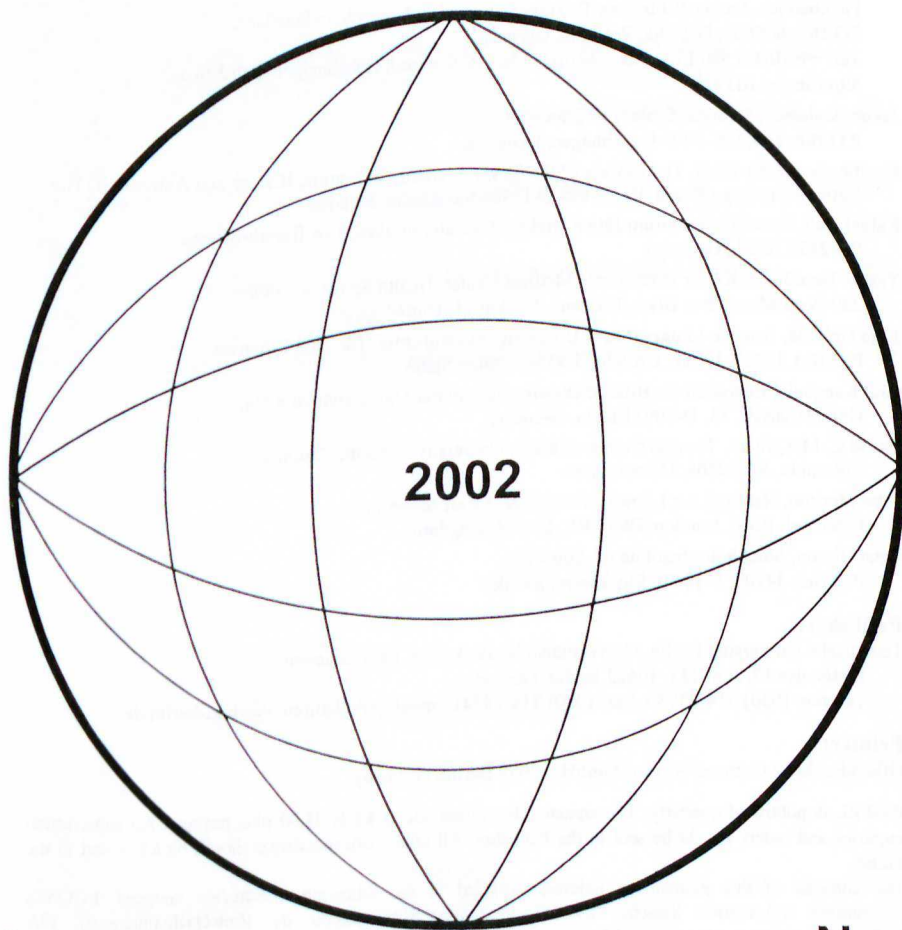


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## DOCUMENTATION ISSUES FOR MATHEMATICS IN THE DIGITAL AGE\*

By Pierre Bérard

The impact of licensing science and technology digital resources on collection development, archiving and access for non-affiliated users are major issues for libraries. They were discussed at the 2002 open session of the Science & Technology Section of the International Federation of Library Associations in Glasgow. Being an end-user, I would like to address these documentation issues the other way around and ask:

*How should the needs of end-users influence library policies, in particular concerning licensing, selecting material and archiving?*

Mathematicians have always been very much involved in documentation issues. Academic institutions publish top mathematics journals (e.g. Acta Mathematica, Annals of Mathematics, Publications Mathématiques de l'Institut des Hautes Études Scientifiques), mathematical societies publish long-standing international journals, the American Mathematical Society and the European Mathematical Society are very much involved in databases, several committees discuss documentation issues (e.g. the Committee on Electronic Information and Communication—CEIC of the International Mathematical Union and the Electronic Publishing Committee of the European Mathematical Society), etc. In France, documentation issues in mathematics are handled in a collaborative way by the Réseau National des Bibliothèques de Mathématiques-RNBM<sup>1</sup> and by the Cellule MathDoc, an Institute on scientific information and communication (a joint institute, Centre National de la Recherche Scientifique-CNRS and Université Joseph Fourier, Grenoble).

I am aware that other scientific communities are very active on documentation issues as well, and I acknowledge the fact that we should share our experience and avoid acting in isolation. In this article, I shall concentrate on documentation issues for mathematics. I will discuss the importance of the scholarly literature for

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\* Paper presented at the 68<sup>th</sup> General Conference and Council of the International Federation of Library Associations and Institutions, August, 16 – 24, 2002 in Glasgow

<sup>1</sup> French network of mathematics libraries.

mathematics, the needs of mathematicians – as far as documentation is concerned – and I will present some of the actions that have been undertaken, in particular in France.

*Note: The URLs of institutions or services mentioned in this paper are provided in the last section.*

## **Mathematics and its scholarly literature**

Mathematics is unique among the sciences in its dependence on the scholarly literature. Mathematics has indeed flourished along the past 2 500 years because key literature was passed from generation to generation. Time scales in mathematics and in other fields differ: ideas and techniques from decades or even one hundred years ago are relevant, sometimes crucial, for solving contemporary problems in mathematics or for applying mathematics to other sciences and technology.

Since the 17<sup>th</sup> century mathematics has played an important role in physical sciences and in technology by providing tools to organize, analyse, compute and predict. More recently, mathematics has assumed a similar role in quantitative aspects of the life sciences. The role of mathematics in technological development is increasing every day. Documentation issues in mathematics are therefore important not only for the discipline itself, but for the other sciences and for technology as well.

Let me recall a few figures. About 15 journals contained mathematical papers in 1700 and they were 200 by the end of the 18<sup>th</sup> century. Less than 1 000 mathematics papers were published every year in the second half of the 19<sup>th</sup> century. Today, the reviewing databases Mathematical Reviews and Zentralblatt MATH both publish about 75 000 items every year and they analyse nearly 600 mathematics journals from cover to cover, among thousands of sources (over 1 500 journals, as well as books, conference proceedings, etc).

The whole corpus of mathematical scholarly literature actually makes up the environment in which mathematicians live, in which they look for inspiration, for examples to mold their intuition, for tools to work out their ideas.

It is impossible today for mathematicians to have a global knowledge of their field. They need to move from one item to another in the scholarly literature, looking for concepts, ideas, examples, results and proofs. More importantly, mathematicians, as well as those who use or apply mathematics, need to rely on previously established results they may not always be able to check by themselves.

## What do mathematicians need?

### How should these needs influence library policies?

The needs of mathematicians –as far as documentation is concerned– follow from their dependence on scholarly literature. These needs should, I believe, directly influence institution policies concerning documentation.

### Mathematicians need reliable sources

Because mathematics so much depends on its past literature, journals have played a major role since their emergence in the 18<sup>th</sup> century by providing validation and storage of key mathematical pieces. As far as the long-term welfare of mathematics is concerned, this is far more important than the social role [7] describes.

The robustness of the validation system has so far been guaranteed by the diversity of independent, and very often long-standing<sup>2</sup>, reputable peer-reviewed journals.

In this framework, publishers compete for markets; journals, groups and individuals compete for recognition or ranking. This competition and the diversity of journals (for-profit, not-for-profit) have participated in keeping quality high, in improving services and in avoiding that groups or schools take undue control over the publication process. This competition has also, to some extent, contributed in controlling subscriptions fees (many top mathematics journals are published under the auspices of academic institutions, with reasonable subscription fees).

The digital age brings new opportunities –from archival eprint servers to purely electronic journals– to disseminate and access literature. At the same time, publication and validation are becoming increasingly detached.

*Our main concern, for the long-term welfare of mathematics, should be to preserve the diversity of well-identified reliable sources.*

In this perspective, consortial agreements and bundling practices have negative side effects. They indeed tend to bring more and more money to bigger publishers to the detriment of smaller ones (in particular academic publishers). They concur to reducing the diversity of the journal offer and to letting commercial considerations overcome scientific considerations when selecting sources. As stated in *Best current practices: Recommendations on Electronic Information and Communication*, a set of recommendations issued by the Committee on Electronic

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<sup>2</sup> Among the oldest mathematics journals, let me mention for example, the Journal für die reine und angewandte Mathematik (Crelle's journal) created in 1826 and the Journal de mathématiques pures et appliquées (Liouville's journal) created in 1836.

Information and Communication (International Mathematical Union), “When institutions are forced to accept or reject large collections of scholarly literature covering many different disciplines, the decisions are less likely to be made by scholars.” ([1] Item 15). Consortial agreements may also concur to distorting the publishing landscape, as explained in [7], Chapter 10. As a matter of fact, the transition from selling/buying print collections to licensing electronic access may in the long-run endanger access to reliable sources.

The Cellule MathDoc and the Réseau National des Bibliothèques de Mathématiques apply and promote the following principles (which are, I believe, very much in the spirit of SPARC).

- Consortial agreements should be based on lists of journals rather than based on whole catalogue offers (the “Big Deals” described by K. Frazier [5]). These lists should be established according to scientific and relevance criteria.
- Enough print subscriptions should be maintained as long as long-term access to digital content is not secured.
- As far as documentation is concerned, institutions should take global budget approaches leaving room for smaller publishers, thus concurring to maintaining the diversity of journal offers. They should also keep a reasonable balance between journals and books collections.
- Institutions should, as far as possible, support the actions undertaken by editorial committees against excessive subscription. Libraries should inform the academic communities on pricing issues and institutions should encourage scientists to take journal policies into account before deciding to submit papers or to do referee work.
- Scientists and specialised librarians should be invited to participate in the negotiations with publishers.

Scientific communication has been made much easier by the possibility to exchange digital files over the internet, and in particular by the emergence of eprint servers. As a by-product, the number of multi-version papers tends to increase. To provide version identification and well identified validation procedures for electronic only documents are compulsory to insure reliability of electronic communication.

### **Mathematicians need to have access to the scholarly literature over a very wide time-span**

In this respect, the digital era brings both concerns and hopes; concerns because preservation, archiving and long-term access issues are becoming even more intricate and hopes because we may dream of a large virtual library on the internet.

## *Concerns*

- Because mathematics so heavily depends on its past literature, preservation and archiving are of prime importance. Libraries (maybe not individually but on a global scale) have up to now played a central role by providing preservation and archiving of print material. New technical problems arise in the digital age. In view of the present licensing practices, our main concern today is however of a political nature.

*Who will in the future be responsible for preserving and archiving the mathematical heritage?*

- Libraries have not only cared for preservation and archiving. They have provided long-term access for their patrons and, more generally, for the general public. Publishers used not to take care of providing long-term access. With the digital era, this is changing.

*Will the mathematical production remain part of our common heritage or will it be gradually confiscated by private interests?*

In view of the importance of mathematical scholarly literature for the discipline itself, and for the advancement of science and technology as well, it is mandatory that the tasks of preserving, archiving and providing long-term access to the mathematical heritage be shared in an international endeavour by academic communities and institutions (using open standards). These tasks cannot be left to the sole responsibility of commercial groups whose main concerns are revenues, not documentation issues. The International Mathematical Union has endorsed a recommendation in this direction, [1] Recommendation 14.

