increase in the use of the library. Students on the other side said that "use of library services depends on semester sessions; if it is during assignments and study breaks or even exam time, we use them quite often". This statement was common in all the focus group discussions in all the universities. The librarians added that the students heavily used the library during exam time. Asked if it was for all services, the students said that it was for all except using the computers in the library for their personal browsing. This is contrary to what the librarians said where they noted that each reengineered service recorded a different level of usage from the other. For instance one librarian said "we have noted an increased usage of the e-resources when we introduced the off-campus access using EZ-proxy compared to when the access was limited to the IP of the university".

On average, the level of usage of the reengineered services was said to be good with the provision of computers, Wi-Fi, quiet and discussion areas being the top most used services as per the

students' responses while institutional repositories and social media were lowly used as they received no mention. This could be explained by the fact that most of the students associated the library with print books only as they pointed out that they go to the library to use books especially when they have an assignment or examination approaching. A few students said that "I rely on books to do more research to fill what the lecturers give us since it is little"; "I like the reading area because it is quiet and peaceful"; "I go to the library to use the computers because I can get additional information from [the] Internet which is plenty and up-to-date". This agrees with what the librarians noted that the usage of the reengineered service is average and that a substantial number of students still prefer print books. One librarian said "I feel that students are yet to appreciate the new way of doing things and the transformations in the library, when they hear the word library they just think books, so even if it is a fun activity that you have, they may not embrace it".

## 5. Discussions

### 5.1 Reengineered library services in Kenya

The major mandate of a university is teaching, research, dissemination of knowledge and community development. These tasks cannot be accomplished without a university library (Nnadozie, 2013). This perhaps explains why the Commission for University Education (CUE) in Kenya, which accredits universities, insists on the provision of purpose-built, well-equipped, information resource-rich and adequately staffed library as a pre-condition for approval of a university and accreditation of courses offered there on. A library in a university is one of the manifestations of the fundamental beliefs and activities in a university setup. Kuh and Gonyea (2003) observe that a library is one of the iconic symbols of academic values in a university; this aptly underscores the major role a library plays in an institution of higher learning.

In Kenya, academic libraries have in one way or another re-engineered their physical spaces to transform them to learning commons. Some university libraries in Kenya have built state-of-the-art libraries, commonly known as learning resource centers which incorporate in their design group-study areas, internet access, and open work spaces, these features have been explained as the definition of these centers (Suman, 2017; Sutton, 2017). These features have been incorporated in the library design in order to meet the demands of the millennial generation who are the majority of library users in universities. From the librarians' perspective, universities are now placing emphasis on the architectural designs of the library building by benchmarking nationally and internationally and involving the librarians in the design process. Some university libraries reported nearing completion of what may be termed as magnificent library buildings not just in size but also incorporating new features like discussion rooms with sound proof walls, learning commons, and internet connection all over building to take care of the changing information needs of the user. This study found that libraries have continued to redefine their services and spaces in an effort to meet user expectations and maintain their place in the user community. As Tbaishat (2010) points out, academic libraries are currently functioning in a dissimilar situation both technologically and economically compared to libraries in the 19<sup>th</sup> and 20<sup>th</sup> Centuries. This has seen libraries remodel their processes so as to nurture a competitive advantage.

Walton and Cleland (2014) in their research noted that libraries need to help students to have critical thinking skills in order to engage with information effectively instead of concentrating on developing skills in using specific resources. This is what information literacy as a reengineered service is intended to achieve. As noted in most of the university libraries, information literacy was offered, where students were trained on how to find, locate, evaluate and use information rather than being shown how to use the physical library and collections. Popescu (2016) acknowledges that new technologies create opportunities for learners but he also warns that they must be approached critically and used correctly in order to achieve scholarly excellence. This calls for information literacy which most librarians termed to be a prerequisite for students in institutions of higher learning and in the current information age. Therefore, Popescu challenges university libraries to be able to inculcate such skills to students. Respondents in this study when explaining the reengineered services noted that the information landscape is rapidly changing and this has predisposed students to so many ways in

which they can search for information. Despite the presence of a lot of information, Bhimani (2015, Para. 1) adds that the challenge is “locating, accessing and finding relevant and appropriate information resources for academic research”. She adds that “library users require skills that include knowledge of different types of information resources and an understanding of the most appropriate ways of critically evaluating information, using it in an ethical manner and managing this information” (Para. 2). This evidently calls for the need for information literacy than ever before.

