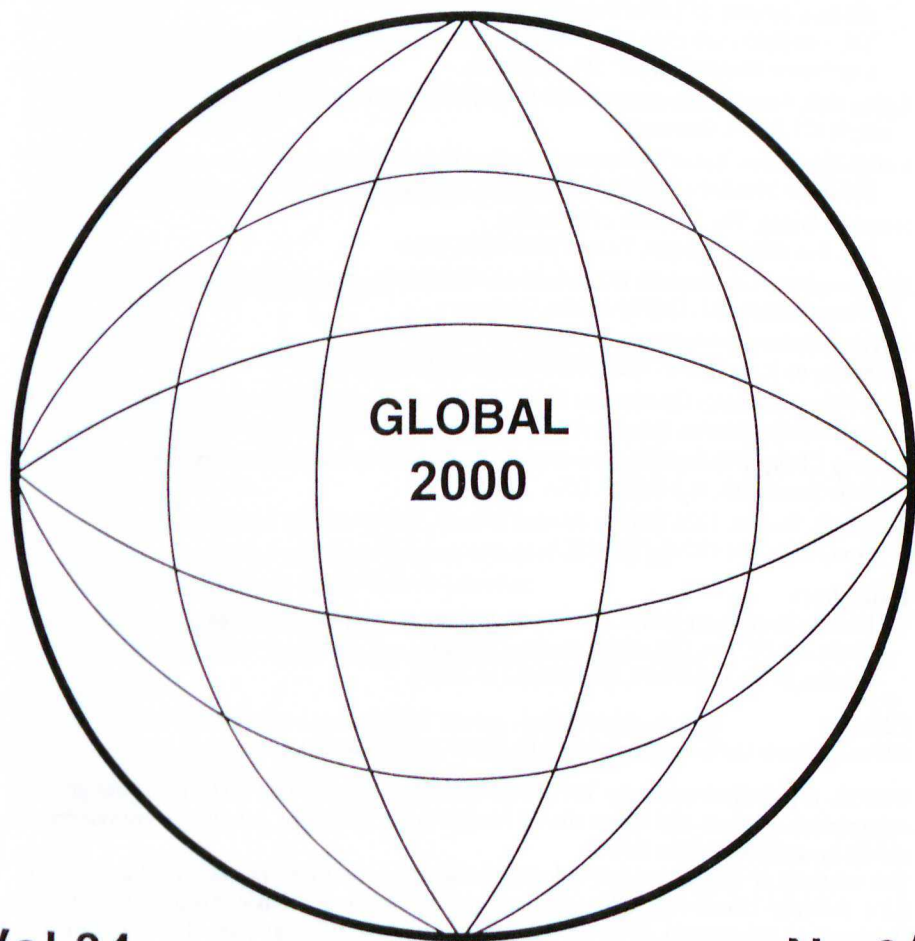


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**Editorial Board:**

Hans-Christoph Hobohm (Editor in chief)

Fachbereich Archiv-Bibliothek-Dokumentation, Fachhochschule Potsdam,  
PO-Box 600608, D-14406 Potsdam, Germany.

Tel.: +49 (0)331 580 1514, Fax: +49 (0)331 580 1599; e-mail: Hobohm@FH-Potsdam.de  
<http://www.fh-potsdam.de/~IFLA/INSPEL>

Rafael Ball, Forschungszentrum Jülich GmbH, Zentralbibliothek, Leo-Brandt-Strasse  
D-52425 Jülich, Germany

Ysabel Bertolucci, Kaiser Permanente Medical Center, Library  
280 West MacArthur Blvd., Oakland, CA 94611, USA

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P.O.Box 6826, Houston, Texas 77265-6826, USA

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New Brunswick, N.J. 08903, USA

Patricia B. Yocum, 3026 Shapiro Science Library, The University of Michigan  
Ann Arbor, MI 48109-1185, USA

**Publisher:**

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Straße des 17. Juni 135, 10623 Berlin, Germany  
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## **Editorial: Special Issue on the Global 2000 Conference**

The Global 2000 Conference held in Brighton, United Kingdom 16-19 October 2000 revealed some very important factors that will determine the continued growth of the information profession on a world-wide scale. Sponsored by the Special Libraries Association (SLA), this Second World-wide Conference on Special Librarianship yielded 700 delegates from 56 nations, all of whom were carefully optimistic about the promise of greater global sharing and networking with their colleagues.

Each day of the conference was highlighted by a keynote address. Dame Stephanie Shirley delivered an uplifting address to the delegation on the first full day of the conference. She called on the audience to “focus on entrepreneurship, innovation, and making their careers and organisations leaner and more fit.” Her remarks spurred several breakout sessions after the First General Session ended, and inspired many delegates to engage in some lively discussion on the relevance of Dame Stephanie's success to their own careers and the future of their profession.

Yves Michel Marti, Founder and President of EGIDERIA, a leading European competitive intelligence consultancy, was the Keynote Speaker for the Second General Session of the conference . During his address, Marti emphasised that information professionals should not focus on the processes they put in place for the dissemination of knowledge. Rather, information professionals "should focus on customer needs first, so that you can fully meet their needs." Marti's remarks were well-received, and were the focus of discussions during the Strategy Sharing Sessions held shortly after his address, with many delegates wondering just how aggressive the profession must be in CI efforts.

The highlight of the final day of Global 2000 was the Closing Luncheon, where Chantal Cuer delivered a stirring address. Through sharing stories of her reporting career, Cuer provided an intriguing commentary of the crucial need for accurate information sharing world-wide. She urged the delegates to take on the responsibility in their organisations for communicating truth and accuracy. “Without it,” Cuer warned, “our world’s governments, corporations, news agencies, and the people will suffer.”

The Global 2000 Exhibit Hall proved to be one of the highlights of the conference, with 50 international companies showing off the latest in online and digital information resources. Many events were held in the Exhibit Hall so that delegates

and exhibitors could spend more time interacting and learning about one another.

The 23 delegates at Global 2000 who received fellowships to attend the conference represented the future of the information profession. Others in attendance could see quite clearly that these people find the services and networking opportunities within SLA to be critical to their future success. They will enjoy the benefits of membership in SLA for the next year, and they will likely gain more from the experience than many who have been members for years. Their involvement in the conference surprisingly echoed the same ideals for the profession that were mentioned by the colleagues from developed nations:

- Innovation in the profession is a priority.
- Enhanced collaboration is badly needed.
- Global alliances among organisations must happen NOW.
- Growth in the profession is dependent on the developing nations.
- How will the digital divide be closed so that developing nations can participate?

Many within the SLA leadership suggested that the Global 2000 Conference was just the beginning and expressed strong hopes for a regular international event that will promote the local nature of this global profession.

The papers in this issue all come from this exciting event. They do not represent the complete proceedings but a selection of the best papers. Some authors of other papers unfortunately were too late in giving their copyright to be integrated in this issue of INSPEL - some of these will follow in the next issues. Stay tuned.

Doug Newcomb, SLA  
Hans-Christoph Hobohm, INSPEL/IFLA

## **FUTURE TRENDS IN SPECIAL LIBRARY SERVICES\***

**By Rafael Ball**

### **1. Introduction**

Special libraries all over the world today fulfil a whole variety of different services at a wide range of locations. This diversified spectrum of activities is by no means a recent development. At the time that the Special Library Association (SLA) was founded at the 1909 conference of the American Library Association (ALA), special libraries already had little to do with traditional library tasks. The services performed by special libraries in the early 20th century could be regarded as documentation.

At the 1912 meeting of the SLA, the special librarians took stock of their own self-image and came to the conclusion that a special library always has to be concerned with documentation.<sup>1</sup> At that time, no differentiation was made between documentalists and librarians. For special libraries (especially in companies) activities usually comprised the enterprise's entire information management. Functions and tasks went far beyond traditional basic library work. "The special library as an information bureau" was already a topic at the SLA meeting in 1915. Just three years later, the SLA established the "clearing-house concept". This apparently almost postmodern concept of the library as a clearing house for information is not only on everybody's lips with the flood of information on the internet, but has almost become a matter of course in order to cope with the volumes of data involved.

Even this short historical review shows that special libraries and librarians have long had to cover a broad, diversified and interesting range of services going far beyond that of a general library. In order to more closely define future trends in the work of special libraries, the traditional fields of work will first be presented once again in the following section.

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\* Paper presented at the „Global 2000“ Worldwide Conference on Special Librarianship“ (Brighton, 16-19 October 2000) organised by the Special Libraries Association (SLA) and co-sponsored by several international library associations and organisations.

<sup>1</sup> Robert Williams: The Documentation and Special Libraries Movement in the United States, 1910-1960. In: Journal of the American Society for Information Science, 48(9), 1997

## 2. Traditional Fields of Library Work

Library facilities have existed for thousands of years as collections of literature and knowledge per se, as places of reading and academic investigation of contents, and sometimes as museums in which books of all sorts are collected. The definition of a library as a business and thus the necessity of adequate control and corresponding management is relatively new.

The traditional tasks of a library can be described as the creation, processing, harnessing and maintenance of library holdings for assigned users. In traditional libraries this usually involves collections of monographs, series and journals in a printed (or more rarely handwritten) form. To achieve this central core function, the classical tripartite structure distinguishes between acquisition, cataloguing and user services. The establishment and formation of holdings is the central goal of acquisition, irrespective of whether the literature is acquired by purchase, donation, exchange or in some other form. The tasks arising are essentially identical and are characterized, on the one hand, by the traditional mechanisms of purchase (ordering, procurement) and, on the other hand, accession. In traditional libraries, accession is part of cataloguing thus characterizing the holdings as the library's property, and consequently serves the user as an identification in the catalogue. Cataloguing is therefore an important step at the interface between internal handling of literature and the users' access to the holdings. Cataloguing enables users to retrieve the literature by listing the materials according to subject and topic. How well the holdings of a library are catalogued finally becomes apparent in the user section. At the interface between the library and user it becomes clear whether the literature has been correctly selected and whether the formal and subject cataloguing is adequate and in accordance with the users' needs, and whether the condition of user friendliness has been properly considered. Conventional definitions of a traditional library as a collection and repository for books representing a locally oriented approach<sup>2</sup> as well as a function-oriented definition of a library, for example in a recommendation by UNESCO<sup>3</sup> presumes holdings of traditional (print) media and standard services.

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<sup>2</sup> Evert, Gisela; Umstätter, Walter (1999) Die Definition der Bibliothek. In: Bibliotheksdienst, Vol. 33, No. 6, pp. 957-971

<sup>3</sup> Jede geordnete Sammlung gedruckter Bücher und periodische Veröffentlichungen oder andere graphische oder audio-visuelle Medien, sowie Dienstleistungen eines Mitarbeiters, der für die bequeme Nutzung der Materialien sorgt, die der Leser zum Zwecke der Information, Forschung, Bildung oder Entspannung benötigen". ("Any ordered collection of printed books and periodicals or other graphical or audiovisual media, as well as services by a member of staff ensuring the convenient use of the materials which the reader requires for the purpose of information, research, education or leisure"). Empfehlungen zur internationalen Vereinheitlichung der Bibliotheksstatistik. In: Zentralblatt Bibliothekswesen 85 (1971), p.596

## **2.1 Acquisition**

The central processes of acquisition are the selection and ordering of literature as well as its accession after delivery. The actual purchase requisition, catalogue order entry, confirmation of delivery, invoicing and checking delivery are among the detailed steps in this process. Traditional literature such as printed monographs, journals and series is usually acquired in familiar ways. The literature is selected on the basis of printed, traditional selection sources in the form of brochures, announcements and publishers' information. The actual order is usually placed as an order letter or by fax. The media in a digital library are of an electronic nature. They include CD-ROMs, e-journals or other electronic information frequently provided online via the WWW. Selecting and ordering this literature has to break new ground. Orders are often placed electronically by e-mail or directly with the provider on his home page.

Even the actual distribution of electronic digital information is uncharted territory for many libraries. Instead of the familiar delivery by post and then opening the package, incoming inspection, stamping and the (traditional) accession process, delivery is now frequently effected electronically: as an ftp file, e-mail, attachment or even retrieved from the Internet by a password. Nevertheless, acquisition and classical collection building remain a traditional task of general libraries.

## **2.2 Cataloguing**

In order to make holdings available they must first be catalogued formally and with respect to subject in a more or less complicated system. Only then can a library be used in the strict sense.

Traditional media are catalogued by traditional cataloguing departments in traditional card catalogues or in OPACs. The media are thus indexed according to author/title and subject and provided with certain "imprints" as physically identifiable media. The medium is given a shelf mark for a concrete physical location in the stacks or reading room. The formal and subject description and also the location is therefore quite clear. In the case of electronic and digital media, this type of processing becomes blurred. Instead of a physical location there is a server address, a drive specifier or a URL.

## **2.3 User Services**

The traditional activities of the user services consist of satisfying the users' requirements with the aid of traditional holdings in reading rooms and stacks. The new electronic digital documents must also be made available to the user. The concepts for presenting the holdings are still based on traditional media and must



be completely revised. Against the background of the discussion on "holdings versus access", the way in which the holdings are presented will become an issue of the "organization of the information environment". This does not only require reorganization but also rethinking. Completely new strategies must be developed so that the supply of information will also be adequately ensured in future with electronic and digital documents. It is impossible to present holdings of electronic information with traditional literature methods. Instead of a reading room classification system and stack shelf marks, virtual access must be realized via electronic interfaces. The issue of user friendliness is transformed into software ergonomics.

This has an enormous impact on the activities and qualifications of the staff in the user services departments. However, in spite of all innovations user services still remain both a classical and central task of traditional general libraries.

### **3. Special Library Services in the Business Environment**

#### **3.1 Position of (Special) Libraries in Society and Business**

Special libraries usually also always fulfil the classical functions of general libraries. Over and above this, special libraries also make a decisive contribution to the respective supporting organization, whether it be a company, a research institute or some other type of organization. The permanent development, adaptation and optimization of the customer- and/or institution-oriented service portfolio is also necessary in order to legitimate the library's work, especially against the background of a still rather poor image of libraries and library work. An IFLA study confirms this negative image<sup>4</sup>. The following quotation concerning the image of libraries and librarians worldwide was taken from a 1995 IFLA study:

"The public's general image of the profession and practice of librarianship is poor. The reputation of the profession is low and as a consequence the status of workers in it is also low. The situation is not exactly the same all over the world but it does exist everywhere to varying degrees, and the picture is a fairly accurate one for most countries."<sup>5</sup>

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<sup>4</sup> The Status, Reputation and Image of the Library and Information Profession. Proceedings of the IFLA Pre-Session Seminar Delhi, 24-28 August 1992. Eds. Russell Bowden and Donald Wijasuriya. Saur, Munich, 1994

<sup>5</sup> Cf.: Prins, Hans, de Gier, Wilco: The Image of the Library and Information Profession. A report of an empirical study undertaken on behalf of IFLA's Round Table for the Management of Library Associations. Saur: München, 1995, pp.11

The following reasons are given for this situation<sup>6</sup>:

### 3.1.1 Library Work invisible to Users

The librarians' active work is not concretely visible to the majority of users, nor can they distinguish it from other tasks in the library. A great deal of important work central to the library's tasks, such as collection building and catalogue updating, takes place behind the scenes. In the same way, most users are unaware of management responsibility, for example for the acquisitions budget.

The social and democratic dimension of library work, which may be defined as free access to information and literature, also remains practically hidden from the public.

### 3.1.2 Economic Dimension of Libraries

Libraries are not assumed to make an economically measurable contribution to society, the company, or the scientific institution. In balance sheets libraries are only mentioned as causing costs and expenditure. An economic contribution by the library to the success of the overall concern is hardly ever found.

Cuts in the acquisitions budget and the comparatively low salaries of library staff further contribute to the poor image of libraries.

### 3.1.3 Quality of Service

The quality of the various services provided by libraries can neither be perceived nor assessed by the vast majority of users. The quality of library services therefore tends to be assessed as below average. The internal assessment of library quality has too long been oriented to "inside" values, and libraries and librarians (especially in Europe) have ignored the user as the direct recipient of service quality for much too long. The standardization of service quality in libraries has only begun to take shape in the past few years.

### 3.1.4 Quality of Training

On the whole, training in librarianship has a rather poor image throughout the world. Doubt is cast both on the quality of the training courses and the teachers, as well as on the quality and motivation of the students. Criticism of the traditional syllabus of librarianship courses is particularly widespread. There is generally considered to be a lack of service-oriented training at schools of librarianship worldwide.

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<sup>6</sup> Cf.: Prins, Hans, de Gier, Wilco: *The Image of the Library and Information Profession. A report of an empirical study undertaken on behalf of IFLA's Round Table for the Management of Library Associations.* Saur: München, 1995, pp.21-23

### 3.1.5 Professional Image

The professional image of a librarian is very diverse and tends to be rather diffuse. The essence of a library profession is difficult to identify. There are too many tasks performed by librarians, which could also be undertaken by other occupational groups. The spectrum of library activity ranges from support work in the stacks up to management and the political representation of a library. It is not possible to clearly define the job profile as is the case for a doctor, lawyer or engineer. This all has a negative impact on the status and image of a librarian.

### 3.1.6 Fragmentation of Knowledge<sup>7</sup>

Libraries can no longer be regarded as the repository of world knowledge. Due to the pluralistic (knowledge) society, libraries are no longer able to offer all the theories, opinions and ideas that exist in all fields of knowledge. The flood of information and opinions has caused libraries to fall behind and has seriously damaged their image.

### 3.1.7 Legitimation of Special Libraries

Special libraries have particularly close relationships with their customers and occasionally rather complicated interconnections with their funding bodies. These libraries are rarely prescribed by law so that their existence is not guaranteed by the government. They thus have to legitimate themselves anew each day so that special libraries in particular have to achieve a good standing with users and funding bodies:

- special libraries depend directly on their funding bodies
- conversely, the specific requirements of the funding bodies of special libraries are frequently directly dependent on the performance and quality of the library
- special libraries make a direct contribution to the corporate goal
- special librarians must and can usually work efficiently in small teams
- as a consequence of the new information technologies, special libraries are increasingly exposed to direct competition with other information providers to a much greater extent than general libraries
- special librarians are usually completely responsible for a broad range of activities

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<sup>7</sup> Detemple, Siegfried: Werbung für Wissen. Die Öffentlichkeitsarbeit der wissenschaftlichen Bibliotheken in der postmodernen Situation. In: Bibliotheken, Service für die Zukunft. Ed. V. Hartwig Lohse. Frankfurt: Klostermann, 1994

- special libraries and special librarians have to reestablish their legitimation day by day; only rarely is a special library prescribed by law
- the impacts of work in special libraries are much more directly visible and noticeable for users.

### **3.2 Fields of Work for Special Libraries Today and Tomorrow: Selected Examples**

Special libraries are frequently termed the avant-garde of librarianship. This is correct to the extent that special libraries usually do not merely react to changes in their (information) environment, but already foresee and influence developments in a proactive and anticipatory manner. Such libraries are therefore rarely passive but rather frequently decisive and actively shape trends and developments. Active library work thus continually creates new services for the users. Innovative actions by special libraries and their librarians therefore represent proactive innovations involving imaginativeness but also (conscious) risk taking.

In the following, a few examples are given of other infrastructural services which can be provided in the science sector:

- integration of the translation and language services of a university or research establishment into the organizational and structural responsibility of the library,
- publishing functions performed by a library
- establishment of a proof-reading service for scientific manuscripts,
- organization and permanent installation of exhibitions and lectures on the sole responsibility of scientific libraries,
- establishment of a new acquisition management involving suppliers and document delivery systems,
- outsourcing of functional areas with staff participation,
- establishment of new collection fields such as the integration of software collections into a library's holdings,
- performance of archiving services by the library sector,
- cataloguing of archive materials and making finding books and databases available to users,
- establishing a dossier service for company executives or university management with respect to political and historical issues,
- maintaining a database of publications by an institution's staff,

- undertaking a semi-qualitative and quantitative assessment of lists of publications submitted to appointments committees,
- complete remodelling of a library's legal form depending on their overall legal integration into the corresponding educational system.

#### **4. Summary and Outlook**

In future, special libraries will react even more flexibly and will have to provide a service for their funding bodies and users which is not only perfectly tailored but also proactive. They must be prepared to share responsibility or actively shape changes ranging from permanent change management up to reengineering processes. Continual optimization of services as well as sensible information management are required to make an optimum contribution for the company or supporting institution.

In our media society, whoever is uninformed and unable to communicate no longer exists. A presence in the public eye and the propagation of a positive image are basic prerequisites for operating successfully in all sectors of the market. Users and funding bodies are no longer prepared to accept and finance institutions whose performance and efficiency are no longer adequately in evidence. Particular significance is thus attached to image building as a long-term instrument for public relations. Only a positive image will ensure that services remain useful and successful in the long term and will at the same time provide libraries with new opportunities of doing even more for their users.

Rafael Ball  
Forschungszentrum Jülich GmbH  
Zentralbibliothek  
Leo-Brandt-Strasse  
D-52425 Jülich  
Germany

# **INFORMATION SPECIALISTS IN THE CORPORATE SECTOR: AN ANALYSIS OF THE TRAINING AND EDUCATION NEEDS FOR THE 21ST CENTURY\***

**By Judith Broady-Preston and Tim Hayward**

## **Introduction**

Since 1981, the retail financial services sector market in the UK has undergone fundamental change.<sup>1</sup> Deregulation in this sector, especially the impact of the 1986 Financial Services Act, (FSA) has been an extremely potent force for change, initiating significant market restructuring and the breaking down of traditional market boundaries. The consequences of the FSA post-1986 have been far-reaching, affecting how banks, building societies, brokers and insurance companies operate. Competition intensified during the late 1980s and the 1990s, stimulating the appearance of financial service conglomerates, combining different institutions under one company holding umbrella. In such a scenario, quality information is of paramount concern to companies as it enables managers to make decisions more rapidly than their rivals, and hence obtain competitive advantage<sup>2</sup>. Such rapidity of decision-making relies, in turn, upon both the quality of the employees of the organization, and the quality/type of information they have available to them. However, it may be argued that, regardless of all the many technological advances, managers merely have 'more' information, not necessarily 'better' information. Companies may, therefore, accumulate information in too much detail, with the result that decision-making information ultimately fails to match corporate strategy.

As Axson<sup>3</sup> argues, to obtain the information you need to make quicker and better decisions, it is necessary firstly to have an effective performance measurement and

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\* Paper presented at the „Global 2000“ Worldwide Conference on Special Librarianship“ (Brighton, 16-19 October 2000) organised by the Special Libraries Association (SLA) and co-sponsored by several international library associations and organisations.

<sup>1</sup> McGoldrick, P.J. and Greenland, S.J. Retailing of financial services. London: Bowker Saur, 1994.

<sup>2</sup> Broady-Preston, J. and Hayward, T. The role of information in the strategic management process. British Library Research and Innovation Centre report, 171. London: British Library Research and Innovation Centre, 1999. Online. Available: <http://www.dil.aber.ac.uk/dils/Research/Rfocus5/5sub2/Resource/BANK0X.htm>

<sup>3</sup> Axson, D., Collecting more data but gaining less insight Financial Executive 14 (3) 1998, 16-22.

planning process. This should help generate information that is predictive of what may happen to the business, rather than that which is reportive of what has happened thus far. To this extent, understanding the key drivers of any business is essential in obtaining predictive decision-making information, with scorecard models, such as the Balanced Scorecard<sup>4</sup> being used increasingly in the identification of such drivers.

Generally, information is recognized increasingly as a valuable and necessary commodity in the business world. A 1996 report<sup>5</sup> that examined information systems and services in twelve high performing companies concluded:

Information is seen as a valuable asset by the majority of the companies surveyed.

and

The creation of an information ethos is seen as an important step towards ensuring continued success by the majority of the companies surveyed.

Similarly, as the then Library and Information Commission<sup>6</sup> noted, information is an international commodity and knowledge underpins all successful economic activity. Thus, it is imperative that such a valuable resource is harnessed effectively by the business world, especially in the transition from an information age to an intelligence age.<sup>7</sup> In Tyson's intelligence age, companies need to both build a knowledge base of their competitive environment, and devise a perpetual strategy process to ensure it is constantly updated. Hence, the information advantage for companies lies beyond the simple activities of merely storing and retrieving information, residing rather in matching information to specific strategic processes. As Frappaolo<sup>8</sup> suggests, the value of information assets is assessed by companies based on their ability to utilize such assets to react to market demands more effectively than their competitors. Furthermore, as Pascarella<sup>9</sup> relates, Karl Erik Sveiby, the Swedish businessman who pioneered knowledge definition and

measurement in Europe, believes that information by itself is of no value; what is

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<sup>4</sup> Kaplan, R. and Norton, D. *Translating strategy into action: the balanced scorecard*. Boston: Harvard, 1996.

