

Academic libraries in transition: Challenges ahead.

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Academic Libraries In Transition – Challenges Ahead

Foo, S., Chaudhry, A.S., Majid, S.M. and Logan, E.

Division of Information Studies, School of Communication and Information
31 Nanyang Link, Singapore 637718

Abstract

The evolving information and knowledge-based economy has resulted in a climate of transition and change in academic libraries around the world. As universities make the transformation to learning organisations, academic libraries, as constituents of its larger parent organisations, are rethinking and exploring new ways to reposition themselves in the campus environment in view of higher expectations of its various stakeholders, pervasiveness of information technology, increased availability and focus on electronic resources and services, and the need to become learning and research centers to support a wide range of educational initiatives. This paper addresses a number of key challenges facing academic libraries as well as measures taken by the Division of Information Studies at Nanyang Technological University, through its Masters programmes in information studies and knowledge management, to provide appropriate education and training of information and knowledge professionals for this new economy.

INTRODUCTION

The evolving information and knowledge-based economy, with an increasing emphasis on the important role of information and knowledge, has had an impact on every form of organisation and every form of business in some way or another. This, coupled with advances in technology, has resulted in the need for substantial changes to be made in the strategic and operation levels in organisations. In general, information professionals and librarians have been coping well and addressing the many changes brought about by the electronic information environment. Forward-looking academic libraries and academic departments have used this opportunity to rethink their activities with the intention to reinvent or reposition themselves and to find new ways and means to build new partnerships and enterprising endeavours with all their stakeholders.

This paper is divided into three main sections. The first highlights a number of important challenges facing academic libraries. The second elaborates on the opportunities that

have become available for libraries as a result of the various initiatives in knowledge management. The final section addresses the initiatives of information education providers to respond to these changes drawing examples from an information studies programme in Singapore.

CHALLENGES FACING ACADEMIC LIBRARIES

A recent workshop in “Managing academic and research libraries partnership” held during the 67th IFLA Council and General Conference (Rader, H.B., 2001) has seen evidence of active work done by various professional organisations to formulate policies and guidelines to help their members anticipate and exploit change in the new environment. For example, the Association of Research Libraries (ARL) is developing assessment criteria for research libraries and investigating scholarly, cooperative ventures for information sharing and provision, global ventures, and other new information-related activities. Likewise, the Association of College and Research Libraries (ACRL) has developed a number of new activities for consideration by its members including outcomes measurements for information literacy in the higher education environment.

The vision and mission of academic libraries are changing. Many academic libraries now take on the key role of providing the “competitive advantage” for the parent university - a factor that is crucial to both staff and students. Academic libraries are positioning themselves to be the learning and research centres of universities. They are sometimes known as the “learning building” and are constantly asked to examine what value they add to student learning outcomes. These are some comments and observations noted at an American Association of Higher Education Annual conference in 1999 during a discussion forum (<http://www.ala.org/acrl/aahe99.html>)

The rich body of literature gleaned from IFLA, ACRL and related publications on academic libraries and education clearly demonstrates how well information professionals and educators have been identifying and proposing innovative solutions in tackling the many challenges of a new information environment.

Using the framework of ACRL’s Standards for College Libraries 2000 Edition (ACRL College Libraries Section Standards Committee, 2000), some of these challenges are selected and presented under the headings of Services and Access, Instructions and Research, Resources and Collection Development, Administration and Cooperation, and Staff and Training. It must be emphasised that these challenges are by no means exhaustive but viewed as important ones that deserve to be highlighted.

Services and Access

One main challenge facing academic libraries in the networked online environment is to exploit all forms of digital and telecommunication technologies and find new ways and means to provide feasible forms of collections, services and access to library materials.

Depending on the state of technology readiness of libraries and their users, new forms of services are available in many academic institutions. A 24-hour electronic library paradigm with reference, reserve and circulation facilities has emerged at various levels of sophistication. Digital reference services using email, Web forms or video-conferencing has been tested and implemented in a number of academic libraries. Online reservation and renewal of library materials is becoming part and parcel of library automation systems, especially in the new generation of Web-based systems that replaced the older traditional standalone proprietary library systems. Online document delivery service requests with credit card payments are potential new services to better serve the needs academic users. .