Interesting experiences to work on these important issues are underway, for example Project EUCLID (Cornell University) on the academic side and the EMANI project, an international joint venture between libraries (Cornell, Göttingen, Orsay, Tsinghua) and publishers in the Springer Verlag group.

## *Hopes*

- The mathematical community pursues the project of creating a *Digital Mathematics Library* of the scholarly literature. This endeavour has been endorsed by the International Mathematical Union and by mathematical societies world-wide.

The Digital Mathematics Library will be a comprehensive collection comprising both retro-digitised and natively digital documents. It is meant to serve scientific communities, students and, more generally, citizens world-wide, by providing easy and efficient access (in particular cross-linking) to the mathematical heritage. The



Digital Mathematics Library is expected to have a strong impact on the way mathematics is done and used in the 21<sup>st</sup> century, an impact that may turn out to be as important as the emergence of journals three centuries ago.

The realization of this project will consist of three phases (design, implementation and sustained operation). Questions to be addressed concern scientific choices, technical choices, copyright issues, archiving and sustained operation (including future migrations of formats).

Meetings have already been held to prepare for the project: San Diego (USA) in January 2002, Berlingen (Switzerland) in April 2002 and Washington (USA) in July 2002. Several funding agencies have shown their interest in the project, including the Centre National de la Recherche Scientifique–CNRS (France), the Deutsche Forschungsgemeinschaft–DFG (Germany) and the National Science Foundation–NSF (USA).

The general idea is that the raw data (raw images of the scanned documents) will be available at low cost to all on the internet and that mathematics societies, institutions or publishers will provide added value services and enhancements (cross-linking, comments) possibly on a paying basis (for a possible scenario, see [3]). It is expected that the sustaining effort will be undertaken by academic institutions and societies world-wide. The project will require co-operations between academic institutions, libraries and publishers. I believe that we must be very careful that the retro-digitised mathematical heritage be not confiscated by private interests.

The French mathematical community is participating in this endeavour with the NUMDAM<sup>3</sup> programme, on which I will briefly report later on.

- Libraries have in the past played an important role by providing free access not only to their patrons but also to a wider audience (walk-in users). It seems desirable to extend this to the internet in some way.

The International Mathematical Union endorsed a recommendation for *Unrestricted access* to data such as Table of contents, Abstracts, Keywords (and Bibliographies whenever possible) and a recommendation for *Eventual free access* (free access to the full-texts after a suitable time-span), see [1] Recommendations 11 and 12. As a matter of fact some journals are already committed to this goal.

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<sup>3</sup> NUMérisation de Documents Anciens Mathématiques (Digitisation of Ancient Mathematics Documents).

## Mathematicians need organization and linking

- The need for tools to organize and approach a growing scholarly literature was soon recognized by mathematicians (and others). This led to the emergence of classification schemes and databases. Here are some of them (see [6] for a more general study and [9] for more information on the Répertoire Bibliographique des Sciences Mathématiques).
  - Jahrbuch über die Fortschritte der Mathematik (1868–1942), established by Carl Ohrtmann and Felix Müller.
  - Répertoire Bibliographique des Sciences Mathématiques (1894–1912), established by the Société mathématique de France and chaired by Henri Poincaré.
  - Zentralblatt für Mathematik und ihre Grenzgebiete<sup>4</sup> (1931 →), established by Otto Neugebauer.
  - Mathematical reviews (1940 →), founded by the American Mathematical Society.
  - Mathematics section, Referativnyi Zhurnal (1952 →).

The pioneers clearly expressed their motivations.

Das Ziel, das uns vorschwebte, war einerseits: Demjenigen, der nicht in der Lage ist, alle auf dem umfangreichen Gebiet der Mathematik vorkommenden Erscheinungen selbstständig zu verfolgen, ein Mittel zu geben, sich wenigstens einen allgemeinen Überblick über das Fortschreiten der Wissenschaft zu verschaffen. Andererseits: dem gelehrten Forscher seine Arbeit bei Auffindung des bereits Bekannten zu erleichtern<sup>5</sup>.

Carl Ohrtmann and Felix Müller

Jahrbuch über die Fortschritte der Mathematik

Toute classification est une théorie déguisée, et ce n'est pourtant qu'en classant les faits qu'on pourra se mouvoir dans le dédale sans s'égarer. Ceux qui méconnaîtront cette vérité ne marcheront qu'à tâtons, revenant sans cesse sur leurs pas, refaisant cent fois le même chemin ...<sup>6</sup>

Henri Poincaré

*Le libre examen en matière scientifique* (1909)

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<sup>4</sup> It is today published under the title Zentralblatt MATH by the European Mathematical Society, the Fachinformationszentrum–Karlsruhe and Springer Verlag.

<sup>5</sup> “Our intention was on the one hand: To provide a tool for those, who are not able to follow all publications on the comprehensive field of mathematics, and to gain a general overview about the development of the science. On the other hand: It should help the active scientist to find out known facts.”

<sup>6</sup> “Any classification is a disguised theory. It is however only by classifying facts that one will be able to move in the maze without getting lost. Those who will not recognize this truth will only grope along, coming back onto their own steps, taking a hundred times the same path ...”

Today, both indexing and reviewing services – Mathematical Reviews and Zentralblatt MATH – cover all of mathematical scholarly literature. They collaborate on a common classification scheme (Mathematics Subject Classification 2000) which is used by the whole mathematical community. They benefit from the work of thousands of reviewers world-wide. Both services offer external links from reviewed items to full-text. By including the bibliographies of papers, together with internal links, in the corresponding reviews they will eventually provide a tool to explore the interconnections within the literature (see [8] for the state of the art at Mathematical Reviews) thus providing alternatives to the large databanks of commercial publishers.

Indexing and reviewing databases therefore represent a strategic resource for mathematics. This is why I believe that the existence of two competing databases of high quality is beneficial for the mathematical community world-wide (improved quality, better access conditions). As a matter of fact, these ideas have been endorsed by the European Mathematical Society and others. In France, the Cellule MathDoc takes an active part in the transformation of Zentralblatt MATH into a large European research infrastructure for the benefit of mathematics world-wide, under the auspices of the European Mathematical Society.

- Cross-linking is a major issue for publishing in the digital age. This is an expensive process and one should be very careful that cross-linking services do not become the monopoly of the bigger publishers (for an interesting scenario, see [4]). We expect that Mathematical Reviews and Zentralblatt MATH will both play an important role in providing links to digital documents, in particular in the Digital Mathematics Library project<sup>7</sup>.

## **From principles to practice**

The Cellule MathDoc, in collaboration with the Réseau National des Bibliothèques de Mathématiques, has set up services for the French mathematics community. I will illustrate our approach with three examples which are directly related to the issues addressed here (for more details on our activities, see [2]).

### **Databases: Mathematical Reviews and Zentralblatt MATH**

- As already mentioned, the Cellule MathDoc has since 1996 taken a very active part in the transformation of Zentralblatt MATH into a large European research

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<sup>7</sup> Note that the Jahrbuch is being digitised and already provides over 12 000 links to digitised papers in print collections.

infrastructure, for the benefit of mathematics world-wide, under the auspices of the European Mathematical Society.

In this framework, we have negotiated a general consortial agreement with the Zentralblatt MATH database which goes beyond mere licensing. French institutions subscribe within the general agreement which in particular allows small centres to benefit from reduced subscriptions fees (still with a site licence). The Cellule MathDoc has set up a network of three national mirrors for Zentralblatt MATH to ensure robustness of access (controlled by IP numbers). The search and display engine is provided by the Cellule MathDoc (as for the international mirrors) and the database is updated every month. This mirror system guarantees long term availability to the data. The network of national mirrors also provides a better integration of resources (journals in the Zentralblatt MATH database are linked to the common catalogue of mathematics serials which provides localization and hence makes document delivery easier).

- A general consortial agreement – of the usual licensing kind – has been passed between the Réseau National des Bibliothèques de Mathématiques and the Mathematical Reviews database.

### **Current contents service and electronic journals**

- The Cellule MathDoc negotiated a national consortial agreement with a data provider. Table of contents are downloaded every week by FTP to our server and indexed locally. The system is built on in-house tools and offers the following functionalities:
  - Table of contents of about 450 core mathematics journals and 450 journals in related fields.
  - Search and display interfaces (browsing by title, search by author, keyword).
  - Alert service (email address of the user / list of serials).
  - Information concerning the serials (localization in French libraries through the common catalogue of mathematics serials).
  - Hyperlinks to web pages of journals when available, links to the “OpenResolver” service.

Access to the current contents service is controlled by IP numbers (under the responsibility of the Cellule MathDoc) and is open to the whole mathematics community including occasional users. As in the case of Zentralblatt MATH, this agreement goes beyond mere licensing.

- A national consortial agreement has been passed by the Réseau National des Bibliothèques de Mathématiques for the electronic access to a subset of mathematics journals in LINK (Springer Verlag group). The agreement is based on a set of print subscriptions in libraries belonging to the network; electronic access is granted to all mathematics institutes in France (from the work desk of the mathematicians, control by IP numbers); access for external users; the extra cost is covered by a special grant from the Centre National de la Recherche Scientifique–CNRS. Negotiations with other publishers are in progress.

The next step would be to globally reconsider the number of print subscriptions for each individual journal before negotiating.

Let me add that one of the main libraries in the Réseau National des Bibliothèques de Mathématiques (Bibliothèque Jacques Hadamard, Orsay) is a partner of the Electronic Mathematics Archiving Network Initiative – EMANI project and hence involved in the difficult issues of the digital age: archiving, preservation and long-term access for digital content.

### **Digitisation programme**

The general goal of the NUMDAM<sup>8</sup> programme is to digitise the mathematics scholarly literature published in France in print form and to participate in the Digital Mathematics Library international project mentioned previously. The first phase of the programme concerns five internationally known serials. Subsequent phases will concern other journals and important seminar series.

The following technical choices take the needs of end-users into account:

- Pages scanned at 600 dpi to fully recover complex formulas and to allow later treatments depending on technological progress (such as structure or formulas recognition).
- Character recognition of text to allow searches.
- Segmentation to allow precise access to articles.
- Bibliographies of articles are key-boarded and tagged. They are included in the database of articles.
- Links to the mathematics databases will be provided whenever possible (at the level of digitised articles and at the level of bibliographic items contained in the digitised articles).

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<sup>8</sup> NUMérisation de Documents Anciens Mathématiques / Digitisation of Ancient Mathematics Documents.

We promote the following principles:

- The meta data (cataloguing data, abstracts, bibliographies, hidden OCREd full-text) of the digitised documents will be freely accessible to all on the internet.
- The full-text (image mode) will be freely available on the internet after a suitable moving-wall set up to insure the financial stability of journals.