<sup>5</sup> Owens, I., Wilson, T. and Abell, A. *Information and business performance: a study of information systems and services in high performing companies*, London: Bowker Saur, 1996, 51-52.

<sup>6</sup> Library and Information Commission. *2020 Vision*. 1998.

<sup>7</sup> Tyson, K. Perpetual strategy: a 21st century essential, *Strategy and Leadership* 26 (1) 1998, 14-18.

<sup>8</sup> Frappaolo, C. Defining knowledge management: four basic functions, *Computerworld* 32 (8) 1998), 80.

<sup>9</sup> Pascarella, P. Harnessing knowledge. *Management Review* 86 (9) 1997, 37-40.

required is someone to interpret information and translate it effectively into knowledge. However, as Allee argues:

Thinking of knowledge as an object leads people to focus on databases and other storage devices...<sup>10</sup>

New strategic thinking is now necessary for all types of organizations for two reasons. Firstly, as Galagan<sup>11</sup> argues, companies are now equal as competitors as a result of implementing easy internal gains in performance in areas such as quality. Secondly, with such turbulence in markets, companies may create competitive advantages because of their predictions as to future directions in the market place. Such crystal ball gazing entails a new approach to strategic thinking. To succeed, companies need to have new methods for analyzing the marketplace, and for predicting customer behavior. All of which have implications in terms of skills and competencies required of the staff of the organization, and for external data collection and analysis. Clearly, information is central to effective strategic decision making, yet it is evident from the information blockages which exist, that differing perceptions are held as to the relevance or otherwise of information originating at the operational level<sup>12</sup>.

The current situation involving new strategic thinking, highly volatile markets and the importance of information, has obvious implications for those working in the field of information. Our research chose, therefore, to investigate the role of information and its relationship with strategy formulation in the UK retail-banking sector. The primary reason for our choosing to focus on the retail-banking sector is as a result of the pivotal role information management plays in this sector. This is not only in terms of externally collected data, the traditional "business information", but also in terms of the information processes involved in strategy formulation. Similarly, as indicated above, increased competition in this sector, together with rapid technological development, has meant that retail banks have had to make crucial strategic decisions since deregulation in the 1980s. These strategic decisions are concerned not only with how the banks market themselves, but are also concerned with the rationalization of banking and financial infrastructures. Strength of analysis, based upon quality information, is an essential part of this strategic process.

Furthermore, with the onset of the new millennium, research is also focusing on the 'new' role for information professionals. The British Library Research and

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<sup>10</sup> Allee, V., *The knowledge revolution*. London: Butterworth-Heinemann, 1997.

<sup>11</sup> Galagan, P. Strategic planning is back, *Training and Development* 51(4) 1997, 32-37.

<sup>12</sup> Sharman, P. Linking strategy to action, *CMA Magazine* 71(10) 1998, 26-29.



Innovation Centre, for example, funded a number of projects relating to the skills and aptitudes required for the whole range of information work, before its research function was transferred to the Library and Information Commission in April 1999.<sup>13</sup> Similarly, there is a profusion of journal articles and conference papers relating to the topic.<sup>14</sup>

One key area which many of these studies neglect, is the inexorable link between information and strategy in organizations and the extent to which information managers are an integral part of the strategic process. The problem arises over the definition of the term 'information professional' which suggests a service orientated role, pre-occupied with provision. As will be argued below, those responsible for information in retail banks see themselves much more as marketing professionals, and as such, actively informing the strategic process.

## Methodology

This paper reports some of the results of the second stage of a British Library Research and Innovation Centre funded project, investigating the role of information in the strategic management process of UK retail banks.<sup>15</sup> The sample consisted of 15 retail banks and 5 large retailing organizations with financial services arms. The latter were included to reflect the provision of retail banking from outside the traditional banking sector.

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<sup>13</sup> Although the Library and Information Commission has itself been superseded, and is now known as Resource: The Council for Museums, Archives and Libraries, the web site given below is still extant until all the funded projects are completed. Thus, these projects are described in more detail, together with full publication details at the Commission web site: <http://www.lic.gov.uk/publications/>

<sup>14</sup> See, for example:  
Blair, L. Beyond the square: career planning for information professionals in the twenty-first century, *New Library World* 101 (No. 1156) 2000, 175-179.  
Diamond, R. Enhancing competitiveness in the information age: strategies and tactics for special librarians and information professionals, *Information Today* 15(4) 1998, 82-87.  
Garrod, P. Skills for the new information professionals (SKIP): an evaluation of the key findings, *Program* 32(3) 1998, 241-263.  
Griffiths, J. The new information professional, *American Society for Information Science Bulletin* 24(3) 1998, 8-12.  
Proceedings of the German-Dutch University conference, "Preparing the future: information specialists for the 21st Century", Hanover, 14-15 October 1999. Fachhochschule Hanover and Hogeschool Ijeslland Deventer, 1999. CD-ROM. Also Online. Available: <http://conference99.fh-hannover.de/>

<sup>15</sup> Broady-Preston, J. and Hayward, T. op. cit.

The first stage of the project involved an exploration of the attitudes of strategic managers in retail banks.<sup>16</sup> The second stage of the project, to which this paper relates, involved an investigation of strategic information from the viewpoint of information managers. Initially, a questionnaire was distributed, achieving a response rate of 85%. Of these managers, 76% agreed to participate further in the study by taking part in a personal interview.

### **Changing nature of information activity**

Given the volatility in the financial services sector, as outlined earlier, we were interested to explore the potential impact of a turbulent environment on those engaged in information-related activity. The following reply is indicative of the degree of change and development experienced during the last five years:

[Our department's role has changed] in two ways. One is that it has a broader remit...which includes analysis of customer databases and geographic systems. The second thing is the degree to which we are pro-active in acquiring, processing and disseminating information out to the business, as opposed to waiting for people to come and ask us a question and then going to find an answer to that question.

This emphasis on the management of customer information was mirrored in other organizations and reflected a change in the functional area in which information services were located. One manager commented that her department was now responsible to the Marketing department, and as a result, made greater contributions to marketing strategy. The contact with the marketing or customer side of the business was an issue of increasing importance for such services. Generally, banks had become more strategically, rather than operationally focused, hence a wider role for information.

In addition, managers believed that information services generally had a higher profile within retail banks as a result of the way in which information professionals presented and marketed information throughout their organizations. This is illustrative of the changing role of the information professional in retail banking, moving from a passive and reactive role to becoming pro-active, supplying information in advance of its being requested.

The emphasis on an internal marketing approach was evident in several organizations. Managers believed that it was essential to sell their services actively to senior management, and simultaneously raise awareness of their activities across

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<sup>16</sup> Broady-Preston, J. and Hayward, T. Turbulent change: strategy and information flow in UK retail banks, *Journal of Information Science* 24(6) 1998, pp.395-408.

the whole organization. The development of such an internal marketing role may be related directly to the need for an information strategy. As one manager commented:

That is something I'm continually trying to get more in concrete at Board level. I'm currently chairing a working party within the Group, where one of my prime functions is to make sure we can do all this work on knowledge management but we have to have senior executive or Board level approval, and from that I believe the bank will have a strategy for information.

Thus, one of the key problems for those working in information, is for the use of information to be recognized as a strategic issue. Once this is accepted by senior executives, then information strategies can be developed. Possibly, the increasing emphasis on customer information, as a source of competitive advantage, provides a way forward here, if the use of such information can be related very clearly to the needs of the business.

Despite involvement with information dissemination, there were clear statements from the majority of managers outlining their wish to move away from a traditional service role. Such views were given impetus by the integration of the information services function with departments that had a customer or market orientation. Common to all respondents, however, was a perception that without the information they provided, banks would find it very difficult to operate at all. The range and importance of the information supplied by information managers to strategic decision-makers, is reflected in the following description of the work of one information manager:

We produce on a regular basis, key documents about strategic issues to do with planning. We put forecast packages together on how we see the industry or economy going for the planners and strategists in the group to make decisions. The information that we're gathering...is the key to how they make those decisions.

#### **Information analysis and the role of the information professional**

The questionnaire responses showed that information managers placed most importance on market and competitor information. Surprisingly, slightly less emphasis was placed on customer information. This may be attributable to the continuing perception by a small minority of managers, that their role is purely reactive and therefore, customer information should be the responsibility of other departmental areas. Whilst managers made use of traditional information sources such as reports and on-line databases, interestingly, less use was made of the Internet.

The importance of 'market' information to retail banks, adds credence to the view that information managers should be able to develop market research skills, in addition to undertaking business analysis. Market research was an integral responsibility of many of those interviewed:

Probably between one half and two thirds of the team would refer to themselves as market researchers. The others would be doing analytical tasks of different sorts or analytically based work...

In a number of cases, internally produced market research or business analysis was supplemented by research which was bought-in or 'off the shelf', which could then be customized by the information manager. Thus, the information manager may be directly involved with market research, or with coordinating external suppliers, or simply with coordinating the research from across the organization.

Both the interview and questionnaire responses established a positive link between market and customer information, and strategic decision-making. However, the extent to which the information professional was involved with strategy development, beyond an analysis of information, remained unclear. One possible explanation may lie in the use of the term 'information professional', as indicated below:

There's no such thing in this organization as an information person. Everyone is in a finance function, or strategic planning function, or a marketing function, and part of their role is information... you've got to produce models and train people within other functions how to use them and you don't get away with simply giving out information and hoping that someone uses it.

Similarly, one manager commented that employees were expected to be information professionals within their own area, but the bank would not seek and recruit an information professional per se. Other information managers felt that the term 'information professional' related solely to external consultancies:

I could see a role for them but again it would be an ad hoc consultancy type basis. Again, being the nature of this organization, we would probably not want to go down that road too often. We shoot from the hip really so it's not something we would contemplate.

Despite their roles as information managers, some respondents clearly felt that the term 'information professional' related to a person with a very traditional, library based, set of skills, bearing no relationship to themselves or the work of their organization. As one remarked:

I think I'd struggle to define in my own mind what they'd be bringing to this organization. If what you're referring to is someone who could help us sort and disseminate information, then yes... but I remain to be convinced in the short term, that what they would bring to the part would not be an immense oversimplification of what we need to achieve.

Where the term 'information professional' was recognized in retail banks, it was associated with roles and responsibilities far beyond a set of traditional search and retrieval skills:

Because we haven't got an information strategy as such...this is something I'm involved in at the moment at a very high level within the Group, to try and get that recognized far more and for people to recognize the skill of the information specialist. I mean to me it's absolutely key to the strategy of information; it's changing the culture of a large organization to ensure that people recognize the value of information and the information specialist.

Given these responses, information managers were asked at interview whether they actually considered themselves to be 'information professionals'. The majority of managers did not regard themselves as information professionals but rather as managers with marketing skills:

Yes to an extent, but probably more so market research and market analysis would be more applicable... information professional to me conjures up images of big tomes and someone sitting behind them, not in the real world at all.

This view was reiterated thus:

I mean I'm a marketer first and foremost and the skills which I have, which are even less prevalent in the rest of the company, is to be able to interpret information correctly, by which I mean being able to pick up what is an incipient breaking trend before it is statistically obvious to the entire world.

Whilst an understanding of the marketplace and customers was obviously information based, the important role for information managers demonstrably lay in the interpretation of that information, as evidenced by the following:

I would classify myself as a marketing person rather than an information professional because we can make a difference if we do the right analysis and it is useful... we can spot an issue or we may think there's an issue and do some research into it, and then report on it, and then someone will hopefully take notice if it's done correctly...

These views reinforce the above results, i.e. those working in the information area need to market themselves effectively and, in so doing, facilitate the process of informed strategic decision making:

I would say that I was an information marketer because I feel my key role at this moment is not providing information but it's basically getting people to use that information.

Of those who viewed themselves as information professionals, such a view was often qualified:

Yes, I suppose I could be considered as an information professional, but as long as it encompasses all the communication side and the marketing side...

In a similar vein, one manager referred to himself as a 'hybrid', explaining further:

I heard a distinction between information and knowledge and I would like to think that we are moving away from information work to be knowledge workers. The information itself doesn't actually produce the results, it's knowledge of what's going on.

### **Training and education requirements for information professionals**

Given the above, it was of obvious interest to ascertain information managers' views of the education and training necessary for these new roles. Thus, their views on this issue were sought, including asking them to assess the value and relevance of their own qualifications.

#### **Information or Business Related Qualifications**

The majority of those interviewed had either an information or business related qualification, with a stronger emphasis on the latter. When questioned as to the relevance of information and business qualifications, one manager observed:

I have to say that 5 years ago I'd probably have said no, but now I'd look at departmental recruits who have some sort of business or information related qualifications more positively. The reason for that is the growth of the industry and the way it has become a specialist function.

One respondent believed his degree to be of little relevance; unsurprising, perhaps, as it is a degree in theology!

Many stated the need for information specialists to have business skills:

I mean when I did my [information] qualification, it wasn't business orientated; it wasn't broad enough. It was too much delving into Dewey classification and God knows what else. I mean far more the technical side of the library function... information management has changed enormously, absolutely exploded within the last few years really, and I think people have to be very, very business minded.

This manager, whilst aware of the importance of information management, saw her primary function as that of a business manager, reinforcing the generally held view that experience and knowledge of the business, gave managers the ability to evaluate information effectively, and re-present it to colleagues.

### Education and Training

Respondents held strong views as to the education and training requirements necessary for their work, and the limitations of academic qualifications in this context. This latter point was reinforced in an interview with a strategic manager earlier in the project:

I feel the academic community has not successfully managed the expectations surrounding MBAs. I'm not going to learn something in 12 months that's going to convert me from being an average manager into a Richard Branson... [also] they don't teach you the basic business skills which are required to survive in an organization. Particularly they don't teach people how to communicate. There are too many people in business generally who can't write reports.

The main tenets of his views are reflected in the responses of information managers. They were eager to recruit numerate graduates, who were organized, good communicators and possessed analytical skills. One manager commented that whilst it was important to understand how information was constructed and held electronically, it was also important to relate this to the business:

Communications skills are absolutely vital. It's no good us having the biggest mainframe in the world and knowing everything that's on it, if we can't actually get across to the line managers in the business what the meaning of it all is and interpret it all for them, and communicate quite passionately to them...

The range of skills this manager sought in her staff are encapsulated as being:

an anorak with communication skills.

Demonstrably, there was a real need for employees to understand the financial services sector. As one manager remarked:

I think some business training is essential, not necessarily an MBA but you need to have a wider perspective on what an organization is, why it exists and how it works.

Such comments reinforce the view expressed earlier in respect of the need for information to be marketed throughout the organization. Indeed, one manager described the changing expectations of the role of information professionals in his organization:

[Three years ago] it was very much a library type atmosphere. It didn't get anyone's motivation going because you want people to apply imagination to the information that they've already got, to use it.

One of the key roles for this department currently, was to make decision makers aware of available information and to sell it internally. Consequently, he held the view that it was important to employ people who could therefore sell information and work effectively within a team. This emphasis on the importance of teamwork was reinforced by the views of another manager, elaborating on the role of her department:

I don't see us as a function where we just sit here and people come to us. I have a totally different view these days, totally turned on its head. We have got information we can sell to the rest of the Group. We are there in a communicator role and it's absolutely crucial that people can communicate and communicate well; whether it's written, whether they're doing a summary of a report or whether they're able to communicate by giving short presentations... so it's very, very different from a traditional library/information role.

Whilst some managers were eager to employ people who had a library/information qualification, this was not always regarded as essential:

I think almost any sort of degree [is useful], in that a lot of what we're doing is report writing and presentations and generally analyzing information for other people to use...

Again, specific qualifications were not always regarded as of paramount importance. Information managers believed that the academic rigor which is a part of any degree was useful, together with good personal and analytical skills, plus:

An interest, an avid interest, an enthusiasm for information, to be interested in what you are looking at and to have the enthusiasm to look at things and to think, why is it relevant?

This view was reflected by another manager:

You really do need hybrids who can understand the business and how it works... if the data says something that is obviously wrong, rather than telling the business, they filter it and go back and re-question what the information is telling them. But they also need to understand technology because an information worker really needs to know how to get the best answer, to understand how the data is structured. These traditionally are skills that people in information areas didn't need.

Indeed, one manager stated categorically that she did not regard information/library qualifications as important; banking qualifications and a



knowledge of the business sector were of more importance. Thus, with regard to information retrieval skills, for example, she believed it was relatively easy to send well-motivated staff on short training courses to acquire such skills:

I've got a couple of people who've never had any knowledge of on-line information at all and they're absolutely first class... we get free on-line training from all of these suppliers [and so] people go off on one of those courses.

## **Conclusion**

Clearly, the role of information managers/professionals is in a state of transition within the UK financial services sector. Few information managers regard the department where they work as a library or even an information center. This may be due to the increasing emphasis placed on customer information and market research, which means that those responsible for information often work in the marketing areas of an organization. This latter move towards their being placed organizationally within such areas may be viewed as encouraging, especially when coupled with their being more actively involved with the interpretation of information for strategic decision-making.

Furthermore, it is apparent that information managers need to be pro-active in marketing their services within their organization, and to be prepared to analyze and disseminate information, rather than simply respond to ad hoc enquiries. Indeed, information managers are generally unhappy with remaining in what they regard as a traditional service role. This may explain why traditional library qualifications were not regarded as essential for those working in the sector. Similarly, training is required to provide the skills necessary to participate actively in strategy formulation. If information professionals do not possess such skills/abilities, they will find themselves on the margin of activity in their organizations. Thus, we believe, our results have obvious implications for the future design of education and training schemes in our field.

Judith Broady-Preston  
Department of Information and Library Services  
University of Wales  
Aberystwyth SY23 3AS  
United Kingdom  
[dils@aber.ac.uk](mailto:dils@aber.ac.uk)

# **SPEAKING IT, STAYING A LIBRARIAN: BUILDING SUCCESSFUL RELATIONSHIPS WITH THE INFORMATION TECHNOLOGY ORGANIZATION WITHOUT LOSING YOUR IDENTITY AS A LIBRARIAN\***

**By Martha K. Heyman**

**Abstract:** Today's corporate environment demands that cross-functional teams come together at a moment's notice and collaborate effectively to rapidly resolve business problems. These short-term task teams are often composed of people who have never before worked together, and may never again. If the team is to be successful, the leaders, whether formally appointed or informally emerging, must determine quickly how to motivate their peers to contribute beyond the minimally required effort. Studies have reported that workers apply as little as 30% of their available effort (Yankelovich and Immerwahr, 1987). Only by harnessing the members' discretionary effort can the team begin operating in a collaborative fashion. The only tool available to accomplish this task is influence, because these teams are typically composed of peers and not direct reports. The literature reports three critical success factors necessary for establishing a relationship conducive to influence. These factors include a clearly defined and understood common purpose, shared responsibility for results, and mutual trust amongst the membership. Mutual trust requires individuals have: a demonstrated level of competence or relevant domain knowledge, a focus on the "broken" work processes versus blaming people, a willingness to admit individual mistakes and to acknowledge limitations, a spirit of cooperation not competition, and an ability to give and receive assistance from associates. The recent explosion of affordable information technology solutions has placed corporate librarians and information scientists squarely in the midst of many task teams with information technology professionals. Librarians are challenged to work with technology without becoming lost in it. This paper will offer one practitioner's views and experiences on how librarians can collaborate successfully with IT professionals without losing their identities as librarians.

## **What and Why**

There is nothing new in the statement that librarians need to network effectively with information technology professionals. Even before the March 1994 Library Solutions' conference "Building Partnerships" (7), library and computing professionals had been trying to understand how best to work together, though, as

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\* Paper presented at the „Global 2000“ Worldwide Conference on Special Librarianship“ (Brighton, 16-19 October 2000) organised by the Special Libraries Association (SLA) and co-sponsored by several international library associations and organisations.

the depth of references in the literature would indicate, perhaps more so in academic settings than in corporate settings.

To some extent, information technology professionals and librarians in academic settings seem to have done a superior job of recognizing the value of working together to deliver results to their customers in the rest of the academic community. The literature is full of case studies of successful collaborations.

In corporate settings, there tends to be a much greater level of competition for turf and recognition. This trend seems to be exasperated in technology-based companies, where the tangible glitz of slick new computers and software always seems to take funding precedence over the intangible benefits of solid information science practice. It's much easier to understand the connection between the efficacy of the accounting or inventory systems with relation to the revenue stream than it is to understand the money and time saved by being able to quickly and easily leverage knowledge nuggets to be found in proprietary or corporate literature. While the core competencies of the information technology profession result in the creation of tangible products, the core competencies of librarians and information scientists result in qualitative enhancement of those tangible products. (Much like the BASF advertisement "We don't make the products you use, we make the products you use better.") These qualitative enhancements can be critical to the successful operation of the information technology product because they enable the human user to make sense of the data and information.

### **Information Science Core Competencies: Sense-Making Tools**

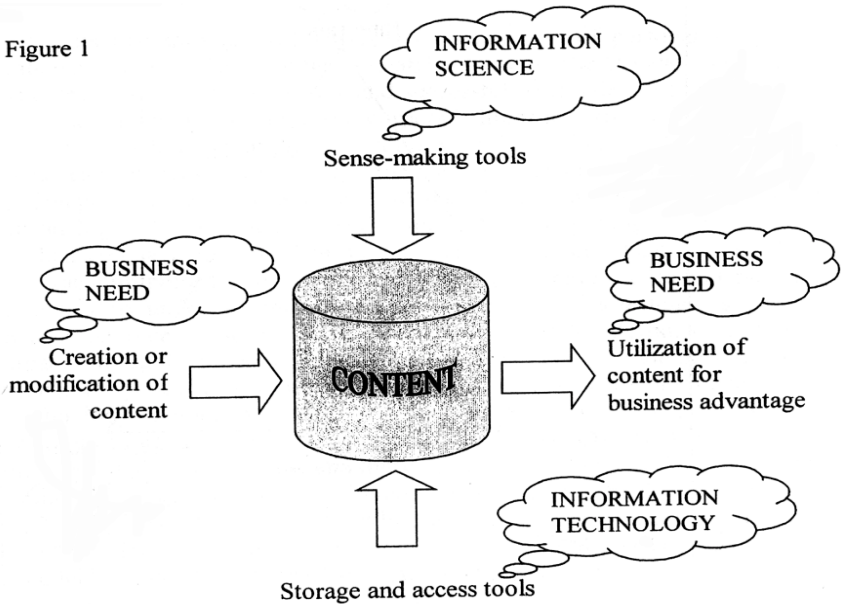
1. Expert knowledge of information resources (content and use)
2. Conceptual analysis (indexing, abstracting)
3. Ability to structure and organize content (information management)
4. Ability to synthesize and customize (information relevancy)

Fortunately, however, there is a growing recognition in corporations that digitized information content must be handled in as rigorous a fashion as the print (9). As information systems become more pervasive and truly enterprise critical, upper management is increasing its expectations as to the speed and accuracy with which the information can be retrieved and utilized. There is diminishing tolerance for problems introduced by, rather than resolved by, the information technology solution. There is reduced tolerance for information overload. Corporations operating in the global economy must rely on the efficacy of their information systems to bring them the competitive advantage they need to succeed in the market place. As a result, librarians and information scientists are increasingly being invited to join

project teams in the formative stages of problem identification and resolution. This is a welcome improvement over being asked to "clean-up the mess" after the fact.

It has become clear that there are actually three key aspects to any information system - business need, information science, and information technology (Figure 1). Without the content associated with a business need, there is no reason for the

Figure 1



information system to exist. Information technology provides the mechanics of the system - the physical storage container, the search engine, the software to manipulate and use the information (system architecture). Information science provides the standards and techniques critical for effective content architecture so that the information is stored in a manner that facilitates accurate retrieval and timely dissemination. Without the content architecture information science provides, the system is just a storage bin to hold information. Information science brings the organization that allows the user to make sense of all that information.

