

Acquisition Process for Electronic Journals in Academic Libraries

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ABSTRACT

Academic libraries are one of the several, and in fact, the most important source of information available to the academic community. With the growth of Information and Communication Technology (ICT), many more ways of information flow are being opened. Libraries generally contain electronic as well as non-electronic resources, including journals which are indispensable secondary sources of information for the academia with respect to research. This paper presents the process involved in the acquisition of electronic version of journals for academic libraries. This is against the backdrop of inadequate and obsolete journals in these “information houses”. Implications of and hindrances to e-journal acquisition in this digital age are also discussed.

Keywords: Electronic journals, Academic libraries, Digital age, ICT, Electronic resources

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I. INTRODUCTION

Academic libraries are one of the several, and in fact, the most important source of information available to the academic community, with the growth of Information and Communication Technology opening many more ways of information flow. A research study by [1] indicates that the staff of typical African universities felt let down by their Universities and that it is the failure of the libraries

to obtain and make the journals needed available that has led them (the staff) to seek other ways of access. They still hope that their libraries will be able to order more journals, both general and African. At the same time, the point was made that just a copy of an essential journal wasn't enough; copies also need to be available at departmental level. This is the situation academic libraries have found themselves mainly due to inadequate funds. It is a well known fact that current journal titles are very

difficult to find in most academic libraries in Nigeria. In fact, very few libraries can boast of any quantity of new titles for the past few years. Electronic journals are a viable means of transmitting knowledge especially in this era of information proliferation. They contain more updated information than print journals and are also readily accessible especially to the academia.

Electronic journals are considered in this paper as remote access electronic resource [2] that has to be accessed with the use of computers and other peripheral devices, which contain information issued sequentially with numerical and chronological order and intended to be continued indefinitely [3].

Academic researchers publish to establish their claim at a specific time for a specific result, to gain other forms of recognition (such as promotion and tenure) and to have independent certification of the results. They also communicate with those who may be interested in their works, researchers in related fields and students working their way into the inner ring. If the academic researcher as an author is focused in this way, any source of information whether a journal article, database, newspaper or a primary source document can be important. The easier the access to these sources, the more likely the sources will be used. It is for this reason (which includes improved access that means quicker publications, desktop access, improved search and retrieval tools) that electronic journals take on real significance.

Electronic journals can generally be of two types, namely offline journals and online journals [4]. An off-line electronic journal is an electronic document which is bibliographically identifiable and is stored in machine readable form on an electronic storage medium. Journals on CD and DVD ROMs are typical examples. An online journal, on the other hand, is an electronic document that is bibliographically identifiable, is stored in machine readable form on an electronic storage medium and is available on-line.

The present paper discusses the process involved in the acquisition of e-journals for academic libraries. The primary focus is on online journals, as against off-line journals. Implications of and hindrances to e-journal acquisition in this digital age are also discussed.

II. LITERATURE REVIEW

The new electronic journals already offer facilities that are not available for users of paper. These include the

ability to search for a particular content within a paper or a complete journal; cross referencing i.e. the ability to move quickly from the article one is reading to one which it cites in its references and that includes forward citing. Such electronic linking is in principle easy within a given journal or within a stable of journals from the same publisher, provided that electronic versions are available.

The first electronic journal to be distributed in the years 1994-1995 was Electronics Online by the Institute of Electrical Engineers (IEE) who distributed the journal via Online Computer Library Centre (OCLC) [5]. OCLC is a global library cooperative which provides shared technology services. It also provides original research and community programs for its thousands of library members in over 100 countries. OCLC invented a client called Guidon for installation on the reader's station. Guidon was an excellent tool, with a very rich functionality; unfortunately it was not web-based. It became obsolete as soon as the web was chosen for the distribution of electronic journals. Web distribution started in 1995-1996 and was an immediate success. It was possible to use the rich format PDF (Portable Document Format) to embed links in the text and to start to use multimedia tools [6].

It has been emphasized in [7] that there are a number of benefits arising from the transition of most journals as well as other publications to online distributions for publishers. These include faster publication of articles, shifting of cost of printing and binding to local sites (where they become optional), elimination of postage and warehousing costs, and access to articles by individuals without subscribing to a whole journal and preliminary versions. Of all the above, access to individual articles would be the most advantageous to academic libraries because of the reduction in cost without having to buy the whole journal, then, of course, availability is improved, thereby making research articles updated and accessible.

