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Physical places and virtual spaces: Fostering innovative partnerships between the library and the stakeholder

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Physical Places and Virtual Spaces: Fostering Innovative Partnerships between the Library and the Stakeholder

ABSTRACT

The 21st Century continues to see rapid change in the role of both the academic science and technology engineering librarian and the research environment in which they operate. Innovative approaches are required in order to ensure that the Librarian retains a central role in the teaching, learning and research processes.

The Dorothy Hill Physical Sciences and Engineering Library has been actively and fundamentally redefining the role of the Library at the University of Queensland. Qualitative research such as focus groups and user interviews have been undertaken to ensure that the Library remains aware of and responsive to the changing needs of the user community.

In order to ensure that the Library is an integral participant in institutional teaching, learning and research goals and outcomes a number of physical and virtual projects have been instigated. These include the addition of a student-centred learning and research space that aims to act as a focal point for partnerships between the Library, the Faculty and industry partners. Virtual collaborations have been supported through projects such as The Undergraduate Site Learning Program and AVEL Sustainability Knowledge Network (a portal dedicated encouraging and enabling collaboration between researchers working in sustainable development).

This paper outlines the strategies that have been employed to reposition the Library and examines some of the ancillary benefits that have resulted.

INTRODUCTION

The University of Queensland Cybrary

The Dorothy Hill Physical Sciences and Engineering (DHPSE) Library is one of the fourteen branch libraries which make up the University of Queensland Library. The University of Queensland is a leader among Australia’s 38 universities and is recognised internationally as a premier teaching and research institution. It is one of only three Australian members of ‘Universitas 21’ – a global alliance of 20 universities committed to quality enhancement through international benchmarking.

The University of Queensland Library delivers customer focused innovative information products, services and programs of the highest quality that are integrated with, and central to, the University’s teaching, learning and research activities. The Library has over 2 million items in its collections, approximately 590 electronic databases, 16,500 electronic journals linked at a title level through the catalogue and 45,000 electronic journals accessible via the Cybrary website.

Providing client-focused quality services is the Library’s driving force. Regular surveys and focus groups ensure an understanding of client needs and suggestion boxes in both electronic and physical form provide important customer feedback.
Clients access services in the library branches, from office, laboratory, home or other locations.

The principle behind the structure of the Library is the distributed nature of its service delivery, combined with centralised planning and policy development. The branch libraries (a total of 13) include the Social Sciences and Humanities Library, the Dorothy Hill Physical Sciences and Engineering Library and the Biological Sciences Library. Also included are the University Archives. The University Library also manages several libraries in teaching hospitals.

In 1998, the UQ Library was awarded joint first place in the institutional category of the prestigious Australian Awards for University Teaching for its development and implementation of the Cybrary concept. In 2000, the Library won the same award for its AskIT Computing Help and Training Service. UQ Library is the only Library in the country to have won this Teaching Award. The University Librarian, Mrs Janine Schmidt was designated Library Manager of the Year for 1999 by her colleagues in the Australian Library and Information Association.

The Dorothy Hill Physical Sciences and Engineering Library holds the University's main collection of resources in the areas of chemistry, computer science, earth sciences, engineering, mathematics and physics, and it supports the teaching and research in the Faculty of Engineering, Physical Sciences and Architecture and the Faculty of Biological and Chemical Sciences.

THE IMPORTANCE OF PARTNERSHIPS IN THE CHANGING TEACHING, LEARNING AND RESEARCH ENVIRONMENT

In the last five to ten years partnerships have become much more central to the way Universities, and consequently University Libraries, do business. Competition, uncertainty and change are the drivers for this shift. In response, universities are increasingly identifying and pursuing new strategic priorities in teaching and research. This included the establishment of beneficial strategic partnerships with traditional and non-traditional partners. The University of Queensland has stated that one of its key operational priorities for 2003-2007 is to “increase engagement in mutually beneficial partnerships with outside organisations”.

In the Australian context, the peak funding body, the Australian Research Council, through the competitive grant system, encourages research partnerships. Partnerships between researchers located at different universities and partnerships between the university sector and industry, are often an important prerequisite to securing grant funding.