The recommended moving-wall is 5 years (articles published in year N to be freely available from N+5 onwards). The digital collections are scheduled to be incremented with natively digital production (with the same moving-wall). These principles are implemented on a case-by-case basis, after suitable negotiation with the institutions and publishers involved. Copyright issues are also addressed. One difficulty we have encountered with commercial publishers concerns cross-linking from bibliographic items (to be compared with [7], Chapter 11)

Discussions with mathematicians and historians of mathematics are underway to enhance the digitised collections with comments.

## **Conclusion**

For us, producers and users of contents, documentation is clearly a scientific issue. Due in particular to international competition, it is also a political and an economic issue. The concentration phenomenon in the publishing business shows that documentation has become a commercial issue. We cannot minimise the fact that publishing activities – academic or commercial - and development of services with added value (databases, search facilities, cross-linking) require know-how, they cost money and generate money and jobs.

The welfare of mathematics, as a scientific discipline and as a service provider for other sciences and technology, will, in the future, very much depend on how well we continue to enrich, to preserve, and to archive the mathematical scholarly literature, our common heritage. The welfare of mathematics will also depend on the fact that the mathematical scholarly literature remains part of humanity's knowledge commons and that it is not gradually confiscated for the benefit of restricted circles.

We must be very careful that the choices and decisions we make today do not endanger the mathematical heritage in the future.

## URL's<sup>9</sup>

American Mathematical Society (AMS)

<http://www.ams.org/>

Cellule MathDoc

<http://www-mathdoc.ujf-grenoble.fr/>

Centre National de la Recherche Scientifique (CNRS)

<http://www.cnrs.fr/>

Committee on Electronic Information and Communication (CEIC)

International Mathematical Union

<http://www.ceic.math.ca/>

Deutsche Forschungsgemeinschaft (DFG)

<http://www.dfg.de/english/index.html>

Electronic Mathematics Archiving Network Initiative (EMANI)

<http://www.springer.de/press/companynews/emani.html>

European Mathematical Society (EMS)

<http://www.emis.de/>

International Mathematical Union (IMU)

<http://www.mathunion.org/>

Mathematical Reviews

<http://www.ams.org/mathscinet>

National Science Foundation (NSF)

<http://www.nsf.gov/>

NUMérisation de Documents Anciens Mathématiques (NUMDAM)

<http://www-mathdoc.ujf-grenoble.fr/NUMDAM/>

Project EUCLID

<http://projecteuclid.org/>

Réseau National des Bibliothèques de Mathématiques (RNBM)

<http://www.biblio.math.jussieu.fr/reseau.html>

Société de Mathématiques Appliquées et Industrielles (SMAI)

<http://smi.emath.fr/>

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<sup>9</sup> Last visited, May 2002.

Société Mathématique de France (SMF)

<http://smf.emath.fr/>

The Scholarly Publishing and Academic Resources Coalition (SPARC)

<http://www.arl.org/sparc/>

Université Joseph Fourier (UJF)

<http://www.ujf-grenoble.fr/>

Zentralblatt MATH

<http://www-irma.u-strasbg.fr/ZMATH/>

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## **LIBRARIES, DELIVERERS OF LIFELONG LEARNING - AS STRONG AS OUR WEAKEST LINK\***

**By Barbara Hull**

**Abstract:** The traditional, idealistic and expanding roles of the information professional are considered and a number of potential weaknesses in fulfilling the ideal are examined. A common failure of libraries and librarians to practice sufficient self-promotion, particularly in online environments is indicated. A need for improved internal communications and enhanced interpersonal skills, in dealing with both customers and more junior staff is indicated, as is that of cultivating better awareness of the broader context in which libraries operate.

### **Background**

Librarians have been perceived in a variety of guises, each one trailing in its wake an awesome degree of responsibility. Overwhelmingly, we are seen as information providers, capable of opening up the channels of access to satisfy our clients' needs. The extent of our powers is seemingly boundless:

“With time and a kindly librarian, any unskilled person can learn how to build a replica of the Taj Mahal” (Angelou, 2002).

“Even the most misfitting child,

Who's chanced upon the library's worth,

Sits with the genius of the Earth,

And turns the key to the whole world.” (Hughes, 1997).

According to the Library and Information Commission, libraries and library staff, “make inclusion happen everywhere for everyone” (Library and Information Commission, 2000)

It is now widely agreed that it is no longer sufficient for librarians to be custodians and organisers of information: in an environment of widening participation in higher education, social inclusion initiatives and more complex ways of accessing information, teaching skills are seen as desirable. As librarians expand their role to teaching their onus becomes even greater! The potential influence of teachers, for good or ill, is legendary: “A teacher effects eternity; he can never know where

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\* Paper presented at the 68<sup>th</sup> General Conference and Council of the International Federation of Library Associations and Institutions, August, 16 – 24, 2002 in Glasgow

his influence stops”(Adams, 1918). Gratitude to teachers may be still passionately felt over half a century later: a 66 year-old male student on a pre-retirement course reported, “I have always been slow on the uptake so I was always left behind at school. The only teacher who ever put me on, she took about five of us in the evening, in her own time, unpaid in her own time, and she did more for us than any other teacher I ever came across” (Hull, 1997)

With the Lifelong learning agenda, librarians are seen to be at centre stage as never before! Are we equal to the challenge? Where are our potentially weak links?

### **Promotion of services**

Often there is an insufficiency of trumpet blowing! Librarians are not usually given to making extravagant claims tending rather to err on the side of caution – a desirable quality in many aspects of our art, but, if an overly measured approach is allowed to permeate the entire library culture, this can result in poor self-promotion. Our skills have long been recognised as underused: “Librarians are almost always very helpful and often most absurdly knowledgeable. Their skills are probably very underestimated and largely underemployed” (Medawar, 1978). One of the major problems facing information professionals today is the impact of “disintermediation”, which has been defined as giving the user or the consumer direct access to information that otherwise would require a mediator, such as a salesperson, a librarian, or a lawyer. Observers of the Internet and the World Wide Web note that these new technologies give users the power to look up medical, legal information, travel, or comparative product data directly, in some cases removing the need for the mediator or, at the very least, changing the relationship between the user and the product or service provider. Because of this widely held misconception that everything can be found on the Web reliably, easily, and quickly, there is trend to discount the value-added mediation that information professionals provide. That end-user searchers are constantly being presented with thousands of spam-ridden, porn-promoting, advertising-laden hits for most of their WWW queries, should be seen as abject failure, but rarely is (Downie, 1999). Unless the misconception is rectified, information professionals as mediators may be viewed as superfluous by the ill-informed. There is scope for greater efforts to dispel the myth than the only information intermediary needed is a *mouse*. However, there is some evidence of a realisation that disintermediation is far from adequate to satisfy the needs of all e.g. in online public services. In a recent review of online health services, Barrie Gunter expresses doubts on the efficacy of online public services and highlights the need for users to be *educated* in the way information is structured and in technological terminology which may well present barriers, “.once the user has found the online public service, they must be able to

get into it and find their way round it with ease....on a point of language use, some individuals may not be familiar with even the most common computer or net terminology. In the health context for instance, usability tests revealed that for some people the 'home page' meant the part of the site that dealt with 'health in the home'" (Gunter, 2002).

Many libraries, particularly academic, have provided access to good-quality information sources only to find that many of their customers display conservative tendencies and tend to shun new channels and to cling to the familiar, preferring to use hard copies of sources they know, even when the online version offers far more powerful searching capacity: it is clear that, for these customers, the ready availability of a technology does not guarantee its immediate take-up and exploitation (Morrow, 1999) and that the usefulness of a piece of technology is strongly tempered by the user's *perceptions* of its usefulness (Barry and Squires, 1995).

Additionally, although many customers, would deem themselves competent at retrieving online information via the internet, in LIS professional circles in the UK there has been general disappointment at the low levels of usage of *reliable* online sources. A report on a project, JISC User Surveys: Trends in Electronic Information Services (JUSTEIS), funded by the Joint Information Systems Committee (JISC), advises us that students, academics and library staff in 25 universities were surveyed using critical incident and critical success factors methodologies. The findings revealed an ad hoc nature of search strategies adopted across undergraduate and postgraduate bodies within a range of disciplines. There appears to be little or no variation in the pattern of EIS use by the various student groups studied - the effect of the Internet on information seeking by students is hugely significant and the more formal resources, such as JISC-negotiated resources are little used. There is little evidence of coherent search strategies used by students (Armstrong, 2001). One key role for librarians is to constantly promote new sources and refresh customers on the usefulness of existing ones. We may fall into the trap of believing that we have already advertised the new database, the special collection or our user education sessions. But, if we look to the world of business, we see that the brand leader does not stop advertising on the assumption that everyone already knows about the product or service. It is recognised that even existing customers need reminding of what is available and there are always potentially new customers out there. In speaking of the need for continual promotion, an advertising guru reminds us, "You can never wash the dinner dishes and say they are done. You have to keep doing them constantly" (Lawrence, 1966)

## Interpersonal Skills

Internal to the library service, the value of staff development cannot be overstressed. Most customer interactions take place with counter staff, who are not usually qualified librarians. Do we value these staff sufficiently to keep them properly trained and informed of current events? An organisation does not create a favourable impression if reception staff, particularly in the information centre, the library, do not have a clear idea of the institution's organisation or any major events taking place. The impressions, positive or negative, created by front line staff resound much further than the initial interaction. Satisfied customers bring in more; personal recommendation is the best kind of advertisement (Peters and Waterman, 1995) The *cost* of keeping staff informed is minimal, especially if they have access to email or an intranet.

For all library staff, besides the need for being well-informed, the importance of good interpersonal skills cannot be overstressed. Just as memories of positive encounters remain, so do those of negative ones. Libraries need staff with excellent technical and interpersonal skills, both of which can be improved by training. The desirable *personal qualities* for information professionals have already received some attention in a Library and Information Commission-funded research project, "Likely to succeed: attitudes and aptitudes for an effective information profession for the 21<sup>st</sup> Century", (Library and Information Commission, 1998). In a national survey conducted across different library sectors and involving 439 respondents with average 22 years' in the profession, respondents were asked to state the qualities which they deemed to be *most lacking* in new graduates and these included those of being *friendly, flexible and confident in own ability*. Even allowing for the seasoned professionals' possibly jaundiced view of the young, in view of the growing role of the librarian as teacher/facilitator/fellow explorer of new information horizons, it is not encouraging that new graduates were seen in such negative terms by their more experienced colleagues. End-users do rate the *friendliness and approachability* of staff quite highly: a male undergraduate, when asked to recall any abiding memories of using the public library service as a child, replied, "I remember particularly one librarian who everybody commented on. She was the most sour-faced unfriendly women on the face of the planet. If you wanted to take a book out it was like you had committed a mortal sin!" (Hull, 2000). We should remind counter staff that it is largely *they* who set the initial tone of the library/customer interface. Referring to counter staff in a University Library, a female undergraduate reported, "I've worked in the shop industry for 4 years and I know how to treat a customer. Some of them [counter staff] are OK but some of them are really miserable. They could smile at least.....I think a qualification for being

a librarian must be to be miserable!" (Hull, 2000). The paramount importance of the staff/customer interface is also recognised by Millson-Martula and Menon (1995) who make the recommendation that, "Hiring officials should make a concerted effort to employ frontline staff who possess excellent interpersonal skills together with a strong service orientation. For continuing staff, managers have the obligation to provide the proper training that will result in enhanced service". Internally, is there scope for strengthening links with our colleagues on the front-line? Without deluging them with too much detail, can we include them more in knowledge of the broader issues within the organisation? Do we always remember to express our own appreciation for their efforts and to give them a share of bouquets we, as more senior staff receive?