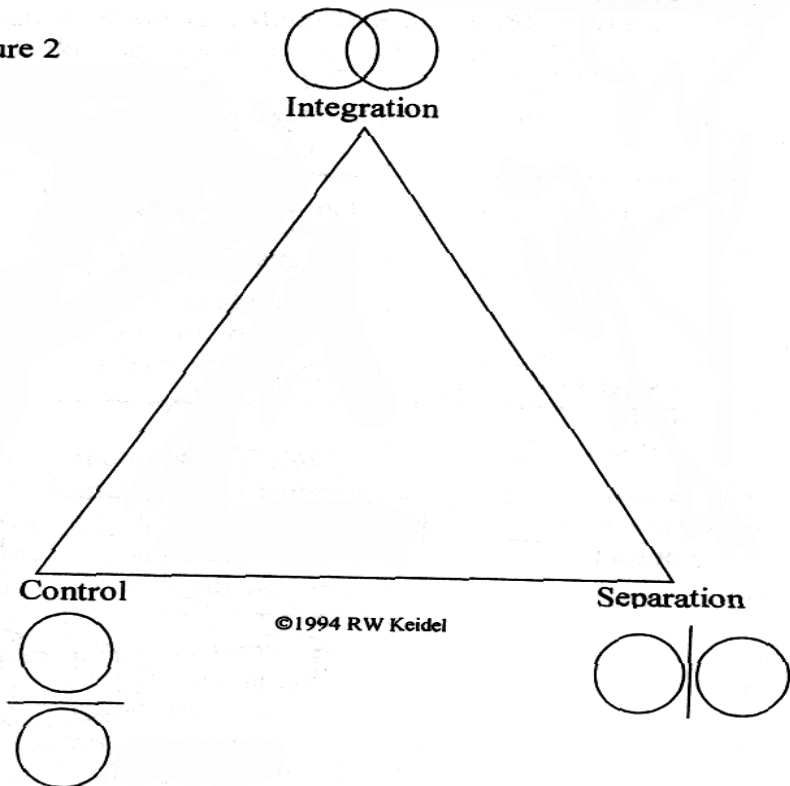
A combination of the growing understanding that content architecture is as important as the architecture of the technology, and the recent explosion of affordable information technology solutions has placed corporate librarians and information scientists squarely in the midst of many task teams with information technology professionals. It seems to be less and less of a challenge to get

ourselves invited to participate early in the projects. However, what continues to be a challenge is how to work effectively with the information technology groups without losing our identity as librarians. How to do this in a manner which educates others as to not only the critical skills but also the critical value of librarians versus the skills and value of the information technology professional. And do all this while delivering the best solution possible to the business.

### How

There are essentially three defining modes for constructive human interaction. (Figure 2) Keidel explains that individuals can relate to each other as equal peers (integration), they can arrange themselves in a hierarchical fashion

**Figure 2**



(subordination), or they can act very independently (separation). What is experienced in any given actual relationship will be a shifting mix of the three

types. All three relationship types involve some form of cooperation, but not necessarily collaboration. Collaboration can occur only when the individuals are willing to integrate on some level. Employees of corporations are contractually obligated to cooperate with other employees to complete the tasks assigned to them. This cooperation can occur whether the relationship be one of subordination, separation or integration. However, personal job satisfaction and innovative, sustainable solutions to business problems tend to be exclusively the result of true collaborative efforts. Bennis and Biederman state "in all but the rarest cases, one is too small a number to produce greatness." While we may not be looking for "greatness", we are looking to resolve the identified business problem with a solution that is both sustainable and provides the business with competitive advantage. We are looking for the best solution in the shortest amount of time. Cross-functional teams provide the opportunity to accomplish complex, interdependent tasks that are beyond the capabilities of the individuals alone. "None of us is as smart as all of us." (1)

As librarians and information scientists are invited to participate in cross-functional task teams with information technology professionals, we must be willing to construct the relationship in a manner that fosters collaboration. We must be willing to come to the table as peers integrated with the information technology professionals, not as autonomous units contributing our "piece" and then walking away, or as subordinates simply doing as we are directed to do. In order to ensure a successful outcome (personally and professionally) and future invitations to participate, we must work to create an equal and collaborative partnership with the information technology professionals. The foundation of an equal partnership is mutual trust. There are five key requirements for mutual trust to occur between individuals.

**Mutual trust requires individuals have:**

1. a demonstrated level of competence or relevant domain knowledge,
2. a focus on the "broken" work processes versus blaming people,
3. a willingness to admit individual mistakes and to acknowledge limitations,
4. a spirit of cooperation not competition,
5. and an ability to give and receive assistance from associates. (2)

Requirements two through five fall into the categories of personal integrity and the respectful treatment of others. They are fundamental not only to the foundation of a relationship based on mutual trust, but to any sustainable and successful work relationship. The most critical requirement to build mutual trust between corporate librarians and information technology professionals is to develop credibility.

Credibility is built through the demonstration of competence and relevant domain knowledge (the first requirement listed in the above box for mutual trust). Competence and domain knowledge apply to not just information science but also information technology. No one would argue that the first step to getting people to hear you is to at least speak their language. Getting them to listen is the next step. One successful way to be heard is to learn the terminology of information technology and have a solid understanding of the tools and techniques. By understanding how the tools work and what techniques to use, we're in a much better position to be advocates for our customers (corporate information users), and to be able to participate fully in the process of problem clarification and solution development (classic systems analysis). This doesn't mean we need to be able to right computer code and build the information technology solution ourselves. It means we need to stay within our profession's boundaries while understanding the terminology of another profession. It means we need to understand the functionality of the tools and the value of the techniques. We should be reading information technology trade journals and popular magazines. We should be attending relevant vendor seminars at professional conferences. While we should expect the information technology professionals to develop an understanding of our sense-making tools, we can't demand it. But we can be a role model by understanding their tools and techniques.

If you want to be heard, be sure you can speak the language. If you want to be listened to, be willing to build a visible track record of contributions supporting successful solutions. By building an appropriate level of information technology domain knowledge and bringing the information science competence librarians already have, credibility can be developed over time through active contribution to the creation of viable and sustainable business solutions. With each successful solution, a track record is created for the value of both our individual capabilities and the tools and techniques of information science. When information can be disseminated rapidly and built upon for competitive advantage, business leaders take notice. I would argue that the difference between a successful IT-based business solution and an unsuccessful one is the extent to which a librarian or information scientist was able to contribute. Speak their language but don't lose your identity as a librarian. Speak their language because it pays off for the customer and it's the best way to be heard. But don't forget to speak their language in our accent - don't leave our tools and techniques at the door and don't let the value information science competencies bring to the information technology solution get lost in all the "glitz" of the technology itself. Speak the language of information technology with an information science accent. Educate the information technology professionals and the corporation about information

science by demonstrating the value it brings to successful information technology solutions for critical business problems.

With each subsequent task team project, credibility is built and the information technology professionals begin to listen more and argue less. In 1995, I was assigned to a new location as an "information science resource". The client base was composed primarily of chemists and engineers working within a small research center in a subsidiary of DuPont.<sup>1</sup> There had been a recent change in the laboratory director position. Unlike the past director, the new director recognized that information technology was not "a toy", but a critical tool that would provide the research center with the competitive edge it needed to bring value to the businesses it supported. There were little or no existing information systems related to the research and development function. There was a traditional library established years prior by a professional librarian and maintained ever since by a well-trained clerk. One day a week, one of the laboratory technicians conducted literature searches using STN and Dialog. The only information technology support came from the manufacturing facility located near-by.

The chemists and engineers of the research center had been actively teaching themselves about the potential of information technology. There was a tremendously high level of enthusiasm for adopting and implementing new ways of working. When I arrived, I found myself instantly swamped by well-formulated requests for document tracking systems, collaborative databases, proprietary literature databases, etc. In addition, they had developed an understanding of and appreciation for such things as subject categories, controlled term thesauruses and authority lists. On average, they understood that full-text searching was rarely the most efficient or effective way to find what they were looking for. The questions weren't "why do we need controlled term lists" but "how do we best create them".

So the challenge wasn't in educating the consumer (the R&D management and staff) as to the value of information science sense-making tools. Rather, the challenge was in building credibility with the information technology support staff located at the manufacturing facility. Almost the entirety of their work was composed of massive, corporate-wide transactional systems such as SAP. Imagine their faces when a librarian came knocking on their door wanting to talk about setting up HTTP servers, establishing shared directories on the NT servers with specified file structures and access controls, investigating search utilities to run across the NT and HTTP servers, purchasing network licenses for MS Access,

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<sup>1</sup> E.I. DuPont de Nemours Co. Inc. is the world's largest chemical manufacturer. DuPont employed the author for sixteen years in various R&D laboratory as well as numerous library settings. To learn more about the DuPont Company, visit [www.dupont.com](http://www.dupont.com).



Procite and other database tools for end-users, and inviting them to participate in various task teams being established to look at EDMS (electronic document management systems) choices and data warehouse construction. After they picked their jaws up off the ground, we smiled, shook hands and started a long and extremely successful relationship.

Speaking to the information technology staff in their own language during that first meeting, and stating the business problems in the context of information technology concepts, were critical first steps. The extent of the work the team (clients, librarian, IT professionals) was eventually able to complete in the two and a half years I was there and sustain since then had its foundation during those initial few meetings. Early in the work, the corporation began to test Lotus Notes as both an email client and as a collaborative workspace. The research center and production plant were chosen as one of the pilot locations. By that time, the information technology professionals had seen several successful examples of the value information science sense-making tools bring to information technology implementations.

\* The initial Intranet (internal corporate web pages) site established on the HTTP server was one of the best in the company because of the use of subject categories and the careful content architecture that we had used.

\* The shared portion of the NT server used by the chemists and engineers contained carefully constructed directory structures, file naming conventions, and access control. Users were able to rapidly store and use the information so effectively that the Research Center was able to avoid the (sizable) costs associated with implementing a vended EDMS solution.

\* We had constructed a number of Microsoft Access databases for tracking proprietary documentation including research notebooks. The use of authority lists and controlled term thesauruses made data entry and retrieval accurate and rapid.

When the manager of the information technology group invited me to be a participant in the Lotus Notes Design and Implementation team, I realized we had a collaborative, equal partnership. We spoke each other's languages with our own accents. We each had an understanding of how the other's tools worked with our own to provide the customer with the best solution possible. The people with the "easy" funding and recognition recognized their success depended on the incorporation of sense-making tools delivered by librarians and information scientists.

#### One Step Further - True Collaboration and Innovation

Michael Schrage defines collaboration as the process of shared creation or shared discovery that individuals realize they could not have done on their own. (5) A

partnership relationship between corporate librarians and the information technology community is only the beginning of successful collaborative efforts. The existence of the partnership itself does not guarantee a truly collaborative process will occur. There are three categories of behavior in evidence when individuals are truly collaborating.

- \* work processes, relationships and expected results are jointly developed
- \* there is joint accountability for high-quality decisions
- \* individuals demonstrate a personal commitment to the success of the effort (11)

In "The Soul of a New Machine", Tracy Kidder described human interactions that result in creative collaboration as "webs of voluntary, mutual responsibility." If the cross-functional task team is to successfully collaborate, the leaders, whether formal or informal, must determine quickly how to motivate themselves and their peers to voluntarily contribute beyond the minimally required effort, and to have personal commitment to the success of the effort. Somehow, the flames of passion have to be fanned. Otherwise, the extent of the individual's contribution will be only what is expected of them as defined by their assigned duties and responsibilities.

They will cooperate but not collaborate. Studies have reported that workers apply as little as 30% of their available effort. (13) Only by harnessing the members' discretionary effort (i.e. the other 70%) can the team begin operating in a collaborative fashion. The only tool available for peers to motivate peers is influence.

The literature reports three critical success factors necessary for establishing a relationship conducive to influence. These factors include a clearly defined and understood common purpose, shared responsibility for results, and mutual trust amongst the membership. (11) In today's fast paced, high demand work environment, no one should be doing any work that is not clearly defined and understood in terms of: what is the immediate business issue; what is the business value of resolving the issue; and what are the financial and time constraints for the business. No work should be conducted until these questions are answered and everyone is in agreement. Teams aren't teams unless there is a shared responsibility for the work. The leader will be ultimately accountable to upper management for the results, but the team members must all hold equal responsibility for completion of tasks and contributing intellectual effort. Otherwise, it is just a collection of individuals working within the narrow confines of their formally assigned duties. Finally, and most importantly, a relationship conducive to influence must be founded on mutual trust, which was extensively discussed earlier.

A key to collaboration is ensuring there is equity. Librarians and information scientists must be willing to provide an equal effort, including assumption of risk, responsibility, and labor. There must be an unspoken but visible bartering. If it isn't balanced, the collaboration isn't going to work. If librarians and information scientists want the information technology professionals to understand the value of sense-making tools, then they need to understand the concepts behind SGML, client-server networking, Java, systems analysis, data modeling, etc. Equitable relationships engender a willingness to partner effectively, thus taping into discretionary effort beyond simple cooperation and leading to true collaboration. It is only with true collaboration that innovation will occur. Innovation leads to sustainable competitive advantage for the corporation.

## Summary

Two trends have placed corporate librarians and information scientists squarely in the midst of many task teams with information technology professionals. The creation of these teams is being driven by the recent explosion of affordable information technology solutions and the ever increasing recognition that the sense-making tools of information science are as important to the success of an information technology solution as the information technology itself. Librarians are challenged to work with technology without becoming lost in it. One might view the potential failure of information science and information technology to remain clearly defined as autonomous disciplines as a form of brand, trademark or product dilution.<sup>2</sup> Each discipline brings unique, critical competencies to bear in the creation of sustainable information technology solutions to business critical problems. Neither side can lead unilaterally. What is needed is a parallel approach. (12)

Librarians are challenged to speak the language of information technology with an information science accent. The task is to form and sustain relationships founded on mutual trust resulting from a high degree of professional credibility and domain knowledge, and collaborate with the information technology professionals in the creation of tools so the business can use the content for competitive advantage. In order to accomplish this end, there must be the ability to speak each other's languages and

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<sup>2</sup> A very well known example of trademark dilution is the use of the term Xerox as a synonym for photocopying. Xerox is the manufacturer of the machine. It is not the process the machine runs. Another well-known example (at least in the U.S.) is the use of the term Fridge (which was a model of refrigerator produced by a company called Fridgedaire) to refer to any model refrigerator. Failure to protect trademarks and brand names leads to erosion of market share. Customers think they're buying your product when they are not. DuPont's failure to retain Nylon as a trademark caused a significant erosion of the company's market share in synthetic fabric arena.

understand the capabilities of each discipline. The ultimate challenge for corporate librarians and information scientists is to accomplish this end without losing the identity of a librarian (i.e. being mistaken as an "IT person") and without missing the opportunity to educate the information technology professionals and corporate management on information science value and skills.

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Martha K. Heyman  
DuPont Specialty Chemicals  
Jackson Laboratory  
Deepwater, NJ 08023  
U.S.A.  
[Martha.heyman@usa.Dupont.com](mailto:Martha.heyman@usa.Dupont.com)

## **COLLABORATION BETWEEN THE UNITED STATES AND MEXICO: THE LEGACY OF SLA – SUPPORTED LINKAGES\***

**By Charlene Baldwin and Jesús Lau**

**Abstract:** The origins of the Transborder Library Forum, called in Spanish the Foro Transfronterizo de Bibliotecas, extend back to 1989, when librarians from Arizona and Sonora identified the need for better communication between libraries in Mexico and United States. In 1990, FORO I was held in southern Arizona. The following year, librarians in Hermosillo, Sonora, hosted the group. Subsequently, FORO conferences have taken place every year alternating between the U.S. and Mexico.

From the initial informal meetings of a few dozen librarians, attendance has grown to over 300. Participants come to hear keynote speakers and to attend a wide range of programs, breakout sessions, and "talk tables" which enable librarians to discuss their specific needs and projects of particular interest. Ongoing simultaneous interpretation and bi-lingual programs and proceedings ensure that every FORO attendee has the opportunity to participate equally across linguistic borders.

Unique to the FORO is the continuation of projects between the United States and Mexico over the past ten years. Some of these include

1. A groundbreaking agreement for Interlibrary Loan
2. The creation of state library associations in Sonora and Baja California
3. Subsidies from other organizations for border librarians to attend conferences in the other country
4. Team training and cross training between librarians across the border
5. Expert consultancies by librarians to visit each other's libraries.

The Special Libraries Association has been a visible presence since the beginning as a sponsor, as an exhibitor, and with participation by SLA Presidents and many SLA members. As SLA continues to shape its policy concerning international librarianship and international membership services, the FORO has already confronted many of these issues and can provide in a microcosm a synthesis of problems and opportunities for international library associations.

This paper, co-authored by two of the founders of the Transborder Library Forum, and both SLA members, will explore the role of SLA in the FORO and how this has led to greater understanding of international networking.

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## **Introduction**

”Viewing the information profession globally as the predominant profession of the future, it is important to emphasize that at no point in history has there been such a high level of understanding about the importance of global interdependence and the need to establish and maintain strong and harmonious international relations. It is logical to conclude that only dynamic, forward-looking and globally-oriented information professionals, aided by up-to-the minute information generated both nationally and globally, can provide quality service in the realm of continuously changing specialized information needs.” (Cveljo. 1997)

These are the words of Katherine Cveljo, professor emerita at the University of North Texas, Denton, summing up the relevance of international library associations in Information Outlook in 1997.

In this paper we will look at some of ways that information professionals in the United States and Mexico, predominately in the contiguous border regions of those two countries, with the support of the Special Libraries Association and the annual reinforcement of the Transborder Library Forum, have worked together in the past 10 years to build a solid collaborative network. We will also suggest some challenges that both organizations have to face to ensure continued success.

## **Background**

Prior to 1989, there was little exchange between libraries and librarians in the United States and Mexico border region. SALALM (the Seminar for the Acquisition of Latin American Library Materials, a group of primarily U.S. academic library acquisitions personnel), and the Mexican-hosted book fairs such as the Feria Internacional del Libro and the Feria del Libro de Monterrey did offer opportunities for U.S.-Mexico collaboration.

However, there were major barriers associated with more wide-spread contact. The language barrier was a primary obstacle, but restrictive governmental policies regarding the political border for travel and exchange of personnel, and the economic border of tariffs and trade effectively prevented library materials and librarians to travel between the U.S. and Mexico and to work together.

Three pivotal events occurred in the library world in the late 1980's, which, coupled with changes in the nature of U.S.-Mexico border relations, resulted in the development of greater library collaboration. The first was the Bi-national Conference on Libraries in California and Baja California, held in 1984 and again in 1985 which established early library contacts along the border. (Ayala.1984)

The second was the Arizona Library Association's goal to reach out to its Sonoran colleagues, inviting them to attend an annual conference of the Association, which held a rare meeting in Tucson in 1989. The third was the evolving focus of the two largest U.S. library associations, the Special Libraries Association and the American Library Association, toward the need for greater connection with the Latin American world. SLA's interest was primarily generated by two factors: (1) to help its business and commerce members develop an understanding of the international marketplace, and (2) to achieve its goal of increasing membership in the association by targeting special librarians in all areas of the world, including Mexico. ALA's interest was generated more by sociological motivations to recognize the growth of Hispanic populations in the U.S., their library needs, and their connections to Mexico.

As a result of the conference of the Arizona State Library Association (ASLA then, AzLA now), a group of Arizona and Sonoran librarians worked together to found the Transborder Library Forum/Foro Transfronterizo de Bibliotecas to provide opportunities for border librarians to get together annually. The history of the FORO itself has been published in many sources. It has become a success story for the development of grass roots, secretariat-free, dues-free, volunteer solutions for professional connections. (Milam, 1990; Baldwin, 1991; Neugebauer, 1992; Baldwin, 1997.)

The successes of SLA and ALA are numerous. SLA has expanded its membership throughout the world, adding in the last decade a large and active chapter in the Arabian Gulf, increasing membership in Asia and the Pacific, re-vitalizing the European Chapter, and hosting this global conference on special librarianship in the U.K. ALA has fulfilled its mission as well, with several recent ALA Presidents focusing on international connections. The latest have been Barbara Ford's Global Reach Local Touch and the 2000 conference in San Antonio, presided over by President Sarah Ann Long, featuring successful programming which included librarians from Mexico and Latin America.

SLA and the FORO have been intertwined from the beginning, with SLA providing financial support, exhibiting at the conferences, publicizing its association through the translation into Spanish of its membership brochures and publications, and offering programs and special conferences on Latin America and the information resources of the region. SLA, however, has not played a vital leadership role in the FORO phenomenon, nor has SLA been able to extend its membership base in Mexico. Reasons for this will be discussed later in this paper. U.S. and Mexican bi-national collaboration can be described by looking at the following opportunities that library leaders in the two countries have taken



advantage of to benefit of their library clientele and add to their professional development:

- Collection Development
- Information Exchange
- Vendor Support
- Governmental and Non-Governmental Organizational Support
- Professional Development
- Professional Association Affiliations

### **Collection Development**

A common goal of librarians is to expedite the loan, exchange, or transfer of materials (information) between countries. Prominent among the projects which can be directly related to the FORO are book exchanges, collection building, and interlibrary loan agreements.

After the successful first and second FORO conferences, AzLA began a cooperative project with the Sonoran State Library to provide professional library materials to develop its collections. Under the leadership of Dora Biblarz in Arizona and the late Carlos Salas Placencia in Sonora, this project resulted in the creation of a collection specializing in librarianship. The development of the Chihuahua-ana collection at UACJ is another example of book exchange that has been expedited because of increased contact between UACJ and content producers and suppliers in the U.S. Another example is the collection exchange between the U.S. National Library of Agriculture and the northern agricultural libraries of Mexico such as the Universidad Agraria Antonio Narro. American public libraries with Spanish-speaking communities have benefited from exchanges of Mexican elementary school books and media from Mexico.

One of the most enduring success stories of cooperation facilitated by the FORO is the interlibrary loan agreement established by librarians of the University of Texas at El Paso, the United States Information Agency's Biblioteca Benjamin Franklin in Mexico City, and the Instituto Tecnológico Autónomo de México. The project leaders were Bob Seal, who is an active FORO member and was the host of FORO III and Daniel Mattes from Mexico City. This cooperation scheme offers interlending between several American university libraries and institutions from Mexico City. The lending of materials has benefited users on both sides of the border and promises to involve more libraries now that the initial trial period has proven successful. The FORO has become the venue for the interlibrary loan committee and it meets every year during the conference, often hosting programs about its cooperative program. his Interlibrary Loan project has been described in

several publications, notably a 1996 article in Advances in Librarianship. (Seal, 1996).

### **Information Exchange**

A second activity fostered by the FORO involves the development of standards for the recording of bibliographic data to ensure greater use of library cataloging between the two countries. Two examples are OCLC and the United Nations databases such as CDS/ISIS. OCLC had been, and still is, a long-time sponsor and exhibitor of United States library conferences including SLA. While working to increase its presence in Mexico, it was natural for OCLC to become a major supporter of FORO conferences. As a result, since 1996, six libraries in Mexico now are members of OCLC and contribute original cataloging to this important world catalog.

The U.N. databases such as CDS/ISIS, originally developed by Canada and later distributed by the U.N. at no charge throughout the world, have made possible cooperative cataloging and the integration of library catalogs. Not utilized to any great extent in the U.S., nevertheless, the vision of CDS/ISIS was to provide a software to facilitate library work such as circulation and cataloging thus facilitating record exchange and union catalogs. Planners of the FORO have usually included programs related to cooperative cataloging, subject headings in Spanish, and other topics of concern to library database builders.

The growth of the Internet and the world wide web have provided new technologies to neutralize the political and economic border as a barrier to information exchange. The 1997 Foro, held in Cd. Juarez, Chihuahua., featured a program on this topic (Lau, 1997). It was fortunate timing that this phenomenon of an alternative method for the transfer of digital information coincided with the increased interest in U.S. and Mexican library partnerships. In fact, by the time the program was presented in Juarez, the power of the new technologies was a "given" among library professionals in both countries. The Internet was already accepted as an email medium offering barrier free (and fast) communication contact between librarians. The only limitation was the telecommunication infrastructure which was problematic on both sides of the border, but which has become better and better in the ensuing years. The establishment of the listserv Foro-L facilitated this interconnection. See Foro-L in the References for information on how to subscribe.

## **Vendor Support**

Library vendors have exploited the new Internet technology to the benefit of all librarians. To market new products required remaining visible at important library conferences. EBSCO is one company that has been a strong supporter of both SLA and the FORO. With their products EBSCO Online and EBSCO Host, full text data can be searched and transmitted electronically. The larger Mexican libraries subscribe to these services, making it part of their digital library service goals of "24/7" availability. DIALOG, SilverPlatter, Ovid, and other vendors of fee-based databases now provide that information over the world wide web. The ongoing economic limitations of many libraries on both sides of the border prevent full participation. However, increasingly, libraries are developing web pages, mounting them on local servers, and accessing the rest of the world wide web through local satellite dishes to provide a network of free information transfer. Some good examples of academic library sites are those of UACJ, ITESM, INFOMINE at the University of California, Riverside, and the University of Texas at El Paso. (See URL addresses in the References section.) ITESM (Monterrey, Mexico) and UTEP (El Paso) offer their web sites in both English and Spanish.