Improvement in computer security and authentication techniques may permit libraries to practice single password logons. Upon successful authentication, users have access to a whole range of electronic resources and services without having to remember individual passwords - long the bane of resource connectivity and electronic services provision to multiple resources. Likewise, new opportunities are available for using technology to promote services and resources (e.g. using push technology to disseminate information its potential users) and to evaluate the range and quality of services (e.g. through online surveys).

Instructions and Research

Competency in information literacy (IL) skills and knowledge has been the hallmark of information professionals and has long been an important aspect in information education. IL competency is even more crucial as a direct result of the Web revolution, where a phenomenal amount of information of varying quality is being continuously generated by its huge base of users. This has, in fact, caused a need for more – not less – guidance in the selection, use and evaluation of information. Thus, academic librarians proficient and knowledgeable in the identification, location and evaluation of information, have an even greater role to guide faculty, students and other users in the best use of both print and online resources in the library (Hardesty, L, 2000; Bainton, T, 2001). This can have a significant impact on student learning: making them aware of the potential for useless and inferior information available on the Web; recognising the distinction between information from refereed scholarly journals, grey literature, unrefereed digital information, misinformation and disinformation; and resisting total reliance upon convenient information from the Internet. In other words, academic librarians remain important as allied professionals in supporting the totality of university education.

With this context in mind, it is also apparent that many new research issues and challenges have emerged. These provide a focus for research that can and should be tackled by academic librarians. Thus, new initiatives for research are needed for academic librarianship to establish a sound theoretical foundation for its practices, services and programs and to enable the creation of a solid base for “inventing the future”. Such a call is not new, but is even more crucial than before. Proactive research action and results generated by academic librarians will enhance and improve the

credibility, status and value of the profession at a time when many misinformed and misdirected policy makers are calling for the demise of the physical library.

Resources and Collection Development

New initiatives to create digital libraries and information portals have surfaced in the last two years in an attempt to build on the availability and production of digital information by making it easily available online and then reaping the benefits of accessibility. Novel and useful features as well as new value-added services are constantly added to such systems. The “user-centred” paradigm has been adopted to create customisable interfaces to meet the needs of different constituent groups and individual users. Current awareness modules, links to other rich sources of internal and external information through the university’s Intranet and Internet are all examples of how initial static Web-based or stand-alone information kiosks of academic libraries have evolved into information portals. With the future availability of higher bandwidths and multimedia information objects, we would expect to see far more sophisticated interactive systems conceived, designed and maintained for content by academic libraries.

Collection development has become an extremely complex process with the need to develop and maintain a collection that balances the various types of print and non-print materials in the library. The ability to create and adapt a collection development policy to satisfy its various users remains a huge challenge and calls for an understanding of the needs of a new generation of Internet-savvy users as well as the availability and complexity of online and other forms of digital resources. For example, E-journals, require a workflow that is entirely different from its print counterparts. It is more complex, cyclical, labour-intensive, variable, and requires a team-based approach for selecting, acquiring, processing and accessing online serials (Kaag, 1998). Licensing, copyright and fair use are all issues that need to be tackled and sorted out in this transformation to the acquisition and use of digital information.

Administration and Cooperation

As academic libraries become more involved with information infrastructure building, it is appropriate to iterate the four main components of information organisations in the information age: software, hardware, human resources and data/information. New organisational structures that see the merger of the academic libraries and computer centres in the university are clear indications of the fusion of these components to provide new and better products and services. Different organisational cultures in such situations must be addressed to ensure the success of these mergers.

In addition, sound administrative policies and guidelines are needed to shape the human resource requirements and expectations of libraries. In the current situation of increasing costs and budget constraints, academic libraries face the challenge of providing high levels of service to meet ever-increasing users’ demands and expectations but at reduced costs. Some solutions adopted by academic libraries include those of consortia, obtaining extracurricular funding for research, tough negotiations to acquire the best price possible,

rebuilding collections paying special attention to expensive electronic information, and redirecting and reallocating funds to meet current needs. (<http://www.ala.org/acrl/aahe99.html>).

