Position or Purpose: Situating the Library in a Webbed World

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ABSTRACT   *The University of Southern Queensland (USQ) is building on its long experience in distance education to design for the delivery of a comprehensive range of teaching, learning and support services in a web environment. The author is a university librarian who has also taken on the role of directing the corporate project that is developing USQ's vision of the eUniversity. From the perspective of this project, she discusses the challenges for librarians of integrating with other functions to meet the needs of students studying 'flexibly'. What is the role of the library for an online student who may only know the university as a web site? What will be the expectations of those students, formed by familiarity with commercial applications on the web, and can they be met without lowering academic standards? The article discusses some of the implications – legal, pedagogical, technical - of working in a web environment to deliver learning flexibly.*

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'Flexible delivery', like so many of the terms in which our modern discourse is conducted, has a number of different shades of meaning. To some people it connotes a particular form of distance education, one which makes use of modern technologies to a greater or lesser degree. More loosely it seems sometimes to be conflated with 'online delivery'. The necessary element for delivery to be 'flexible' is that learning is not dependent on the presence of a student at a particular time in a particular place. This of course is a characteristic of distance education, at least as it is understood in Australia. However it is possible to give a student on campus flexibility about how and when they learn by the provision of materials that can be studied at the student's convenience, outside of scheduled lecture or tutorial times. In this sense it might be said that library services have always been an example of flexible delivery. But this is to play with semantics. In practice the term today always assumes that the delivery of teaching 'flexibly' involves some use of technology, and usually communications technology, whether via an intranet or the web.

This paper will be about flexible delivery almost exclusively as a means of delivering education at a distance and online. That is not to deny its validity as a means of enhancing the on-campus experience. It simply reflects the fact that the author works at a distance education university where the planning of library services online has been particularly concerned to serve students studying off-campus. It is obvious that on-campus students are also beneficiaries of this work, but they will not be the focus of the paper.

The value of on-campus libraries or the traditional services offered from them to distance students are not under challenge here. It is undoubted that access to a good library, and training in how to use it, is still important in a quality general university education. But we know from experience that it is impossible to reproduce the on-campus library experience for most distance students, not because to do so is expensive (though it is), but because the time involved in the delivery of requested items simply means that the service can never be as convenient as being able to call into a physical library when the need arises. If a student realizes in the middle of writing up an assignment that they need extra information, it may be impossible for them to obtain it at short notice without visiting a library. Only the rare student starts their work sufficiently far ahead to plan for this eventuality.

Given that libraries have for some years now been making access to catalogues, databases, and other resources available online, why should we be concerned that our practice may require examination just because teachers are also discovering that information, broadly defined, can be delivered in this mode? The simple answer is that, as universities move more of their programs into the online environment, the number of their students and our clients who will expect remote access will grow, as will the demand for more and better supporting services including libraries. A more sophisticated answer is that the new environment is reinventing teaching and learning, and libraries need to ask themselves whether there are any implications there for our practice. A more radical perspective still suggests that in the web environment the delivery of all services might need reexamination, including some of the organizational boundaries we have put around services and their providers. It is this more radical perspective that will be explored in this paper.

A Look into the Future

Consider this scenario. The year is 2010. A student has enrolled, on the other side of the world, in an online course (or subject unit) offered by a university in Australia. This course is part of a study plan she is following by using a portal that provides access to a range of degree programs offered by a number of universities around the world. The student has taken advantage of the personal career advice and planning offered by the portal, and has put together a suite of subjects from several providers that will build into a degree for which she will receive accreditation from one of the universities. (An alternative scenario envisions that the portal operator itself will become the accrediting agency.) The student may never visit the university with which she has enrolled. She may or may not have studied on-campus, she may or may not be familiar with the way Australian universities are organized and the terminology they use to describe themselves and their functions. She is most likely to be a mature-age student, since by 2010 lifelong learning has become the largest part of the higher education market. In any case, for this student her current university is a web site.

The challenge of meeting this student's learning needs cannot be properly addressed without taking into account the nature of the environment in which her interactions with the university will take place. By 2010 web-based computing will have become pervasive; ubiquitous devices including wireless PDAs will allow access to web-based information and services any time anywhere in the developed world. Our student spends a lot of time in this environment, for business or pleasure. Her expectations are framed by the web's large commercial operators, who compete to provide an attractive intuitive environment, save her time, and deliver personalized information and services. Since our student has paid for her course, she expects a similar standard of performance from the university.