The FORO, thus, like SLA, has become a key conference venue for vendors. Since its origins, the FORO brought the presence of vendor information services from both sides of the border. The positive impact of the trade show that goes along with the academic program of the conference has not been researched, but one can easily guess that FORO exhibits have enabled librarians to learn about the wide availability of information products and services that otherwise it would have been difficult to learn about by librarians, especially about those from smaller companies. The FORO relies on vendor support to help underwrite expenses. FORO organizers talk directly with vendors at SLA Exhibit Halls, greatly facilitating knowledge about the FORO by potential vendor/sponsors and in fact, SLA itself has been a vendor at several recent FORO conferences.

## **Governmental and Non-Governmental Organizations**

The role of governmental and non-governmental organizations cannot be overlooked in the support of the FORO, which in turn has helped these organizations to fulfill their cooperation/collaboration mission in both countries by furthering each others' knowledge. The best example is the former United States Information Agency (USIA) now merged with the U.S. State Department and its Office of International Information Programs. USIA has helped the FORO sponsor speakers and promote the conference. The Biblioteca Benjamin Franklin in Mexico City, known in Mexico as the BBF, has contributed to most of the FOROs.

Its staff has always been a visible, strong link between the FORO and libraries in Mexico, especially in its host city of Mexico City, where a very important number of Mexican libraries are located. It has to be said that the BBF, established in 1942, was the first library that the U.S government set up abroad. It has been one, if not the best, cultural export from the U.S to Mexico and it has been modeled in other countries as well. The United States Information Agency, through the BBF, has played a pivotal role in Mexican information development by training library staff, promoting public libraries, distributing library literature and bringing some of the best American librarians on visits to Mexican libraries and Mexican librarians on study tours to the United States.

The FORO began before the historic North American Free Trade Agreement was signed between the U.S., Mexico and Canada in 1993. NAFTA has made border relations easier from the economic and political point of view. NAFTA has promoted new laws and regulations to facilitate the commerce of information of sides of the border, to ease postal regulations and rates, and to create cooperative copyright agreements. NAFTA has been the topic of many FORO and SLA programs. Results of this agreement include the facility to transport computers and other information technology equipment across the border with less trouble, especially lowering import/export costs, reducing paper work, and in some cases freeing up the trade of goods between the three signatory countries. The NAFTA benefits to the library community have been great, because they have facilitated the buying and selling of information, both electronically and in print, as well as computer and telecommunication equipment to libraries. Now, there is a library trade between the U.S. and Mexico. Mexican bookshelves are exported to the U.S., and American library furniture is imported by Mexican academic libraries. This exchange would have been rather difficult before trade tariffs were lowered by NAFTA partners.

The Fidelcomiso para la Cultura EUA-Mexico is an example of a non-governmental body financed by Consejo Nacional para la Cultura, Bancomer (a bank), and the Rockefeller Foundation which has given funds to support part of the organizational expenses of the last two FOROs. It has also given seed money to some library cooperation projects, such as the Controlled Vocabulary project that aims to create a set of hemispheric subject headings for libraries in the Latin American continent, a project led by the El Colegio de Mexico Library. Another similar foundation is the UC Mexus program that sponsors scholarly exchanges and programs of interest to scholars (including librarians) affiliated with the University of California and its Mexican counterparts. UC Mexus was a major sponsor of the Riverside FORO (1998).

## **Professional Development**

Sharing information between countries on new ways of doing things in the library has been a primary outcome of both the FORO and SLA partnerships throughout the world. The following are projects directly related to the FORO experience.

### **Training**

The most valuable spin-offs from the FOROs have been staff training. Some examples are the reciprocal exchanges between libraries of all types from Chihuahua, Coahuila, Baja California, Nuevo Leon, and Sonora with U.S. libraries in Arizona, New Mexico, Texas, and California. These institutions have organized several courses and workshops with volunteering library professionals that travel to the other country's site. Some collaborative training has even taken place as far south as Chiapas, a state on the Mexican border with Guatemala, 2,000 miles away from the nearest American library, yet experiencing the same sets of problems confronting border librarians to the north. Consultations and sharing of organizational and leadership materials has been shared across borders. Several of the trainers have been SLA members who work mainly in academic libraries.

Although not every bi-national action has been generated by the existence of the FOROs alone, it could be said that most U.S.-Mexico Border Library initiatives have had some relation to the communication channels established and perpetuated by the existence of the annual FORO meetings. An example of this is the new joint Master's library degree program jointly offered by ITESM and the University of Texas at Austin Library School. This program uses the latest telecommunication technology to record and broadcast academic library education programs to 26 sites all over Mexico.

### **Staff exchanges**

Personnel exchanges have been most successful. USIA travel grants to the United States are not only valuable themselves, but set the stage for future collaborative opportunities. The consultancy between the University of California, Riverside and the Colegio del Front era Sure, the Foro library representing "the other border" of Mexico, in Chiapas, was one outgrowth. In this consultancy, a new library system was acquired and new cataloguing schemes were created for backlogs, as well as staff training.

Staff exchanges between the librarians at New Mexico State University in Las Cruces and the Autonomous University of Cd. Juarez (UACJ) have focused on language training and in-site library training. SLA has recently established a goal to expedite an effective means to recruit and train library personnel in the international marketplace and for dealing with international information to serve

business patrons. The 1993 State-of-the-Art Institute sponsored by SLA was entitled "Latin America: the emerging information power" and brought several Latin American library leaders to present position papers at the Institute. (SLA, 1993). OCLC explored the value of its international catalogs at recent Directors Conferences which brought library leaders from Latin America (and other parts of the world) to its Dublin, Ohio headquarters.

### **Professional Associations**

Finally, it must be re-emphasized that professional associations have played a pivotal role in the success of these bi-national collaborative ventures. Existing associations have encouraged participation by the other country at their conferences. SLA, ALA, the Association of Mexican Librarians (AMBAC), the Sonoran Library Association (ASBAC), AzLA, the Texas Library Association, and the Border Regional Library Association are examples. The most active ones in the past decade are undoubtedly the Arizona Library Association, the Texas Library Association and AMBAC. However, other associations, such as the Southern Association of Law Librarians, have invited Mexican librarians to participate in their conferences as speakers as well as attendees.

New associations have sprung out of the need to increase U.S.-Mexico contact. The FORO itself is of course one, working now on its eleventh consecutive conference, to be held in Hermosillo, Sonora, Mexico, in March, 2001). (See its new web site at [victoria.ciad.mx/biblioteca/eventos/foro\\_xi.htm](http://victoria.ciad.mx/biblioteca/eventos/foro_xi.htm).) Librarians from Sonora had the preliminary meetings of their state association at early FORO conferences and the Baja Library Association also gained momentum because of the contact generated by the FORO experience.

Library conference programming increasingly encourages bi-national contributions: AMBAC invited a panel of U.S. librarians to attend their last two annual conferences, called Jornadas. AzLA continues to bring Mexican, primarily Sonoran, librarians to their annual conferences, and the AzLA International Librarianship Round Table, the first ever for a state association, maintains a strong membership base. The Texas Library Association also has a special committee for Texas-Mexico relations.

### **Conclusion**

All of these success stories, however, raise important issues which will require resolution if large U.S. associations such as SLA want to create a member base of Latin American special librarians and if the FORO wishes to remain a viable alternative for the "disenfranchised" and often economically pressured regional

librarians on the U.S Mexico border. These issues were discussed in a recent Library Trends article entitled "International Library Associations." (Baldwin, 1997). The most relevant for associations serving U.S. and Mexican librarians include the following:

1. The appropriate payment of dues relevant to the member's ability to pay for services and the value of those services to all members. The FORO has avoided this matter by not charging any dues, but is facing increasing difficulties in raising funds for future conferences and to solidify a member base and organizational leadership. SLA has not increased its membership in Latin America at the levels of other international areas in part because the dues is just too high in relation to the annual salaries of librarians in those countries. An SLA committee is looking into membership dues alternative structures which may in the future encourage increased membership in Mexico. Affiliation of Mexican library associations would be one solution, but sets economic precedents which would lower the ratio of dues to member service fees.
2. Planning programs that meet the needs of all member constituencies and how to identify and satisfy those needs. The FORO has evolved from highly interactive talk tables and a resolution-based format to a more formal set of programs by noted speakers delivered to an audience, albeit simultaneously translated. This may not sustain the FORO's unique sense of collaborative association. SLA's increased focus on business and corporate librarianship creates some international programming especially related to access to Mexican business information, but the organization has yet resolve central issues raised between its Board of Directors'-responsive International Relations Committee and its member-generated International Information Exchange Caucus. The success of Global 2000 will be directly related to the value placed by the membership on international experiences and international collaboration.
3. The ability to maintain continuity from year to year in library conference programming that develops and builds upon past programming. The FORO has done extremely well in this area, as noted in this paper of examples. SLA could do a lot more in this area. Its chapters which share a border with Mexico, provide opportunities to develop ongoing projects sponsored by SLA. Several chapters, for example, have utilized International Special Librarians Day for collaborative meetings and tours with Mexican librarians. Affiliate memberships would encourage other organizations to meet during SLA conferences.
4. The ability to disseminate and archive published and unpublished records of library meetings. Independent organizers of annual FORO meetings have not

been uniformly dedicated to the provision of proceedings of the conferences. Thus, the records of some conferences are lost. SLA headquarters has made a concerted effort to market its association in Latin America by translating brochures, membership forms, and abstracts of published articles into Spanish, but the traditional paper copy distribution of SLA publications is not as useful as the digital availability of the same information. SLA has embarked on an ambitious plan to create the virtual organization, and its successes in this area are contributing to the dissemination of information globally. This will assist in the vitality of SLA in Mexico and in other countries as well.

5. The development of a mission and vision that is broad enough for flexibility and change but exact enough to distinguish one association from another in the constant quest for new members and the provision of relevant services for those members. The FORO itself has evolved a "look and feel" which is much more traditional than its early mission. Recent FORO conferences have shown lower registration, in part perhaps because of the lack of urgency for its existence or uniqueness for what it offers. SLA is working on its image as well, and it is both losing membership in the academic arena and failing to attract members in some international sectors as it focuses more on the corporate and business librarians and the information they need to do their jobs.
6. Ascertaining ways to detail accomplishments. Questions such as "Must accomplishments be measurable and identifiable in order to be evaluated?" are related to continued support for the maintenance of the FORO. Many in the FORO believed in the beginning that just contact was enough, and for years two of the objectives of the FORO conferences were simply to network with other librarians with similar library concerns, and to get to know the cultural differences on both sides of the border. Many collaborative projects occurred out of this contact. Is it time for the FORO to cease existing? FORO participants of the last 3 conferences have asked this very question, and repeatedly the participants have voiced support for continuation. SLA's mission statement on its web site clearly offers support directly to its members' job effectiveness: "SLA's mission is to advance the leadership role of the special librarian/information professional in our information and knowledge-based society. SLA is committed to providing a variety of products and services designed to enhance its members' professional skills." The members vote their confidence in their association's service with their dues, their volunteerism, and their attendance at conferences.
7. Establishing the limit to the geographic coverage of an association. The FORO attempted to include Canada in its programming for several years just after



NAFTA. In fact, organizers briefly changed its name to the Tri-national Library Forum/Foro Tri-national de Bibliotecas to identify three countries in its embrace. However, Canadian information issues and Canadian-U.S. border libraries have less in common with the majority of programming and spin-off collaboration of the FORO in the U.S. and Mexico, and the group renamed itself the Foro Transfronterizo de Bibliotecas, the Transborder Library Forum, not to exclude Canada, but to fuddy the commitment. SLA is confronting issues related to its geographic coverage as well. Some SLA members in the United States are concerned that meeting the information needs of new members in Latin America, Africa, the South Pacific, and the Middle East may dilute the mission of the organization to support special librarians in the U.S. and Canada. Certainly, the organization will have to provide many alternatives to programming, member contact, and information dissemination to serve fully a world-wide membership.

8. Communicating appropriately with members. To deliver information in a format and language which is understandable and usable to members. The FORO has its listserv (See references for information on how to subscribe), but no central web site. Each Conference Chair has to establish a new web site, hopefully linking to all previous FORO websites, but hosted at their sponsoring institution, with no surety of its continuance. SLA has developed a very successful web site, and has many listservs to service its chapters, divisions, caucuses, board of directors, committees, headquarters operations, and general information for its members ([www.sla.org](http://www.sla.org)). The FORO has a serious problem with marketing upcoming conferences, as there is no standard distribution mechanism for promotional flyers and information brochures. SLA has a variety of publication media, and is assuming a greater visibility in the United States and Canada for its leadership in government and policy development related to information access.

All of these projects supported and nurtured by U.S. and Mexican library leaders point to the reasons behind this paper. We who are involved do this out of a desire to network, to understand information resources from other parts of the world, to explore better ways of organizing and disseminating information, to make our work more relevant to our clientele, and to feel connected to other professionals who face the same challenges and who recognize the same opportunities. The global village needs the global library. International librarians are paving the way.

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INFOMINE at the University of California, Riverside: [infomine.ucr.edu](http://infomine.ucr.edu)

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Charlene Baldwin  
Chapman University  
One University Drive  
Orange, CA 92866  
e-mail: [Baldwin@chapman.edu](mailto:Baldwin@chapman.edu)

Jesús Lau  
Universidad Autonoma de Ciudad Juarez  
Av. Lopez Mateo 20  
32310 Ciudad Juarez, Chic.  
Mexico  
e-mail: [jlau@uacj.mx](mailto:jlau@uacj.mx)

## **PARLEZ-VOUS TECHNOLOGIE?: TEACHING INFORMATION SKILLS IN A SECOND LANGUAGE\***

**By Claire Spaven and Anne Murphy**

**Abstract:** Librarians are in charge of teaching information skills to post-secondary students in a government-funded college system in the United Arab Emirates. In developing a curriculum to meet the information needs of nearly 10,000 English-as-a-foreign-language students, librarians first had to review their own assumptions of their customers' existing information literacy skills. Among these assumptions were that students understood and appreciated library "culture" and knew how to find information in their native language. Other cultural differences such as the role of books in society, learner-centered versus rote learning styles and education as a life-long process were examined in developing the curriculum. This paper will examine some of the obstacles faced, lessons learned and offer advice to other librarians teaching information skills to students in a second language.

### **Introduction**

Teaching information skills to any library newcomer is a daunting task. Subject classification and orderly displays seem second nature to information professionals, but are a whole new world for those with limited library experience. Now add to that scenario instruction in a second language and you have the situation more than 10,000 post-secondary school students face in the United Arab Emirates. Not only are they expected to become independent learners in a relatively short time frame, but are expected to understand abstract concepts explained in English, a language few of them speak outside the classroom.

The authors have been involved in teaching information skills to college-level Emirati women since 1997. In developing suitable curriculum for our students, we have had to re-examine our views on librarianship and on lifelong learning. In this paper, we will share some of the internal and external challenges we faced, how we attempted to overcome them and share some advice for others teaching information skills in a second language.

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\* Paper presented at the „Global 2000“ Worldwide Conference on Special Librarianship“ (Brighton, 16-19 October 2000) organised by the Special Libraries Association (SLA) and co-sponsored by several international library associations and organisations.

## **Our Environment**

We work for the Higher Colleges of Technology (HCT) in the United Arab Emirates, a small and oil-rich country in the Saudi peninsula. The government-funded system provides free post-secondary programs in English to more than 10,000 Emirati men and women in engineering, business, health sciences and communication technology. Based upon the Canadian community college model, the emphasis is on teaching practical skills that prepare graduates for the work force or additional education. By the time a student graduates from a two-, three- or four-year program, he or she is expected to "have the linguistic ability to function effectively in an international environment; the technical skills to operate in an increasingly complex technological world; the intellectual capacity to adapt to constant change..."<sup>1</sup>

As part of this information skills mandate, all first-year students receive instruction on how to use and analyze several information sources, including the online public access catalogue, CD-ROM products such as Encarta and the Internet. Each of the system's twelve learning resource centers also keeps such traditional print reference works as encyclopedias, almanacs, dictionaries, directories and telephone books. We have found that students who receive a good grounding in information skills during their first year build on that foundation in subsequent years with refresher or subject-specific courses.

Information skills courses are taught by librarians with a Master of Library Science degree or equivalent and at least three years of public service experience. Working with English teachers, we instruct students on how to use a variety of information tools. Students complete practical exercises to reinforce a particular information skill such as using an encyclopedia. For example, students are asked to find the population, area and official languages of a number of countries using the most appropriate source. While the Internet is often a student's first choice, we have found that exposing them to both print and online sources demonstrates that the World Wide Web is not always the best or quickest source.

Now that we have three years of Middle East experience on which to draw, we can tell you about some of the challenges we faced, how we overcame them and offer some tips to others in similar situations. We will divide the challenges into external ones from our client base and internal ones from our diverse backgrounds. Some of the challenges are ongoing. We view them not as obstacles but opportunities for growth.

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<sup>1</sup> Higher Colleges of Technology Mission Statement

## **External Challenges**

### **Level of English**

All students entering the Higher Colleges of Technology have studied English in elementary and secondary school. However much of that instruction has been by teachers who speak English as a second language themselves. For many students, English is not used outside the classroom, so they have little opportunity to practise their second-language skills. Conversely, some students have been educated in private schools or travel frequently to English-language countries and have a near-native level of English. Male students tend to have more opportunities outside the family to travel and meet non-Arab speaking people than women do. Students at HCT are segregated according to gender and are streamed into two programs based on the English results from the final year of secondary school and a diagnostic test written as they enter our system.

In order to immerse students in an English-only environment, faculty and supervisors are recruited mostly from outside the Arab-speaking world. Because the bulk of information skills instruction is completed during the students' first year, we use simple language and lots of pictures to show them how to use various programs. When we teach computer-based skills such as searching the Internet or using a CD-ROM product such as Encarta Encyclopedia, we use a data projector to show students what their screens should look like. Once the students are online, we walk around and troubleshoot problems.

Finding suitable materials is an ongoing process. After each term, information skills instructors sit down and talk about what worked and what did not and revise the course as necessary. For instance, a lesson on parts of a book was changed when students completed a generic fill-in-the-gap exercise (another term for the name of a book is the \_\_\_\_\_) with the title of a specific book. We divided the lesson in two so that the students completed the generic part before we gave them specific books in which to look for information.

### **Different Levels of Exposure to Technology**

Some of our students have home computers and are already computer literate when they enter our system while others will never have seen, much less used, a computer before. During their first year, all students take a compulsory computer course. As well, teachers in other subject areas encourage students to practice their technical skills by offering a variety of exercises using CD-ROMs, interactive computer programs and Web-based instruction. Peer-to-peer training supplements the formal computer-based instruction as students who have already mastered a computer program explain it to their colleagues.

This peer-to-peer training also applies to navigating the Internet, as students learn from one another the "cool" sites and want to be able to bookmark them. There are a number of advantages to this kind of instruction: students learn about sites which are of interest to them; instruction is in a language and manner which they understand; there is a cascading effect as they pass along their knowledge to others. Conversely, there are disadvantages to peer-to-peer tutoring: students tend to stick to a limited number of topics, which are usually leisure-related; bad habits are passed along and information is not analyzed for authority or bias.

As students become more familiar with computers and the Internet, they sometimes use these skills for non-academic purposes. For instance, some of our students download Hindi movie clips which take up a lot of memory and do not improve their English language skills. They also bring in disks that may contain viruses or illegal programs. To counteract this, all computers are equipped with anti-virus software and illegal programs are deleted on a regular basis. It is a case of balancing the students' need to improve their computing skills with the college's need to have an efficient computer network.

#### Library Culture a New Experience

One of the biggest challenges we faced during our first few months in the United Arab Emirates was realizing that our students were not used to spending time in a library. As a result, students did not know how to find information using the catalogue, speak quietly or keep the library tidy. We tried to instill in our students the importance of returning items on time, not defacing books or magazines and to act like they're in a library, not a zoo. The domed roof of our library does not help matters, as all conversations below it reverberate throughout the rest of the room.

We teach these "library etiquette" skills through formal and informal methods. The formal portion involves answering true and false questions about how to behave in the library. On a more informal basis, we try to demonstrate acceptable conduct by talking to students in a low voice and by returning items to their proper place.

#### New Learning Style

Most of our students come from a teacher-centered, rote-learning environment. What we want to teach them is how to develop life-long learning skills that can be adapted to any situation in which they find themselves. For instance, the "yellow pages" of the telephone book can be used to shop for an item for the home or to see if there are business competitors in the area. Sometimes it is difficult to explain to students that the purpose of many the information skills exercises we give them is not necessarily to find the correct answer within a short time frame, but to add the skill to their repertoire. One of the most gratifying moments we have experienced is when students are able to apply the skills we have taught them in

their own research. After weeks of trying to explain the differences among several reference tools such as an encyclopedia, atlas, almanac and the Internet, our students were able to pick out the most appropriate ones for a "countries-of-the-world" project.

### Limited World Experiences

Many of our students have limited exposure to the outside world that makes finding relevant examples difficult. Using a cookbook as an example of a relational database may be appropriate for a women's college in the West, but it produced blank stares in our college. First of all, few of our students cook as most large families have a maid who does that. Secondly, recipes are handed down orally, so students would not file them under appetizer, main course or dessert in a recipe box or book.

We have found that developing our own materials using situations that students might find themselves in such as booking a trip to another Arabian Gulf country works better than asking them to find out the cost of a train ticket between Devon and Brighton. One of the men's colleges has developed an information skills exercise based on four-wheel drive vehicles which are popular among their student body. We have a selection of women's, business, computer, health and general interest magazines and local newspapers available for students so that they can broaden their knowledge and improve their reading abilities in English. These materials are well-used because they are current and are easy to read or browse.

These are among the main challenges we faced from our client group when we developed our information skills programs. As we worked on these programs, we realized that we had to re-examine our views on librarianship. The next part of this paper will deal with some of the internal challenges.

### **Internal Challenges**

#### Comfort Levels with Technology

With "technology" an integral part of our system's philosophy, we had to look at our own comfort levels with teaching non-print information sources such as the Internet or CD-ROMs. Unlike print sources that rarely vary in format from year to year, electronic products such as Encarta change dramatically between editions. In some cases, we were learning how to use a new software program or CD-ROM only hours before we taught it to our students. We relied heavily on the advice of others who had used the product before or were good at troubleshooting problems. As we gained confidence in our own abilities through practice and honing our lessons, we assessed an electronic information source with the same criteria we used for a print one.



If there is one piece of advice we can offer someone demonstrating how to use a new technology (especially to a culturally sensitive group), it is to make sure you do not attempt a "live" demonstration using suggestions from your students. One of us was showing some students the Disney World web site when one of participants asked that we look at the wedding link. While the bride-and-groom images were certainly tame by Western standards, there were a couple of culturally inappropriate items (champagne and a bare-armed bride) for Muslim students.

### Speaking the Same Language

Although we are both native English speakers and fully-qualified librarians, we found that we used different terminology for the same thing. For instance, Claire, who trained in the United Kingdom, kept saying that students needed a "reader ticket" to check out items. Anne was more familiar with the term "library card." While it was relatively simple to clarify the terms among ourselves, we also had to explain to our students that the loans desk was also the circulation desk. Because other teachers and staff members come from around the world, the students soon become accustomed to different names for the same thing.

### Using Appropriate Language Levels for Patron Group

Our students are a fairly homogeneous group - mostly between the ages of 18 and 25, Emirati citizens and Muslims. However, their language skills in English vary from almost non-existent to near-native speaking. Most of the students we see in first year have a fairly limited English vocabulary, so we have to use photographs, step-by-step instructions and diagrams to augment oral explanations of new concepts. In addition to simple explanations, we also use examples from the students' own experiences. For instance, when explaining the rather abstract concepts of the Library of Congress classification system, we used the example of classifying purchases. Eggs and milk belong together because they are dairy products and need refrigeration while dresses and veils belong together - but not with eggs and milk -- because they are pieces of clothing. We have found that being patient and treating each question as a reference interview help to bridge any communication gap.

### Seeing the Library through the Patrons' Eyes

Of all the internal challenges, the one that we still find most difficult to absorb is that our patrons have an entirely different view of the library than the one with which we are familiar. Because we have been exposed to libraries and books since childhood, we would never think of writing in a library book or tearing out an article on Prince William from a magazine. We know how to behave in a library because we have spent so much time in one as a patron and as a professional. For our students, however, ideas such as unlimited access to the Internet, independent

learning and the freedom to choose a book or video are new concepts. From our vantage point, we may sometimes feel that patrons should be using the resources more wisely. The patron, however, may feel that her need to track down every possible picture of Leonardo Di Caprio is no less important than someone else's need to look up information on parts of a computer.