According to [8], the Internet now makes it possible for the user to have easy access to vast amounts of information. The user can manipulate this information in various ways to create new syntheses of knowledge. In effect, the internet is changing the role of printed information, since the web not the information is becoming the medium of research communication.

Studies have been carried out on the state, awareness, impact and usage of electronic journals and information resources in different countries. These include Nigeria [9, 10, 11], Ghana [12], Malaysia [13], India [14, 15], Turkey [16], Malawi [17] and Kenya [18]. In [19], a discourse on

development of electronic journals in Africa was presented, with a focus on African Journal Online (AJOL) project. Other successful African electronic journals include *African Journal of Library, Archives and Information Science*, and *African Journal of Computing and ICT*. [20] discusses the cost of journal publishing while [21] dwells on the approach for automating the processing of electronic mathematical documents and their transformation into semantic documents.

III. ACQUISITION OF ELECTRONIC JOURNALS FOR LIBRARIES

The process involved in acquiring e-journals includes selection, acquisition and registration, installation, document description, authentication and integrity, and migration. Others include storage, conversion, emulation, indexing and access.

Selection

Research is being carried out by many libraries in the world into the best methods to give access to electronic materials in the very long term. Because of the sheer quantity of material being produced, particularly for access via the World Wide Web, selection is essential. Many archives and libraries use the existing selection criteria for printed materials for electronic materials as well. The contents of the document are the relevant factors for selection and not the medium. This means that the physical carrier, the hardware and the software used are not relevant for the selection process. Local policy defines the criteria for selection e.g. Lecturers can be presented with the table of contents of journals available, so the most requested can be subscribed to [2, 9].

Acquisition and Registration

Off-line publications can often come to the library as printed publications. On-line publications require a new form of co-operation. The publication has to be transmitted from the host system to the library via the network. Selected documents are either ordered or transferred automatically by the publisher or harvested by the library with a harvester application. For on-line documents, acquisition means the physical migration (via the network) of the document from the host-system to the depository system. The Serials librarian needs to be involved in this process. They could also come by means of access to the full text on the publisher's website. It is necessary to register documents when they are received by the library. This requires the exchange of bibliographic information (pre-publishing information) between the

depository library and publisher preferably before acquisition [2].

Installation

It is necessary to install the electronic publication so it can be viewed and described by the librarian. For on-line documents, a connection to the host-system is required.

Description of the Document

Cataloguing systems for electronic documents are still the subject of much debate. Various groups are discussing how to describe an electronic document. The existing book-based systems such as MARC (Machine Readable Cataloging) and its variants do not fully describe these new formats. For example, to be able to view an electronic publication, it is also necessary to describe the technical features like the computer and operating system which the publication made for, the formats used etc. Many fields for the technical description will be made in coded form. The traditional system of author, title and subject are also used except that it is indicated whether access is online. The main problem comes when an article is been subscribed.

In the international book trade, the unique identification numbers ISBN (International Standard Book Number) and ISSN (International Standard Serial Number) are widely used to uniquely identify a certain version of a monograph or serial publication. ISBN and ISSN are also used for CD-ROMs and on-line publications like electronic journals. However, these numbers are not designed for electronic publications and a proposal was, therefore, made for a Digital Object Identifier (DOI). The DOI is designed by Association of American Publishers and the Corporation for National Research Initiatives [22].

Authenticity and Integrity

Some electronic publications can easily be changed. What guarantee is there that the bibliographic description defines exactly the version which is stored? And will it still do so after the lapse of several hundred years and the migration to other carriers and formats. This is still a very tricky area. Several methods are being considered, e.g. time stamps, encryptions and watermarks. But it must be said that the final solution for this issue has yet to be found [23, 24].

Migration – This refers to movement of the electronic content from the original carrier to the physical storage of the depository system, including migration quality control

and duplication for backup (preferably on another medium).

Storage – The section of storage that records the physical locations of all the files in a document and makes the file map available to the search engine is called pathfinder. The physical storage system will probably use different types of media with different access speeds, e.g. hard disc (very fast), magneto-optical (fast), tape (slow). This requires sophisticated software to monitor the use of documents and to shift documents from tape to discs and vice versa.