Interlibrary co-operation through the formation of different levels of local and international library consortia is one area of development to affect cost savings as well as to expand the participating libraries' access to resources. Thus, new strategic alliances and potential collaboration need to be explored throughout the whole chain of library interfaces.

Staff and Training

Human expertise has always been, and will remain as one of a library's greatest assets. Thus, recognising that staff and their collective knowledge is key in academic libraries is an important first step in promoting opportunities for staff to reach their full potential through well designed human resource development plans and training. Today, proficiency of library information science (LIS) and information skills must be complemented by hardware and software skills for working in an information technology (IT) intensive environment. Academic librarians need to update and/or acquire the skills and knowledge to ensure proficiency in an environment that is constantly faced with new technological breakthroughs and new ways of doing work.

Academic librarians, as knowledge workers, need to play active roles in searching for innovative solutions to the issues involved in adapting to new environments. Academic libraries' traditional affiliation to university library schools provides a prime opportunity for librarians to be part of the teaching faculty and active research groups. Attendance at seminars, formal short courses and/or auditing advanced courses in the library schools' curricula is essential for academic librarians to remain viable and current.

POTENTIAL OF KNOWLEDGE MANAGEMENT

The emergence of knowledge management has made tremendous opportunities available to libraries that can help meet the challenges described earlier. The recognition of creation and application of knowledge as a key competitive factor for both individuals and organisations in the knowledge based economy has made the emerging discipline of knowledge management very popular. Effective exploitation of information appears to be a distinguishing characteristic of knowledge management initiatives. Since the provision of information and knowledge has been one crucial *raison d'etre* of libraries, with academic libraries always playing a leading role over other types of libraries, it is imperative that they respond quickly and appropriately to take full advantage of the initiatives of knowledge management.

Libraries have always facilitated information exchange so that they are placed in a perfect position to take on knowledge management functions. Librarians may be ignorant of this, but they already possess many of the required particular skills of knowledge

management by virtue of their professional training and nature of their work. However, they need to reposition themselves as knowledge managers by transforming their information management skills and enhancing their knowledge management competencies. Redefining roles and responsibilities and timely initiation and performance of relevant activities will put librarians at the forefront to facilitate knowledge management in different types of organisations. Again, academic libraries seem to be in an excellent position to do so as they are part of learning institutions where knowledge creation is a priority. Looking at library functions from the knowledge management perspective will create new opportunities for academic libraries beyond their traditional roles. It is necessary and fitting that appropriate steps are taken to take full advantage of the many new opportunities to expand the market of library and information services. However, they need to look at the ways they work and re-orient their methods, tools, and techniques to be able to exploit this new potential. To be able to realise the full potential of knowledge management, academic libraries will have to consider restructuring their functions, expand the roles and responsibilities of their professional staff, take initiative in introducing new services and products, build strategic alliances within and outside their organisations, enhance liaison with their users, and make creative use of outsourcing options.

Most of the initiatives suggested above can be built upon the already existing expertise among library and information services professionals. For example, knowledge of classification schemes and controlled vocabularies can be very useful for building taxonomies and ontologies, an area that is becoming extremely important for organising knowledge resources on intranets, web sites, and portals. Knowledge and experience of cataloguing provides an excellent foundation for metadata creation. Likewise, librarians' experience in resource selection and collection development provides an adequate foundation for their active involvement in content creation and management, a much needed expertise for sharing knowledge through enterprise wide portals. Librarians have been dealing with building and searching online database for a long time. This experience can be very helpful in building knowledge bases and repositories, a crucial area of knowledge management for managing organisational memory.

Academic librarians have also been very active in conducting studies and research in the areas of information needs and information seeking behaviour. This provides an excellent foundation to make contribution in initiatives like customer management, which again is an important area of knowledge management applications. Citation analysis, and extraction and use of management information from library automation systems are another important areas of expertise that can be very useful for adopting knowledge management techniques like business intelligence. As such, opportunities abound but time is of the essence. Thus, it is important to seize the opportunity and take positive actions quickly. If academic libraries are not fast enough to respond and adapt to these changes, there is a danger that they might become redundant or irrelevant in the new competitive environment of information delivery.