We are always treading a fine line between making the library so inviting that students are drawn to it and ensuring that it does not become merely a social club. We also are aware that the type of behavior they learn here, especially if it is their first experience in a library, will carry on in subsequent encounters. We have found that other patrons are much harder on noisy or disobedient students than we are. The offending students soon learn through group censure that their actions are inappropriate.

### **Tips**

- \* Make sure information skills are part of the overall curriculum and not an isolated topic. We work very closely with teachers on projects so that the skills students learn in our classes are used throughout the curriculum.
- \* Make sure teachers are on your side and ask how you can help. When teachers understand that you are working together to develop life-long learning skills, they will support you by coming with their students to your classes.
- \* Choose topics of interest to your customer group. For instance, we teach Internet searching skills by showing our female students pages pertaining to weddings while our colleagues at the men's college use four-wheel drive websites.
- \* Revise your curriculum as often as necessary to meet your customers' needs. If a lesson does not work, try to figure out how to improve it and test pilot it.
- \* Network with others who are also teaching information skills in a second language. This can be accomplished in person, by electronic discussion groups or by keeping up with the literature.
- \* Be patient. Remember the first time you tried to communicate to someone in a second language - did that person understand you? Eventually your customers will learn as much as they need to know.

### **Conclusions**

We have learned so much from our students, not only about teaching information skills in a second language but about how other cultures view the work we do. We

have learned to face internal as well as external challenges to help our customers become life-long, independent learners. Most importantly, we have learned that teaching information skills in a second language need not be onerous if we bring the enthusiasm we have for our profession to our customers.

Anne Murphy and Claire Spaven  
Al Ain Women's College  
Box 17258  
Al Ain  
United Arab Emirates  
[Anne.Murphy@net.ac.ae](mailto:Anne.Murphy@net.ac.ae)

## **ELECTRONIC JOURNALS: A DELPHI SURVEY\***

**By Alice Keller**

### **Summary**

This paper presents the results of a Delphi survey on the future development of electronic journals. The international expert panel comprised 45 scientists, publishers, librarians, journal agents and consultants. The survey covered five areas of interest regarding electronic journals: (1) the future role of scholarly journal literature, (2) scenarios for the journal of the future, (3) the serials crisis and the electronic journal, (4) archiving of electronic journals, and (5) new pricing and access models.

The Delphi survey studied changes expected within the next 5 to 10 years. The results indicate that we are moving towards a process of substitution wherein other publication and communication channels will increasingly take over functions traditionally fulfilled by journals. Digital "doppelgänger" of printed journals are considered a transitional medium and will be replaced by authentic electronic journals that take full advantage of the new technologies. Electronic journals *per se* won't eliminate the serials crisis, but features and services introduced by new technologies are expected to offer solutions in some problem areas. Archiving will most likely be done by national depositories, possibly in co-operation with international subject-specific digital archives. Experts expect to see a coexistence of different pricing and access models, with (consortial) licensing and pay-per-use systems taking an increasingly predominant position.

Throughout their history lasting over 300 years, journals have never been faced with so many changes as they are expected to see within the next 5 to 10 years.

### **Introduction**

In order to study the future development of electronic journals<sup>1</sup> a Delphi survey was carried out. The aim of the survey was to study the following questions<sup>2</sup> :

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\* Paper presented at the „Global 2000“ Worldwide Conference on Special Librarianship“ (Brighton, 16-19 October 2000) organised by the Special Libraries Association (SLA) and co-sponsored by several international library associations and organisations.

<sup>1</sup> The survey focussed on scholarly journal literature, i.e. peer-reviewed journals.

- Which will be the role or function of electronic journals in the scholarly information and communication landscape of the future?
- What could the (electronic) journal of the future look like?
- Can electronic journals contribute to the elimination of the serials crisis?
- How can long-term availability of electronic journals be organised?
- Which new cost and access models will dominate in future?
- Which new technological innovations and developments are expected in the area of electronic publishing<sup>3</sup>.

A clear distinction between electronic and print journals is becoming increasingly more difficult. On the one hand many print journals are available in electronic format, on the other hand many electronic journals are distributed retrospectively in print. Bearing in mind this integration of the print and electronic medium, any survey considering the future development of electronic journals will also cover (at least in part) the future of scholarly journal literature in general.

### The Delphi Survey

#### The Expert Panel

The composition of the expert panel has a very great influence on the validity of the results of a Delphi survey. Due to the complexity of the subject matter, it was of great importance that the members of the panel possessed both competence and experience in the area of electronic publishing and scholarly communication. The expert panel comprised 45 scientists, publishers, librarians, journal agents and consultants from 9 nations (**Figures 1 and 2**). Both the interdisciplinary and international character of the panel were considered important issues for the validity of the results.

**Figure 1:** Professional background of experts on panel

Professional background	Number of experts on panel	
Scientists (teaching or research)	10	(22,2%)
Publishing	9	(,200%)
Journal agents	3	(6,7%)
Libraries	19	(42,2%)
Consultants	4	(8,9%)
<b>Total</b>	<b>45</b>	<b>(100%)</b>

<sup>2</sup> The full results of the survey including statistical material will be published by A. Keller in winter 2000/2001. This paper presents a brief summary of the results.

<sup>3</sup> These results are not presented in this paper.

**Figure 2:** Geographical background of experts on panel

Geographical background	Number of experts on panel	
Austria	4	(8,9%)
Belgium	1	(2,2%)
Germany	16	(35,6%)
France	1	(2,2%)
Netherlands	5	(11,1%)
South Africa	1	(2,2%)
Switzerland	3	(6,7%)
United Kingdom	10	(22,2%)
USA	4	(8,9%)
<b>Total</b>	<b>45</b>	<b>(100%)</b>

### **The Survey**

The Delphi survey included 3 rounds of questions starting in February and ending in December 1999. After each round experts were sent a summary of the results of the previous round. This procedure provided the required interaction between the panel members. Questionnaires were distributed in English and German. The questions in the first round were very broad and gave the specialists sufficient scope to bring in their own ideas and thereby influence the emphasis or direction of the survey. In the second and third round questions were much more specific and led to quantitative results. Questions focussed on how desirable or likely certain developments were, or in which year they were likely to occur. The time scale in all questions ranged from year 2000 to 2010.

All answers were dealt with anonymously. Inbetween 86,7 and 93,3% of the questionnaires were returned.

### **Results of the Delphi Survey**

#### **The Future Role of Scholarly Journal Literature**

The first set of the questions in the Delphi survey dealt with expected changes in scholarly communication and information. Questions focussed on the current and future significance of scholarly journal literature. Will the journal remain the core element of scholarly communication or will other publishing channels take on tasks traditionally performed by journals?

The answers of the panel show clearly that journals currently fulfil a important role in the scholarly community. All functions originally described by A.C.Schaffner are currently still fulfilled by journals<sup>4</sup> :

- Building a collective knowledge base
- Communicating information
- Validating the quality of research
- Distributing rewards
- Building scientific communities

However, respondents expect fundamental changes in the nature of scholarly information and communication during the next 5 to 10 years. Despite these changes journals will remain vital for quality control in research. According to the experts the significance of the peer-review-process will gain even more importance in future.

In all other areas experts assume that journals will be at least partly substituted by other communication or publication channels. Especially the distribution of research findings can be achieved much more quickly and effectively by other publication forms.

Preprint archives offer significant advantages over conventional journals and are looked on as very cost-effective alternatives to journals. Although the expert panel would in general welcome the introduction of preprint archives in all areas of scholarly research, many consider the lack of quality control a serious problem. The advantages of preprint archives (speed of publication and maximum availability) are clearly not equally important in all areas of research.

Experts assume that the role of journals will fall significantly during the second half of the next decade.

### **Scenarios for the Journal of the Future**

Respondents are generally disappointed that the current nature of electronic journals is so strongly dominated by the tradition of print publication. This digital "doppelgänger" is, however, considered as a transitional medium which will be replaced by real, authentic electronic journals that take full advantage of the new technologies.

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<sup>4</sup> Schaffner, Ann C. (1994): Future of Scientific Journals: Lessons from the Past. In: Information Technology and Libraries 13(4), 239-247.

In order to establish a model for the electronic journal of the future, various scenarios that were put forward by experts in the first round were presented for assessment:

- Scenario (1): Journals will represent customised collections of articles, put together according to the users' personal interest profile.
- Scenario (2): Journals as "envelopes" for articles will disappear completely. Articles will be tagged with quality labels and stored in large knowledge environments.
- Scenario (3): Articles will be replaced by a stream of dynamic information objects that represent versions of a paper over time.

The answers of the panel don't give a clear picture as to which scenario is most realistic. Considering the diversity of user requirements and the differences between different subject areas, it is very possible that the journal of the future will not be uniform. We will most likely be confronted with a variety of publication types. This diversity is, of course, made possible and encouraged by the introduction of new technologies.

### **The Serials Crisis and the Electronic Journal**

Many librarians and scientists have been aware of the limits of the scholarly journal system for years. The exponential growth of information and the annual rise of subscription prices are very frequently seen as the main reasons for the serials crisis. The Delphi survey tried to assess whether electronic journals could help eliminate these problems. Although the experts could not agree on whom to blame for this crisis (and whether to call it a crisis, at all), none of them expected that the introduction of the electronic journal *per se* would solve the problem.

However, the introduction of new technologies could offer solutions in various areas of the serials crisis. The following suggestions were put forward:

(a) Alternative access models can improve general access to journal literature. Members of the panel mentioned consortia, electronic document delivery services and pay-per-use access.

(b) New pricing models could lead to a reduction of subscription prices. Experts are especially positive about the SPARC initiative<sup>5</sup> This initiative promises to publish lower-priced journals as alternatives to expensive commercial titles. Although such initiatives do not focus exclusively on electronic only journals, it is

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<sup>5</sup> SPARC: Scholarly Publishing and Academic Resources Coalition (SPARC): <http://www.arl.org/sparc/index.html>.



expected that the introduction of new technologies can help reduce production costs and lead to lower subscription prices.

© The serials crisis can be seen as a opportunity to re-think the nature of highly specialised, low-circulation journals. These "marginal journals" are expected to disappear or to be published in an alternative – most likely electronic only – format. Respondents would welcome such a change.

(d) Authors are increasingly able to distribute their findings without the assistance of publishers. There are very diverging opinions concerning this form of "self-publishing". It is not clear what significance this practice will have in future, nor whether such a change is desirable or not.

### **Archiving of Electronic Journals**

If you speak about electronic journals you are bound to be asked about long-term availability. This issue remains unsolved. According to the experts the most important issue is not the question of which technology to use, but how to allocate the responsibilities. The Delphi survey tried to establish the general opinion on which institution *will* or *should* take on the responsibility for archiving these journals, of protecting them against changes and of securing long-term availability.

Two models were put forward. Either the required legal, organisational and financial framework will be established on a national level and archiving will be defined as a national task with national depositories (possibly national libraries) taking a leading role. Or it will be done on a co-operative basis whereby national depositories and international subject-specific digital archives will share the responsibility and commercial suppliers may offer certain services. It is not thought that publishers are suitable archiving partners.

The current practice wherein libraries collect print copies of electronic journals for archival purposes is seen as a valid solution for moment. However, experts think that libraries will stop subscribing to print versions of major scholarly journals for archival purposes by the middle of the next decade. Furthermore, this shift will be encouraged by the fact that the average journal article will have so many interactive and/or multimedia features, that printing it will only convey part of the information content.

### **New Pricing and Access Models**

If you consider the characteristics of electronic publishing you will notice that electronic journals offer us a whole range of new opportunities to define pricing and access models. New opportunities cover direct access at article level, the

creation of customised journals (price differentiation) and the possibilities to bundle, unbundle or rebundle articles to match the users' requirements. Main emphasis of the discussion, however, was on the role of pay-per-use access models.

According to the experts, libraries will in future offer unrestricted electronic access to core journals through license agreements (possibly consortial) and pay-per-use access to journals of secondary importance (**Figure 3**). Not all specialists welcome this development. Some recognise the danger that such systems may discriminate certain user groups. According to the librarians users will have to contribute substantially to the costs for pay-per-use access.

**Figure 3:** Question: "Do you agree that libraries will in future offer unrestricted electronic access to core journals through license agreements (possibly consortial) and pay-per-use access to journals of secondary importance?"

	Number of respondents	
"Yes, I agree"	34	(87,2%)
"No, I don't agree"	3	(7,7%)
(answers not valid)	2	(5,1%)

The formation of consortia will be a widespread phenomenon. According to the results of the survey, librarians are less convinced than non-librarians that consortia will represent a cost-effective access model for the future.

Alice Keller  
 ETH-Bibliothek  
 Raemistrasse 101  
 CH-8092 Zürich  
 Switzerland  
[Alice.keller@library.ethz.ch](mailto:Alice.keller@library.ethz.ch)

## **THE DIGITIZATION OF SWITZERLAND: A SPECIAL LIBRARY'S PERSPECTIVE\***

**By Wolfram Neubauer**

### **Special Librarianship in Switzerland**

Compared to other Western European nations Switzerland can only boast of very few major special libraries. Until recently large industries and companies had significant book and journal collections and formed a network of special libraries with good services and professional staff. This was valid especially for the pharmaceutical, chemical, and engineering industry. However, these libraries are increasingly being reduced in number, size and significance.

Apart from these special libraries within commercial enterprises there are a number of well-stocked research libraries affiliated to universities or research institutes. Few of these libraries can be considered as large and although all of them participate in some form of interlibrary loan services, speed and convenience of services vary strongly. The largest special library for public use is certainly the ETH-Bibliothek with very extensive collections in all fields of science and technology. The abbreviation ETH stands for Eidgenössische Technische Hochschule and translates as Swiss Federal Institute of Technology. In this paper we talk about the technical university in Zurich, which is the bigger of the two in Switzerland.

Scientists from industry and academia are increasingly turning towards the ETH Libraries for document supply. However, users are no longer willing to wait a week for a book or even 3 days for a journal article. And often they cannot be bothered to walk across the campus to collect the document at the issue desk. What users want is convenience, i.e. one gateway to information, electronic delivery and supply within 24 hours.

The ETH-Bibliothek therefore saw it as a challenge to put forward a variety of services which would match the needs of research scientists and be competitive on the international market. As libraries in industry are being downsized or closed

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\* Paper presented at the „Global 2000“ Worldwide Conference on Special Librarianship“ (Brighton, 16-19 October 2000) organised by the Special Libraries Association (SLA) and co-sponsored by several international library associations and organisations.

completely and research libraries are forced to reduce their journal subscriptions for financial reasons, the demand for central document services is growing.

This paper tries to give an overview of the ways a large special library can build up services that not only benefit its students and staff members but also make the collections available to users outside the campus. In this context, digitally available collections, gateway functions and electronic document delivery play a major role within the Swiss library environment.

### **Current state of digitization**

#### Access to library holdings

In nearly all bigger libraries (special, corporate, academic and public libraries) holdings are generally accessed over the OPAC.

The introduction of library systems in Switzerland goes back to the late seventies, with two major centres of library automation: Lausanne with its SIBIL system and especially Zurich with its customized system ETHICS. For a period of about ten years this application was one of the leading library systems in the German speaking countries, based on earlier developments of the ETH Libraries' IT-department. During the last decade, both systems have been replaced by commercial products with the French-speaking part of Switzerland opting for VTLS and the German-speaking part choosing ExLibris' new Aleph 500 system. Unfortunately, not all holdings of special libraries are covered by these catalogues. Our experience shows that despite the advantages many smaller libraries are hesitant to participate in large library networks. From a user's, perhaps a scientist's point of view, this can be extremely unsatisfying, because some of these smaller collections may contain really important material for special interests.

#### Bibliographic databases

Up to now it has been the responsibility of each university or research institute to license databases and make them available to students and staff members. Only recently the Swiss Federal Government has helped to finance a large national project, called "Consortium of Swiss University Libraries" which will make it possible to negotiate consortial licenses and try to harmonise and extend the database collections of all Swiss universities, all federal research institutes, all universities for applied sciences and the National Library of Switzerland. As usual in such consortia, commercial partners are excluded from these deals.

This project has started operation in September 2000 and will end in 2004. The whole budget for this five-year-period is about 10,8 million US Dollar.

### Full text journals

Several libraries offer very good collections, others are only now starting to build up their e-journal collections. The national project will help to co-ordinate these digital collections and link them to the bibliographic databases. The leading institution in this context is the ETH Zurich with online access to about 1,500 titles. This number does not seem very high, but we pursue a strategy of quality.

### Electronic document delivery

In order to fulfil user requirements of industrial and also university customers the ETH-Bibliothek has implemented an electronic document delivery system. This DocUTrans system is the result of a co-operation between the TU Delft Library in the Netherlands and Minolta and is marketed commercially. This complex application allows an easy transmission of the full text of documents either electronically or as fax.

At the moment this service is only offered to a group of pilot users from industry. The ETH-Bibliothek, however, will extend this service to all other users. From October this year, all copy requests in electronic form will run over this system.

Obviously building up such an infrastructure is a large investment for any library and the ETH-Bibliothek is currently the only library in Switzerland offering these services.

### Digital collections

Digital libraries are often designed to offer better access of lesser known or valuable collections to the public. A second aspect is the fact, that scanning can, of course, also be regarded as a way of preservation. The ETH-Bibliothek is involved in some very interesting projects. One of these projects is the Virtual Library Eduard Imhof. The world renowned cartographer Eduard Imhof painted many general or special maps of Switzerland and created a series of models of famous Swiss mountains. These objects are an important part of the history of Swiss cartography, and many originals are part of the library collections. The main purpose of the project is now the digitization of the most important objects and ist presentation via the library's homepage.

Another example is the digital photo archive managed by the Special Collections Department of the ETH-Bibliothek. The photo archive holds about 500,000 photos, especially to technical and scientific topics in general (engineering, bridge and railway construction etc.) and also to the history and development of the ETH Zurich. The project goal is to digitize all relevant photos of this collection and to make them accessible via the Internet. This project will run over several years. Until now, about 15,000 units are available in a digitized format. Another example are the digital dissertations of the ETH Zurich.

In 1999 the ETH-Bibliothek decided to digitize all dissertations of the university, and to make them available electronically. The aim of this project is to give easy access to the full text of about 400 papers a year. Once a user finds the bibliographic data of a dissertation in the OPAC, he or she can then click on a button to view the abstract and decide in which format he or she wants to obtain the full text: either as a printout, on a CD-ROM or in an electronic format. The project started last year and will be fully operational in 2001.

### **Situation in the future**

Up to now, most users of library services in Switzerland appreciate to have electronic access to OPACs, to check the content lists of accessible electronic journals, to browse through hundreds and thousands of library web pages and, finally, to get the full text of scientific articles on their desktop. Most of these services are taken for granted.

All these different kinds of library services are not only very diversified and very complex, but mostly also not very user-friendly. In this context, it is rather obvious that convenience will become one of the big issues for the near future.

What can a small country in the centre of Europe hope to achieve in the digital library world? Although the financial situation of many libraries in Switzerland may not be so bad compared to other European countries, fast progress in digitization also depends on other two factors: first on qualified IT-staff in general, and particularly in libraries, and second on the availability of central funds to encourage co-operative projects.

Building up a national consortium is a good start, and can be an example for further co-operative projects and actions. The next steps which have to be taken are the digitization of vast library collections and the development of one national union catalogue or of one central gateway function for the two OPAC families (users of the VTLS system and all Aleph 500 libraries). These are much more complex and difficult tasks but absolutely necessary.

All services of the ETH-Bibliothek are provided for two main user groups: academics and students on the one hand, scientists and other persons from industry on the other. Both groups are nearly the same size. To satisfy the different needs, the library is trying to find pragmatic solutions which do not have the dimensions and the impact of projects abroad, but are designed with regard to the users to make sure they benefit directly. In this context the ETH Libraries put special emphasis on the following issues:

- one gateway to information
- integration of bibliographic databases and full text journals

- building up a document server for digital material owned by the ETH
- extension of electronic access to databases and e-journals through the national consortium
- customization of services
- electronic document delivery services to all user groups (using different technologies and services)

From the ETH-Bibliothek's point of view, this is a very ambitious programme, but we are optimistic about achieving these goals within the next five years. We are convinced that going in this direction, we will take the leading role in the development towards a digitization of the Swiss library environment. Libraries are moving to a more competitive future, where services will have to be tailored to match the requirements of different user groups. We believe that the developments within the ETH-Bibliothek over the last few years have shown that we are ready to meet the challenge.

Wolfram Neubauer  
ETH-Bibliothek  
Rämistasse 101  
CH-8092 Zürich  
Switzerland  
e-mail: [neubauer@library.ethz.ch](mailto:neubauer@library.ethz.ch)

# **DEVELOPMENT INFORMATION DISSEMINATION TECHNIQUES: DIRECTION FOR AQUACULTURE DEVELOPMENT AND HEALTH PLANNING IN INDONESIA DURING AND AFTER THE ECONOMIC CRISIS\***

**By Widharto Widharto**

## **Summary**

Within the next two decades, the population of Indonesia is projected to be 258.2 million. Thus, the need for food will dramatically increase and agricultural productivity should be increased accordingly. However, concomitantly industry, housing, and other sectors must also expand and call on land resource availability. These conflicts have created a major problem that must be addressed to guarantee that resources will be sufficient to at least provide the food security of the growing population.

SEAMEO BIOTROP to conduct and disseminate relevant research that supports the aquaculture development and ways in SEAMEO BIOTROP hopes to help solve this problem by disseminating appropriate information necessary for the attainment of fish resource proficiency. Fish is a very important yet relatively cheap protein source for the people of Indonesia and most of the other Southeast Asian countries.

SEAMEO Regional Centre for Tropical Biology (BIOTROP), a Regional Centre operationally funded by the Indonesian Government, has played an important role in support of the agricultural development that Indonesia has achieved. It is the mission of which farmers profit and compete in the global arena.

## **Background**

Indonesia is a country comprising 13.667 islands straddled out along the equator between the Indian and Pacific Oceans, and sandwiched between the continents of Asia and Australia. A country rich in natural resources, Indonesia's population stood at more than 200 (two hundred) million people as of 1997 with more than

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50% inhabiting the island of Java and the remainder distributed over Sumatra, Kalimantan, Sulawesi, Irian Jaya and other islands.

Oka (1996) stated that in Indonesia, agriculture is the backbone of the economy and the major propeller of national development. The role of agriculture in the economy of the nation, is to provide food, foreign exchange earnings, and job opportunities as well as to contribute development of other sectors especially providing raw materials for industry to meet the expansion of domestic demands. During the fifth five-year Development Plan (1988 - 93) the agricultural sector contributed about 19% of the total Gross Domestic Product (GDP), and more than 7.8% of the total export earnings or 12.5% of the total non-oil exports. Likewise, agriculture employs 42.3 million people, or 59.9% of the total labour force. Thus, increasing agricultural productivity must be generated not only to achieve self-sufficiency in food but also to improve employment and welfare levels in the rural areas, where most of the Indonesians live.

Increasing population pressures on the world's limited resources, coupled with escalation in energy costs, have emphasized the necessity of developing new methods of food production. An additional concern is the recent emphasis on industries that are environmentally clean, yet able to provide tax revenues and employment opportunities, particularly for communities that traditionally have been agricultural. Aquaculture, the systematic cultivation of aquatic plants and animals, has demonstrated the potential to meet these needs. Aquaculture development projects are being initiated in many parts of the world, particularly in Indonesia. Most effort in aquaculture has been oriented towards improved productivity through intensive feeding of formulated diets, better pest management, water quality management, and utilization of open waters for aquaculture. This requires research in areas such as water management (irrigation), pest and diseases management, fertilizers, land preparation, farm management and marketing, harvesting and post harvest technology. Information on aquaculture and its related fields is very important to the success of that project. However, such information to support the development of aquaculture and its impacts on the public health is very scarce.

### **What is SEAMEO BIOTROP?**

SEAMEO (The Southeast Asian Ministers of Education Organization) is an organization created for the purpose of promoting cooperation among Southeast Asian nations through activities in education, science and culture. The SEAMEO member countries are: Brunei Darussalam, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Viet Nam. The Associate

member countries are: Australia, Canada, France, Germany, The Netherlands, and New Zealand - countries outside the region that cherish the organization's aspirations and share its cooperative spirit. Other donor countries include Japan and the United States of America.

The organization operates through its 11 Regional Centres located in the member's countries. The SEAMEO Regional Centre for Tropical Biology (BIOTROP) is located in Bogor, Indonesia, and was established by the Third SEAMEC (The Southeast Asian Ministers of Education Council) Conference in Singapore, on 6-9 February, 1968. The Bogor Agricultural University (Institut Pertanian Bogor), as host institution to BIOTROP plays a very important role in BIOTROP's development as a first-rate institution (Sahertian - Bakhoven, 1984).