Similarly, both professional associations and corporations realise the necessity of life-long learning for their stakeholders. In a highly competitive environment universities have also recognised the need for courses to reflect work-place realities and to incorporate the needs of employers. Partnerships in teaching and learning have become commonplace, with companies funding teaching chairs and professional associations providing direct input to teaching programs.
The Engineering, Physical Sciences and Architecture Faculty has recognised the importance of partnerships as part of its core business. In its Operational Plan for 2003-2007 it identifies a number of partnership priority areas, which cut across both teaching and research. These include the need to supplement Commonwealth funding through contract research and the commercialisation of intellectual property. Also mentioned is the need to work with employers and professional associations in order to "deliver postgraduate professional education to significant cohorts of students."ii

The roles of both the library and the librarian have also changed to reflect and support the changing operating environment. The core business of the Library was once to act as an information repository and a physical space where students and academic staff came to study, undertake research or seek help. Increasingly the Library acts as an “enabler” and facilitator, providing seamless access to print and electronic resources as well as integrating state of the art information technology with traditional services. The result is the virtual library or “Cybrary” as it has become known. This cutting edge approach to information delivery, a first in Australia, enables clients to access resources and services from the lecture theatre, the home of the office, 24 hours a day.

The Library’s role as “enabler” is also extended to teaching, learning and research activities. The Library has taken a proactive role, establishing strong links with the Faculty (and Schools) in order to ensure that Library is seen as integral to the teaching and research activities that it undertakes. One important way that this is achieved is through active liaison with the Faculty and its staff.

The concept of faculty- liaison is by no means a new one. The University of Queensland Library has however taken a holistic approach to liaison, making it central to the delivery of service and support to its clients. Liaison is undertaken at both a macro and a micro level. They work with individually with Schools, publicising Library services, assisting academics and postgraduates with their individual research needs and tailoring information skills courses to meet the requirements of specific courses. Librarians participate in faculty, school and departmental meetings and attend student presentations. Contact is made at all levels of the School and Faculty, including heads of schools, teaching staff, research staff, students and general staff. The Library has come to be seen as an integral partner in the activities of the Faculty.

This exercise in relationship building and relationship marketing has been taken a step further at the University of Queensland. Recognition, by both the Library and the Faculty, of the benefits and synergies that a closer worker relationship can create has led to enhanced collaborations and partnerships across a broad range of projects. The Library has also extended its role as “enabler” to the creation of a flexible, collaborative research facility.

Physical Spaces

The Cybrary has taken a leadership role in responding to the need to provide facilities that enable and encourage collaborative research. The Dorothy Hill Research Centre was created through funds from the estate of the late Professor Dorothy Hill to the Library. Dorothy Hill was an academic at the University of Queensland. She was a geologist and a world authority on Palaeozoic corals. She was the first woman to...
graduate with a gold medal, the first woman professor at an Australian university, first woman Fellow of the Australian Academy of Science, and its first (and only) woman president, and the first woman Fellow of the Royal Society.

The Centre is also a first of its kind in the Cybrary. It is a facility that supports flexible learning and research and is equipped with state-of-the-art technology, to accommodate individual and group activity while also promoting dynamic, interactive and innovative partnerships between the Faculty, the Cybrary and industry. It is a space that provides the delivery of customized, comprehensive and convenient services for post graduates students, academic staff and industry partners. The Centre is designed to be flexible, supporting a variety of learning and research activity styles through “wired” workstations and “wireless” laptops. It is a “high-tech, high touch” environment aimed at creating synergies amongst individuals and groups accessing scholarly information within this facility. The aims of the Dorothy Hill Research Centre are not only to provide specialised accommodation for postgraduate students and researchers to work individually or in teams but also to facilitate collaborative partnerships at a faculty-to-faculty, and a faculty-to-industry.

The Centre incorporates the Don Carruthers eXchange Zone. Part of the refurbishment of the Dorothy Hill Centre has included the creation of this flexible e-zone. This specially designed, multi-purpose room can be used as:

- A boardroom or meeting room (accommodating 10 people)
- A seminar room
  (Accommodating 12 people)
- A lecture room
  (Accommodating 30 people)
- A wireless laptop facility (accommodating 10 laptops)

In addition to enabling face-to-face interactions the facility will incorporate video and teleconferencing technology to enable virtual partnerships to occur within this room. The vision is to create an “eXchange Zone”: a cutting-edge facility that uses the latest technology to enable researchers, academic staff, industry partners and postgraduate students to communicate, collaborate and exchange knowledge with national and international colleagues. Point-to-point technology will facilitate real-time discussion between remotely placed individuals, or teams engaged in collaborative ventures, meetings, interviews or presentations.

The flexible nature of the space allows it to be used by diverse groups for multiple purposes. For instance, meetings could be held between research staff engaged in multi-team collaboration or between a postgraduate student and a remotely located supervisor. Interviews could be conducted using this technology, eliminating the costs of flying candidates to the University of Queensland. Postgraduate students are increasingly required to undertake on-site projects, travelling to remote mine sites or conducting field studies. This technology will allow them to communicate with St Lucia based academics or postgraduate.

