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The Intelligent University Library: Developing a More Comprehensive Option for the Researcher

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Abstract

The aim of this short conference presentation was to highlight the importance of seeking alternative technological approaches to the optimization of university libraries' resources and services. It discusses briefly the changes that are taking place in universities, and the importance for libraries of being seen to contribute to facilitating those changes. It explains the growing importance of research activity, and the expectations of researchers, an increasingly influential group in universities. It then goes on to outline the potential for increasing collections of electronic information by redirecting some of the effort of the libraries' staff towards discovering and securing resources that are already available and offer data and information that may be valued by researchers. Finally, it provides a reminder that it is not enough to be good at what you do unless this is recognised, and stresses the importance of networking and advocacy as a means of providing a constant reminder to the influential and decision makers.

Introduction

There have been significant changes in universities since I first visited university libraries in less developed countries regularly as a professional observer and occasional adviser. At that time, more than 35 years ago, simple automated systems were just beginning to be introduced for cataloguing and controlling circulation. Most of the attention now focussed on the creation of the so-called 'Intelligent Library' seems to be on the development of those systems into so-called 'smart' systems and their integration into the so-called 'Internet of Things' technology which enables users to interact with systems from remote personal devices (e.g. Xu 2014). However, an 'intelligent library' is not simply one that has the most up to date technology. It is a library that uses technology to respond in a timely and effective way to changes that are taking place in its university. In this presentation, I shall briefly review some of the changes in universities and their implications for libraries; some ways in which university libraries could respond by enhancing their electronic information resources; and

how this could be used to win the support of the library's users and the university's managers.

The Profile of Modern Universities

If we look closely at how universities are changing, we can see that they are changing in several ways, and with clear implications for their library services.

- More students
- e-learning
- More higher degree students
- Inter-disciplinary and international collaboration in research
- Engaged in local and national development
- Evaluation of teaching quality and research outputs

Figure 1: The profile of the modern university

Some of the changes taking place in teaching are very familiar and have received a great deal of attention from librarians. There are more students because people see a university education not only as having an intrinsic value but also as a pathway to a better paid job, and because governments are encouraging universities to produce more of the highly educated people that are needed to support a growing and diverse economy. These students are likely to have higher expectations of what a university degree will bring them, but perhaps less familiar with using libraries than their predecessors, and need more assistance. The introduction of e-learning, either as support for conventional classroom teaching, or as the medium for the delivery of distance learning, has created an expectation that the learning resources required will be available anywhere and immediately, and has led to the popularity of online access to digital information sources.

Research in universities has also taken on new dimensions. The need for more specialised knowledge to advance their careers has encouraged more people to take Masters and Doctoral degrees. Research activity by the academic staff continues to be undertaken in pursuit of scientific and scholarly progress, but is now often multi-disciplinary and may involve international collaboration. Universities that depend on public funding are also expected to contribute to local and national economic and social development. The consequence for university libraries is an increasing demand for a wider range of resources.   At the same time, the appearance of national and international surveys and 'league tables' of universities has made senior university managers aware of how their university's reputation is affected by assessments of teaching quality and research.

Attracting and Supporting Knowledge Workers

A university's managers face many challenges — the most obvious being the challenge of reconciling the limitations on state and personal incomes with the growing expectations of society and individuals. To facilitate the changes that are expected, and to maintain or improve their position in the 'league tables', the

university's senior managers know that a principal requirement is to attract and develop students, teachers, and researchers who will demonstrate the university's pedagogical, scholarly and scientific strengths.

The best of these 'knowledge workers' — the researchers — are not only well educated, and expect to be well informed, but are also socially and geographically mobile. They not only expect to be offered an attractive salary, but also expect their physical or institutional location to not disadvantage them. They expect their university's libraries' facilities and services, as far as possible, to match the best worldwide to enable them to remain competitive and successful in their subject area. In many universities, this is creating unprecedented demands for the enhancement of the research resources available through the library.

Creative Subversion — a Characteristic of Intelligent University Libraries

The challenge facing the university library's staff is to identify how they could effectively support these developments in the university by improving the library's resources and services. The key to success is recognising that any development must be seen to meet the expectations of the university's managers and other influential people within the university community. Achieving one's own goals whilst appearing to serve the needs of higher authority is a management technique that is sometimes called 'creative subversion' (Jones 1973; 1984).