BIOTROP was developed to provide the SEAMEO member countries with increased capability in biological sciences, relevant to regional economic needs. The objective of this organization is to identify and help solve critical biological problems, to enhance economic development in the member states and conduct research, publication and training programmes and related activities within and outside Indonesia. Based on its objectives and its functional goals, BIOTROP disseminates relevant information on BIOTROP's programme achievements and research results (through BIOTROP publications, papers, seminars) to scientists, appropriate authorities, interested organizations and key persons in the region. acts as a central clearing house for storage and exchange of tropical biological information within the region, and foster international cooperation, communication and exchange of biological information within the region. This task is entrusted to the Information Resource Unit.

The Centre's activities are mainly focused on research and training in areas of tropical biology, namely Tropical Forest Biology, Tropical Pest Biology, and Tropical Aquatic Biology. Research studies have focused on inland water ecosystem with special emphasis on natural and manmade lakes of Java on a broad range of topics including water quality monitoring, aquatic weeds, water pollution, fish population structure and dynamics, feasibility studies on use of lakes for aquaculture and the formulation of the appropriate fisheries management concepts. The Information Resource Unit (IRU) supports these professional programmes. The objectives of the IRU are to provide a two-way flow of information between BIOTROP and the scientific community in Southeast Asia and other tropical areas.

The experimental results are disseminated to professionals in the region through the training courses organized by BIOTROP. Training professionals at BIOTROP

stimulate further biological research in the SEAMEO member countries, thus producing the maximum multiplier effect from BIOTROP programmes.

The studies, though focused mainly on fisheries production, have also a number of public health and socioeconomic implications.

### **Socioeconomic Development of Building New Dams**

The Indonesian government has implemented water resource development programmes by the construction of dams and irrigation systems in order to provide more water for agricultural land and/or for hydro-power production. Other benefits obtained include flood controls in the downstream area, inland navigation, communication and transportation upstream and down-stream, fish raising in the manmade water reservoir and public recreation in the dam area. However, these programmes may cause adverse effects on health and nutritional status of the communities. Seldom are the health aspect and the sociocultural aspects of the project on the community to be flooded of the migrant population that will settle on the shore, considered. Such health and nutritional problems may be major obstacles to the socioeconomic development of the country as a whole..

For the success of both the development of aquaculture and the public health service, information transfer between research, development and implementation is of great importance. Examples of such transfer are:

#### **Provision of Safe Water Supply**

Using the same data collected to examine the suitability of water for fisheries activities can be used in making decisions as to the suitability of the water as source of domestic water supply and the kind of treatment the water has to undergo prior to its distribution to the community.

#### **Nutritional Aspects**

Although fish is still one of the cheapest source of protein for most people in the rural communities of Southeast Asia, there is still a need to inform the population on proper fish culture techniques in terms of proper feeding regimes, stocking densities, choice of breeds, proper use of fishing would ensure a sustainable development of the ecosystem.

#### **The BIOTROP's Documentation and Information Service**

The objective of BIOTROP's Information Resource Unit is to gather, analyze, produce and disseminate information for scientists, technicians, Training Course and Symposia participants of BIOTROP and the outside users as well. Outputs include: (I) Scientific Serial: BITROPIA, (ii) Symposia Proceedings "BIOTROP

SPECIAL Publications", (iii) Training Course Reports, and (iv) an information service, a document delivery service and consultancy. Those jobs have been implemented into the services as follows: (1). The Library and Documentation Service, (2). Publications Service, and (3). Communication Service.

### **The Library and Documentation**

#### The Library

The BIOTROP Library and Documentation Service is classified as a special library and is headed by a librarian who is directly under the supervision of the Head of the Information Resource Unit. The Library has a seating capacity for forty readers. It provides up-to-date references and learning resources both print and non-print media. Currently, the library holdings consist of 15.500 volumes of books, more than 1.000 of serial titles, voluminous pamphlets, and microfiches. They are acquired and collected from a large variety of sources within and outside the Southeast Asian Region, 80% of the books collected are in English. Due to recent budgetary constraints, the acquisition of books and other library materials through purchase have been reduced. However, with the higher activities programmed through the programme thrusts, which will increase the number of BIOTROP publications, we are sure that they will allow BIOTROP to make exchanges with other institutions both local and international that will contribute greatly to the growth of the library collection.

Needless to say, scientists are interested in having immediate answers to their questions, rather than getting lengthy reports. Having the right information at the right time will give scientists the competitive edge they need to help them in their regionalization effort. The BIOTROP library should be more proactive in providing value added services such as online searching, alerts and customized information that meet the BIOTROP's scientists specific needs. Information specialists with specific BIOTROP subject areas have to be on hand and equipped with the right skills to tap databases around the world to extract, analyze and present relevant information to the scientists and other BIOTROP's clientele.

However, in this time of economic crisis, the Libraries have been subjected to a budget reduction. Effective Fiscal Year 1997/98, a number of vacant positions are not being refilled, moreover, other activities related to library and librarianship jobs have to be cancelled. It seems probable that Indonesian librarians will have to devise new methods to solve their problems; techniques that have proved to be effective in the developed countries will probably not work because of geographical differences. Moreover, the proliferation of information makes it impossible for BIOTROP library to collect all information, especially in times of the crisis. Thus, to optimize the returns on government investment in BIOTROP

library development, BIOTROP library has to distribute its information available to others.

Whatever ideas, practices and procedures may be borrowed, of whatever origin, they must be adapted to fit local needs to support Indonesia.

### The Documentation

The first step to build up a documentation of the institute's publications, unpublished and published reports was the systematic collection of these materials. Further dissemination of BIOTROP results of research would not be possible if the materials could not be located or be available for consultation. These materials are stored separately from the library, and are catalogued using its own systematic classifications. As required by SEAMES (SEAMEO Secretariat in Bangkok), BIOTROP has to submit the list of Published and Un-published Reports and Papers, every year, which will be compiled together with those from the other Centres under SEAMEO. This publication is very important as it is the medium to promote as well as to disseminate hidden gray literatures available at the Centre.

### **Publication and Information Dissemination**

The Publication Service's role in supplying information is just as important for the transfer of information as that of the other services. BIOTROP has disseminated information through various publications, such as the Annual Report, BIOTROP Special Publication which contains proceedings of the BIOTROP Meetings and Symposia, and its scientific journal BIOTROPIA.

### **Literature Search**

The most popular service recognized by users is literature search. Having established a computerized database, this service can provide things much faster than before. To back -up the information retrieval service, IRU is also offering document supply service. Related journals and other publications regularly scanned for the database are part of the library collection. Therefore, photocopies of the original documents are available for any information included in the database. Information retrieval service on BIOTROP related subjects areas, particularly on weeds has been speeded up with the creation of the home databases. Requests for literature search were significantly high, so far the Information Resource Unit receiving an average of one request per week.

### **Methods of Requesting and Supplying Documents**

There are no standard procedures for requesting and supplying documents existing in Indonesia. Zultanawar (1989), stated that the Centre for Scientific Documentation and Information developed an Interlending form system in 1982,

but it was abandoned a few years later. Indonesian libraries, including IRU, usually accept requests by any method. The use of mere letters is commonly acceptable by most libraries. The request by telex or by telefacsimile are being used by only a few clients and rarely by libraries.

### **Delivery of Primary Documents**

To complement the information retrieval service, IRU offers back up service by providing photocopies of the original documents. This service has been utilized very extensively by the students, consultants, and researchers. Especially, the literature on weeds as IRU has been depository of grey literature produced in southeast Asia. Request for document delivery were received not only resulting from the information retrieval service, but also from the List of Indexed Articles and Annotated Bibliography.

The dissemination of Information, however, depends on the technology; it depends on the organization and efficiency of documentation services; on the production of a medium of the message; on the financing of programmes and equipment of storing, cataloguing, and redistributing materials; and on the people in all the intermediate agencies who edit, publish, and distribute information. The key to this complex network of actions is speed.

### **Delivery Options**

We know that many scientists and researchers expect libraries primarily to deliver needed material when it is required. They need ready access to the information that will enable them to do their job effectively. To provide the right information in a convenient and comprehensible form to those who need them are really the objective of IRU. As Information itself is a resource that cannot be wasted, that must be handled efficiently.

A close look at the delivery methods, comparing their advantages and disadvantages, help to identify the options for IRU to take a more proactive posture in meeting the information needs of users. Five factors are important in analyzing the desirability of each delivery mode; these are cost, speed, reliability, ease of use, and in the case of facsimile, the quality of the received document.

## **The Utilization of Information Technology**

### **Telefacsimile**

Telefacsimile (fax) machines transmit copies of documents over telephone lines. This technology has been known for quite some time but has not has a great impact yet. Advances in speed of transmission, increased memory for storing and sending

documents. The current economic crisis, and the increasing fee for the said technology has hampered the intensive promotion to use.

### **Database building**

Technology provides users with solution to their need for speed delivery, but also creates new, sometimes overwhelming, hardware or software requirements for utilization. The user's needs for high-resolution documents, along with her or his time and technological limitations will determine how a document is transmitted by its respective staff. However, it is important for libraries to assist users in sorting through the available delivery choices and also to serve as a relay center, when necessary, to equalize access to the more sophisticated, high quality document delivery technologies.

To allow easy access to information resources available at the Information Resource Unit, different kind of databases were produced for different purposes. Until recently five databases have been established namely the WEEDOC (Weed documents), RESABS (abstracts of research), and HERBAR (herbarium data bank). After trial and error, the choice was made on a user-friendly software, INMAGIC. Following up a series of training on the use of the software, the bibliographic database on Weed.

- *WEEDOC*, a database which contains bibliographical information on weeds of the Southeast Asia. IRU may proud to have a larger database on Southeast Asian weeds than what a user can get at any one place.
- *LIA*, a database which contains index of scientific articles from the journals available at the IRU library.
- *DOC*, a database which contains bibliographical data of published and unpublished publications and reports, and/or other articles/papers written by BIOTROP staff.
- *BIOTRO*, a database which contains bibliographical data on books acquired by BIOTROP library.
- *SERIAL*, a database which contains bibliographical data of the serials title acquired regularly by BIOTROP library.

### **Electronic Mail**

Computer-based messaging system evolved from simple programmes used on individual computer systems to exchange short messages. As computer networks became more prevalent in the late 1960s and 1970s, these systems were expanded to allow users of different computers to send messages to one another. These messaging system then to be called electronic mail or e-mail systems.

The equipment used to access e-mail services usually consists of a microcomputer, a communication software package, and a modem. The modem provides the connection between the telephone line and the computer, and the communication software allows the computer to interact with modem.

Since e-mail makes more efficient use of communication media than do conventional services such as telex, its use can generate significant cost savings. Of course the cost of the service, other than the monthly administrative fee, depends on how much it used, but most users realize a significant reduction in total cost.

Since e-mail is cheaper, users tend to explain themselves more fully and correspond more frequently when using it. Many matters that might have been discussed only in a letter, or not at all, can be reviewed economically in an e-mail message. The benefits of this faster and more frequent communication cannot be easily translated into specific monetary amounts. The ability to make better and timely decisions, for example, can be profoundly important yet difficult to quantify.

### **BIOTROP Library's Service in the New Millennium**

Changing and adapting are two essential requirements for survival and growth. A Library generally operates with no great sense of urgency and by their nature, are more conservative and protective. Here, inertia, reigns and valuable traditions and status quo are jealously guarded against disturbing change. Thus, as a supporting unit, BIOTROP library today is confronting daunting new challenges as it enters the early years of the 21<sup>st</sup> Century. BIOTROP library is forced to grapple with these pervasive changes in order to meet the demands of times, the relevance of its services to societal needs, its role in social, economic and political activities.

The new challenge of BIOTROP library in the new age is to remain contemporary. It must preserve what it is most valuable in its tradition, while at the same time introducing the changes required by dynamic society entering the 21<sup>st</sup> Century. In general, libraries must ask which changes they must take, rather than whether or not. Changes will be required, significant change must involve innovation, that is purposeful action taken to accomplish something new. To achieve this, libraries must create an environment that encourages innovative thinking and risk taking.

Any attempt to transform the work philosophy of a certain library must have a well - defined mission with diversity of its institutions they support's goals and objectives. They should be inline with their supporting institutions responsibility of developing its own quality. Whatever ideas, practices and procedures may be



borrowed, whatever their origin, they must be adapted to fit local needs and circumstances. Indonesian librarianship can undoubtedly profit from the experience of others, which had found solutions for problems of library services. The most urgent of these problems would seem to be education for librarianship. Without enlightened leadership in this field, Indonesian librarianship will have difficulty in achieving status it needs and deserves. Indonesian librarians by the very magnitude and special nature of their problems are in the position to develop new techniques and to offer other countries useful suggestions.

## **Conclusion**

Of the issues discussed in this paper, the following may be considered the most important:

1. The Information Resource Unit of SEAMEO BIOTROP, can do a better job at selling its usefulness for the National Development, especially for Ministry of Agriculture, specifically for the Aquaculture Development Programme.
2. Greater access to information and technology is needed for better service, but:
  - Researchers on Aquaculture Development and Public Health personnel need more than just a CD index or abstract
  - Both the Scientists and their institutions should contribute to the availability of literature
3. The high costs of telecommunication are a major impediment to large-scale use of computerized information retrieval facilities in developing countries.
4. There is a need for more specialized information centres that set up and maintain integrated bibliographical files in well-defined. They should serve users on a worldwide scale.

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Widharto Widharto  
SEAMEO BIOTROP  
JL. Raya Tajur KM6, P.O. Box 116  
Bogor 16001  
Indonesia  
tel.: (62-251)323-848  
fax: (62-251)326-851  
e-mail: [w\\_widharto@bogor.wasantara.net.id](mailto:w_widharto@bogor.wasantara.net.id)

# **THE INFORMATION AUDIT AS A FIRST STEP TOWARDS EFFECTIVE KNOWLEDGE MANAGEMENT: AN OPPORTUNITY FOR THE SPECIAL LIBRARIAN\***

**By Susan Henczel**

## **Introduction**

Knowledge is universally recognized as the most important strategic asset that an organisation has. Despite this recognition many information units are being closed or downsized and organisations are encouraging information users to acquire, control and manage their own resources that support knowledge creation and development. Controlling the acquisition of, and access to, information resources is becoming increasingly difficult as vendors bypass the information professionals and market directly to the end-user. Compounding this problem is the availability of information in a multitude of formats and the exponential growth in the number of products available. This necessitates a higher level of evaluation and control to ensure that quality information is available to those who need it.

Because of this proliferation of information products and delivery methods, information users within organisations are suffering from 'information overload' and in many cases are using a variety of resources to gather their information, some of which may be not be the appropriate for their needs. Many organisations are structured in such a way that the business units operate independently of one another, yet they rely on similar information resources. Some operate without the resources they need because they don't know where to find them, while others engage in 'information overkill' and purchase anything that looks like it might be relevant. Consequently there are often significant gaps, inconsistencies and duplications in information resources within an organisation.

As well as ensuring that the appropriate information is provided, there must be a clear and visible alignment of the information that is acquired by the information users with the organisational or business unit objectives. The challenge for today's information professional is to identify the information that is needed to optimize

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the achievement of organisational objectives, who it is needed by, how it will be used, its source and how it flows through the organisation and between the organisation and its external environment. The information audit is an established management methodology that will address all of these issues.

The information audit is a process that will effectively determine the current information environment by identifying what information is required to meet the needs of the organisation. It establishes what information is currently supplied, and allows a matching of the two to identify gaps, inconsistencies and duplications. The process will also facilitate the mapping of information flows throughout the organisation and between the organisation and its external environment to enable the identification of bottlenecks and inefficiencies.

This paper defines the information audit as a tool that can be used to not only identify strategically significant information resources, but to also identify those tasks and activities that create knowledge and those that rely on the transfer of knowledge from other areas of the organisation. It firstly describes the relationship between the information audit process and knowledge management. Secondly, it introduces the seven stage information audit model. It discusses each stage of the model in terms of its contribution to the process and the desired outcomes. It concludes by examining the potential benefits of using the information audit as a foundation that can be built on as the knowledge management strategy is developed.

### **From information management to knowledge management**

‘Knowledge management encompasses both the management of information and the management of people. Knowledge cannot be managed directly – only the information about the knowledge possessed by people in organisations can be managed.’

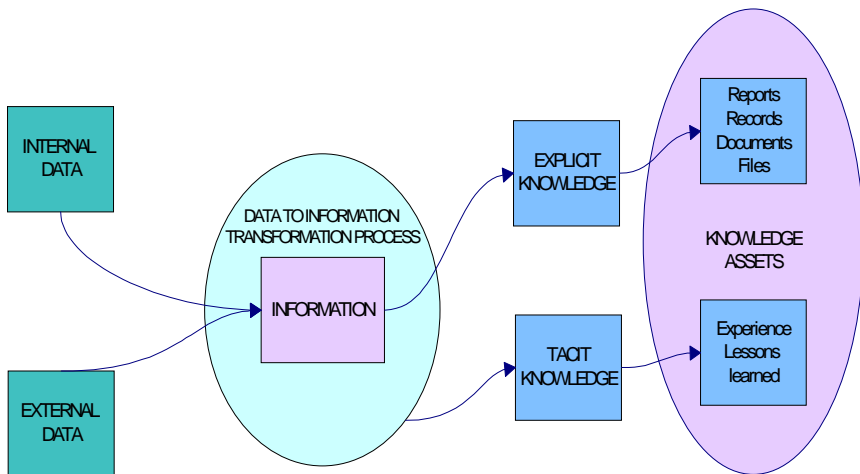
(Streatfield and Wilson, 1999, p70)

This statement by Streatfield and Wilson is an example of the emerging recognition that sound information management practices form a solid foundation on which successful knowledge management strategies can be developed. Good information management is seen as the essential prerequisite to knowledge management (Horne, 1999) yet many organisations are developing knowledge management strategies based on technical systems that disregard the information resources and the people who create the knowledge.

Defining knowledge is difficult, as it incorporates many intangibles such as experience, intuition, judgement, skill and lessons learned which have the potential

to create value for a business by informing decisions and improving actions. Knowledge is constantly being created by employees as they do their jobs. Some of this knowledge can be articulated, captured, stored and accessed for re-use. Much of the knowledge, however, is tacit knowledge and is never articulated until the need to re-use it occurs.

The first step in any knowledge management program is to identify where knowledge is being created, where it already exists and where it is needed to support decisions and actions. Organisations that have not yet developed a strategy for managing their knowledge, or those that have a strategy in place that could be working better are in an ideal position to go back to basics and find out exactly what knowledge they need to manage to gain a competitive advantage using an established information management methodology. Using the information audit as a first step in developing a knowledge management strategy or improving the strategy you have can ensure that you are managing the knowledge your organisation needs to manage to be successful.



**Figure1:From data to knowledge**

Figure 1 illustrates the 'data to information to knowledge' process that occurs in every organisation. Moving from left to right - data is used to enable and support the tasks and activities of its business units, sections or departments. The data can originate inside the organisation or be acquired from external sources. As a task or activity is performed the data is transformed into information which is then filtered, further transformed, reused, stored, or transferred. The process of creating

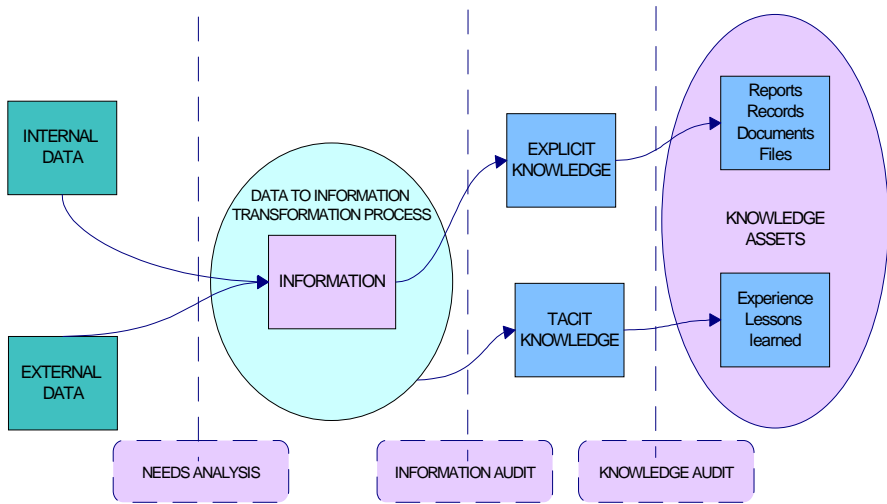
information, the data to information transfer process, is a knowledge-creating process that creates both *explicit* and *tacit* knowledge.

*Explicit* knowledge is the output of tasks and activities that can be documented as reports, databases, procedures etc. It is easily captured, stored and communicated. *Tacit* knowledge resides in the heads of employees and is more difficult to capture and communicate. It consists of the lessons learned by doing a job and is made up of gathered experience and understanding. Tacit knowledge is of no value to the organisation until it can be applied as the knowledge held by an employee is of no value until that employee can use it for the benefit of the organisation. The tacit knowledge that is created during this process as people assist in the transformation and experience it is often lost unless methods can be developed to identify and capture it and then enable access to it so that it can be applied. The knowledge asset that needs to be managed by an organisation, illustrated at the far right of figure 1, consists of both explicit and tacit knowledge and any knowledge management strategy that is developed must incorporate them both.

### **Developing a knowledge management strategy**

There is no generic model for developing a knowledge management strategy as each organisation has unique needs that must be identified and understood. Some organisations are embarking on knowledge management programs without an understanding of why their knowledge assets are important. Rather than being in a position to make informed decisions about what knowledge they need to manage, they attempt to manage everything, whether it is significant or not. They often consider the information technology infrastructure to be the knowledge management system, rather than merely the enabler, and think that all they need to do is buy an expensive computer system and it will all be done for them.

To develop a knowledge management strategy that incorporates the management of both tacit and explicit knowledge it is critical that the knowledge creation process is understood and that the understanding extends to the role of the people involved in the process. The first step is to identify where knowledge exists and where it is needed to support decisions and actions. An understanding of the organisation and how it works, including its structure and culture, internal and external relationships, formal and informal communication networks is critical as these are the characteristics that will determine the best way in which to manage knowledge in that particular organisation.



**Figure 2: From needs analysis to knowledge audit**

Figure 2 illustrates the three audits that are used to move an organisation from information management to knowledge management. They are the needs analysis, the information audit and the knowledge audit. It also indicates the point in the data to knowledge process where they are each the most useful.

The *needs analysis* is a process by which information users are asked precisely what information resources or services they need to perform their jobs. It usually results in a list of resources that are required by each person or department, and can be used to rationalise acquisitions (determining what will be bought and who will it be bought for), delivery mechanisms (getting the right resources to the people who need them) and service levels (identifying who needs specific services and at what level).

The *information audit* goes one step further in not only finding out what information resources and services people need to do their jobs, but how those information resources and services are actually used. It looks at the objectives, critical success factors and tasks and activities of each group, business unit, department or section, and links them with the relevant organisational objective. It identifies the information that is required to support each task or activity. It is then possible to trace a specific resource from the task it supports to the organisation objective, and assign a level of strategic significance to it. This allows you to not

only identify those resources and services that are supporting organisational objectives but also to 'rate' them according to their strategic significance.

An information audit also enables you to map information flows within an organisation and between an organisation and its external environment. This is a significant feature of the process as it identifies the existing formal and informal communication channels that are used to transfer information as well as highlighting inefficiencies such as bottlenecks, gaps and duplications.

A *knowledge audit* is conducted to identify an organisation's knowledge assets, how they are produced and by whom. If an information audit has already been conducted, a knowledge audit will also allow you to assign a level of strategic significance or importance to those knowledge assets using the organisational data already established. This ensures that you not only know what knowledge assets exist, but that you identify those that are critical to the success of the organisation. Your knowledge management strategy can then focus on the knowledge assets at their various levels of criticality, rather than managing everything regardless of its significance.

Conducting an information audit prior to developing a knowledge management strategy will enable you to determine what information you need to manage by assigning a level of strategic significance to resources. It provides a 'snapshot' of information use that enables the identification of those areas of the organisation that are producing knowledge and areas where there is a need for knowledge-transfer mechanisms.

### **The information audit**

For many years the information audit process has been promoted by information professionals as a means of identifying the information needs of an organisation and matching them against existing services and resources. In more recent years it has been used extensively, mainly by consultants, as the first step in the development of a knowledge management strategy.

