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Management problems of electronic information resources: A case study of UNN Library

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This study examined the problems encountered in managing electronic information resources (EIRs) in the University of Nigeria, Nsukka (UNN) Library System. Case study design was employed to achieve the research objectives. The population of the study consisted of 151 staff of the University library. Questionnaire was the main instrument used for data collection. Out of the 151 copies of the questionnaire administered to the respondents, only 95 copies were correctly filled and used for this study. The data collected were analyzed using mean ($\bar{x}$) and standard deviation (SD), while t-test was used to establish the significance of the responses of the library staff on the dimensions of the problems of managing EIRs in the university library. The management problem areas identified in this study consisted of University policies or practices, funding, staffing and information technology infrastructure. Strategies for enhancing effective management of electronic information resources were identified, and recommendations based on the findings of the study were also made.

Key words: Electronic information resources (EIRs), university library, management.

INTRODUCTION

One of the functions of a university library is to provide resources and services for its users. University libraries all over the world are facing the challenge of the paradigm shift from the traditional environment to the electronic environment. In the electronic environment, these libraries are expected to provide information resources in a variety of formats and provide innovative services to their users.

In other words, they are expected to provide abundant E-resources to meet the ever increasing demands of users. An electronic information resource is defined as the information resource that is accessed via the internet (Okore et al., 2009). This definition is extended in this paper to include CD-ROMs because CD-ROM resources can be accessed online. Accessibility of these resources is re-defining the vision and mission of university libraries today. Okore et al. (2009) identified specific types of electronic information resources as consisting of

electronic books (e-books), electronic journals (e-journal), indexes, collections of journal articles, reference works, digital collections, databases and websites.

These electronic information resources (EIRs) do not fly into the library or find themselves in the library by accident. This implies that there should be coordinated effort to select, acquire, catalogue and maintain them; and this is what management of electronic resources in libraries is all about. Yu and Breivold (2008) defined electronic resource management as the practices used by librarians to keep track of important information about electronic information resources, especially internet based resources such as electronic Journals, databases, and electronic books. However, literature has shown that majority of the university libraries in developing countries do not have enough of electronic information resources for their users (Aguolu and Aguolu, 2002). This implies that there may be management problems that hinder the

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development and use of these resources in university libraries in developing economies.

Since its inception in 1960, the library system of the University of Nigeria, Nsukka, has a sizeable collection of books, journals and other specialized materials. These specialized materials are in the grey category and they include theses, dissertations, as well as official publications of United Nations (UN) and its agencies. The university library has a number of CD-ROM collections and subscribes to some online databases such as OARE, JSTOR, AGORA, HINARI and EBSCOHOST. The library also provides an internet -platform for access to the library-based online databases and for remote access to internet -based resources. The institutional repository (IR) that is being developed by the university library has over twenty one thousand files. Unfortunately, these files lack global accessibility due primarily to the absence of management software.

Furthermore, the library is partially automated. However, the automation environment requires integrated library software (ILS) for the management of the traditional content and electronic resources management systems (ERMs) for the management of the electronic content. In the management of the traditional content, the library has finally settled with `KOHA' software after a very long trial with failure of some library applications software such as `TINLIB', XLIB and `LIBPLUS'. The apparent lack of ERMs is responsible for the slow pace of the digitization project of the university library. Though other contributory factors may include human and material resources, any strategic plan targeted at addressing this problem would be holistic to achieve results. The present study is therefore an attempt to address this issue, and is intended to examine the problems encountered in managing electronic information resources (EIRs) in the library system of the University of Nigeria, Nsukka.

LITERATURE REVIEW

There is a great deal of literature devoted to different types of electronic resources. However, very little is written about electronic information resource management and its problems in libraries. Efforts were made in the literature to solve the problems of management of EIRs from the use of these resources in libraries by staff, students and researchers. Many libraries have embraced the use of electronic information resources (EIRs), including CD-ROM, the internet, and the world wide web (www) for provision of information services. A number of reasons have been advanced for preference of EIRs by libraries and information centres. Some of these reasons, according to Iwehabura (2009) include the ability to provide faster and easier access to current information by users in various places such as homes, offices and other workplaces, hostels and dormitories; easy storage and

the possibility of sharing the same information resources among many users at a time, saving space with relatively easy maintenance and easy linkage to indexing and abstracting databases. The internet for example, provides the opportunity to access a wide range of topics on different subjects. It also allows students, staff and other researchers to retrieve information from diverse sources such as e-journals, e-books, databases, newspapers and other sources. Furthermore, it offers the students the opportunity to control their learning and helps them to have interactions with information pertaining to their needs (Jones et al., 2002; Healey, 2003).