Learning and teaching pedagogies are changing in higher education and as Freeman (2005) reports, libraries must transform especially the library space to accommodate the emerging changes. Blumenthal (2017) adds that library space has transformed to support new pedagogies which involve collaborative and interactive learning methods. This can be attested by what was observed in three universities where there existed discussion rooms furnished with furniture to enable students deliberate and share. Students interviewed noted that this was one of their most preferred and heavily used facilities within the library setup. Academic libraries in Kenya have reengineered their physical spaces as observed at four (4) universities where state-of-the-art facilities have been built incorporating social dimensions in their designs for group study areas and open work spaces. This has been necessitated by the demands of the millennial generation who prefer to be socially connected all the time. So, if a library facility provides for their social connection, it stands a high potential of being deemed usable by most of the students.

Stoffle, Leeder and Gabrielle (2008) suggest that a library should be a place for the production of knowledge. Such a place is where new tools and ways can be used to disseminate knowledge. This has been evidenced by university libraries establishing institutional repositories for capturing, preserving and disseminating the knowledge produced by the university. Wynne, Dixon, Donohue and Rowlands (2016) add that the vision of libraries is to manage and develop the intellectual output generated within the organization. This agrees with what was found that university libraries have established institutional repositories to manage the intellectual output of their universities. It can be noted that there is an improvement from what Swan and Chan (2012) reported that institutional repositories in Africa were being developed but their growth was still low. Additionally, study done on the level of adoption of institutional repositories in Kenyan university libraries by Mutwiri in 2014 agree with Swan and Chan, where she found out that there were low levels of institutional repositories adoption (Mutwiri, 2014). However, EIFL (2014) hold a different opinion where it notes that since 2010, 85% of libraries in Kenya have embraced the establishment of institutional repositories but they lack open access policies. The results of this research concur with EIFL’s findings that libraries are increasingly establishing IRs to archive the research outputs of the university in one central place and for posterity.

Social media has been heavily utilized in university libraries to engage users. From web analysis of the university libraries in Kenya, 90% of them are using web 2.0 tools, this shows that most of the university libraries are using web 2.0 technologies. This is evidenced by existence of blogs, wikis, library Online Public Access Catalogues (OPACs) which allow tagging, Real System Syndication (RSS), Facebook pages, Twitter and YouTube links among others. In comparison with Kwanya, Christine and Underwood (2012) it can be said that not much has changed in terms of preference of the web 2.0 tools used. However, the diversity of the social media tools used was noted where other tools such as LinkedIn, Youtube, and Instagram were in use which Kwanya et al.’s research findings did not report. On the other hand, Wasike (2013) notes that although most libraries are using various social media tools, some of them were found to be inactive. This agrees with what was found out by Musangi (2014) where some library Facebook pages had the latest posts as old as two years ago. Another worth-noting point was the interactivity of the pages where the posts were not being optimally followed compared to the number of followers in the pages. This negates the reason for utilizing social media tools which has one of its key features as the ability to allow users to actively interact with the content posted. Librarians interviewed noted that management of social media tools was an “all-staff” duty, with no one responsible and hence the reason why there were no established plans, tactics and metrics in their use. Dowd (2013, Para. 4) advises that “without direction, social media content creators can be at risk of working in silos without any strategy to communicate their brand, connect to services, or drive people to the library or its website”. Therefore, libraries can borrow a leaf from the Bodleian libraries of the University of Oxford which has one of their library staff as a social media manager who draws a plan

to guide the library in succeeding in using social media to connect, engage and influence their users, and this has led to an amazing growth of Facebook 'likes' and increased interaction with the users.