An information audit is '*a systematic evaluation of information use, resources and flows, with a verification by reference to both people and existing documents in order to establish the extent to which they are contributing to an organisation's objectives*'. Although there is no universally accepted definition of an information audit, this definition adopted by Aslib, the Association for Information Management in the UK is the most appropriate as it incorporates the critical elements of 'information use' and 'people' (Orna, 1999 p69). An information audit is a process used to -



- Identify the information needs of the organisation and assign a level of strategic importance to those needs
- Identify the resources and services currently provided to meet those needs
- Map information flows within an organisation and between an organisation and its external environment
- Analyse gaps, duplications, inefficiencies and areas of over-provision that enables the identification of where changes are necessary

The term ‘audit’ implies a counting. An information audit not only counts resources but also examines how they are used, by whom and for what purpose. The information audit examines the activities and tasks that occur in an organisation and identifies the information resources that support them. It examines, not only the resources used, but how they are used and how critical they are to the successful completion of each task. Combining this with the assignment of a level of strategic significance to all tasks and activities enables the identification of the areas where strategically significant knowledge is being created. It also identifies those tasks that rely on knowledge sharing or transfer and those that rely on a high quality of knowledge.

The information audit process enables the mapping of information flows within an organisation and between an organisation and its external environment. As well as identifying efficient flows, it also identifies gaps, duplications, bottlenecks and other inefficiencies in existing flows. It identifies existing channels that can be utilised for knowledge-transfer and areas of the organisation where there is a need for high quality knowledge that isn’t being met.

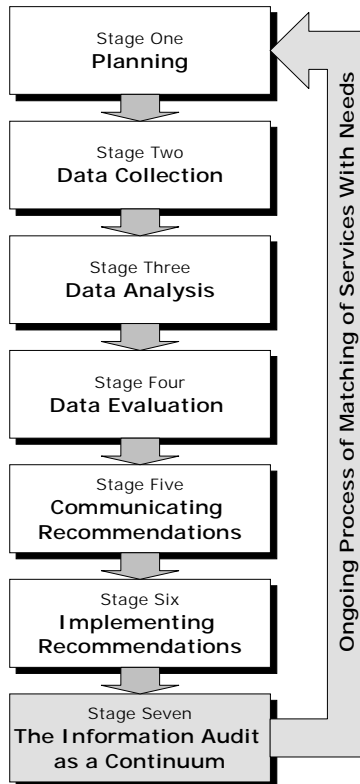
### **How to conduct an information audit - introducing the model**

Just as there is no universally accepted definition of an information audit, there is also no universally accepted model for the information audit process because of the dramatically varying structures, natures and circumstances of the organisations in which they are conducted. The model presented here is one that was developed by the author as a result of examining the methodologies used by librarians and consultants and extracting the components necessary to achieve the objectives of an information audit.

The seven-stage information audit model as shown in figure 3 takes you through the information audit process stage-by-stage highlighting those aspects of the process that are critical to its success and the issues that you may face that can impact on the value of your outcomes. The seven stages are -

1. Planning
2. Data collection
3. Data analysis
4. Data evaluation
5. Communicating recommendations
6. Implementing recommendations
7. The Information Audit as a continuum

The model is not a highly structured and controlled process that operates in a tightly defined manner. Rather it is a structured framework that is flexible and can 'bend' to meet the varying conditions and constraints of an organisation. In other words, the components can be 'tailored' to suit to the objectives of the organisation and the resources available (Henczel, 2000).



**Figure 3: The seven-stage model**

## *Stage One - Planning*

As with any major project, the planning stage is critical as it can determine the project's success or failure. To plan properly for an information audit there are five steps to work through. These are -

1. Understand your organisation and develop clear objectives
2. Determine the scope and resource allocation
3. Choose a methodology
4. Develop a communication strategy
5. Enlist management support

### Step 1 - Understand Your Organisation and Develop Clear Objectives

Understanding how the organisation functions is critical to the success of an information audit. Structure, culture, communication issues, political issues, internal relationships and relationships with external entities must all be understood before an appropriate information audit methodology can be developed. This is important because the audit process must be designed to minimise the obstacles and maximise the opportunities that exist within the organisation.

There will be a number of stakeholder groups to consider. Information users, organisational management, information professionals, and knowledge managers are just some of the possibilities. It is important to not only understand who the stakeholders are, but why they are stakeholders and how they can impact on the success of the information audit project.

It is important to understand where the organisation is at with regard to its information management and knowledge management strategy development as it may be necessary to link in with other projects, committees and processes that have already been established. Find out what else is going on the organisation that this project could link with, support, or receive support from.

It is necessary to have a clear understanding of why you are conducting an information audit, and of the specific objectives you hope to achieve before you can begin to sell the idea to management or to the employees of your organisation. Ensure that your objectives are clear and simple, specific, realistic and measurable. When the purpose of an information audit is to form a foundation on which to 'build' a knowledge management strategy the objectives are to -

- identify the tasks and activities that potentially produce strategically significant knowledge assets

- identify strategically significant information resources
- identify and map information flows

### Step 2 - Determine the Scope and Resource Allocation

This step involves identifying the resources that are available to conduct the audit, and defining which parts of the organisation will be included.

There are two ways in which to scope an information audit. The first is physically by deciding which parts of the organisation will be included and at which level the audit will be focused. Conducting an audit across 3000 frontline people is enormously more expensive than targeting their section or department managers. There may be parts of the organisation that can be reasonably excluded.

Resource allocation involves not only people (audit manager, team, administration), but also time, money, technical resources such as computers and telephones, and physical resources such as desks and working space. At this stage you must also consider whether sufficient expertise is available within the organisation or whether you will need bring in additional expertise.

### Step 3 - Choose a Methodology

This step involves the design of a methodology for conducting your information audit. Data must be collected, analysed and evaluated. Recommendations must be made and presented for implementation. From whom do you need to collect data and how will you collect it? How will you analyse what you collect? How will you communicate the purpose of the audit, communicate with data contributors during the audit, and present the findings after the audit?

### Step 4 – Develop a Communication Strategy

Identifying the appropriate communication channels during the planning stage will facilitate effective communication before, during and after the audit. It is important to begin communication before the audit has started to ensure that everyone understands the purpose and objectives and can better understand their role in the data collection stage. During the audit process it is important to be able to address concerns that employees might have as they arise and to continue to promote the audit as a strategically significant project. This ensures a broader ownership base which increases support for the recommendations. Effective feedback after the audit will generate support for the implementation program which will minimise resistance to the suggested changes.

## Step 5 - Enlist Management Support

For any project such as this to be successful you will need management support. To obtain approval for the allocation of resources it is important to have a clearly defined and comprehensive business case that details the project's objectives, methodology, potential benefits and relationships with other projects. It is important to also include details of the consequences for the organisation of not conducting the audit.

Finding a sponsor in the organisation who can liaise between the audit team and senior management and promote the audit can significantly improve the chances of success. A high level sponsor will raise the profile of the information audit, ensure a higher level of support for the project and open new communication channels.

Once these steps have been worked through you will have determined how you can conduct an information audit with the resources that you have available to you, what questions you have to ask to get the data you need to achieve your objectives, how long it will take, and what level of management support you have to do it.

### ***Stage Two - Data Collection***

This stage involves collecting the data you need to achieve your objectives. Data can be collected by questionnaire, personal interview or focus group interview. Whether you create a questionnaire or conduct interviews it is critical that the right people are asked the right questions. It is critical that the questions you ask result in a dataset that is usable, in terms of its volume, its content and its format. It is usual to collect three types of data –

1. data relating to information required to perform tasks and activities
2. data relating to the 'level of criticality' of information resources, tasks and activities
3. data relating to information transfer

This stage also involves the creation of an information resources database that is used as the tool to establish the strategic significance of resources. Records must be created for all business units/sections/departments that include their objectives, critical success factors and tasks and activities. The data collection process will gather the data relating to the information resources that enable and support the tasks and activities.

### ***Stage Three - Data Analysis***

Once the data has been collected it must be analysed. The analysis process will identify gaps, duplications and over provisions and the use of sub-standard or inappropriate resources. It will enable a level of strategic significance to be

assigned to tasks and activities that can then be used to determine where critical knowledge is being produced and stored and where it is required for re-use.

Analysis can be done inhouse or by external analysts, depending on the resources available inhouse, and the complexity and volume of the data collected. There are a variety of tools available to facilitate the analysis process. These range from common spreadsheet and database programs such as MS Access and MS Excel, specialist qualitative and quantitative data analysis programs such as Atlas.ti and NUD\*IST through to the more sophisticated business modelling tools such as System Architect 2001 and ProVision Workbench. Drawing tools such as ABC Flowcharter or MS Draw can be used for the mapping of information flows.

There are three types of analysis carried out on the data collected – (1)general analysis, (2)strategic significance analysis and (3)information flow mapping.

*General analysis:* data collected by any open questions is analysed generally using common spreadsheet or database programs or specialist analysis tools.

*Significance analysis* is done using the information resources database. The database can be used to develop an 'information and knowledge inventory' and to enable the matching of resources and knowledge development with business unit or organisational objectives. This allows a measure of strategic significance to be assigned to resources used and to knowledge generated. The information resources database can be used to generate reports such as -

- the tasks supported by each information resource
- the importance of each information resource to the tasks it supports
- the information resources that support each organisational objective
- the tasks for which the 'ideal' resources are not provided
- duplications of resources

*The mapping of information flows* enables the identification of gaps, duplications and flow inefficiencies. It can also form the basis for a 'knowledge transfer' model by identifying where knowledge is created, where it is needed and where it currently goes (if anywhere). Visual representation of the information flows can identify -

- bottlenecks and inefficiencies (lots going in but very little coming out)
- information gatekeepers (lots coming in through a single distribution point)
- dead ends (lots going in but nothing coming out)

- over provisions (services provided but not required)
- gaps (non-provision of critical resources)
- imbalances/biases (inequalities in information provision)

#### ***Stage Four - Data Evaluation***

Once the data has been analysed, problems and opportunities can be identified and then interpreted and evaluated within the context of the organisation. Not every problem will need to be addressed and some will be unable to be addressed due to organisational constraints such as insufficient resources (people, money, technical or physical resources).

Many of the problems that are identified are opportunities to improve the provision of information and extend information services and improve the quality of knowledge created. They can include -

- information hoarding
- biased distribution of resources
- use of sub-standard resources
- gaps in the provision of resources
- information overload issues
- lack of transparency and accountability
- lack of traceability

To evaluate how significant the problems are a number of questions need to be answered before a decision can be made regarding the feasibility and cost-effectiveness of addressing the problems. These relate to its level of criticality, the cost of addressing it, the cost of not addressing it, and the level of formality needed to address it (local, departmental or organisational). Some examples are -

- does the problem have strategic significance? (is it affecting the achievement of organisational objectives?)
- is there a reason for the problem? Does it matter?
- what are the cost implications?
- what alternatives are possible?

- what are the implications of suggesting a change? Who will be affected? What other services will be affected? What barriers will be faced?

For each problem that is identified there may be more than one solution and it is important that the most appropriate solution is recommended. The measure of suitability of each solution must be determined to by using a weighting system to measure them against a common set of criteria. If this process is performed correctly and objectively the solution with the highest score is the best alternative.

It is important that the recommendations that are formulated in this stage are realistic, achievable and manageable. The costs associated with the recommendation, the processes for incorporation and implementation and quantifiable goals must all be established and documented.

### ***Stage Five - Communicating the Recommendations***

Communication strategies are important throughout the entire information audit process, however it is critical that once the recommendations have been formulated, they are communicated to the people who are integral to them being implemented. Because many of the recommendations will represent an element of change to the resources and services available in the organisation they may affect the daily work processes of some, if not many, employees. It is critical that the changes are communicated in a positive way, and in a way that guarantees management support for their implementation. Also, if you have established and maintained successful communication channels throughout the audit process, the employees will recognise the validity of the process that has been worked through to reach the final recommendations.

There are many ways in which you can communicate the information audit results and recommendations. The most common method is a written report, with the second most common being an oral presentation (or a series of presentations depending on the size and structure of the organisation). Other methods include seminars and workshops, newsletters and bulletins either in hardcopy or posted on corporate intranets and web sites.

### ***Stage Six - Implementing the Recommendations***

Once the findings of the information audit have been developed into strategies, and the recommendations that have been formulated from the strategies have been successfully communicated to management and throughout the organisation, plans must be made for the implementation of the recommendations. Nothing can be changed in isolation and each change that is made in an organisation has a roll on



effect. This must be understood when formulating the recommendations, and also during the implementation process. The development of a comprehensive implementation plan and a post-implementation review strategy will facilitate the changes and minimise resistance.

The way in which the implementation program is developed will depend on what the recommendations are and to what extent they will impact on the individuals and groups that are affected. Whether they are minor or major changes, if their implementation is to be successful they must be carefully planned and executed. Even seemingly minor changes can be unsuccessful if their impact is underestimated or if they conflict with aspects of the political and cultural environments that exist within the organisation.

### ***Stage Seven - The Continuum***

The initial information audit is the 1<sup>st</sup> generation information audit (Buchanan, 1998). It has provided you with a rich dataset that presents a 'snapshot' of where the organisation is at with regard to its information - this is your first *information baseline*. It has also provided you with a database that contains information relating to the information resources, and the organisation's business units and tasks and activities. Subsequent audits add to the dataset and re-assess the validity of the information baseline which is constantly changing as the organisation changes. They also add to and supplement the information resources database to reflect changes in significance, tasks or organisational structure.

Once the initial information audit is complete, a decision must be made about how the datasets can be maintained and built on with subsequent information audits to regularly review the information environment. Each subsequent information audit (2<sup>nd</sup> generation and beyond) need not be conducted using the same framework. They may vary in their scope, for example be restricted to a single business unit, or a group of business units, a geographical area, or a functional section of the organisation. The methodology used could also vary according to the objectives of a specific audit. This is known as 'tailoring' the audit to suit the objectives.

The conducting of 2<sup>nd</sup> generation audits will not only ensure that resources meet needs, but will also ensure that the data gathered during the 1<sup>st</sup> generation audit are built on. 2<sup>nd</sup> generation information audits must not be conducted in isolation and must measure and account for any changes that have occurred since the previous audit. Each information audit that is conducted adds to the information resource database. As the organisation changes, the changing needs can be matched with either existing or new resources using the data stored in the database.

## **From information audit to knowledge audit**

Conducting an information audit provides an improved level of understanding of how the tasks and activities performed by the business units, sections and departments of the organisation create knowledge and what the level of strategic significance of that knowledge may be. It has also provided a 'map' of existing formal and informal information transfer and communication channels and networks within the organisation and between the organisation and its external environment. The outcomes of the information audit can be built on by conducting a knowledge audit which examines where knowledge is being produced (where it is an output of an activity), and where it is needed as an input to a task or activity. It identifies where there is a need for an internal transfer of knowledge and knowledge-sharing activities. From this data the strategies can be developed to address the issues of knowledge capture, access and storage, dissemination and validation.

A knowledge audit has two main objectives, with the first being to identify the 'people' issues that impact on knowledge creation, transfer and sharing. These include the communication issues that enable or prevent knowledge transfer, and the cultural and political issues that impact on the success of knowledge management strategies. The second objective of a knowledge audit is to identify which knowledge can be captured, where it is needed and can be reused, and to determine the most efficient and effective methods to store, facilitate access to and transfer of the knowledge. By building on the outcomes of the information audit with a knowledge audit you are able to incorporate your information and knowledge management strategies to ensure that strategically significant knowledge is identified and managed appropriately, and that the most appropriate resources are provided for its ongoing creation.

## **Conclusion**

So, why conduct an information audit? An information audit is a means by which an organisation can better understand how the tasks and activities that it supports contribute to its success. Conducting an information audit will increase the understanding of how an organisation works with regard to information and consequently with regard to knowledge. Using the information resources database developed to store the collected data it enables the determination of how well tasks and activities are aligned with organisational objectives and the strategic significance of not only the tasks and activities, but also the information resources. This flows on to other processes and enables the elimination or minimisation of non-strategic tasks and their associated support services. The information audit can

form a solid basis for the development of a knowledge management strategy by providing the foundation dataset for a knowledge audit that enables the identification of how and where knowledge is being created and used, and where it is needed to improve outputs.

The consequences of not conducting an information audit prior to conducting a knowledge audit or developing a knowledge management strategy can cause significant direct and indirect costs for an organisation. When an organisation is unaware of the strategic significance of its knowledge assets it manages everything rather than what it is necessary to manage. The direct costs increase as the program requires more people and technical resources and the indirect costs increase as the program is unable to identify strategically significant knowledge assets and prioritise their management. Other direct costs are incurred when the knowledge that is managed is sub-standard knowledge, that is knowledge that is produced using sub-standard resources and processes. There is also the risk of excluding significant knowledge assets because you don't know they exist.

The information audit process presents librarians with an opportunity to use their professional skills to analyse and evaluate the information needs of their organisation, identify the information resources that contribute to business objectives and establish a foundation from which to develop a policy to coordinate and manage their organisation's knowledge assets.

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Susan M. Henczel  
CAVAL Limited  
4 Park Drive  
Bundoora VIC 3083  
Australia  
e-mail: [sueh@caval.edu.au](mailto:sueh@caval.edu.au)

## **THINK GLOBAL, ACT LOCAL: THE CHALLENGES OF TAKING THE WEBSITE GLOBAL\***

**By Anna H. Perrault and Vicki L. Gregory**

### **Introduction**

How many of us have had the experience of looking at the geographic location of "hits" on our organization's website and being amazed at the traffic coming from all over the globe? No matter what type of organization we are working within, there is a need to think globally. It does not matter whether you are in education, a governmental agency, or the corporate sector; just merely putting up a website enters your organization (or you personally) into the global arena. Eric Ward reminds us just how easy and fast it is to become global -

"It happens to my site every day, and I have never advertised or sent my URL to anyone outside the U.S.--of course, even one e-mail message sent to a discussion list, of which a member is from another country, and bingo, your URL from your signature file is global in three seconds."<sup>1</sup>

Ward points out that all websites de facto become global by virtue of being on the web. His statement makes us realize that all information professionals need to be conscious of globalization and know the basic tenets of shaping a culturally sensitive website that is accessible, understandable and inoffensive to people in other parts of the world.

The majority of the literature on website globalization is written for the corporate e-commerce audience. The e-commerce definition is that "Web site globalization is the configuring of a company's Web site so it can be used to market and sell products outside its home country."<sup>2</sup> But most of the advice given about website globalization applies no matter what the mission of the organization.

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\* Paper presented at the „Global 2000“ Worldwide Conference on Special Librarianship“ (Brighton, 16-19 October 2000) organised by the Special Libraries Association (SLA) and co-sponsored by several international library associations and organisations.

<sup>1</sup> Ward, Eric. "Make Simple Site Adjustments to do Business Globally-Better," *Business Marketing* (1 July 1999): 34.

<sup>2</sup> "Web Site Globalization." *Computerworld* (10 July 2000): 56.

Currently, the countries which produce the most traffic on the WWW are the United States, Japan, Germany, and the United Kingdom. Users at non-United States domains account for close to half of all Web traffic, according to WebSideStory, an internet traffic measurement company.

"Data from traffic measurements at nearly 100,000 websites show that in 1999, from January to July, traffic from non-U.S. users rose from 36% to 42% in six months."<sup>3</sup> And according to statistics from International Data Corp. (IDC), by 2005, Web users will number approximately 1 billion, with 70 percent being non-English speakers. The number of users accessing the Web via non-PC devices, such as mobile phones, handhelds, and TVs, is growing rapidly also.<sup>4</sup>

### **Basic Advice**

There are numerous articles offering advice for developing an accessible, understandable, culturally sensitive website. Much of the advice is found in English language articles written for a Western audience. The following elements to include or watch out for have been culled from articles by Rick Borelli<sup>5</sup>, Laura Morelli<sup>6</sup>, Lynda Radosevich<sup>7</sup>, Anna and Yuri Radziewsky.<sup>8</sup>

- *Simple Language* -- Avoid complicated sentence structures; strive for clear, concise language by choosing a shorter word over a longer one.
- *Use the Active Voice*
- *Avoid Humor; Avoid words with multiple meanings*
- *Consider Dates, Time, and Geography* -- Many countries use different formats for dates. Spelling out the month can help avoid confusion which can be caused by numerical formats. Many cities have the same name in different countries. Give the country name for locations. Use Greenwich Mean Time (GMT) and bear in mind that foreign visitors to your site are in vastly different time zones.

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<sup>3</sup> <http://www.statmarket.com>

<sup>4</sup> Biggs, Maggie. "Globalization Issues Forced to the Front Lines by Changing Online Demographics," *InfoWorld* v.21 no.36 (Sept. 1, 1999): 52.

<sup>5</sup> Borelli, Rick. "A Worldwide Language Trap," *Management Review* 86 (Oct.1997): 52-54.

<sup>6</sup> Morelli, Laura. "Writing for a Global Audience on the Web," *Marketing News* 32 (17 Aug.1998): 16.

<sup>7</sup> Radosevich, Lynda. "Going Global Overnight," *Infoworld* 21.16 (1999): 1,34+

<sup>8</sup> Radziewsky, Yuri and Anna Radziewsky. "Successful Global Web Sites Look Through Eyes of the Audience," *Advertising Age's Business Marketing* 83 (January 1998): 17.

- *Phone and fax numbers* -- U.S. based toll-free numbers are not reachable from other countries. Include direct-dial telephone and fax numbers with the country code. Fax numbers are crucial because reading and writing is often easier for non-native speakers to understand than verbal, and fax machines, like e-mail, are more time zone friendly.
- *Currency Conversion* --For e-commerce sites customers want the price information in their native currency. There are free programs for currency conversion so this is not a high cost issue.<sup>9</sup>
- *Avoid using terminology that does not easily lend itself to translation* -- such as lingo, slang, jargon, buzzwords, abbreviations, colloquialisms, regional dialects, euphemisms, acronyms, idiomatic phrases, cliches, proverbs, similes, easily confused words, metaphors, and military and sports terminology.<sup>10</sup>
- *Use graphics* to assist in communicating written concepts.

## Technology

When building Websites to attract foreign users, those in countries which have widespread use of the latest and fastest technology for internet access need to keep in mind that this is not the case worldwide. In many places internet access is very expensive and also slow. If the site must be viewed at a lower resolution the designer must insure that the integrity of the page is maintained. Internet access via cellular phone is the preferred mode in some countries. For these customers, minimal content is a must.<sup>11</sup>

Another aspect of web design which affects all websites is that many people with disabilities use the Web. "Web authors should be aware that some visitors to their sites may be using adaptive technologies, and authors should not forget to design pages to provide full access to users with disabilities."<sup>12</sup>

## Language

By far the most prevalent topic in regard to website globalization is that of language and translation. The first thing that comes to mind when considering the

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<sup>9</sup> <http://www.toccat.com>

<sup>10</sup> Borelli.

<sup>11</sup> Disabatino, Jennifer. "Globalization," Computerworld 10(July 2000): 46.

<sup>12</sup> Balas, Janet L. "The Don'ts of Web Page Design," Computers in Libraries 19(Sept.1999): 46-48. The author refers the reader to several websites which address the technological aspects of designing sites for accessibility by individuals with disabilities. In addition, there are references to useit.com and other sites which give "awards" for bad site design.

'world' part of the World Wide Web is language. This is more complex than the advice in the list above and asks the question "internationalization or localization"? Or to use the current catch phrase -- "Think Global, Act Local."<sup>13</sup> The globalization/localization issue has received a great deal of attention in academic as well as commerce and marketing arenas, especially with respect to machine translation. Definitions have been developed for the key terms by the LISA (Localization Industry Standards Association) Education Initiative Taskforce:

### **Globalization**

The adaptation of marketing strategies to regional requirements of all kinds (e.g. cultural, legal, and linguistic).

### **Internationalization**

The engineering of a product (usually software) to enable efficient adaptation of the product to local requirements.

### **Localization**

The adaptation of a product to a target language and culture (locale)<sup>14</sup> .

According to Forrester Research, "Web users are three times more likely to make purchases at sites that are presented in their native language."<sup>15</sup> Dell Computer recognizes this. Its Premier Pages Websites, built for its business clients, are available in 12 languages. "Dell's business customers need standardized information to be accessible throughout the world; Premier Pages offers them that capability. And its direct consumers want to buy their way," says Chris Halligan, formerly director of online development for Dell's corporate business. "If you're French you want [information] priced in francs."<sup>16</sup> Localization reflects not only the native language but the local norms of weights and measures, time, currency, and other cultural issues.