Electronic information resources are used for academic and research activities in higher educational institutions (Iwehabura, 2009). Internet resources such as online databases, e-books, and e-journals were among the EIRs used for academic purposes. Other resources found to be used were CD-ROMs and OPAC (Online Public Access Catalogue). Kinengyere (2007) has shown that the available information is under-utilized. The study also shows that information availability does not mean actual use because the users may not be aware of the availability of such resources, do not know how to access them or do not know what the resources offer. Generally, literature has shown that there is a positive relationship between the use of electronic information resources and improvement in the quality and quantity of research output. Manda and Nawe (2009) stated that this relationship is influenced by several factors such as technology, infrastructure, nature of the organization and individual attributes. Nawe and Kiondo (2005) have shown that 21.7% of the respondents reported that research quality had improved significantly with the use of electronic information resources. Results of the study also revealed that the quality of teaching and learning had improved significantly as a result of information and communication technology (ICT) application in library operation.

Meanwhile, despite the importance of and advantages offered by EIRs, studies have identified a number of problems associated with their use. These problems range from lack of or inadequate resources, mainly computers, and poor internet connectivity, inappropriate usage to lack of appropriate skills among users. For instance, Ray and Day (1998) noted that the main factors affecting students' access to electronic information and using them were limited to time and lack of effective information retrieval skills. The use of EIRs in educational institutions is further affected by lack of technical support staff, IT infrastructure and training. In addition, Johnston and McCormack (1996) posit that: "a perceived lack of various resources such as time, equipment or funds,... lack of training and insufficient technical support staff and risks associated with implementing innovations in teaching, particularly those using technologies, are the most significant barriers to academic staff using information technology in their teaching".

Table 1. Characteristics of the respondents.

Staff category	No	Percentage (%)
Professional Librarians	45	29.8
Non-professional Librarians	106	70.2
Total	151	100

Moreover, while other researchers have shown that the use of the internet and other EIRs by students was limited by inadequate number of computers and access points (Malekani, 2006; Luambano and Nawe, 2004; Jagboro, 2003; Ojedokun, 2001), Hung (2004) argues that lack of skills in searching the internet is one of the limitations that affect its proper utilization (Hung, 2004). This explains why students limit themselves to searching for and reviewing information on entertainment, sports and news from around the world instead of using the internet for academic matters. The study of Iwehabura's (2009) shows that lack of adequate knowledge and skills in some aspects, including searching and evaluation affected the use of various EIRs in Tanzanian University libraries. The study recommended the development of ICT infrastructures, that librarians and teaching staff become role models and mentors to students in using EIRs, and that teaching staff adopt an active learning and student-centered approach in their teaching as well as strengthening information literacy programmes as intervention measures for improving students' skills in using EIRs.

The only paper related to electronic information resources management was Okoye and Ugwuanyi's (2012) paper. This paper examined the management functions performed by cataloguers in the management of EIRs in Nigerian university libraries. The recommendations made were based on the challenges and strategies identified. Bothmann and Holmbery (2006) identified the challenges to electronic resources management in libraries as consisting of planning, policies and workflow. The planning challenges were found to include staffing, budgeting, change, communication and management tools. In addition, the barriers to policy development were identified as change, decision making and communication. It must be emphasized that how each of these factors affect the management of electronic information resources in university libraries as yet to be emphatically determined in the literature.

The present study is an attempt to address this issue. While discussing the challenges of managing EIRS in libraries, Okoye and Ugwuanyi (2012) identified skills, acquisition, budgeting and communication as major challenges. They summarized the situation in Nigerian university libraries thus: "the situation in the present study is that there are no librarians designated on EIR librarian functions, particularly unique to electronic resources such as licensing, access set-up, link maintenance, inter-data-base linking are either non-existent or are at their embryonic stages of implementation. Few electronic management services available are done by professsionals". On the strategies for changing the situation, Okoye and Ugwuanyi (2012) were of the opinion that institutions should provided fund on that library schools in Nigeria should provide pragmatic training to student, libraries to enable them to handle e-resources. Kanyengo (2006) maintained that for effective management of digital resources in Africa, efforts should be focused on funding creating enabling policy framework and training of staff.