Video technology will allow participants to communicate in real-time. Advanced display technology will enable the participants to “push” their presentations (such as PowerPoint) to their remotely located audience. The facility can be set-up to
accommodate large lecture-style presentations; boardroom-style meetings are smaller one-to-one interactions.

The facility was launched in July this year and has already been used for a broad range of activities. This includes meetings between academics and industry partners across discipline areas as broad as electrical engineering and technology management. Locating the facility within the Library has also had direct benefits for the Library and has led to a number of partnerships and project involvements that would otherwise not have occurred. One interesting development has been the involvement of the Library in the Catalyst Centre group at the University of Queensland. The mission of this group is to create “innovative, sustainable solutions to complex social and technological challenges facing industry and the community, through the fusion of social science and engineering perspectives.”

Virtual Collaborations

The notion of providing virtual services and collections is integral to the way that the University of Queensland Library operates. The University of Queensland Library was the first in Australia to develop the Cybrary, or virtual library. The Cybrary is central to the Library’s service delivery and information provision to customers.

The Dorothy Hill Physical Sciences and Engineering Library has actively engaged in a number of “virtual” partnerships. These partnerships are “virtual” in the sense that they use the web, or other technology to facilitate collaboration between remotely placed partners. They are also “virtual” in that the Library provides “virtual”, web-based, electronic resources and services to support the activities and projects being undertaken. A number of these projects are detailed below.

Undergraduate Site Learning Project

The Undergraduate Site Learning Program (USLP) is part of an innovative Strategic learning Partnership between the University of Queensland and industry. It began in 2000. It offers the Library a unique opportunity to demonstrate its role in supporting on line teaching and learning. The aim has been to develop senior engineering students as self-managed learners, through a unique integration of work-based learning with a traditional university curriculum.

The USLP program allows engineering students to be based with an engineering company for one semester while studying. The students spend 12 weeks in an on-site placement, but unlike co-op education (sandwich) programs, the students are simultaneously enrolled in the same syllabus as their peers who are on-campus. This program has been previously open to 4th year Mining students. In 2003 year the program also allowed mechanical, civil and chemical engineering students to participate. Thirty sites and 17 organisations were involved.

The role of the Dorothy Hill Physical Sciences and Engineering Library has been to support teaching and learning for the students who are studying remotely while participating in the program. Information skill classes for the students were conducted in both first and second semester. Most of the liaison librarians were involved in information skills training and providing support for the students while
they were off campus. This was in the form of document delivery support and assistance with accessing databases.

In 2002 the USLP won a UQ Award for the Enhancement of Student Learning. Survey results have consistently recognised library services as an important factor in the success of the USLP. The USLP also received recognition through an award from the Australasian Association for Engineering Education. The success of this program lies with the alignment of learning objectives to work tasks. Survey results have consistently recognised library services as an important factor in the success of the USLP. The site can be found at: [http://www.uslp.uq.edu.au/](http://www.uslp.uq.edu.au/)

**Virtual School of Engineering**

The Virtual School of Engineering (VSE) is another innovative programme that Library is involved in. The VSE was developed as a result of the collaboration between the University of Queensland Library and the Faculty of Engineering, Physical Sciences and Architecture. The project is funded through the Science and Technology Awareness program of the Department of Industry, Science and Technology.

The VSE was developed by the staff of the Dorothy Hill Physical Sciences and Engineering Library, using WebCT, a tool that facilitates the creation of web-based environments. Through its involvement in the project, the Library has reinforced its link with Faculty and has also created an awareness of the role that it can play in the development of course materials for flexible delivery. The Library provides advice on the educational use of the Internet and the resources available through the UQL Cyberschool\(^1\).

The project is aimed at teachers and secondary school students in years 9 to 12. Other participants include:

- University of Queensland academics, who act as mentors
- Members of professional engineering association, who act as “neighbourhood engineers”
- Members of teacher groups, such as the Mathematics Teachers' Association and the Science Teachers' Association, who assist with the design of the project, and its linkage to the curriculum.

The main purpose of the VSE is to promote an understanding of the role of engineers in the community by creating an awareness of the important contribution that Engineering makes to the standard of living in Australia.