We can take it for granted that, when the student logs on to the university, she will have delivered to her desktop or PDA a range of resources and functions that are specific to her course. Just what will that desktop look like, and will there be something there that she recognizes as a library?

The Lessons of Experience

Before we address that question, let us consider what we already know about users and the web. These are still early days and much can happen between 2001 and 2010, but we do seem to have come to the end of the first chaotic stage of web design and development with some lessons learnt, and there are serious moves being made to bring order to the information marketplace at last. We know the following:

- Users searching the web for information, or using information services, value simplicity. They want to find the information they need quickly, with as few mouse clicks as possible.

- Web sites that are designed from the institutional perspective out, with an information architecture based on organizational structures may be perfectly understandable to those who work within the organization, but they are confusing to others. They won't care who the Vice Chancellor is, or how the work of the organization is divided. They just want to find what they are looking for.
- Hyperlinking, dynamic multiple searching and open URLs make it possible to build very rich information environments without forcing users to recognize or master the structures that are so important to librarians. These structures have been dictated by the way in which information is produced and published, and the various ways by which librarians and others have stored, organized and provided access to information.
- A rich information store alone does not create an effective learning experience. MIT has recently announced that they will be making all their course content available on the public web. In many quarters this has caused surprise and consternation. Why? All the recorded knowledge of the world, at least at a sub-doctoral level, is already available in libraries and bookstores. Students still enroll at universities because of the value that teachers and others add to recorded knowledge, and because only by enrolling can they receive a degree. The MIT move does however remind us that most value for the learner lies not in the mere commodity of recorded knowledge but in the quality of the support and services that a university can provide that facilitate learning.
- In the business environment at least, the recognition of the value of implicit knowledge has given rise to the techniques known as knowledge management. This promises to build and organize databases of knowledge of potential usefulness, but the quality measures applied to input are not those we are used to teaching our students. This has implications for the critical judgment that students may exercise in future when using information.

Cooper and Dempsey1 state that in serving remote users '…library staff must possess a superior understanding of customers linked with the library's capabilities. We must understand our customers' behavioral needs, their overall attitudes, the environment in which they use services and products, and their perceptions of how services and resources compare to those of other service providers.'

Bearing this in mind, and with the reservation that we should define 'the library's capabilities' as including the capacity to draw on the extended information environment that is the web, let us examine some of the themes that emerge from the lessons above, and their implications for the design of library services for online learners.

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If online learners expect that what is delivered to their desktop will be tailored specifically for them, how long will they be satisfied with a simple link to the library's home page, from where they are expected to search the general catalogue or choose from

a collection of databases? Libraries have made efforts to enrich their sites with supplementary materials or links to other libraries or subject gateways. Many, like USQ, provide guides to the literature based on disciplines, faculties or courses. These the student usually must find from the general library page. We know from the JUSTEIS study[2] in the UK that many students already bypass expensive and sophisticated electronic information services and go directly to an internet search engine. Whether this is out of ignorance or to save time is a question that needs study, but we ignore this evidence of user behaviour at our peril.

It seems obvious, but is perhaps nevertheless worth stating, that most information seeking takes place in the context of a particular task or piece of study. However passionately we may believe that libraries should encourage students to extend their interests beyond a narrow focus on the curriculum, we may have to accept that the typical online student of the future will only use information that is available within a click or two from any particular point in their study. If this is to be achieved, librarians will need to work closely with academic staff to identify relevant sources with much greater granularity than is now common.

Two approaches are possible. The most simple technically is to link the student to a pre-selected list of items in a digital repository. Some of these items may be readings selected by the lecturer, and some may be additions made at the suggestion of the librarian. Either way access will need to be managed according to Part VB of the revised Australian Copyright Act. Let us hope that by 2010 the more onerous provisions of that Act for educational institutions will have been modified. In practical terms this currently mandates a single digital repository for all course readings made available to students online. Librarians will have to ask themselves whether they add anything of value to the learning process by making their contribution to such a collection explicit.

A second approach is more difficult technically, but might provide a solution that is less labor intensive and perhaps educationally more valuable. This would be for a link at relevant points in the course materials to be to a stored search strategy that could be run dynamically across a collection of Z39.50 databases selected by the librarian. The university's digital repository (or more accurately its metadata) could be one of the databases. This method would have the advantage of delivering more up-to-date references, with the disadvantage that the results would not have had the same quality control as the archived set. There would need to be consultation with academic staff and/or instructional designers in implementing this approach. There should be plenty of time for reflection and critical thinking about sources by the student. The aim should not be to overload them with information.