In terms of utilising technological developments to provide more comprehensive services for these demanding library users, it seems to me that there are 3 other important characteristics that university libraries and their staff must demonstrate. They should be:
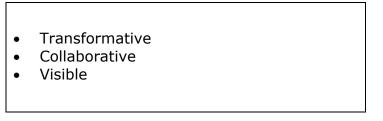
- Transformative
- Collaborative
- Visible

Figure 3: Characteristics of an intelligent university library's staff

Transforming the Available Research Information

In a rapidly changing and difficult environment, the staff of an intelligent library need to be not only competent to manage current systems and services, but must also have the insight to identify changes in the information needed in the university and a commitment to transform and enhance their services by constructing or adapting new sources of information, perhaps by redirecting some of their efforts through the introduction of lean management strategies to release staff time instead of seeking more money (Huber 2011).

Because researchers are increasingly important and influential within universities, the aim of this short paper is to focus on the higher degree and research activity of universities. Faced by the increasing expectations of researchers and senior university managers, what could university libraries do to enhance their services and resources for researchers? How could university libraries enrich their research resources by exploiting some of the technological advances that are taking place in publishing.

While I welcome the availability of information made possible by the development of Open Access publishing, and efforts to improve the quality of online journals, the reality is that there are many electronic serial publications which are not issued by the small number of commercial publishers who dominate scholarly and scientific journal publishing and that do not qualify for inclusion in services such as the Directory of Open Access Journals (DOAJ). That does not mean that those serials, many issued by not-for-profit organisations, would not be of interest to researchers, particularly in the humanities and social sciences. The challenge for libraries is to identify those publications, and make them available in an organised way for the researchers in their university, who may, in fact, find useful information in them that is not readily available elsewhere — data, information, or references to unfamiliar sources of information. Some publishing companies have already identified that many popular magazines contain potentially useful information, and represent a new business opportunity. They are starting to digitise those that are only available in printed formats, and will put them behind pay-walls! (Hodgkin 2016).

The emergence of electronic publishing at the same time as university managers are encouraging academics to enhance their own and the university's reputation by publishing more, or by being members of journal editorial boards, has led to the appearance of journal publishers who do not demonstrate the professional integrity required in academic publishing. They will publish anything for authors who are desperate enough to pay a fee to have a paper published. They recruit editors and editorial advisory committees who have no experience of exercising the critical judgement necessary to control the quality of the content, but who are under the same pressure as authors to seek the prestige of being seen to be involved with a published journal. Many of these publishers and their journals can be identified from 'Beall's List' of predatory publishers, first compiled 4 years ago by Jeffrey Beall of the University of Colorado libraries (https://scholarlyoa.com/2012/12/06/bealls-list-of-predatory-publishers-2013/).

Although these journals may include some material that may useful to researchers, it is perhaps controversial to suggest that they should be made available through university libraries. If this is done, it should only be undertaken in an organised and controlled way. Researchers need to be made aware that the content of these journals should be read critically and any reference to them in papers subsequently published should be accompanied by a 'health warning' in the same way that McAfee's web-protection software links a warning in the results of a Google search to the URLs of web sites that attempt to induce people to provide their personal and financial data. The researcher and their future readers first need to be alerted in some way to the distinctive nature of the content of journals that are being published by these less reputable organisations. In the same way that major commercial publishers are already starting to link individual papers to their ISI and SCOPUS citation records, libraries that make these journals available could, for example, add an advisory link from each paper to 'Beall's List'. If nothing else, it may help to raise their awareness of one of the key skills required to be information literate in the modern age — the exercise of critical judgement.

Collaborative Action to Enhance Resource Availability

These predatory journal publishers are principally based in Africa and Asia, and prey on authors from the English-speaking community. However, throughout the world, many serial publications from reputable independent publishers do not

appear regularly, or have a short life, or do not have a stable location on the web, and may not be archived. Regardless of their quality, access to these secondary serial publications needs to be checked regularly. Those that originate within a university need to be captured and archived by the university library in its repository. All this requires some considerable effort. Of course, the task of doing all this would be made easier if the work could be shared amongst a group of libraries.