### **“Mind Reading”**

Anyone working in information provision must be capable of interpreting the reactions of those whose information needs have not been met. Customers commonly express their anger and frustration at failing to retrieve information as being due to poor provision by the library, rather than their own lack of skills. All staff should be able to recognise the symptoms and be aware of how to defuse the situation. Another reaction to failure is for the customer to blame him/herself. "After multiple failures in the search process, students may conclude that they are too dumb to learn how to use the library. Social comparisons with others in the library who are perceived as more successful may reinforce this inference"(Keefer and Karabenick, 1998). The phenomenon is not uncommon: research conducted at the University of Teesside in 1999 found that 39% of the sample agreed with the statement, "Other students I see in the LRC seem to know more than I do how to use the facilities there" (Hull, 2000) Students with low self esteem are particularly vulnerable to the many potential knowledge gaps that the library search process can generate (Karabenick and Knapp, 1991). Each failure compounds previous failures and discourages them from asking for help. If they do ask for help, questions are often of a superficial nature, rather than addressing the more complex aspects of their difficulties. Are all staff, including counter staff, trained to recognise a hidden query, and, most importantly, are they capable of recognising when it is beyond their scope? Is there a clear matrix of referral for such more complex queries?

### **Alliances**

Whatever the community they serve, all information workers should strive be in tune with the broader aims of that community. If they are in a Public Library, they should be in tune with the aspirations and needs of *all* in that community. In the

UK, public library usage, like participation in post-compulsory education, has long been dominated by the professional classes: social class AB is nearly twice as likely to visit a Library as DE, with 57% of AB reporting this as a leisure activity in the last 3 months, as opposed to 31% of class DE (Social Trends, 1995). A very similar contrast occurs between AB and DE when we consider participation in current or recent learning: 53% of AB report involvement in learning either current or in the last 3 years; or social class DE the figure is 26% (Sargant, 1997).

Dave Muddiman's more recent findings on public library policy and social exclusion make rather sobering reading: "Public libraries are, at present, only superficially open to all. They provide mainly passive access to materials and resources and they have service priorities and resourcing strategies which work in favour of existing library users rather than excluded or disadvantaged communities or groups. An ICT-led "modernisation" of the library service is doing little to change this pattern: our research concludes that this will simply replicate existing inequities of use in an "information age". The core conclusion of the study is therefore that public libraries have the potential to play a key role in tackling social exclusion, but in order to make a real difference they will need to undergo rapid transformation and change"(Muddiman, 2001)

In an academic library, there should be strong links with subject lecturing staff and, in many Universities, there is already good liaison on information *provision*. However, there is potential for further development in involving the librarian more deeply in the teaching of information literacy and in the United Kingdom there has been some uneven progress in this area. In a recent international literature review, it was found that "In comparison with the UK, considerable progress has been made into the development of information literacy strategies in the US and Australia. Although the UK has a relatively cohesive strategy in the early stages of the educational process, this has not been pursued into post-16 and higher education" (Big Blue, 2001). Jacobson (2001) indicated that in the US there is still scope to further improve communications between librarians and faculty, "Instruction librarians should make known their desire to work more closely with center staff and should volunteer to help with or apply to participate in center programs. Informal meetings with the center's director may lead to starting new partnerships or soliciting librarian involvement in current programs"

Clearly, there is scope for further strengthening of links. The concept of the Library providing user education sessions is far from novel, but it is increasingly recognised that information literacy sessions delivered by librarians have greater impact if they are endorsed by mainstream lecturers and preferably form an integrated part of an existing module. In referring to non-integrated sessions,

Samson (2000) states, “Individually scheduled classes rarely attracted a full house; even those who registered for the classes frequently failed to attend.” Indeed, as students become more and more assessment-driven they are even less likely to participate in what they perceive to be “extra” non-compulsory sessions. Additionally, the subject lecturer can influence the success of the librarian’s input, either positively or negatively. Caspers (1995) describes how the attitude of the professor, who gave permission for students to leave early, considerably undermined her information skills session. This may be contrasted to the experience described by Visscher (1995), who, having been acknowledged by the professor as “the library expert”, found the students “receptive to library research instruction”. How do we librarians gain such recognition from our own academic colleagues: recognition that we too are experts in our own field of information handling: that we are different but equal? Librarians *do* conduct and publish research and, as reflective practitioners, we frequently act on that research to make changes to our service provision. Do we bother to make our academic colleagues aware of this? Learning resources are at the very heart of lifelong learning. Do we make efforts to publicise our research findings *outside of* our own specialist LIS circles? E.g. the research findings from “Barriers to Libraries as agents as lifelong learning” research project (Hull, 2000), besides being widely disseminated to LIS professionals in conferences and publications, have also been publicised in education and computer ethics circles, thus making them available to those who would not normally be aware of LIS research.

## **Conclusion**

There are many challenges remaining to librarians as deliverers of lifelong learning. If we are to succeed in this changing environment, there are some key factors to bear in mind:

- It pays to advertise! Let’s polish up our trumpets and remind people that we are experts in our field.
- Even in this electronic age, potentially, the most satisfying interface is human. Let us remember that we are dealing with people, both our clients and our colleagues.
- Alliances can improve our prestige and influence. Time spent creating links with others in our wider community is usually time well spent.

Never mind a replica of the Taj Mahal! With our expert help they can build something even greater!



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# **LIBRARY INVOLVEMENT IN STATE GOVERNMENT INFORMATION POLICY DEVELOPMENT IN THE UNITED STATES\***

**By Barbara F. Weaver**

**Abstract:** This paper focuses on efforts by library groups and individuals to influence the development of state government information policy in various states in the United States, and emphasizes the need for librarians to make sure they either initiate such development or insert themselves into any existing policy development processes. Emphasis is given to accessibility for all, including those with disabilities that may prevent them from reading conventional print. Included are links to websites that may be of interest to those involved in such policy development

## **Overview**

Much has been written and debated for many years concerning government information policy development and oversight. Certainly since September 11 there has been increased attention paid at both the federal and state levels on the often conflicting needs of information access versus information security. Of major importance has been passage of the “USA Patriot Act”, which increased dramatically the role of government oversight and management of information access. The Act has caused many librarians to express concern about possible diminution of access to government information. For details on issues relating to the USA Patriot Act, see the American Library Association website cited in Attachment A.

In the past, at both the federal level and in many of the states, there have been many policies – both written and unwritten – often available only to the agency that developed them and the clients who have tried to obtain information from that agency. More recently, due to the ubiquity of the Internet, policy statements often appear on the government websites, and the federal government is making tremendous efforts to present the various policy statements in a comprehensive fashion. At the same time, issues concerning national policy in the areas of telecommunication, copyright, and uniform codes for transmission of information via the Internet have become topics of increasing public debate. The following is a

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quote from the United States strategic technology policy which appears at <http://www.gils.net/intro.html>:

“Every year, the Federal Government spends billions of dollars collecting and processing information (e.g., economic data, environmental data, and technical information). Unfortunately, while much of this information is very valuable, many potential users either do not know that it exists or do not know how to access it. We are committed to using new computer and networking technology to make this information more accessible to the taxpayers who paid for it.”

Attached to this paper are a few of the many federal and state government websites that readers may want to refer to in developing a strategy for information policy development in their own governmental area. (See Attachment A)

### **Historical Role of Libraries**

Libraries and librarians have been leaders in developing information policy throughout the United States and particularly in the individual states. The American Library Association has been key in recommending governmental information policies, as well as serving as a watchdog group over potential threats to information access.

We are very proud of the fact that the current Superintendent of Documents, who oversees the distribution of federal documents throughout a system of depository libraries is a practicing librarian. In fact, the Depository Library Council in the early 1980's required each depository library to develop and submit to the Superintendent of Documents a comprehensive plan that included the range of documents it would collect, its policies on availability and distribution methods, its goals for increasing access, and the like.

### **Focus of This Paper**

This paper will focus on the history of information policy development by state library agencies, and will offer in some detail the experience of one state: the state of Rhode Island, where for more than ten years I filled the position of State Librarian, and for the last five years was also the state's Chief Information Officer.

In the 1980's there was a growing realization among state librarians that it was essential to develop a coherent information policy for state governments in addition to what was being done at the federal level. At that time there was no overall federal government information policy, though there were many agency policy statements, as well as policies relating to Depository Libraries throughout

the country. The overall policy statements for this system are available at [http://www.gpo.gov/su\\_docs/](http://www.gpo.gov/su_docs/).

In 1987 the Chief Officers of State Library Agencies put together a national conference to investigate how best to formulate state government information policies and what entities should be involved in that formulation. The conference was by invitation only, to representatives from each state who had responsibility for generating, distributing, maintaining, or archiving government documents. Each state was invited to send up to five representatives from the State Library, State Archives and/or Records Management Units, as well as other persons who might have interest or responsibility for any aspect of government documents, including academic and corporate individuals who were experts in various aspects of information resource management.

The conference attracted 140 people from nearly all 50 states. The proceedings from the conference were published <sup>1</sup> through the Council of State Governments and are available on loan from the Kentucky Department of Libraries and Archives.

Also include papers on the process used in several states to formulate their policies. One paper specified 16 principles that should be addressed in developing any government information policy. Although these principles were developed before the Internet became a basic source of information, they remain valid. More recently, the American Library Association's Office of Information Technology Policy convened a group of librarians to update a statement of principles that had been developed in 1994. The resulting statement – "Draft Principles for the Networked World" - includes statements concerning the role of libraries in development policies on intellectual freedom, privacy, intellectual property, infrastructure, equitable access, and content. Although the statement is too long to include in this paper, it is an important document that should be read by all librarians. The full text is available at <http://www.ala.org/oitp/>.

Results from the 1987 conference were significant. The most common result was that many state representatives recognized that they had many similar concerns, and that they needed to work together within their own states to develop coherent policies for their states. Several states – most notably Kentucky – did work out a process by which legislation was adopted, an oversight board was established, and issued relating to state information policy were identified and worked on.

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<sup>1</sup> Gateways to Comprehensive State Information Policy, James A. Nelson, Editor, Lexington, KY, Chief Officers of State Library Agencies through the Council of State Governments, 1987.

Kentucky's current information policy statements are included on their state website and as part of their new portal [www.kydirect.net](http://www.kydirect.net).