Reference service has been one of the core library services. However, with the emergence of ICTs there has been a transformation of this service. Several authors have predicted the death of reference service (Gunter & Snyder, 2010; Rettig, 2011). Martin (2009) had predicted that the importance of reference service will grow over time with the introduction of technologies and new services in the library. The finding of this study show that reference service is one of the service which has been reengineered by all libraries studied and has gained demand with the empowerment of library users to access library resources and services remotely hence the need to interact with the librarians for inquiries from the users' comfort zones. Reference service was found to be no longer a preserve of the reference librarian but every librarian's task, since it was noted that the digital reference service desk was very busy. Research suggests that a chat reference service can be managed through a consortium effort where libraries are organized nationally, regionally or globally. The consortium works together to staff the chat reference hence providing the service for longer hours and covering more libraries (Yang & Dalal, 2015). However, the university libraries studied which offered chat reference service relied on in-house staffing to manage the service.

It is expected that users access library services mainly through the website. But, how many search boxes does a library website have? This is a question posed by Koutropoulos (2014) who found that in most academic library's websites there existed a search box for each database that the library subscribes to, a search box for OPAC, and of course another for Google Scholar as well. He concludes that "there are just way too many search boxes on a present-day library website which makes it easy for the patron to just give it all up and go to Google in the first place" (p. 69). Similarly, the same was observed in this study, where the library portal, OPAC, electronic databases among other resources in the library websites existed as islands. Cohen (2007) advises that such technologies need to connect and interface in a meaningful way to the services that the patrons already use. This is in addition to pushing them to the users' social spaces. It was also observed that the OPAC embraced library 2.0 technologies which allowed a user to tag resources and provide descriptions and reviews; the resources were linked to Amazon to provide book cover images.

## 5.2 User satisfaction with reengineered library services and spaces

Library users were generally satisfied with library services, and in particular they preferred the reengineered services. Similar conclusion was given by Wang, Ke and Lu (2012) who noted that user satisfaction and acceptance levels toward library mobile-based services, a reengineered service in Taiwan university libraries reached 90 per cent, reflecting the positive attitude the users have for the services. Interesting to note from this study is that the improved user satisfaction did not translate to increase in usage of the library. It was found that most library users were not aware of some of the reengineered services, this shows that promotion is required to make the users aware of such services. From the assessment of level of usage showed that, some of the heavily used reengineered services are ask-a-librarian, institutional repository, off-campus access service, and discussion rooms among others, but during the interview the users responded that they are not aware of such services. This shows that the users use the service and may not know the technical term used by librarians for the service and hence the need to re-think the terminologies given to library services which do not make sense to the users.

The services which the users rated as being highly satisfied with were the traditional library services like borrowing books for research, quiet and conducive reading areas and provision of internet. This shows that libraries continue to reengineer library services while users still associate them with the traditional services, this brings to question the library user contribution to service reengineering. This finding agrees with what OCLC in 2010 reported that, students overwhelmingly associated libraries with "books" rather than information, expertise, or service.

## 6. Conclusion and recommendations

University libraries in Kenya have reengineered their services in one way or another. Some of the ways include the use of institutional repositories, information literacy programs, digital reference



services, electronic information resources, use of web 2.0 tools, and discussion rooms. This shows that libraries have taken advantage of information technology to remodel some of the conventional library services in addition to taking into consideration the social demands of today's user. It was expected that reengineering of library services would increase the usage of the library but this research found otherwise.

The study concludes that reengineering has had no impact because despite the libraries responding to the changes in the information environment by introducing new services enabled by information technology, however there is still a gap in terms of their usage as users bypass the library to get information from other sources. Additionally, librarians have taken the opportunity offered by technologies and redefined their library services and spaces in response to the generation of users they serve disregarding involvement of the same users the services and spaces are made for.

This study recommends that, for success of the reengineering library services and spaces the librarians need to engage the library users when reengineering. This will enable incorporation of the user's inputs and also create awareness through promotion strategies and this will bridge the gap of non-awareness of some services leading to non-usage. With the ever-changing and continuous advancements of technologies, the study recommends continual reviews of the reengineered services and spaces for improvements or redesign. The university libraries need to develop a policy to guide in reengineering which needs to capture the necessity of reengineering being a continuous process.

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