There are many other reasons for libraries to collaborate in today's environment.

The growth in the number of journals has been driven by increases in the volume of papers published in all disciplines. Inter-disciplinary, inter-institutional and international collaborative research are features of the modern universities, and there is probably no library, even in the largest and wealthiest universities, that can meet all researcher's diverse needs from its own resources. Libraries throughout the world have worked together to negotiate better prices for electronic journal services, to ensure that some journals and e-books are available in every member of the consortium, and to offer free access to electronic media to alumni or even to people from their local community who are not staff or students of the university. I am not familiar with the arrangements for purchasing electronic resources for university libraries everywhere but I am surprised that there are so few countries in which universities has taken advantage of the support available from eIFL — electronic Information for Libraries (http://www.eifl.net/) — a foundation that has already helped to establish consortia of libraries in more than 40 countries and then assists them to acquire electronic journals at reduced prices from more than 40 publishers.

University libraries could also work together in other ways to provide a wider range of resources for researchers. For example, some coordinated pressure needs to be brought to bear on commercial publishers whose digitised journals are incomplete. In some cases, the publisher had not retained a complete file of the printed issues of a journal, and digitised only the issues that they had. Other digitised journals contain only the major articles published in a journal, and omit the short notes, news items and advertisements because the publishers did not understand that they may provide researchers with the first or perhaps only indication of events or activities or who was involved.

There are also numerous printed journals which are no longer published and may never have been covered by the indexing services, but which, in many fields, include knowledge which is still relevant to the interest of researchers. At present, if a researcher has access to them, they must be searched manually, page by page. How could arrangements be made to digitise these journals — a task that may need to be preceded by a search to determine whether anyone can be identified as the current owner of the rights to reproduce them?

In the less developed countries, the distribution of printed journals has typically been poor; few libraries have complete collections. How can these be comprehensively digitised and made available online from one place for wider use?

It is also worth noting that few older books originally published in less developed countries have been digitised and can be found in the Internet Archive (https://archive.org), in the Hathi Trust collection (https://www.hathitrust.org), the Directory of Open Access Books (http://www.doabooks.org), etc. The older libraries in the less developed countries have major collections of rare books, often including the last surviving copy, typically in such poor physical condition

that access to them must be limited. These books need to be digitised and made available to facilitate greater use locally and globally.

Digitising these printed publications may need additional funding, but there is ample evidence that foundations will support the coordinated action that is needed to ensure that any necessary copyright clearance is secured, that a digitised collection of journals or newspapers is complete, and that the digital copies are hosted online in a secure server.

Visibility – the 'Smart' Librarian

This paper has mentioned just a few of the opportunities for intelligent libraries to meet the emerging needs of a modern university, and may have stimulated further thoughts about how those challenges could be addressed. There is, of course, little point in making the effort to do all these things for the university's research community unless the library gets the credit for doing so. There is no point in being the best at anything unless that is well known.

Libraries have to compete for a share of the university's resources, but unless they continually present evidence of their expertise, efforts and impact, libraries are likely to be regarded as a lesser priority. All the library's staff need to be committed not only to the effort required to introduce new approaches to library services, but also to being an active participant in the public life of the university, familiar with the changes that are being introduced in the library's services, armed with evidence of the impact of those changes, and building a network of supportive and influential personal relationships both within and external to the university. An 'intelligent library' needs 'smart' staff.

REFERENCES

Hodgkin, A. 2016. Magazine Archives in Libraries. *CILIP Update* November: 48.

Huber, J. 2011. *Lean Library Management: Eleven Strategies for Reducing Costs and Improving Services*. Chicago, IL, USA: Neal-Schuman.

Jones, K.H. 1973. Creative Library Management (parts 1 & 2). *Assistant Librarian*, 66 (10), October, 164-165; 66 (11), November, 178-182

Jones, K.H. 1984. *Conflict and Change in Library Organizations: People, Power and Service.* London, U.K.: Bingley

Xu, L. 2014. "The Internet of Things Technology Application and the Intelligent Library." *Applied Mechanics & Materials* 571-572: 1180-1183

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