In the 1980's, many of the agencies had developed information policy statements relating to their own particular areas, but there had not been any consistent effort to make sure that these policies were compatible. For example, the records management people had developed records retention schedules for documents generated by government agencies, and the archives people had developed policies with respect to the types of materials and formats that should be kept in perpetuity. These groups had worked together for a long time, and were consistent in their approaches; however, the growing use of electronic media for information generation had caused them to begin to review their policies to determine how well they fit the new formats. At the same time, the information technology units in state government were generally much more concerned with information security than information access, and at the time were almost universally of the opinion that policies relating to information generation or retention were the responsibility of others.

### **My Efforts**

At that time I was State Librarian in the state of New Jersey, and I tried to have legislation introduced that would permit an overall approach to information policy. This would have been particularly opportune, since the State Library was a part of the Department of Education, which also included the State Archives and Records Management Program, the State Historical Commission, and the State Museum. We did work together informally, but I was unsuccessful in developing anything more formal.

From New Jersey, I moved to Rhode Island as the Director of the Department of State Library Services. I remind you that the Internet was not available to most of us at that time, and that electronic communication and documents in electronic formats were just beginning (at least in Rhode Island) to become common. At that time, the library system in Rhode Island was the only comprehensive statewide governmental network that allowed communication and transmission of information electronically throughout the state.

### **Rhode Island Activities**

In 1995, I proposed that the state establish the position of Chief Information Officer with responsibility for both library services and information technology. As part of this effort, I also proposed that the state establish an Information Resources Management Board (IRMB), with oversight responsibility for

developing a statewide information policy. The language of the proposed law was similar to that implemented in Kentucky nearly ten years previously. The Governor and the General Assembly approved the concept and both the IRMB and the CIO position were authorized in the 1996 session. The language of the current law appears on the IRMB website <http://www.irmb.state.ri.us>. The original language specified that the CIO must have a graduate degree from an accredited school of library science. This requirement is common in university settings, where the responsibility for library services and information is often joined under one administrative head. In state government, however, this was the first time this combination of administrative functions occurred, and the requirement for a library degree was included. Unfortunately, the educational requirement was dropped as part of a budget review process a couple of years ago, and it may never be restored.

Because I had been influential in developing the idea of the IRMB and the CIO, I was asked to take on the CIO position, and to be the initial chair of the IRMB. The makeup of the IRMB included state government employees from both the Executive and Legislative Branches (the Judiciary was not included, though in recent years there has been consideration of adding them), local government officials, users of information technology, and representatives of both elementary and secondary education, and the higher education establishment. Note that the name of the IRMB included the term “information resources management”, not just information technology management. This was deliberate, though it continued to be difficult to make sure that all concerned – both the IRMB members and others in state government – understood the difference.

The IRMB early on developed a website to display information about its operations. Its first task was to develop a five-year plan for coordinating the information technology system in the Executive Branch of state government. The current version of that five-year plan together with yearly statements of accomplishments and issues appears on the IRMB website.

I should mention also that I was fortunate that I was able to assign a person who had been the head of library development in the former Department of State Library Services to be in charge of the Information Technology Unit within my administration, so it was possible to inculcate the principles of universal access to information into the Information Technology staff.

### **Accessibility Policy**

Several policy statements have been developed and adopted by the IRMB, of particular interest being one concerning accessibility of state websites by people



with disabilities. This area is a contentious one in the United States, with such organizations as the National Federation for the Blind and the World Wide Web Consortium (<http://www.W3C.org>) mounting national and international efforts to assure that people with disabilities have equivalent access to electronic information. Rhode Island has adopted a policy statement that requires each state government website to be handicapped accessible (“Bobby compliant”) (see policy statements on IRMB website cited above). All state websites have been checked and either found compliant or working on steps to become compliant. Each Bobby-compliant state website contains the Bobby logo (see the IRMB website for an example of the Bobby logo). State library agency staff also convene webmasters from many state agencies to conduct continuing education sessions, to share information on issues, and to assure continuing compliance with accessibility policies.

### **Cooperative Efforts Among National Organizations**

During the past few years, there has been a growing amount of cooperation and coordination among the national organizations responsible for library services (COSLA- Chief Officers of State Library Agencies), information technology (NASCIO – National Association of State Chief Information Officers), records management (NAGARA – National Association of Government Archives and Records Administrators). In fact, the three organizations in 1999-2000 issued a joint statement endorsed by each of their executive boards, affirming their support for a coordinated approach to what has been called a “government information locator service”. The joint statement is attached to this paper (See Attachment C). A government information locator service is a portal for government information whereby the person searching need not know the intricacies of the government bureaucracy, but through a system of metatags can get the name and other information about a given document merely by putting in a few keywords. In Rhode Island, this locator service is called “Find-It! Rhode Island” (<http://www.find-it.state.ri.us>), and is the result of more than 25 state agencies agreeing to metatag all their new documents for easy access. Again, each Rhode Island state government web page has the “Find-It! Rhode Island” logo on it so that users can click immediately to it if they need access to a document.

### **Process in Rhode Island:**

The state library agency (Department of State Library Services - DSLS) was the originator and advocate for a statewide information policy. The first step was to introduce a legislative mandate. We were fortunate that we had the Kentucky law as a model. We were also fortunate that the General Assembly (the state

legislature) was accustomed to having new advisory boards and commissions established and that they were beginning to recognize the need for some update of the information technology available through the state. Also fortunately, DSLS already had a positive reputation with the legislators for moving forward with electronic information, since DSLS had been influential in establishing the statewide electronic library network to which public libraries in each municipality were connected.

The proposal was passed into law during the 1996 legislative session. Once the law was established, we established several ongoing and adhoc committees to work on such items as the five-year plan for information resources management, priority issues relating to policy development, and a staff “working group” to look at issues relating to internal capability to do the necessary work. Another internal group is the Webmakers, which consists of volunteers from the various departments in all branches of state government. This group meets regularly to share tips on how best to present information on the departmental websites, as well as problems individuals have encountered on which they need assistance. This group was influential in developing the accessibility policy adopted by the IRMB, and in making sure that all state agencies were compliant.

What we did not do adequately was publicize what the CIO and the IRMB wanted to accomplish, and get “buy-in” from several of the essential players, particularly those who controlled the funding of information resources. However, we have been able to establish overall statewide information resource management policies, and standards for technology equipment acquisition and use by state government. Access to state government information has increased enormously without compromising internal security.

### **Recommendations:**

Regardless of what agency has or has taken on responsibility for developing an overall government information policy in a specific agency or government, I strongly urge that librarians push their way into the process. If nobody has taken on this responsibility, the librarian should. Keep pushing. In the United States it is often the information technology people who begin the process. Although NASCIO has recently switched its allegiance to information access rather than exclusively to information security, there are still many workers in the field who believe the old mantra that “information is power”, but meaning that “If I have the information, I have the power”, and if I give you the information, you will take the power away from me. Many people also still are convinced that information is a zero-sum game; that is, that if I give you information that I have, I will no longer

have it. It is important to keep pushing the idea that sharing information is a win-win situation whereby everybody benefits.

I also recommend that you get as many powerful allies as possible before initiating any major effort. In most states, the Governor is the most important ally that one can have. In the United States the trend in recent years has been for the Chief Information Officer to be attached to the Governor's office for policy development. In Rhode Island, the CIO/State Librarian was a senior executive in the Department of Administration, responsible for information resource management in all Executive Branch departments and agencies. I was also fortunate that I was able to persuade the Governor to appoint me to his Cabinet so that I could regularly attend his Cabinet meetings. This was most helpful in both my ability to provide information to him, and in my visibility to other Cabinet members, who included the directors of major departments as well as members of the Governor's staff.

Whether or not there is an official CIO in your governmental entity, you should become involved in all discussions on information policy, whether they are initiated by you, by the information technology specialist, the archivist, the records manager, or any other entity. This often means stealthily finding out who is discussing policy issues, and inviting yourself to attend their meetings. It is much easier to be the person initiating the meetings, as then you can direct the subject matter, but if you can't be the issue generator, you must be seen as an essential part of the discussions.

I was also fortunate that, as CIO for the state, I was an official member of NASCIO, and was able to schedule a session at their annual conference on cooperative activities in several states between the state library and the information technology operations. This session turned out to be one of the most popular during that conference, and would not have occurred without a librarian suggesting it.

An important part of becoming involved is to make sure that other players recognize the librarian's expertise in organizing information and putting it together in a form that is easy for the user to find and comprehend. Many governmental entities in the United States are committed to the idea of a "portal", but without the kind of analysis and understanding that librarians have always been expert at, these portals can be just as incomprehensible as government information has always seemed to lay people.

So my strongest recommendation is, as the National Organization for Women used to urge its members,

**BE THERE!**

This is the most important recommendation that I can make. Be sure that you are notified of every meeting that discusses information policy, and get to be known as the information policy advocate. To the extent possible, try to be the originator of those meetings. That way you will assure that you are involved and have a leadership role in your government's information policy development.

Finally, I would like to quote from the poet T. S. Eliot, in his poem *Choruses from "The Rock"*:

“...Where is the wisdom we have lost in knowledge/  
Where is the knowledge we have lost in information...”<sup>2</sup>

Librarians are the advocates for maintaining the path to wisdom through knowledge and information.

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<sup>2</sup> Eliot, Thomas Stearns, The Complete Poems and Plays 1909-1950, p. 96; Harcourt 1952.

## ATTACHMENT A

### Websites with Links to Government Information Policy

#### **Federal**

<http://www.firstgov.gov>

Portal for access to federal and some state government information

[http://www.gpo.gov/su\\_docs/](http://www.gpo.gov/su_docs/)

Policy and other information relating to federal depository libraries

<http://www.itpolicy.gsa.gov/>

Includes links for federal accessibility policy, membership of the federal CIO Council, and many information technology policy documents

#### **Other National**

<http://www.ala.org/washoff/patriot.html>

- Contains detailed information about the USA Patriot Act and issues relating to information access as a result

<http://www.ala.org/oitp>

- Includes draft principles concerning libraries' role in information policy development as well as much other valuable information

<http://www.w3c.org/WAI/>

- Contains information relating to accessibility issues. WAI stands for Web Accessibility Initiative.

<http://www.arl.org/info/frn/gov/govtoc.html>

- The Association of Research Libraries' website includes up-to-date information on issues relating to access to government information following the September 11, 2001 terrorist attacks.

<http://www.cosla.org>

Contains information about the 50 state library agencies in the US.

<http://www.nascio.org/aboutNascio/profiles>

- Contains links to state websites, many of which include state information policy statements

<http://www.nagara.org/publications.html>

- Lists publications of NAGARA, many of which include policy statements relating to government records

## **State of Rhode Island**

<http://www.RI.gov>

- Portal for state government information and interactive online government transactions

<http://www.irmb.state.ri.us/policies.htm>

- Official website for the Information Resource Management Board policies

<http://www.info.state.ri.us/minimumstandards.htm>

- Contains Minimum Standards for Rhode Island Websites to assure accessibility for the largest possible audience

<http://www.find-it.state.ri.us>

- Portal for published state government information

## **State of Kentucky**

<http://www.kydirect.net>

State portal for access to interactive services and information

<http://www.kdla.state.ky.us/links/govtech.htm>

- Links to sources of information and policies relating to information technology in Kentucky and elsewhere

## ATTACHMENT B

### Joint Statement Adopted by COSLA, NAGARA, and NASIRE

#### ***ELECTRONIC ACCESS TO GOVERNMENT INFORMATION THROUGH GOVERNMENT INFORMATION LOCATOR SERVICES***

As technology continues to leverage human effort in new, exciting, and productive ways, citizens increasingly look to their governments for additional information, services, and assistance in accessing government information. This complex set of services requires expertise in the structure and nature of information, hardware and software applications, and the dynamics of public service. Access to government information is most effective when government officials with these specialties join forces. In recognition of this desired collaboration, the membership of Chief Officers of State Library Agencies (COSLA), National Association of State Information Resources Executives (NASIRE), and National Association of Government Archives and Records Administrators (NAGARA) formally express their desire to collaborate in ways that make best use of their talents and skills, to insure broad and effective electronic access to government information.