Morelli maintains that for a website to be truly global, it must be multilingual. It is essential for customers abroad to find your site when key word searching in their native language. There is a strong bias toward English on the web - an "estimated 55 million English speakers currently access the internet, including residents of North America, Britain, Australia, New Zealand and India." Still, says Morelli,

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<sup>13</sup> Borelli.

<sup>14</sup> LISA Education initiative Taskforce (LEIT) <http://www.ttt.org/leit/>.

<sup>15</sup> Biggs.

<sup>16</sup> Rasmusson, Erika. "E-commerce Around the World," Sales & Marketing Management. 5 (Feb. 2000): 94.

"Potential customers among the 9 million Japanese speakers, 6.9 million German speakers and 5.3 million Spanish speakers on-line should not be dismissed."<sup>17</sup>

Borelli points out that from an "operational perspective, it is less expensive to have one site in one language." But "visionary companies see that the benefits of localizing outweigh the costs. If money is not an issue the clear choice is to localize."<sup>18</sup> Some companies even go as far as hiring Net marketing consultants to create multiple versions of their sites in different languages. Some even secure the domain name for the country for which they are building a site.

One example of localizing is Nike, a worldwide brand. Nike has a site that is intended for an American audience - "Nike.com." Then there is also "Nikefootball.com." This site was created specifically so that Nike could capitalize on the popularity of the Euro 2000 soccer championships. The website is available in English, French, Spanish, Italian Swedish, German, Portuguese and Dutch. Soccer fans represent such a large market that it was well worth the expense to attract them. While both Nike sites can be accessed worldwide, they have different objectives and intended audiences.<sup>19</sup>

Those who provide language translation services can expect a lucrative future. A recent report from Allied Business Intelligence indicates that the language translation market, which encompasses human translation, machine translation, and software and website localization, is expected to grow from over \$11 billion in 1999 to close to \$20 billion in 2004. The primary driver for this growth is e-commerce."<sup>20</sup>

What has become known as the "localization industry" is now a source of employment for foreign language majors and native speakers of foreign languages alike who are being urged to learn translation technology.<sup>21</sup> Vendors are emerging with software that helps manage multilingual website development and workflow. Global Sight ([www.globalsight.com](http://www.globalsight.com)), produces a software product called Ambassador for multilingual content management that includes a workflow engine, access control, design tools, and a mechanism for flowing translated information into predesigned Web pages. "The key to Ambassador is the

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<sup>17</sup> Morelli.

<sup>18</sup> Borelli.

<sup>19</sup> DiSabatino.

<sup>20</sup> "Expanding the Borders: Gearing Up for a Global Web Market Means More than Language Translation," Internet and Electronic Commerce Strategies August 1999.

<sup>21</sup> Abaitua, Joseba. "Is it Worth Learning Translation Technology?" 3rd Forum on Translation, May 12-15, 1999. Universitat de Vic, Spain.



separation of code and content. When a user comes to the website, Ambassador is able to detect the language specified in that user's browser. Using that language information, Ambassador generates on-the-fly pages in the language/country of the user. Because content is pulled dynamically from a database, the user does not need to manually select local-language versions of a website. However, with an entry price of about \$100,000, Ambassador is only for very large globalization projects."<sup>22</sup>

For information professionals, it is a good idea to have some basic knowledge of the issues and systems available for website translation. In any environment there can be an occasional need to avail oneself of a translation site for interpreting information from a foreign language website or for appearing knowledgeable when asked about the availability of translation software by others within the organization. A thorough exploration of the topics of machine translation, translation technology and translation workflow are too complex and well beyond the bounds of this paper. Two recent papers on the subject which review many of the basic issues are by Abaitua<sup>23</sup> and Theologitis<sup>24</sup>. Abaitua explores the necessity of machine technology and the "localization industry." The article reviews desirable characteristics for translation technology and mentions software currently available. Theologitis' more technical paper reports on systems which have been developed by the European Commission Translation Service. A listing of websites relating to translation has been attached to this article as an appendix.

Machine translation has been controversial and has not worked well in the past. Examples abound illustrating the gaffes that can occur in literal translation, such as the English word "kid." While the actual meaning is "a young goat," a much more prevalent colloquial use mean "a young human." But "kid" translated into Spanish still means "a young goat." New software and technologies have made machine translation much more satisfactory. Many companies combine both machine and human translation such as using machine translation to recognize and understand incoming e-mail from a customer. Then the machine translation is checked by someone fluent in the target language. The same can be done with translation of the contents of a site to other languages. A two step process can be utilized with both machine and human translation.

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<sup>22</sup> Radosevich.

<sup>23</sup> Abaitua.

<sup>24</sup> Theologitis, Dimitri. "Language Tools at the EC Translation Service: The Theory and the Practice," *Translating and the Computer 20: ASLIB Proceedings of the Twentieth International Conference on Translating and the Computer*. 12-13, November, 1998, London.

But simply translating your English-language or other native language site won't make it global or multiculturally correct. Successful multicultural net communication, essential to creating an authentic global presence, is often about nuance." National pride in culture and language must always be part of Web thinking, strategy and content," according to Yuri and Anna Radziewsky.<sup>25</sup> They warn that it's a "grave cultural error to assume a phrase as simple as 'home page' is universally understood. In Spain, home pages are called 'pagina inicial'-literally the first page. In France, it's 'page d'accueil'-the welcome page."<sup>26</sup> Jordan Woods, CEO of Global Sight, gives another example from working with Cisco on its globalization project. "The language issue was heavily charged--Spain wanted the Spanish word [for router]; Latin Americans didn't even know the Spanish word."<sup>27</sup> The Radziewsky's also advise the use of the name of the language in its original alphabet. If the site has Russian, Japanese, Chinese, etc., use the non-Roman alphabet to attract those users.<sup>28</sup>

A few years ago, Anderson Consulting studied electronic commerce and travel services and collected travel brochures. It discovered that while African and German brochures stressed adventure and danger, U.S. brochures emphasized nature and family. In short, they appealed to consumers in different ways.<sup>29</sup> Similarly, the director of Internet Initiatives for Eastman Kodak Co., Terry Lund, experienced problems when translating into the German language. He had Kodak.com's key Web pages translated into other languages. But he found problems with this approach. "In Germany we translated some content--a guide to better pictures--that gets rave reviews on Kodak.com," he says. After it was posted, "the feedback was that the translation was accurate, but [the German users] didn't like the content. It wasn't suitable for the audience. They didn't like the style of the writing. That was a surprise to me-it didn't occur to me."<sup>30</sup>

Another cultural aspect which affects website design is color. Company officials at Dell quickly realized they had made the mistake of surrounding most of the site's content with black borders, a sign of negativity or death in many cultures. The use

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<sup>25</sup> Radziewsky.

<sup>26</sup> Ibid.

<sup>27</sup> Radosevich

<sup>28</sup> Radziewsky.

<sup>29</sup> Horwitt, Elisabeth. "Europe: Cultural, Language Barriers Challenge the Continent," *Computerworld*. (29 Sept. 1997): 21-23.

<sup>30</sup> Blankenhorn, Dana. "It's Not Such a Small World After All," *Datamation* March 1999: Online (<http://datamation.earthweb.com/ecommm/03web1.html>)

of black in graphics and backgrounds is very popular in the United States, but the color has sinister connotations in Asia, Europe, and Latin America.

These examples illustrate the difficulty of translating text from one language to another and conveying the original sense and content so that it is acceptable across cultures. There are other aspect of web design which can be both beneficial and also need careful use.

### **Graphics and Icons**

Of course, language is just one issue that global e-commerce strategies must cover. As Dell found out, international sites must be designed with a knowledge of local culture. Just as using the wrong color can be bad for business, carelessly chosen icons can be especially dangerous. That is because even those commonly used in the United States may have no relevance in other countries. In most countries, for example, "You can forget about using mailboxes and shopping carts," said Martha Ferro Geller, vice president of globalization strategies at GlobalSight Corp, in San Jose, Calif. "Users in European countries don't take their mail from large, tubular receptacles, nor do many of them shop in stores large enough for wheeled carts."<sup>31</sup> The icon for the American mailbox doesn't convey to citizens of other countries the idea of sending mail. A more universally recognized icon is an envelope.

Steve Allan, senior director for business development for Alis Technologies, Inc., a software and translation services company based in Montreal, places the issues Kodak is dealing with into internationalization and localization context. A successful effort will consider pictures as well as words. Instead of highlighting your translated by pages by linking to them with an image of a specific country's national flag, Allan suggests offering a picture of your product and some words in that language, in a font familiar to that country or region's users. "For instance, showing Austrians a German flag to claim you understand them doesn't work."<sup>32</sup>

One aspect of functionality which relates to globalization is navigation within a site. A number of icons integral to commonly employed software have become de facto standards for indicating certain functions in software. Examples of these are the icons for folders, printers, bold, italics, underlines, arrows for forward and back. Beyond this small number of common icons, there are no universally accepted or adopted images.

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<sup>31</sup> Chen, Anne. "Going Global? Avoid Culture Clashes-Sites Must Reflect Local Customs and Ways of Doing Business to Achieve Success in Foreign Markets," PC Week (3 April 2000): 65.

<sup>32</sup> Blankenhorn.

The travel arena has led the development of icons which have become globally recognized. "Never underestimate the power of graphics, which are especially important in the face of language barriers. Europeans understand the universality of graphical communication-long ago, they replaced 'hot' and 'cold' with red and blue dots on the restroom faucets in places such as international airports."<sup>33</sup> As content becomes increasingly global and multilingual, there is a need for a common set of navigational icons that all users of the Web will recognize. The use of such standardized symbols could greatly aid users in concentrating on content. In the meantime, the use of graphics and icons can facilitate the conveyance of simple ideas and common tasks in language neutral terms.

As a final suggestion on the topic we turn again to Morelli who asks, "Seeking examples of effective global sites on the Web? Look not to corporate America but to papal Rome. At the Vatican home page (<http://www.vatican.va>), everything is in place: Concise text, effective graphics, six different languages and links to sites of specialized interest. And if you're surprised about who's leading the way in international marketing on the Internet, don't be. After all, the Catholic Church has been in the global communications business longer than any of us."<sup>34</sup>

## Conclusion

As we prepared this paper, we became much more aware of internationalization for the intended audience, SLA's Brighton conference participants. The research we conducted yielded a number of articles written in journalistic style. We found the advice to avoid idioms, colloquialisms, etc. difficult to follow. These elements are still present in direct quotations throughout the paper and we realize that in spite of some consciousness to internationalize, the paper still has an English language, Western cultural bias. Just writing this paper has made us more aware of the necessity of adopting a broader world view.

Samuel Waltz Jr., Chairman and CEO of Public Relations Society of America in speaking of that profession has said, "Public relations professionals need to prepare to work globally, counsel globally and understand the big global picture with regards to events, business, people and trends. Globalization renders irrelevant traditional borders, boundaries and marketplace definitions for most businesses and non-profits." Waltz sees "The moral high ground for the public relations field will be its capability to develop strategy with regard to the deployment of resources to manage relationships, accomplish goals and achieve

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<sup>33</sup> Morelli.

<sup>34</sup> Ibid.

the mission."<sup>35</sup> This same advice could easily apply to information professionals who now need to "work globally, counsel globally, and develop strategy with regard to deployment of resources," within the global environment. Being knowledgeable about the challenges of "Taking a Website Global," is one aspect of that environment.

## APPENDIX

### WEB SITES RELATING TO TRANSLATION

#### Translation and Linguistic Links:

Monterey Institute Graduate School of Translation and Interpretation  
<http://gsti.miis.edu/>

Freelance Translator's Dictionary <http://foreignword.com/Translators/transdb.htm>

Internet Resources for Translators <http://www.deraaij.com/irt/>

Institute of Translation and Interpreting <http://www.iti.org.uk/>

Human-languages Page <http://www.june29.com/HLP/>

#### Translation Services:

FreeTranslation.com <http://www.freetranslation.com>

Fight the Fog-Write Clearly  
<http://europa.eu.int/comm/translation/en/ftfog/index.htm>

Language Matters  
<http://europa.eu.int/comm/translation/bulletins/matters/1/index.htm>

Parlo <http://www.parlo.com/>

Language Partners International  
<http://www.languagepartners.com/products/translation-memory.html>

LISA Education Initiative Task Force  
<http://www.ttt.org/leit/terminology.html>

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<sup>35</sup> Heckman, James. "International in Internet Closes U.S. Lead," Marketing News 14(February) 2000): 4-7.

Trados [http://www.trados.com/products/download\\_demo.asp](http://www.trados.com/products/download_demo.asp)

**Dictionaries:**

WordReference.com <http://www.wordreference.com/>

Idiom <http://www.idiominc.com/us/about/index.shtml>

WordFan <http://www.mv.com/ipusers/noetic/wordfan.html>

Vicki L. Gregory and Anna H. Perrault  
University of South Florida  
School of Library & Information Science  
4202 E. Fowler Avenue  
CIS 1040  
Tampa, FL 33620-7800  
USA  
e-mail: [gregory@luna.cas.usf.edu](mailto:gregory@luna.cas.usf.edu)  
[perrault@luna.cas.usf.edu](mailto:perrault@luna.cas.usf.edu)  
tel.: (813) 974-3520  
fax: (813) 974-6840

# **NETWORKING THE ASIA-PACIFIC: A CO-OPERATIVE LIBRARY VENTURE BEGUN THROUGH SPECIAL LIBRARIES ASSOCIATION (SLA) AND THE AUSTRALIAN LIBRARY AND INFORMATION ASSOCIATION (ALIA)\***

**By Jeanette Regan**

**Abstract:** During the past three years a network for librarians and information specialists has been established in the Asia-Pacific Region. This network has been encouraged from two sources, namely the PAM Division of SLA and ALIA.

As it has developed, there has been a shift in focus. Originally envisaged as a network for astronomical libraries in this Region, through the involvement of 1997-98 PAM Chair, Liz Bryson, the PAM International Relations Committee (IRC) developed objectives for the group which emphasise world-wide equity of access to information resources.

In late 1998 letters of invitation to participate in an international forum were sent to librarians, in the subjects covered by PAM, who were within the geographic area. Response was sufficient to establish a discussion list and develop a web-site. The Forum has been named the Physics Astronomy Mathematics, Asia Pacific Forum (PAM-APF).

In August 1999 the Forum met in Hobart, Australia at the ALIA Specials Conference. The focus for this session was the development of email-partnerships between librarians in developing and developed countries. As at January 2000 more than 60 librarians from 21 countries representing, relatively equally, developed and developing countries had indicated their interest in participating. From these a small group was chosen to trial the project for a three-month period before all other participants are involved. It is anticipated that results from the initial stages of the project will be available by mid 2000.

This paper will detail the methodology used in the establishment of PAM-APF. As the publishing and research industries are changing rapidly, it is through the development of networks such as PAM-APF that colleagues have the opportunity to exchange information quickly and effectively and so are able to provide necessary resources for their research and client communities.

## **Introduction**

Non-commercial scientific publications have been freely distributed world-wide to relevant institutions for more than a century. Scientists have considered collaboration a very important aspect of their work and to assist them, librarians have established a supportive international network. However, new technology is

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\* Professional Paper contributed to the Worldwide Conference on Special Librarianship "Global2000" organized by the SLA, 16-19 October 2000 (paper not presented due to time restrictions)

providing new approaches for both the research communities and those managing resources. The role of librarians and information specialists is not changing, but the method of providing the resources required by researchers has changed dramatically. Now much of the work undertaken by librarians and information specialists is done inconspicuously. Without this work researchers would not have access to the many bibliographic databases that they use on a daily basis.<sup>1</sup>

The distribution of resources is inequitable between the North and South. On 1 April 1999, *Nature* published a special supplement *Science in Latin America*. On 11 June 1999 *Science* published a two-page article "A second chance to make a difference in the Third World?" Both articles highlighted the benefits that can be made through supportive networks.

During the past three years the International Relations Committee, Physics Astronomy Mathematics and Computer Science Division (PAM) of the Special Libraries Association (North America) has been working with the Asia Pacific Special Interest Group (APSIG) of the Australian Libraries and Information Association (ALIA) in the formation of PAM-APF.

The aims of PAM-APF are:

- fostering the exchange of information amongst colleagues;
- ensuring that publishers are aware of technological weaknesses in developing countries, especially in the Asia Pacific Region; and
- assisting colleagues to obtain the bibliographic information required by their research communities.

## **Background**

Since 1988, a series of meetings for astronomy librarians, Library and Information Services in Astronomy (LISA) have been held in the USA and Europe. From the network that developed, as a result assistance in the form of twinning libraries was introduced between libraries in Europe and the USA and those in former Eastern Block countries. However, such a program has not been developed for libraries in the Asia Pacific Region and the number of delegates from Asia and the Pacific region who have been able to attend these meetings is declining. Unfortunately, the last meeting received little publicity in Asia and the Pacific, and the only two

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<sup>1</sup> Grothkopf, U. (2000): *Astronomy libraries 2000: Context, coordination, cooperation.*; *Information Handling in Astronomy*, Andre Heck (ed.), Dordrecht: Kluwer Academic Publishers, 165-174



delegates from that Region were from India and from Australia. This event emphasised the need for publicising the problems faced by those in this Region.

During the past two years, PAM-APF has been an intermediary for the international library community and publishers to publicise the problems faced by libraries and their research communities in developing countries. A website was developed in 1998 to enable PAM-APF to act as a forum for sharing and exchanging information resources and knowledge. This site includes a list of participants from 23 countries. The pages are now translated into Chinese and Spanish, and these are maintained in China and Chile respectively.

## **Methodology**

After the 1995 LISA II meeting, a need for support for astronomy librarians in the Asia Pacific Region was perceived. Jeanette Regan, Australian National University, who chaired the PAM IRC from 1997-2000, established regular meetings with other astronomical librarians in Australia and maintained contact with colleagues in China. Then, in 1997, this contact was formalised through the involvement of Liz Bryson of the Canada France Hawaii Telescope, and the PAM International Relations Committee (IRC). Under the direction of the IRC Chair, and supported by APSIG, objectives were developed emphasising the need for equal, world-wide access to information resources, through PAM-APF.

Since 1998, a discussion list has been developed with over 100 participants from 27 nations, and a web site has been established at <<http://msowww.anu.edu.au/library/pam-apf/intro.htm>>. This includes a list of those willing to share their expertise and knowledge.

It was decided that the most appropriate and effective method to assist librarians in developing countries was by direct exposure to colleagues and publishers in developed countries. To achieve this, a strategy was developed that directly involves these colleagues by:

- providing publicity through announcements over relevant discussion lists and articles in library newsletters and magazines;
- providing a Forum for these colleagues to present the situation within their country at major conferences;
- providing the opportunity to network with colleagues and publishers;
- involving colleagues from developing countries in policy decisions through participation on the PAM International Relations Committee.

Approximately 600 librarians from Asia, Australasia, Latin America and the Caribbean were contacted at the end of 1998 and invited to participate in the Forum and to complete a questionnaire detailing level of Internet access. The World of Learning was used as the source for addresses, supplemented occasionally with information from the World Wide Web. Chinese and Spanish translations of these letters were sent to relevant colleagues. The organisation of this survey was managed by the then IRC Chair and involved librarians from five continents. Full details of a report on this survey were presented by Christina Louis at the 1999 SLA Annual Conference and are available at <http://msowww.anu.edu.au/library/pam/intro.htm>.

At the same time, the IRC has also worked to establish awards which would enable colleagues in developing countries to have a means with which to voice their concerns to both publishers and colleagues in developed countries. This has been achieved through the establishment of the PAM International Membership Award (PAM IMA) and the PAM International Travel Award (PAM ITA). The first award provides two years membership to SLA. The recipient is also made a member of the IRC and so able to advise directly on how developing countries can best be assisted. The PAM Travel Award, sponsored by the Geelong East Rotary Club (Australia), fully funds the PAM IMA winner to attend the SLA Annual Conference in the USA.

Within many developing countries there is no facility to share bibliographic resources. In India astronomy librarians, lead by Christina Louis of the Indian Institute of Astrophysics, are establishing a combined catalogue through the Forum for Resource Sharing in Astronomy (FORSA). This Forum is being used by PAM-APF to broaden library resources to other related subjects including physics, mathematics and computer science. In 2000, a brief survey was undertaken by Myrna Koch, Pontificia Universidad Catolica de Chile and Maria Eugenia Gomez, European Southern Observatory, Chile, of facilities that are available in five countries within the Latin Americas. General reports on these areas are available on the PAM-APF web site.

In addition, an Email Partnership Program is being trialled. This aims to establish email partnerships between librarians in developing countries and those in developed countries. In early 2000 a trial group was contacted and partnerships formed. This trial group is being regularly monitored. Then, in June 2000, all colleagues who had responded to the initial questionnaire were contacted again and invited to join the Email Partnership Program by completing a web form on the PAM-APF web site.

## Achievements and challenges

There have now been two PAM IMA recipients. At the time the first award was given, the PAM ITA had not been established. However, the winner, Christina Louis from India, was able to attend the SLA Annual Conference as the recipient of another annual award, the Sci-Tech Award. (This annual award is available to SLA member librarians who are outside North America.) The second PAM IMA winner is Nancy Gomez from Argentina. Nancy is the first to receive the PAM ITA.

There have been immediate benefits at several levels for the recipients of these awards:

- they have received recognition from their home institutions;
- by observing, at first hand, the example of their colleagues in developed countries, they have realised the enormity of the benefits produced through networking;
- they have established personal contacts and networks with both publishers and colleagues in developed countries;
- some publishers have responded with special arrangements for the libraries involved;
- Christina Louis was invited to present further papers at both a local library seminar and at a major national conference, Recent Advances in Information Technology 1999 (READIT 99)<sup>2</sup>
- Nancy Gomez received further financial assistance from other sources to attend the Computers in Libraries 2000, and to present a paper at Transborder Library Forum, Albuquerque, New Mexico 2000<sup>3</sup>

The last two points show how librarians in specialised subjects can lead others by their example.

In August 1999, the first PAM-APF meeting was held as a focus session of an ALIA conference, held in Hobart, Australia. Ten delegates attended this session

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<sup>2</sup> Louis, C. & Vagiswari, A., PAM-APF ( Physics, Astronomy, Mathematics - Asia/PacificForum): Network for Resource Sharing and Consortium formation, , *Proceedings of the conference on Recent Advances in Information Technology*, Kalpakkam, India, Oct.28-29, 1999, p.182-194.

<sup>3</sup> Gomez, N. Access options to primary documents in Argentine Science Libraries. *Beyond our borders: Interconnections, FORO X Transborder Library Forum*, Albuquerque, New Mexico, USA, March 23-25, 2000.

and they represented not only the PAM subjects but also medicine and law. They represented a number of countries including Fiji, Papua New Guinea, Hong Kong, United Kingdom and Australia. Dr Nancy Lane, Australian Academy of Science, proposed the to establishment of the Email Partnership Program, and this was announced at this meeting. All those present and a number who were unable to attend, gave their full support to the following:

- the establishment of partnerships in all disciplines, not just those in the PAM subjects.
- working in conjunction with the publicity provided by having awards for delegates to attend further meetings in developed countries.
- further investigations of organisations are already providing assistance to colleagues in this Region and how there might be collaboration with them

In early 2000, the first a trial group for the email partnerships was contacted. From this group the guidelines were amended better to reflect the informal style of partnerships that are now being proposed. In June 2000 all librarians on the web list were contacted and invited to participate in this program.

### **Future developments**

A basis has now been developed on which this Network can be extended. As well as the main PAM-APF, there are now groups of librarians active in both India and the Latin Americas. Future work will be aimed at consolidating all these networks throughout the Asia Pacific Region. This will be achieved by continuing to use the strategies that have been developed and implemented successfully by and for PAM-APF.

Those who attended the meeting in Hobart were enthused to have the email partnership extended outside the PAM subject areas. It was decided initially to limit the group to ensure that the proposed scheme was workable. As this has been achieved, those outside these subjects now have a model which can be repeated.

### **Conclusions**

There is no doubt that PAM-APF has made an impact, both within specific developing countries and to the relevant library communities world wide.

There is still much to be done to consolidate networks, and to ensure that librarians and information specialists from the many different cultures throughout this region are not too reserved to participate. Co-operative networking ventures such as PAM-APF serve Librarians and information specialists with the facilities

to provide more effectively, the bibliographic resources required by research communities.

### **Acknowledgements**

Many people, within the library communities and outside them, have given their time and technical expertise directly and indirectly in the various matters dealt with in this paper and it is appreciated. A special note of thanks go to the IRC and PAM Board, Amelia McKenzie, Convenor, APSIG and to Dr Nancy Lane, Australian Academy of Science.

Jeanette Regan  
Astronomy Branch Library (ANU)  
Private Bag  
Weston Creek PO ACT 2611  
Australia

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