Librarians will say that the first method smacks of spoon-feeding. Academic staff may worry that with the second students may choose articles that are not of the highest value, or with which they themselves are not familiar. Both views are valid but if independent research and a critical approach to sources are considered educationally important some elements of the second method should be incorporated.

The University of Southern Queensland (USQ) is implementing its procedures for managing digital resources under the new educational licence provisions of the copyright Act. Our thinking is influenced by the current pattern of recommended readings for

students both on- and off-campus. In the past, a relatively small number of readings have been placed in the reserve collection in the Library, compared to the larger number that have been included in the printed materials sent out as part of external students' study materials. These latter have had to be copyright cleared individually, a time-consuming and increasingly expensive process.

We expect that the proportion of selected readings from print sources will continue in the immediate future, but over time academic staff will become more conscious of the increasing range of materials available online. The gap in information resource access between on- and off-campus students is narrowing. In these circumstances the importance of pre-selected readings may decline, and the pedagogical advantages of self-searching, with or without direction by a librarian, should become more obvious. Donald Beagle[3] notes a preponderance of academic writers about asynchronous learning who assume self-contained courses (on the grounds of equity), as opposed to the relatively fewer who placed their programs within a larger information environment. As Internet ubiquity reduces concerns about equity, these proportions may change.

Ease and Speed of Access

If the evidence is that organizing web resources according to institutional structures is not helpful (except to employees), is there a place for 'The Library' on a university web page? The answer would appear to be 'It depends on the user, and what they are trying to do at any particular point in time.' As suggested above, library resources will be most used and appreciated by students if they are presented at the point of need. Access to services, like electronic reference, online help, or training in information literacy or research skills, can also be embedded in course materials. Every online course should, as part of its introductory section, explain the resources and support that are available to them from the library. If students read this section, they will at least know the library exists, and their appreciation of its value will be increased if they find assistance from the library throughout their study materials.

Fortunately, most people still know what a library does and expect a university to have one - notwithstanding the fashions that have come and gone for renaming ourselves. There are still users who will look for the library's presence on the web, and know what services they expect to find there. So of course the library should have a web page, though it will be less a place where people go for logon access to resources and more a point of advice, services and training. Those libraries which have gone with the fashion for name changes, or been amalgamated with others through organizational restructuring, need to ask themselves if their function is clear to a stranger who may have to think about whether clicking 'Information Resources and Services' will get them to the library. Any point at which a user has to stop and think in a web site is a point of potential confusion. If the names of organizational units are likely to confuse, consideration might be given to abandoning them in favour of the common names of functions.

The argument is that, if the only access to library resources is via a particular URL, however helpfully labeled, many users will not find what they need, as quickly as possible, when they need it. One or two unsuccessful or frustrating attempts to use library resources, presented as they are today, is enough to persuade many students that an Internet search engine is easier.

Librarians have probably always thought it ideal, but unattainable, to be always ready to assist a student when they needed help, even when the student did not recognize the need. Embedded assistance can give libraries that ubiquity.

Information Literacy and Quality

Librarians in higher education have usually believed that they fill an educational as well as a custodial role. Training students in the practical skills they need to use the campus library has gone on for decades, with varying degrees of cooperation and support from academic staff. More ambitiously, librarians have aimed to teach students about the nature of published information – how it is produced and organized, and by what measures of quality it should be judged. These skills are now described as information literacy, a competency that has gained importance in the context of lifelong learning, and one that many universities claim among the abilities of their graduates.

Most of these 'reader education' programs are conducted at the undergraduate level. Postgraduate research students may be offered more formal and specialized assistance, in courses that might be called 'Research Methods' and that may be compulsory. In these the librarian may move beyond the use of discipline literature to teach about the management of the students' own records in preparation for writing up and perhaps publishing their research.

Most of the online students of the future will not be in research programs, but many will be graduates. It would be wonderful if we could assume that they therefore will possess a reasonable degree of information literacy gained from their undergraduate study – wonderful but contrary to experience. What therefore is the responsibility of the university – and especially its library – to its online student to ensure that they have information skills? Even if a responsibility is accepted, there is a further difficulty. With so much information available, apparently so easily found on the Internet, what chance does the library have of persuading students that finding the right information may actually be quite difficult, and that they should spend extra study time to learn to do it properly?