**As part of achieving this goal, we jointly recognize that:**

1. Public electronic access to government information is a priority to which governments must commit. Government agencies must cooperatively pursue opportunities to increase and enhance public electronic access to information. Government information locator services are an effective approach to connecting people with their governments. For such an effort to succeed requires standards in content description, hardware and software, and the life cycle of information. The most successful programs proceed when professionals in those areas work closely together to deploy a superior product.
2. Successful access requires the application of the specialized and complementary disciplines and skills of library science (content management), technology (equipment and software management), and archives and records management (information life cycle). Partnerships among these disciplines are vital.
  - State library agencies have a role in assisting agencies to publish, inventory, and index public information. They lead in the dissemination of government information through indexing, abstracting, and research services and training the public in the use of technology. Their expertise in direct public service is critical in the design of projects, services, and software applications.
  - Central information technology agencies have a role in determining or designing the hardware and software applications that most effectively connect citizens with information. They exert leadership in determining software and hardware standards and in helping train agency personnel in the application of technology to agency operations and services.
  - Archives and records management agencies have a role in managing government information through its life cycle. They lead in setting information management standards, assisting agencies in information management, and training agency personnel in information management.

**Given the principles above, we jointly conclude that:**

1. States should pursue government information locator services within a fully collaborative partnership among state library agencies, information resource agencies, and state archives/records management agencies.
2. State librarians, chief information officers, and archivists should work together to develop indexing standards and controlled vocabularies. Such efforts will maximize interoperability among government information locator services systems and enhance wider discovery of information by citizens.

--Adopted by COSLA — October 1999

--Adopted by NASIRE — January 2000

--Adopted by NAGARA — January 2000

**“NATIONAL INFORMATION POLICIES: THE ROLE OF  
GOVERNMENT LIBRARIES IN INFLUENCING,  
DEVELOPING AND IMPLEMENTING THEM”**

**BUILDING ON SURE FOUNDATIONS: THE OVERLOOKED  
DIMENSION OF NATIONAL INFORMATION POLICIES**

**By Alan E. Smith**

**Abstract:** National Information Policy (NIP) proposals from the library profession in New Zealand should in theory fit well with government strategic goals for a “knowledge society”. In reality, national information policy has never been an issue on the “public agenda” in the way in which, for example, environmental policy has been.

What NIP debate there is has now been subsumed by the IT industry who have succeeded in making it an issue of investment in systems and networks, rather than in knowledge content *per se*.

The accumulated knowledge content of libraries in New Zealand is a national resource. It risks being overlooked as “knowledge society” attention focuses on technologies.

Formal NIPs are of doubtful value given the context of information use in a dynamic mosaic of law, business practice and cultural belief. Together these provide a viable framework for the enterprising creation and use of knowledge and no added-value unique to a formal national information policy has been demonstrated.

“The knowledge wave” is the politically-correct phrase of the moment in New Zealand. It encompasses the more formal “knowledge society” (with its connotations of a positive enthusiasm for learning) and “knowledge economy” (with its connotations of value-added products and services building national wealth). It also encompasses, in a general way, the rather more bureaucratic concepts of “national information strategy” and “national information policy”.

All these terms have a power of their own deriving from the words used, from the standing of those who assert them, and from the context in which they are used. Some reflection and analysis, however, exposes the unsettling reality that knowledge (and/or information and/or data) has always been inherent in human development. The whole structure of societies or of economies, whether at the global, national, regional or local level, is based on individuals communicating



with each other, on recording ideas for later use, and on arriving at decisions or at new thinking by interpreting (poorly or well) the communicated ideas.

Hence the growth of language, of symbols and, later, of alphabets and grammar, hastened along by printing, and then by broadcasting, and now by digital networking. There is a knowledge wave (i.e. a clearly observable surge of activity, or increase in size) caused by the latter – but it is only the latest of a continuing series of waves which have occurred over the centuries.

As societies consolidated into units of sovereignty and, over the last two centuries, into nation states interconnected by regional or global alliances, information frameworks developed. In New Zealand these frameworks have followed the typical “western” pattern and are codified in expressions such as: laws for copyright and patents; privacy and official information statutes; rules of judicial evidence; national archives and libraries; treaties such as WIPO; and the commercial law enabling news media, publishers and investors to trade ideas and knowledge.

The purpose of this preamble is to emphasise that in New Zealand, as in most if not all other parts of the world, strong frameworks of law, convention, and policy exist and continue to develop, to enable the creation and use of information and knowledge. In New Zealand these can be considered holistically to constitute a “national information policy” except that it has been arrived at incrementally rather than as a single strategy. The absence of this single strategic intent does not reduce, or deny, the strength, vitality and effectiveness of this mosaic of information exchanges. Just because a bundle of community activities has not been formally cloaked in a “policy framework” of the type favoured by advocates of “National Information Policies” does not mean that an effective, continuously developing policy environment does not exist. Indeed, one of the real dangers of seeking a single “National Information Policy” is that, by necessity, this would prescribe parameters and boundaries: things which are utterly inconsistent with the historical development of human knowledge and of its all-persuasive communications. The reality is that the only real examples of “National Information Policies” - policies legitimised by the State as the authoritative framework for behaviours and sanctions - are those of dictatorships which sought to restrict what information their populace could safely access.

Knowledge is an all-persuasive, gloriously porous material and any policy seeking, as any robust policy must, to define and scope it will (on the evidence of history) be doomed to failure.

Evidence of the failure of attempts in New Zealand to develop viable “national information policies” can be found in the distinct lack of interest in the concept at either community or political levels. In short, “National Information Policy” has never become a “public issue” (other than in sporadic instances over censorship) in the way in which “Environmental Policy” or “Defence Policy” has. Beyond the buzz-phrase level of “knowledge society”, it has not become an item on the public agenda – partly because it is not seen to be “an issue”, and partly because the existing structures enabling education, communication, publishing, the understanding of heritage, the protection of personal privacy and all the other aspects of “information” are self-evidently in place, are working as well as could be reasonably expected in a modern nation of nearly four million people, and are capable of continuous incremental improvement.

Libraries exist as one element in this existing mosaic of “information policy” and of the “knowledge society”. In New Zealand, a small and geographically isolated nation, hundreds of libraries exist and have done so for decades. Millions of dollars of public and private funds are invested in them annually because they are perceived to be useful, effective, and worthwhile.

They all interconnect with each other in various ways, from structured management frameworks through to informal associations and co-operatives. All interconnect with other libraries internationally and with the huge global resource of knowledge enabled by the publishing industry. There is a valid case for increasing this investment in libraries, and for improving policies and systems. It is a case worth asserting, both at the institutional and at the national (network) level, because of the increased amount of knowledge content that can consequently be made accessible. Such increases and improvements will occur as part of the normal business and political process – a “National Information Policy” would not of itself lead to such improvements.

Since the 1980’s, the case for a “National Information Policy” (and its more recent alternatives “National Information Strategy”, “Knowledge Economy” etc) has been asserted by certain elements in the library sector, and has now been formally taken up by the professional association LIANZA (1). Also since the 1980’s, investment in libraries has continued to grow broadly in line with demographic and economic trends – but it has not required a “National Information Policy” to achieve this – the “Policy” already exists as a mosaic and as a dynamic enabling environment. The campaigns and policy development for a coherent National Information Policy have failed thus far to demonstrate what actual added-value it would add to this reality. What appears to have kept the policy campaign alive, in the face of such

failure, is its adoption, and its adaptation, by the information technology (IT) industry.

Any discussion of “information policy” now quickly brings to the forefront terms such as “databases”, “networking”, “digitisation” and the prefix “e-“ in front of any other word for which emphasis is sought. Technology factors, from computers in schools through to national broadband networks, have succeeded in crowding out knowledge content in such debate as there has been.

It is content, however, which has historically been the resource which has made the real difference to understanding, to learning, and to the creation of new knowledge. “Knowledge is a collective accomplishment, where new knowledge is conditional on what has come before, is rarely if ever generated by an individual in isolation, and is inflected by the cultural, institutional and physical settings in which it is produced” (2). The history of libraries has been the history of valuing knowledge for its own sake, and of making it possible to compare, contrast and to challenge records to create new knowledge. In a “digital age”, the potential ways in which new knowledge is created out of exploring and challenging the “facts” of the present are, demonstrably, increased enormously. Decades after MacLuhan first coined the phrase; the “medium” of IT and of telecommunications has become the received “message” of national information policy thinking. The place of content is, by comparison, marginalized. In the New Zealand strategy paper (1), the critical role of publishers, retailers and editors is briefly dismissed in s. 2.4.1. (iii) as “who simply [sic] reproduce and package works for knowledge content distribution”. Freedom of the press, surely at the heart of any consideration of national information, gets no mention at all.

The library profession has been quick to question and to challenge the success of publishers such as Elsevier who have sought to bring value-added information to the marketplace. In contrast the profession has all too often been muted about the indifferent outcomes of the numerous IT-based projects which have failed to achieve their goals.

In embracing information management theory formed in either IT-based “information systems” work or in register-type applications, national information policy advocates in New Zealand have all too often minimalised the value of the core asset – the accumulated resource of recorded knowledge. The recent history of government libraries over the last two decades, when public policy in New Zealand has been to “roll back the state” in favour of corporate structures and of competition theory to resolve most issues, has been typified by a widespread culling of collections, and of the organizational memory which understood them. This appears to have gone well beyond the pragmatic elimination of unnecessary

duplication, and has even extended to the fragmentation of the previous inter-lending scheme which enabled, in an equitable way, the library resources of the country as a whole to be utilised to the fullest extent. In a curious way, resource-sharing has become more difficult organizationally at the very same time as the means to facilitate it have improved. The subsequent closure of some government libraries, and the subsuming of others within IT-driven Information Centres, provides evidence of the failure of this policy of reductionism to ensure their viability.