Purpose of the study

The purpose of this study is to identify the problems related to the management of electronic information resources in University of Nigeria, Nsukka (UNN) Library System. The specific objectives of the study are:

1. To identify the University policies and reforms that constitutes problems to the management of electronic information resources in UNN Library System.
2. To identify the problems associated with funding that affect the management of electronic information resources in UNN Library System.
3. To ascertain the problems of staffing that affect the management of electronic information resources in UNN Library System.
4. To ascertain the IT-related problems that affect the management of electronic information resources in UNN Library System.
5. To identify the strategies for enhancing the management of electronic information resources in the UNN Library System.

METHODOLOGY

This study employed a case study design to investigate the perceived problems of management of electronic information resources (EIRs) in the University of Nigeria, Nsukka Library System. The population of the study consisted of the library staff of the university library system. A total of 151 staff of the library was studied. The library staff consisted of 45 professional and 106 non-professional librarians as shown in Table 1. The instrument used for data collection was a questionnaire. The questionnaire consisted of five sections covering the research issues of the study. The questionnaire was trial tested to determine its internal consistency using Cronbach alpha co-efficient procedures. The coefficient alpha analysis yielded reliability coefficients of 0.86, 0.74, 0.76, and 0.71 for sections B, C, D and E. These alpha values are high enough and they show that the instrument is reliable. Out of the 151 copies of the questionnaire distributed, a total of 95 were correctly filled and used for the study. This gave a response rate of 62.5%. Data collected were analyzed using mean ($\bar{x}$) and standard deviation (SD), while t-test was used to establish the significance of the responses of the library staff on the dimensions of the problems of managing EIRs in the university library.

Table 2. Descriptive statistical analysis and t-test on administrative policies or practices affecting management of electronic information resources.

Item statement	Professional librarians		Non-professional librarians		t	Decision*
	$\overline{x}$	SD	$\overline{x}$	SD		
The University Librarian has no free hand in developing e-resources	1.82	0.98	1.70	1.10	0.56	NS
The University Administration has no regard for the Library	1.85	0.99	1.65	1.08	0.93	NS
There is no Policy for e-resources development in the University Library System	3.70	0.56	3.44	0.61	2.15	S
The University Administration determines how the Library should be run	1.70	1.05	1.80	0.99	-0.47	NS
The University Librarian has no free hand in taking decisions in developing library services	1.70	1.11	1.90	0.98	-0.91	NS
The University Administration imposes its decision on the library	1.85	0.99	1.75	1.02	0.48	NS
The University Library Management does not participate in decision making in matters relating to the Library at the higher level of University Administration	1.65	1.09	1.85	0.97	-0.92	NS

*NS = Not significant; S = significant.

RESULTS

The findings of the study are summarized and presented in the following tables. Table 1 shows the distribution of the workforce of the university library. This consisted of Professional Librarians (29.8%) and non-professional librarians (70.2). The non-professional librarians are made up of Senior Technical Staff (26.5%), Senior Administrative Staff (9.9%) Junior Technical Staff (29.2%) and Junior Administrative Staff (4.6%). Table 2 shows the administrative policies and practices that affect the management of electronic information resources in the University of Nigeria, Library System. The findings revealed that the University librarian enjoys some level of freedom in the day-to-day running of the university library. The major management problem is apparent lack of policy for e-resources development ($t = 2.15$, $p < 0.05$). Table 3 shows the funding problems that affect the management of EIRs in the University of Nigeria, Nsukka Library System. The results showed that the funding problems include no specific budget for electronic information resources ($t = 3.45$, $p < 0.05$); funds for the library are disbursed piecemeal ($t = 3.26$, $p < 0.05$) and insufficient budget allocation to meet the needs of the library ($t = 2.98$, $p < 0.05$). These findings showed that funding is a problem affecting the management of EIRs in the university library. Table 4 shows the personnel problems that affect the management of electronic information resources (EIRs) in the University of Nigeria, Nsukka Library System. The results showed that the personnel problems included lack of ICT skills among the library staff ($t = 2.45$, $p < 0.05$) and many of the library staff do not have background training in Library and Information Science ($t = 2.11$, $p < 0.05$). These factors are significant enough to hamper meaningful library development. This therefore implies that the library has personnel problems that affect the management of its EIRs.