The chances will almost certainly be slim. These are students with work and family responsibilities. They are almost certainly time-poor. Few of them will be pursuing knowledge for its own sake. (Unless the promise of technology to increase leisure time for all begins to be realized.) Their goals will be mostly utilitarian, and if keyword searching gets them enough to be useful, they will see it as good enough. If it is true that adults are more likely to make use of their own experiences in accomplishing learning objectives[4] then they are also likely to bring their informal web-based information seeking habits with them to formal study.

But librarians shouldn't give up without a fight. There are important issues at stake, and they do not just relate to the quality of the work the student turns in.

Quite a lot of work has already been put into developing online training programs in information skills, with an emphasis on online resources. Examples are the eGO package (USQ), which is being enriched with discipline-specific options, the WebEzy tutorial developed by Charles Sturt University for UniLinc and Murdoch's LITE program.

Provision of these programs is as much a responsibility for institutions teaching online as is a face-to-face reader education program for on-campus students, but they do require students to be prepared to take time out to work through them. Their take-up can be improved if academic staff accept the advantage of incorporating such programs in the curriculum. If such a program is designed in sufficiently small modules it can also be the basis for an online help facility. It should also be possible to prompt students working through a course occasionally to be critical about the information they find. For example, when results of a search are delivered a button might pose the question 'How good are these sources?', with the opportunity for a quick summary of the quality measures that are used in judging scholarly information.

This is important because we may be seeing a divergence between the systems that have traditionally underpinned scholarly publishing and other systems of organizing knowledge that lack the rigour of academia. The outstanding example is the Internet itself, and its various popular portals like Yahoo. The interest in 'knowledge management' concepts and systems is another manifestation. These, like the Internet, have their uses, but they are not the uses of scholarship. The author has elsewhere warned of the woolly thinking that the loose use of the words 'information' and 'knowledge' can lead us into[5]. Here it is perhaps sufficient to remind ourselves that one of the most valuable and necessary functions of research libraries and librarians has been the preservation of the pedigree of published information. Knowledge in universities is based on the scientific method and its records are subject to a process of contention and examination that in its formal manifestation is known as peer-review. The systems that librarians have developed have ensured that researchers should be able to trace any knowledge to its base in evidence, especially if the written record of that knowledge has followed scholarly practice. If our student of 2010 is not encouraged to ask not just 'what do we know' but 'how do we know', their learning will lack some of the quality that has distinguished university education.

The Technological Drivers

It is not the intention of this paper to discuss technology in any detail, but the broadest terms used to describe the direction that technology is taking to build the environment in which our 2010 student will work are integration and convergence. Libraries have tried to do the best they can for their users, and like many other systems in the past this has meant designing for the greatest good of the greatest number. This necessarily involves trade-offs - consider any classification system in a physical library. Technology has not been the only limitation. Juggling too many demands and too few staff, we have come to take trade-offs for granted. Consider library opening hours, designed to suit the habits of the majority.

Delivering a compromise, best common denominator solution inevitably means that most users' experience falls short of the optimal, customized possibilities. But by 2010 that is what users will expect. There will be contenders for the privilege of situating that customized learning experience for the user. In an article in *Computers in Libraries* Stephen Abram suggests that library system vendors will take the opportunity to "support their products with training that can be delivered without barriers" and thereby

"fundamentally improve the distance learning paradigm"[6]. Library system vendors will hardly have the field to themselves in the contest for the environment in which learning services converge. Already the vendors of back end systems for university administration, foreseeing a diminution of cash-flow as the current wave of re-tooling ebbs, are positioning themselves to offer an environment for teaching and learning, broadly considered. And of course there are the vendors of teaching and learning systems themselves.

In this contest the teaching and learning system vendors should prevail, unless they play their cards very badly. This is because there is still the potential for massive changes in functionality in these applications. They are complex environments and will benefit from advances in communications software, web publishing, content management, bandwidth and the lessons being learned about online pedagogy. Vendors concentrated on large but more stable systems are unlikely to be able to set the pace. This judgment may be mistaken, the power of position and money sometimes distorts technological advance, but it doesn't seem very likely that library system vendors will win the day. Librarians would therefore do well to acquaint themselves with what is happening in the world of teaching and learning management systems (like the IMS initiatives[7]) if they wish to be an integral part of the new environments.