Yet it is in the latent value of the resource of collections (using the word in its fullest sense to encompass content in all formats), the outcome of investment in knowledge over decades, that the distinctive competitive advantage of government libraries lies. No other sector of the information industry has the professional skills or perception to recognise this value, or to leverage it. On the eve of his retirement this year, the Chief Executive of the National Library of New Zealand noted: “The more sources of information in the network then the richer the content. For a small country like New Zealand there are huge benefits from having the information resources of the country all within a network. The country then has the ability to know itself, capitalise on its unique character and identity and use this to enrich its population through increased knowledge of itself and the world. At one end of the scale national and international networks enable entrepreneurs to convert knowledge into commercial enterprise. At the other, artists, researchers and scholars create meaning through knowledge and New Zealanders have easy access to all types of information as a part of their everyday lives.

If these ideas are important to our necessary sense of place in the modern national and international environment it is essential that New Zealand’s library sector does all it can to increase and expand its resource sharing and networking. All parts of the library sector need to think through their contribution and open up their resources in ways that make the information fabric of the country an essential element in its future success”.(3)

The challenge now is for government libraries, and others, to identify and leverage their own rich content so that the networks referred to can deliver the fullest return on their investment.

The accumulated historical record is the overlooked dimension of national information policy thinking. Much of it exists only in print formats and so is all too often presented as lacking the appeal or ease of digitised content, and thus of being of lesser inherent value. The creation of new ideas, of new products and of new forms of community all depends on understanding the present - and the past - influences and beliefs which shape them. This is not an easy business, nor has it

ever been, as the tradition of rigorous academic scholarship shows. An IT-based view of national information policy will inevitably be skewed towards the medium and not to the content. It is content whose accessibility and understanding is the essential underpinning of any viable “knowledge society”. Without a firm basis on, and primary commitment to, the value of content, national information policy and its associated rhetorical terms look set to be a formless chimera. If government libraries in New Zealand do not show leadership in leveraging this overlooked dimension, they are in danger of losing what strategic opportunity they have to influence policy development and investment towards a sustainable “knowledge society”. That strategic opportunity is to champion content, and to assert the value of the accumulated records of knowledge created over time.

Unless government libraries themselves model this principle in the ways they work and in the ways they allocate their resources, they will be unlikely to differentiate themselves from the many other policy advocates asserting that knowledge-based development will result from more databases, more bandwidth and more e-words.

To asset a “Knowledge Society” is not only to set a desirable social and economic goal. It acknowledges that the world has moved from an “industrial” to an “information” economy; and that this move is probably inexorable. What this conference paper argues is that this knowledge-based future:

- 1) is not characterized only by massive investment in IT infrastructure.
- 2) is not in essence different from the past evolution of human society, which has always used and created knowledge to survive, to prosper and to grow.
- 3) is not dependant on a formal policy structure at the national level. The continued incremental development of educational, cultural and commercial principles will allow knowledge growth so long as policies which might impede the free flow of ideas are resisted.
- 4) is, above all, based on a respect for, and appreciation of, knowledge content as the key driver.

Libraries have for centuries been effective champions of content, and the collective resources of the libraries represented by IFLA are a critical component of any knowledge-based futures.

The tendency for these knowledge-based futures to be positioned as (a) a matter of information technology and (b) dependent on formal policy frameworks can result in actual content being the overlooked dimension.

## **Conclusion**

The theme of this conference session is the role of government libraries in influencing, developing and implementing national information policies. The key influence will be the observable behaviour and belief set of the individual library. Government libraries have a role to model the value of the information mosaic built up over time and across cultures. If they are seen to marginalize the value of pre-digital recorded knowledge, then that resource will become the overlooked dimension of the policy. Apart from libraries, there are very few if any agencies of government which understand the social significance of the accumulated resource of knowledge in the public domain.

A powerful contribution which government libraries can make to policy development for national information policy is to assert the enduring values of librarianship: drawing together different knowledge formats, covering all shades of opinion, in a structure which enables the end-user to challenge, and to be challenged by, a range of differing data. An apparently inevitable trend of IT-based systems is that they encourage a more homogenous view of knowledge; that all the units of information are somehow variants of the same thing and can be disaggregated into interchangeable components.

Left to itself, this could result in national information policy becoming little more than a formal framework for the interchange of statistical or personal data between citizens and the various agencies of the state. While this may result in some operational efficiencies, it is not of itself going to build at the national level an appreciation of knowledge as the source of creativity. It is entrepreneurial creativity which is seen as the necessary pre-condition by those advocating “the knowledge society” as the right strategic path for New Zealand.

Finally, government libraries need not subscribe to the view that national information policy requires formal expression. Viable national information policies, uncaptialized, can be formed from the continuous interaction of knowledge-based activities, risks and opportunities. These are the actual conditions under which the creation of new knowledge in and for New Zealand will grow. The library role of gathering together knowledge, and then of enabling meaningful access to it, so that this climate of creativity can flourish, is a precious one and has been proven over decades to work. Creativity will be impeded if IT-skewed thinking marginalizes the knowledge itself to the point that it is allowed to become the overlooked dimension.

## References

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# **SPEAKING NOTES – EFFECTIVE AND RESPONSIVE NEEDS ASSESSMENT\***

**By Bob Gardner<sup>1</sup>**

## **Contents**

### Introduction

- What is Needs Assessment?
- Be Prepared to Act
- Start from Strategic Priorities

### Range of Methods

- 1: Capture anecdotal information from Members wherever you find it
- 2: More proactively, ask for feedback on your services – and make it easy
- 3: Look for systematic ways to canvass clients
- 4: Pilot test all new service or product initiatives
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- 7: Do intensive interviews to answer specific questions
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### Conclusions: Client Insight Into Action

## **Introduction<sup>2</sup>**

Why bother about client needs assessment research – aren't we in the business of providing direct services? In fact, I think understanding client needs is the

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\* Paper presented at the 68<sup>th</sup> General Conference and Council of the International Federation of Library Associations and Institutions, August, 16 – 24, 2002 in Glasgow

<sup>1</sup> I am the Director of the Research and Information Services branch of the Ontario Legislative Library. Our teams of lawyers, economists, political scientists, environmentalists, public administration specialists and librarians provide confidential, non-partisan research and reference services to Members of all parties and all Standing Committees of the Assembly. The Library also delivers a range of electronic products 24 X 7 to clients' desktops through an Intranet. I was previously an academic and have a Ph.D. in sociology.

<sup>2</sup> This paper was developed as speaking notes for a panel on client needs assessment in the Research and Library Services for Parliaments section at IFLA 2002. The panel began with a colleague from the Australian Parliamentary Information and Research Service discussing the comprehensive consultants' survey they do with their Members every 3 years. I followed, and my role was to outline other less costly and intensive methods that could still yield sound actionable information on client research and information needs, satisfaction and preferences. While my library also does intensive interviews like the Australians, my brief was to highlight options that libraries with far less resources could consider, and to illustrate that, whatever our resources, we all have to undertake some kind of needs assessment to guide our strategic planning and service delivery. I was followed by colleagues from Northern Ireland on the difficulties of needs assessment in a new legislature and from Namibia on doing this work within limited resources and in a very different cultural and political context than Australia, Europe or Canada.



essential foundation of good service delivery. We all have broadly similar mandates of providing research and information services to help our Members and legislatures do their work. And we all see ourselves as client driven. This means we need to know what services our clients need and how well the services we are providing actually meet those needs.

Is needs assessment something that only the richer parliaments can afford? Are comprehensive studies and consultants a frill or luxury beyond most of us? While we all have to live within our means, I think there is a wide range of effective needs assessment we can do within limited resources.

Before outlining some of these methods, here are a few starting points:

### **What is Needs Assessment?**

- I think needs assessment has three critical components:
  - a well-thought out strategy to identify what we need to understand about our Members' research and information needs, expectations and preferences;
  - a range of reliable, effective and appropriate methods to find this critical information; and
  - just as importantly, ways of building what we learn into all stages of our strategic planning and service development.
- There are really two separate issues here: **assessing** what services and products Members need, and **evaluating** how well our services are actually meeting those needs. The balance will vary: if we are considering a new service, then we need to assess how strong the need for it is; if we are reviewing established research services, then we need to evaluate what Members think of the services and how effectively we are providing them. In practice, research and feedback from clients can serve both assessment and evaluation purposes.
- Our methods must be:
  - **reliable** – yielding information on our clients that is sound and useful, that we can confidently act on;
  - **effective** – so that we don't have to devote too much of our scarce resources to finding out this information; and

- **appropriate** – geared to our unique political environments; absolutely confidential and not intrusive on our busy Members.
- I will be emphasizing a wide range or **continuum** of methods. I think we never want to rely entirely on one or a few methods. The real value of such a continuum is as a whole; by researching client needs and use in different ways and getting feedback from different sources, we gradually build up a sounder overall picture. It also allows us to adapt those methods that best suit our resources and situations.

### **Be Prepared to Act**

- We should only do needs assessment research or ask for feedback from Members if we are serious. We have to be prepared to act on what we learn. We may very well be raising their expectations by simply going to them.
- And that means that we have to organize ourselves to be able to feed the knowledge we gain from clients into our service planning.
- I like to think of continuous **planning loops**: research to understand what Members need → which guides our strategic planning and priorities → which guides which services we develop and how → we then evaluate how well the services are working from the clients' point of view + monitor ongoing client feedback → to guide continuous refinement and improvement of the range of services we provide.

### **Start from Strategic Priorities**

- We need to start from our strategic situation → that determines what we need to know
  - for example, if you are going to develop an Intranet, you need to know if your Members have the infrastructure and skills to benefit from electronic products and resources, and to determine which products to develop, you need to know what information they need most;
  - if you are planning to offer research services to committees for the first time, you need to know very concretely how your committees do their work, what their major priorities are (legislative drafting, financial oversight, accountability, policy development, etc.), what analysis they need to support these priorities and activities, what specific services are going to be most valuable to them, etc.;

- new Research Services face the quite fundamental questions of what info and analysis do their Members need and what research do they provide to meet those needs?
  - on the other hand, in more established services, we think we understand our Members' information needs (however imperfectly). But we still need to check that our understandings are sound, and we need to know how our Members' expectations and practices are changing. Plus, even if we think we understand their needs pretty well, the real challenge is to make sure we are actually meeting those needs. So established institutions may be focussing more on evaluating the services provided than assessing needs.
- What we are also doing is separating out what we absolutely need to know to achieve our strategic priorities from what it would simply be nice to know.

### **Range of Methods<sup>3</sup>**

Once we have identified the key things about our Members we need to understand better, how do we go about finding out? How can we do effective needs assessment within the resources we have?

I am going to outline eight ways of getting critical information on Members' needs, expectations and service use; some of these methods are both cheap and effective. I don't mean this to sound like the kind of simplistic prescriptions we see in business writing (the six characteristics of effective presentations, the four keys to personal financial success ..); rather that these are some options to think about. I'll give a few concrete examples of each; and other colleagues will be able to fill in many more.

**None of this is meant as a blueprint:** we all have to adapt methods that work in our particular situations.

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<sup>3</sup> This range is not going to be equally relevant for all libraries. Parliamentary libraries and research services are special libraries in the usual sense; plus our clientele of elected representatives operate in the information rich, competitive and unique environments of legislatures. Many parliamentary libraries, such as my own, also have units or departments of specialized research analysts. Some legislatures have research departments institutionally located outside of their libraries. My Library serves 103 Members, who combined with their parliamentary and constituency staff, comprise a primary client group of about 500.