Table 5 shows the IT-related problems that affect the management of EIRs in the University of Nigeria, Nsukka Libraries. These problem as indicated in the table included that the library is not fully automated ($t = 3.70$, $p < 0.05$), ICT infrastructure is poorly developed ($t = 3.39$, $p < 0.05$), and there is an absolute need for requisite equipment for library operations ($t = 3.30$, $p < 0.05$). These results showed that the university library has IT-related problems that affect the management of its EIRs. Table 6 shows the strategies for enhancing the manage-ment of EIRs in the university library. The results showed that the most effective of the strategies are formulation of policies for the development of EIRs ($t = 2.75$, $p < 0.05$) and setting aside a percent of the library budget for the development of EIRs. These findings showed that there is need for a strategic plan for the management of EIRs

Table 3. Descriptive statistical analysis and t-test on funding problems affecting management of EIRs.

Item statement	Professional librarians		Non-professional librarians		t	Decision*
	$\bar{x}$	SD	$\bar{x}$	SD		
The University Library board is in charge of managing library funds	1.45	1.09	1.55	1.04	-0.45	NS
There is no specific budget allocation for electronic information resources	3.85	0.48	3.45	0.56	3.74	S
There is no specific budget allocation for the library	2.28	0.81	2.12	0.90	0.91	NS
The library budget allocation is not sufficient to grapple with its needs	3.68	0.50	3.36	0.54	2.98	S
The library budget is spent without input from the library	1.55	0.91	1.45	0.97	0.48	NS
Funds for the library are disbursed piecemeal	3.68	0.51	3.32	0.56	3.26	S
Funds approved for project development in the library are not released on time	1.72	0.89	1.58	0.96	0.73	NS

* NS = Not significant; S = significant.

Table 4. Descriptive statistical analysis and t-test on personnel problems affecting management of EIRS.

Item statement	Professional librarians		Non-professional librarians		t	Decision*
	$\bar{x}$	SD	$\bar{x}$	SD		
The University Library lacks the required number of staff with which to function	2.10	0.99	1.94	1.01	0.72	NS
Many library staff do not have background in library and information science	3.64	0.52	3.36	0.59	2.45	S
Many professional staff lacks ICT skills.	3.90	0.43	3.70	0.49	2.11	S
Promotion of Library staff is based on qualification	3.07	0.61	2.95	0.75	0.86	NS
Promotion of library is performance-based	3.08	0.70	2.92	0.82	1.02	NS
Library staff are granted study leave	2.75	0.74	2.59	0.95	0.92	NS
Working conditions are poor	1.70	1.05	1.80	0.99	-0.47	NS
Work and moral ethics are not respected	1.62	1.01	1.48	1.08	0.65	NS
There is a high degree of professional staff turnover because of poor working conditions	1.36	1.10	1.44	1.09	-0.35	NS

*NS = Not significant; S = significant.

in the University library.

DISCUSSION

The problems of management of electronic information resources (EIRs) have been found to be multi-dimensional. These problems appear to be compounded because of the limitations of use of electronic information resources in university libraries. The results showed that the libraries of the University of Nigeria, Nsukka, do not have a policy for development of EIRs. This is indeed an administrative policy or practice that constitutes a problem for managing the library's EIRs. Management of EIRs begins with keeping track of them in the library, and e policy that defines what should be acquired and how

Tables 5. Descriptive statistical analysis and t-test on IT- related problems affecting management of EIRs.

Item statement	Professional librarians		Non-professional librarians		t	Decision*
	$\bar{x}$	SD	$\bar{x}$	SD		
The equipment available is outdated	1.58	0.63	1.42	0.70	1.17	NS
The University Library is not fully automated	3.80	0.59	3.34	0.61	3.70	S
There is an absolute need for requisite equipment for library operations	3.82	0.60	3.40	0.63	3.30	S
The library does not have internet facilities	2.12	0.83	2.30	0.71	-1.11	NS
The ICT infrastructure is poorly developed	3.30	0.50	2.90	0.55	3.39	S
The work facilities available are not suitable for library operations	2.34	0.69	2.28	O.75	0.40	NS

*NS = Not significant; S = significant.

Table 6. Descriptive statistical analysis and t-test on strategies for enhancing the management of EIRs.