This is not to say that library systems have had their day, but the future will be with systems based on open standards, whose architecture is expressly designed for a web environment, that can be readily integrated with other systems. Such systems will fit into the complex jigsaw that will lie unseen behind the user's customized screen. One or some of them will be the responsibility of librarians, though in the web environment the traditional modules that we know as acquisitions, cataloguing and circulation will only be part of the broader functions of selecting, describing and facilitating access to resources.[8] Another function that may assume increasing importance in library or other systems is the management of copyright. There are many conflicting influences currently at work in the whole area of intellectual property rights. By 2010 they may have worked themselves to some kind of resolution. The tension between the capacity of technology to make information free and the tendency of the market in a knowledge economy to turn intellectual assets into commodities may be nearer resolution. Alternatively we may live with a mixture of scholarly information that is more free than now, and a commercial market that has developed new ways to secure income streams from knowledge products of high value.

Reference Systems – Humans at Last?

Perhaps the area of library services (rather than resources) that has attracted most attention as a candidate for moving into the web environment is the reference desk. Models include chat and email, and more simply cooperative arrangements to allow 24 hour access to real reference desks. However most questions from students are likely to relate to their course of study, and the experience in off-campus services at USQ is that a knowledge of the curriculum of their own institution and the resources that have been selected to support it are invaluable in meeting student needs.

Some attention is now being given to the use of CRM or contact center software for virtual reference services. These systems might help automate some responses and cut the high costs of one-on-one interactions. However as Coffman[9] points out they will need a great deal of development to be useful in a general reference situation. The difficulties of natural language imprecision when the range of potential enquiries is wide are so considerable that it will be a challenge to develop a useful knowledge base with the current systems. It may be that the answer is to situate the service within the learning materials and develop a knowledge base specific to each course. This would align library reference services with the kind of small discussion group question and answer that is envisaged in the Taylor[10] framework for models of distance education. What Taylor calls the Fifth Generation or Intelligent Flexible Learning Model envisages automated knowledge based response systems in a tutorial setting to help deliver the cost efficiencies that have so far eluded flexible learning.

It will be as difficult for libraries to find economies of scale in the flexible learning environment as it has so far proved for teaching. More advanced systems may help in that quest. However until automated reference services have developed further, or until libraries are able to put much greater resources into assisting remote users on a one-to-one basis, there is probably more value in embedding resources and services at the design stage of teaching programs.

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Technology has already delivered many benefits to libraries and their patrons, but to date the effect has mostly been to automate existing functions, from ordering books to searching databases. Flexible learning systems and developments in web applications offer new ways of assisting students to use library resources as an integral part of learning. The challenge is to design those services so that they suit the individual learner's environment, needs and expectations while still preserving high academic and pedagogical standards. There will continue to be a need for library resources in the web environment structured more or less as they are today – consolidated library web sites, reference 'desk' services - but if libraries are to play their part in realizing the potential of flexible learning they cannot wait for the learner to identify a problem and bring it to the library. Librarians must begin to anticipate information needs and ensure that they are met within the learning context.

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1   R Cooper and P R Dempsey 'Remote Library Users – Needs and Expectations' *Library Trends* vol 47 no 1 pp42-64

2   JUSTEIS (JISC Usage Surveys: Trends in Electronic Information Services) Final Report – 1999/2000 Cycle is at http://www.dil.aber.ac.uk/dils/research/justeis/cyc1rep0.htm

3   D Beagle 'Web-based Learning Environments: Do Libraries Matter?' *College and Research Libraries* vol 61 no 4 2000 pp367-379

4   M Middleton and J Peacock 'Library Services to External Students from Australian Universities: The Influence of Flexible delivery upon Traditional Service Provision' *The Reference Librarian* issue 69/70 2000 pp205-217

5   M McPherson *Information in the Twenty-First Century: Whose Business?* Keynote Address presented to the ABLD/EBSLG 2000 Meeting INSEAD Fontainebleau France 17-20 May 2000 available from <http://www.usq.edu.au/library/homepgs/mcpherso/00-mm-conf-EBLSG.htm>

6   S Abram 'Planning for the Next Wave of Convergence' *Computers in Libraries* vol 20 no 4 2000 pp46-52

7   Information about the IMS projects is at http://www.ims.org/

8   J Metcalf 'Full Circle, Back to selecting and Organizing' *American Libraries* vol 30 no 5 pp42

9   S Coffman 'Distance Education and Virtual Reference: Where Are We Headed?' *Computers in Libraries* vol 21 no 4 pp20-25

10   J Taylor *Fifth Generation Distance Education* Keynote Address presented to the 20th ICDE World Conference Dusseldorf Germany 1-5 April 2001 available from <http://www.usq.edu.au/dec/staff/taylorj/conferences.htm>

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