ROLE OF EDUCATION PROVIDERS

Information education providers can play a crucial role in preparing academic libraries to be able to take full advantage of knowledge management techniques and methods to meet the challenges of the new environment. Many information schools were quick enough to take steps to re-orient their curricula and teaching focusing on how traditional information management skills can be turned into knowledge management competencies. Graduates from information schools are equipped with new competencies and are expected to play key roles in all types of organisations and businesses in the new economy. This should also see an elevation of status and recognition of these professionals as their efforts in value-adding to knowledge assets translates into direct and indirect benefits to their organisations.

In order to remain relevant, academic libraries need to build strategic alliance with these information schools and actively participate in academic programmes and professional development activities initiated by information schools. Such form of continuous organisational learning and the ability to apply them in all aspects of academic library work is a critical success factor of academic libraries in future.

DEVELOPMENTS IN THE DIVISION OF INFORMATION STUDIES

The Division of Information Studies at the School of Communication and Information, Nanyang Technological University, Singapore, has recognised the importance of adopting a proactive approach to providing current and relevant educational experiences for the students enrolled in her graduate programmes. Established in 1993, the Division flagship Master of Science programme in Information Studies (MSc(IS)) had undergone four major curriculum revisions to date, with the last revision being recently concluded in March 2002. Significant changes have been implemented in the last revision to ensure the relevancy of the programme in its ability to meet the demands and expectations of a rapidly changing information and knowledge driven industry:

- New courses have been introduced in important areas such as managing people, knowledge organisation, marketing, client-centred services, and performance measures in the digital environment.
- Existing courses were reviewed and revised to include topics that are relevant to the new environment. Technology and its application were further integrated in all its courses. The scope of courses related to web-based systems was expanded. Some courses were redesigned to emphasise enterprise information and knowledge portals.

The Division also adopted a new approach toward specialisation within the programme, focusing on skills rather than institutions. The programme is now restructured into five main areas of concentration, namely, library and information studies, information management, school media resources management, archival informatics, and information systems.

The potential of knowledge management was recognised by the Division as early as 1998. It was the first in Singapore to introduce courses related to knowledge management in its curricula (although these courses were not called knowledge management at that time) and offered a specialisation in knowledge management in corporate organisations. Substantial interest and demand for this specialisation was seen for the subsequent few years. In the latest development in 2002, the Division has further developed this specialisation and turned it into a full fledged Master of Science programme in Knowledge Management (MSc(KM)).

Master Programme in Knowledge Management

The MSc(KM) is an interdisciplinary programme that draws upon theories and practices from several disciplines including management, information, communication, and technology. Participants of the programme are expected to be equipped with a set of core competencies and skills in the areas of information management and organisation, information technology, organisational communication, information policies, knowledge management tools, and working knowledge in electronic environments. The curriculum structure of the MSc(IS) and MSc(KM) programmes are shown in Appendix 1 for completeness.

In designing the knowledge management curriculum, the Division made a special effort to cater to its existing pool of information professional graduates interested in realising their potential to embark upon knowledge management work in their organisations. Traditional information management subjects have been re-oriented and aligned to develop knowledge management competencies. The programme is taught by academicians from different backgrounds, industry partners and knowledge management practitioners. Partnerships and strategic alliances with these different constituents have been formed and are expected to be expanded further in the future. The Division's own MSc(IS) graduates may enroll for an additional degree in the MSc(KM). Alternatively, they can participate in continuing education by auditing elective modules of the programme. Additionally, existing students in the MSc(IS) and MSc(KM) programmes may select up to two subjects across curricula thereby offering more flexibility in obtaining a wide range of information skills and competencies.

The MSc(KM) programme commences in July 2002 with its first projected intake of 25 part-time students. At the close of applications in March 2002, more than 220 applications were received for the programme. This augurs very well for the future of the programme, as well as for the future of knowledge management in Singapore. The constant appraisal and revision to the Master programme in Information Studies and the introduction of the Masters programme in Knowledge Management is testimony to the Division's sustained attempt to meet the challenges of providing information professionals with important 21st century information skills.