Item statement	Professional librarians		Non-professional librarians		t	Decision*
	$\bar{x}$	SD	$\bar{x}$	SD		
Training needs of the professional staff should be identified	3.56	0.64	3.34	0.71	1.58	NS
The ICT skills of staff should be enhanced	3.63	0.51	3.37	0.60	1.92	NS
Development of Information Literacy Programmes	3.34	0.56	3.42	0.70	-0.59	NS
There should be policy for the development of EIRs	3.72	0.35	3.48	0.50	2.75	S
A certain percentage of the library budget should be set aside for the development of EIRs.	3.73	0.35	3.57	0.40	2.08	S
Fund allocation to the library for project development and implementation should be increased and promptly released	3.42	0.62	3.58	0.51	-1.34	NS
Fully integrated library automation should be developed	2.99	0.71	3.01	0.62	0.14	NS
ICT infrastructures should be developed for efficient library services and operations	3.23	0.58	3.19	0.60	0.33	NS

*NS = Not significant; S = significant.

where th to acquire them is lacking, the collection or development of EIRs in the library will be affected. This will result in apparent lack of EIRs in the library.

Another management problem of EIRs in the university library is funding. The results showed that there is no specific budget allocation for the development of EIRs; the library budget is not sufficient to meet the needs of the library, and the funds for library development are disbursed piecemeal. These factors make it even more difficult for the university library to have an up-to-date print collection let alone EIRS that are capital intensive and require specialized training and retraining. This training may not be possible because of lack of funds and it has a multiplier effect in the sense that when the

librarians, who are to teach information literacy skills do not possess these skills themselves, the library users will suffer the same fate. This supports the finding by Ray and Day (1998) that students' access to EIRS is affected due to their lack of effective information retrieval skills. The results also showed that staffing is another problem that affects the management of EIRS in the University library. Many of the library staff do not have background training in library and information science. Among the professional librarians, many do not have ICT skills. These findings are not unexpected because of the de-creasing budgetary allocations to the university library.

It has also been found that there are information technology factors that affect the management of EIRS in

the university Library. One of these factors is that the university library system is not fully automated. There is also an absolute need for requisite equipment for library operations. In addition, the ICT infrastructure is poorly developed. With the basic ICT infrastructures lacking in the university library, it will be difficult to keep track of EIRS and more difficult to organize them in order to provide access to them. These results support the findings by Malekani (2006), Jagboro (2003) and Ojedokun (2001) that the use of the internet and other EIRS by students was limited by an inadequate number of computers and access points.

Finally, the results showed that the strategic plan of the university library for enhancing the management of its electronic information resources should address a lot of issues. These issues span the critical success factors for the development and use of EIRS in the university library and they include development of ICT policy and fund allocation to the library for innovation and creativity within the context of EIR development in the University library.

CONCLUSION AND RECOMMENDATION

The university library environment is changing. University librarians are advised to keep pace with changes otherwise they will be left behind. Providing unlimited access to electronic information resources in the university library as well as keeping track of them is one way of keeping pace with change. The success of the university library in electronic resources provision depends on its ability to contend with the problems associated with the management of EIRS. These problems are found to be linked with administrative policies/practices, funding, staffing and e-resources provision using ICT. Based on the findings of this study, the following recommendations are made:

Budget allocation for development of EIRS

A certain percentage of the library budget should be allocated to the development of electronic information resources in the university library. Funding issues may also be addressed by diverting funds from the print resource allocations or by canceling some journal titles in order to get enough money for new resources. Another option could be to participate in library networks or consortia to enjoy the benefits of discounts. Finally, the University library may explore the option of making constant requests to the University Administration for sufficient funds allocations for electronic resource development and collection.

Re-skilling of librarians

Librarians and other paraprofessionals should be trained and retrained so as to function effectively in an IT-driven information environment. The acquisition of requisite ICT skills will help them to develop digital information resources or strategically plan for the management of EIRs.

ICT infrastructural development

There should be a policy as well a strategic plan for ICT infrastructural development in the university library. This will provide an enabling environment for the organization and use of EIRS in the university Library.

Commitment to digital library projects

These digital projects that need to be developed in the University library include integrated library automation, creation of standardized databases, digitization of theses and dissertations, and creation of various types of institutional repositories (IRS). Commitments to each of these projects will redefine, reposition and reinvent the university library for user-centered services.

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