Conversion and Emulation – In carrying out this task, certain questions need be asked. For instance, would the format of a document be converted to a new format? Or would a system be designed in which the document is stored in the original format? Emulation software enables the document stored in the original format to be viewed using the new hardware and software.

Indexing

Descriptive information is indexed for use within the search engine of the depository system. This engine can be part of the pathfinder software or can be a separate existing library system's OPAC module, to be defined locally. To find the right compromise between (the user's) indexing requirements and the technical possibilities is very complicated.

Access

Access to electronic publications by end users must be clearly defined. At present, most access is "on-site" but, when agreements are made with the owners of the information, remote access may be possible. As with the deposit for printed publications, electronic deposit collections should be used as "collections of last resort". Libraries can, however, give access when agreements are reached with publishers and authors.

IV. IMPLICATIONS AND HINDRANCES

The introduction of electronic publications especially, electronic journals has implications for improving educational standards, library and information services delivery and the creation of an informed academia.

Learners as well as researchers no longer need to concern themselves with location or format or access problems. This is because they can be supplied whatever the appropriate contents turn out to be and with such immediacy that cannot be found with print publications.

Improving library and Information services delivery is another implication for electronic journals in academic libraries. Inadequate funding is making it difficult for academic libraries to afford their previous levels of purchases. This has also made it difficult for them to maintain their acquisition practices beyond the continent of Africa. Many of them have therefore had to review their subscription and/or purchase policies. Many have even embarked on journal cancellation as a way of making funds available for other areas of needs; the consequence is that these libraries can no longer satisfy the demands of their customers in terms of new and improved services to academic researchers who would always need update on different areas of research.

Access to electronic publications would be easier for Academic libraries. Printed publications like monographs and serials are no longer available on the market permanently. After a relatively short time, a specific edition of a monograph can be difficult to find in a book shop, though it may be possible to order from a large distributor or even the publisher. With off-line electronic publications it is exactly the same. The publishers are no longer interested in keeping publications available when there is no commercial interest in the products. This may be understandable from the market point of view but is still unfortunate. In addition, publishers often do not have a full archive of their own publications. It is very important, therefore, that as soon as possible after the publication date a document should be selected, described and made available (at least for review on site) by a public body like a national archive or a national library.

Based on the above, with electronic subscription, libraries can now subscribe for individual articles instead of purchasing the whole journal title. This further reduces the cost implications associated with acquisitions, storage and preservation of collections. Electronic journals would also serve as a gateway access to the worldwide academic resources extending beyond the resources that are physically available in these libraries.

Improving the inadequacy of Information and Communication Technology facilities and access to Internet seem to be the very first problems academic libraries in Nigeria would have as regards to access and subscription to electronic journals. E-journals require peripheral ICT devices and internet connectivity for them to be assessed. Another problem peculiar to Nigeria is the issue of erratic power, without which assessing the subscribed journals becomes difficult even if the ICT facilities are fully functional.

In buying different software to access the journals, the frequently used formats are the PDF and SGML (Standard Generalized Markup Language). PDF is a proprietary format controlled by Adobe while SGML is an encoding language that became a standard of the International Organization for Standardization (ISO).

Increasing speed of technological innovation, new publishing techniques, Internet and the present lack of standards are a few examples of the uncertainties in which the manager of a depository system must face. There is no proven solution for these systems; large vendors have built systems for data-warehousing and data-mining, although some lack the structured indexing and large scale preservation solutions needed by libraries and archives.

Technical expertise is also important to e-journal management. Libraries should fully embrace the introduction and establishment of information and communication technology into traditional libraries and also ensure competence of the staff. This would go a long way in attaining optimal functionality of e-journals.

V. RECOMMENDATIONS AND CONCLUSION

The University Libraries should subscribe more to electronic journals to complement for the inadequacies of the library stock and also to increase accessibility and level of awareness especially amongst the academia that need these publications for their day to day research. With this subscription, risk of damage and mutilation is reduced. An alternative source of power supply should be provided to make up for the inadequacies of the erratic power supply, which seem to be the major challenge of assessing electronic publications. Training and retraining of staff on the use of Information communication technology (ICT) must be put in place.

Electronic journals create new capabilities that extend far beyond what the print journals can provide. It is precisely these new capabilities that make electronic journals a powerful and indispensable tool for the researchers, students and lecturers who are the bulk users/patrons of academic libraries.

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