CONCLUSIONS

Academic librarians have a stimulating and exciting journey ahead of them as they face the constant changes and developments that characterise the new economy. With these changes, academic librarians will have to reinvent themselves through continuous learning to take on new, expanded, and challenging roles. Knowledge sharing and leveraging their collective knowledge will help them continue to demonstrate their value-adding capabilities to the university and all its users. Positive attitudes, a strong sense of service, expertise in both paper and electronic environments, and a market-facing mindset will position them to take on new challenges as well as to exploit both internal and external future opportunities. They must also form partnerships with information schools in order to tap on this very important avenue of expertise and resources, and to embark upon continuing education to refresh them with updated knowledge and to acquire new competencies to function and excel in the new generation of academic libraries.

REFERENCES

Association of College and Research Libraries (ACRL) College Libraries Section Standards Committee (2000). *Standards for college libraries 2000 edition*. Retrieved March 22, 2002, from American Library Association (ALA) website: <http://www.ala.org/acrl/guides/college.html>.

Bainton, T. (2001). *Information literacy and academic libraries: the SCONUL approach (UK/Ireland)*. Paper presented in the User education workshop, 67th IFLA Council and General Conference, August 16-25, Boston, USA.

Hardesty, L. (2000). *Do we need academic libraries?* Position paper of the Association of College and Research Libraries (ACRL). Retrieved March 22, 2002 from American Library Association (ALA) website: <http://www.ala.org/acrl/academiclib.html>

Kaag, C.S. (1998). Collection development for online serials: Who needs to do what, and why, and when. *The Serials Librarian*, 33(1/2), 107-122.

Rader, H. B. (2001). *Managing academic and research libraries partnership*. Paper presented in the Universities libraries and other general research libraries workshop, 67th IFLA Council and General Conference, August 16-25, Boston, USA.

Appendix 1

NTU MSc Information Studies and MSc in Knowledge Management Curriculum (2002)

MSc (Information Studies)	MSc(Knowledge Management)
<p>Core Subjects (Compulsory) H6601 Information & Knowledge Society H6602 Information Sources & Searching H6603 Information Storage & Retrieval</p> <p>Electives (Group A – Choose 2) H6611 Human-Computer Interaction H6612 Information Management H6613 Information Organisation H6614 Internet & Web Technologies H6615 Archives & Records Management</p> <p>Electives (Group B – Choose 4) H6631 Collection Development & Management H6632 Cataloguing & Classification H6633 Client-Centred Information Services H6634 Business Information Sources & Services H6635 Management of Information Organisations H6636 Automated Systems & Services for Libraries H6637 Digital Libraries and Information Portals H6638 Evaluation of Library and Information Services H6651 Instructional Role of School Media Specialists H6652 Information Sources & Services for Children & Young Adults H6661 Conservation & Preservation H6662 Digital Preservation H6663 Archiving of Multimedia Information H6664 Heritage & Cultural Informatics H6671 Database Management Systems H6672 Web-Based Information Systems H6673 Multimedia Information Systems H6674 Intelligent Information Retrieval Systems H6675 Systems Analysis & Design H6676 Computer Programming for Information Professionals H6677 Information Mining & Analysis H6678 Data Communication & Networking H6695 Special Topic 1 H6696 Special Topic 2</p> <p>Project (Compulsory)</p>	<p>Core Subjects (Compulsory) K0001 Information and Knowledge Society K0002 Information and Knowledge Sources K0003 Foundations of Knowledge Management K0004 Knowledge Management Tools K0005 Communication and Organisational Behavior</p> <p>Electives (Choose 4) K0006 Internet Technologies K0007 Business Intelligence K0008 Electronic Records and Document Management K0009 Electronic Commerce and Knowledge Management K0010 Technopreneurship and Wealth Creation K0011 Knowledge Discovery and Data Mining K0012 Human Capital Management K0013 Knowledge Management Measurement K0014 Knowledge Management in the Public Sector K0015 Communication Management and Leadership K0016 Learning Organisation K0017 Knowledge Organisation K0018 Intellectual Capital K0019 Special Topic 1 K0020 Special Topic 2</p> <p>Project (Compulsory)</p>

(More online information on these programmes is available at: <http://www.ntu.edu.sg/sci/is>)