The VSE comprises a series of engineering problems that offer participating students the opportunity to develop their research and problem solving skills through collaborative teamwork as well as self-paced learning. Students are invited to solve

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\(^1\) The Cyberschool is a separate project aimed at secondary school students. Participating schools can access information resources such as databases and the Cybrary catalogue through this gateway. The UQL Cyberschool is located at: [http://www.library.uq.edu.au/schools/cyberschool.html](http://www.library.uq.edu.au/schools/cyberschool.html)
“real-life” engineering problems by searching for information online and presenting their results on a web page within the VSE.

The VSE acts as a learning program for students. It helps to create an awareness of the practical applications of Engineering, Mathematics and the Sciences in everyday life. It reinforces students’ research, problem solving and communication skills. It also helps to develop their confidence in using computers as a learning tool and stimulates their interest in Engineering as a career. In essence, it helps them make informed career choices. It also acts as an assessment tool for teachers, who can integrate the VSE program in their existing course, and use it to assess their students.

**AVEL Sustainability Knowledge Network**

The Dorothy Hill Physical Sciences and Engineering Library is also a key player in the development of a web portal to support engineers working in the area of sustainable development. The Sustainability Knowledge Network (AVELSKN) is a new Australian web-based initiative whose aim is to assist researchers, practitioners and other professionals working in the areas of sustainability and engineering. It is a collaborative project, lead by the University of Queensland. The gateway was officially launched in February 2003.

The Sustainability Knowledge Network, and its previous incarnation, The Australasian Virtual Engineering Library (AVEL), is part of a wider movement in Australia that has focused on developing discipline-specific, subject gateways in order to assist with the delivery and dissemination of academic information. The gateway can be found at [http://avel.edu.au](http://avel.edu.au).

AVELSKN contains almost 4000 evaluated resources that include conference papers, web sites, technical papers and reports. It uses metadata to underpin the resources in order to make them easily searchable and browseable.

In August 2002 the Australasian Virtual Engineering Library decided to re-focus its content, redesign the user interface and strategically re-aligning itself to be more in keeping with this move towards incorporating sustainability principles into mainstream engineering practice. This was a logical step as AVEL already contained a significant number of resources concerning sustainability. Also, the Engineering profession is increasing recognising that sustainable development and sustainability issues are central to their professional practice. The peak professional body in
Australia, the Institution of Engineers, Australia (IEAust) has included an awareness of the principles of sustainable development, as one of the core attributes that graduates must possess.

Sustainability is used in the sense of the triple bottom line, or financial (including technical), ecological and social sustainability. Engineers are increasingly realising that the products of engineering must not only be technically sound and cost effective, they must also be sustainable in both the ecological and social dimensions. This demands innovative solutions built on solid engineering foundations, drawing on emerging technologies and incorporating ecological and societal considerations systemically.

One of the strengths of AVEL is that it has continued to sustain and develop collaborative relationships between geographically dispersed partners. Achieving a level of transparency and visibility was a key enabling strategy, made possible through an evolving Web page. AVEL works as a “virtual team”. Team members are able to enter records using a web-based metadata entry tool. This enables them to complete their contributions to the project anywhere at anytime. A project Web site has been in existence from the beginning of AVEL. This contains all the policy documents for the metadata schema, the selection criteria and instructions on how to enter metadata, the thesaurus schema and areas of responsibility for all partners.

Partners involved in the AVEL project since its inception in 1999 have included: The University of Queensland (lead institution), the University of New South Wales, Monash University, University of Melbourne, Queensland University of Technology, Institution of Engineers, Australia (IEAust), Centre for Mining Technology and Equipment (CMTE).

The AVEL partnership has represented an important opportunity for librarians and engineers to work together. This cross-disciplinary partnership has contributed greatly to the success of the project. The involvement of engineers in the management structure of AVEL and the part played by the IEAust (the peak, professional body for Australian engineers) as a partner in the venture, has contributed significantly to the credibility of AVEL in the engineering, academic and professional communities. Of equal importance have been the marketing opportunities created by this collaboration. These opportunities have been maximised through presentations and reports to the Australian Council of Engineering Deans, key professional engineering groups and engineering faculties, schools and departments across Australian universities. News about AVEL has appeared in engineering publications and it is linked from the IEAust Web site and various engineering school Web sites.

CONCLUSION

The partnership activity is a significant part of the Library’s ongoing commitment towards collaborative efforts with the academe and the relevant industries. It is one of the many ways of improving and increasing the quality of the services and resources on offer. By working with others the Library is also able to enhance and strengthen its links and engagement within the university and with the external community.
REFERENCES

i University of Queensland, 2003, *Strategic Plan*


iii University of Queensland, 2003, *Catalyst Centre*