These various types of needs assessment and service evaluation are set out roughly:

- from less to more rigorous in methodological terms;
- from less to more costly or resource intensive;
- but not necessarily from least to most effective.

I think that effectiveness and reliability comes from pulling together the results of different methods, as well as from effective design and implementation of individual projects.

<b>Needs Assessment Equation</b> what you need to know + available resources (all in the context of your particular parliamentary environment) → how you find out
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## 1: Capture anecdotal information from Members wherever you find it

- We all have a source of information on Members' expectations and service use that is free and easy to find – **talking** to them and their staff. Part of our job as managers is keeping in touch with Members and their staff anyway; all we have to do is record what they are saying.
- A related and easy method is **to tap staff intelligence**. Front-line staff are in constant touch with clients and over time develop a good overall sense of what clients are doing and thinking. For example, my Branch has recently had a series of front-line staff forums on such topics as client and staff use of our Intranet products and client misperceptions about our services. (I used to use a written questionnaire to canvass staff impressions and observations but semi-structured focus group-type settings have yielded far richer information.)
- We might rightly hesitate to rely on such anecdotal information because it is not seen as rigorous or scientific. But I think that systematically collecting and correlating comments, suggestions and other tidbits from clients can be a rich source of insight on how they actually use our services and see us.
- Interpreting and using anecdotal information is a methodological challenge:
  - the main danger is that the people you are hearing from are not representative of all your Members – especially if they are your most frequent users;
  - so we need to also find ways to hear from Members that don't use us as much. A strategic priority may be to find out why and to correct any problems or barriers. This can be done through the various interviews and other means outlined later;

- another danger is that anecdotal input is by its nature partial – only on the issue the client is interested in at the time as opposed to our overall range of services;
- we also don't want to over-react to every good idea or suggestion from individual Members – we are really interested in understanding patterns and seeing trends;
- We certainly have to be aware of the methodological limits of what we hear from Members, but that does not mean that the information is not useful:
  - one major advantage of open-ended conversations with clients is that they may tell us things we didn't know that we didn't know, or don't want to hear, or never would have imagined for ourselves;
  - so, listening to Members can be a source of tremendously rich insight on how they perceive our services, but it is only one source among many and we do need to test these insights against more rigorous methods.

## 2: More proactively, ask for feedback on your services – and make it easy

- Our friends at Parliamentary Research in Ottawa include short **response forms** in every project they send out to Members. The response rate is a very good 45-50% and the results provide an ongoing indicator of overall satisfaction and many specific comments.
- My Library has **feedback buttons** all over our Intranet site and on specific electronic products. We occasionally put short questionnaires up: e.g. are clients using a new search engine we put on a Bills product? are they finding it useful? any suggestions for better presentation? The response rate has not been high, we think because clients are so busy and want to use the electronic products quickly and get out again.
- Many parliamentary libraries have comments, complaints or **suggestion boxes**.
- I personally think that having these feedback opportunities widely available is important even if there is not a high response rate and they do not yield that much useful information. We can constantly emphasize to clients that we are really interested in hearing from them, especially on gaps they see in our services and any suggestions for improvements.

- Hearing from lots of different clients in these many ways – even if still anecdotal and unstructured – can reveal consistent patterns over time. But to identify these patterns we need some **systematic tools and processes**:
  - we need to record the feedback we get from clients and our observations on clients in an organized way;
  - we then need to analyze these many bits of information to spot patterns and connections
  - this collection and correlation can be much easier if you set up a **database**, which can also link to results of more structured research methods to be discussed next. Australia has a ‘bouquets and brickbats’ database;
  - but if that isn’t possible, we can all make notes, review them regularly (which, of course, is also the trick with a database – the most sophisticated databases are useless if we don’t review the results), make reporting feedback from Members a routine part of our staff meetings (when my branch has a go-round of current client questions, I want to hear not just what the questions were, but what the clients said about how the project worked out).

### 3: Look for systematic ways to canvass clients

- To get beyond the methodological limitations of anecdotal information, we need to conduct more systematic research with clients.
- My Library has developed an example of small-scale structured interviews; what we call **contact point** research. We wanted to take advantage of the place where we most often interact with clients – when they call in questions to our phone reference desk.
  - after the client makes their request, we ask them if they can spare us a minute. We then pose one or two simple and structured questions (we have a supply of question sheets at the reference desk and the librarians simply record the responses on the sheet).
  - most clients were happy to answer the few questions. Those who were too busy didn’t seem to resent being asked and often said they would answer next time they called.
- This can be an easy and non-intrusive way of getting a significant number of responses fairly quickly from a reasonable sample of users (which remember, may not be the same as all Members). For example, we have used this method to estimate use of our Intranet site and products. By repeating the same process every few years, we can identify trends. We also record impromptu

remarks and have gathered quite a number of useful suggestions for product improvements.

- This is a method that could be adapted by any service, even those with very few resources. But not for complex issues: because we are using a busy service point and busy front-line staff, we can ask only a few straight-forward questions.
- There is another source of systematic information that we all keep – **service statistics**. Stats are good ways of spotting trends in demand for services (if particular Members stopped using our services, we would want to explore why), for measuring client activity in more quantitative areas such as hits on Intranet products (if one product was used 50 X more than another), and for helping us determine where to concentrate our efforts.
  - There is a danger in collecting stats on everything we do or just because we always have. Stats are only as good as the planning that goes into deciding what to collect and for what purposes. We only want those stats that help us plan and monitor service delivery. And we don't want to have to put huge amounts of time into collecting them.
  - Where they can be very useful is as part of strategic planning: we identify our top priorities for the next few years, devise indicators to show how successful we are, develop stats to measure these indicators, and use them to evaluate how well we are doing against our priorities.

#### **4: Pilot test all new service or product initiatives**

- **Pilot testing** can be a cost-effective method of yielding actionable information, is absolutely essential to service planning and development, and can also be done on a small scale.
- Whenever we are considering or implementing a new service we need to know: Is the new service going to be of value to clients? More specifically, is it going to be valuable enough to justify our allocating staff and other resources? Once rolled out, are Members using the new service the way we anticipated? Are there changes we need to make to the pilot version of the services to better meet client needs?
- We can go to clients to assess if there is a gap in our services which the potential new service is intended to fill. But the main danger of simply asking clients about a new service is that they are likely to say yes uncritically, especially if it is something entirely new that they find hard to visualize;

- one technique is to present clients with a prototype of the potential new service and ask them if and how they would use it;
  - another is to pose our usual service dilemma to them starkly: “ all right, you will use this new service X, but to do X what should we drop – Y or Z?”
- An electronic variant is **usability research**. This involves sitting clients down in front of a computer and watching them actually use our site and products (e.g. we ask them to find certain information and observe how they go about it, or how they move about within the structure of a particular product). This shows us how clients actually use the products, as opposed to how we thought (or hoped) they would in our planning. It is absolutely crucial to fine-tuning our site and product design and making sure that the products really are useful to clients. This methodology requires quite small samples and sessions of less than an hour, so doing usability research need not involve a huge investment in time. I think it should be an essential part of any development of electronic products.
  - We can also follow-up new service initiatives. For example, my Library has been providing more value-added services from our librarians: rather than just a package of key articles and reports, a memo synthesizing the material; rather than copied pages of financial data from various years, a table highlighting the key trends; rather than a list of Internet resources, a memo sent electronically so that the links are hot and the client just has to click to get to them. We will be calling a sample of Members’ offices who have received such projects to ask how useful the value-added features were to them. In other words, we think these enhancements make sense, but we need to see how valuable they are in the clients’ own terms, how well their particular purposes are met.
  - All of this requires us to be hard-headed as managers. We have to be prepared to cancel what we thought (or hoped) were going to be good initiatives if they aren’t being used by clients or aren’t seen as valuable enough to justify the resources put into them.

## 5: Look for captive audiences

- By this I mean people who are around the legislature and easy to interview, and who are either major users themselves or know about Members’ use. To be blunt, these are people who feel obliged to help the Library out.
- Ontario, like other parliaments, has an **interns** program in which recent graduates work in the Assembly for a year to experience the legislative



environment and enhance their skills. We interview them every spring, with a mixture of general questions to help us understand Members' overall use of Library services, and more focussed questions on specific issues we may be considering at the time. The interns have several critical advantages as a source of information: they alternate a term with a government and a term with an opposition Member, so that the 8 interns can tell us about 16 client offices; they do significant policy and legislative work in these offices, which we are particularly interested in; they are themselves sophisticated information and research users (partially because we train them), so they are good examples of more high-end users, especially of electronic products; and because we have now interviewed them for five years, they have become an invaluable source for historical comparison. It is also fairly easy to impose on them because one of our Research Officers co-ordinates the program.

- Speakers, Clerks or public relations offices in our legislatures often ask for background papers for Members attending parliamentary or other conferences, on jurisdictions Members are visiting, on the home countries of visiting delegations, or on other legislative issues. We can ask the colleague who co-ordinated the conference or visit how the papers worked out.

## **6: Regularly check in with key stakeholders**

- **I interview committee chairs** at least once in the life of each parliament. My goal is to ensure they are happy with the services we provide them and to see if there is anything they would like to change or improve. I always take the opportunity to ask them what they think of Library research and information services and for their general suggestions for enhancements; adding to our overall picture from another 15 or so key Members.
- In our Assembly each party has its own research staff. I tend to meet with their heads each summer in the quieter period between sessions. As with the interns, the **caucus researchers** have worked very closely with the Library over the years and it is in their interests to let us know what they need. As with the Committee chairs, I want to check that our services are meeting their particular needs – generally very demanding, with tight deadlines, and intensive use of subscription databases and other electronic resources. They are also a good general source on how Members from their caucus are using Library services and have had good ideas over the years for service improvements.
- **Exit interviews** with experienced staff. A methodological problem with any interview is that if you are seen as nice and responsive (and all researchers

are!), then clients sometimes may not want to hurt your feelings by seeming to complain. An advantage here is that people leaving can sometimes be more frank.

## **7: Do intensive interviews to answer specific questions**

- One critical means of more systematic research which can yield extremely valuable results is personal interviews. To be effective, we have to consider a sample that is large enough and balanced enough (this will vary for our different parliaments, but generally includes by party, region, experience, offices held within the government or legislature, etc.) and with a question framework that will yield reliable responses. Interviews can be informal or more structured, use fixed questions or be more open-ended, and can focus on specific issues or be designed to yield broader information on clients' overall service use, expectations and perceptions.
- Interviews with a reasonable sample and tightly focussed questions can be used to answer specific operational or planning questions. These can be short – 20 minutes or so – and can be done over the phone if we can't pin busy Members down.
- One example we did several years ago involved newly elected Members. An election was expected within the year and we were beginning to plan our client relations campaign to the new House. We wanted to know what kinds of information and orientation rookie Members needed. We interviewed a sample of Members first elected to the current parliament about their experience when they arrived. This yielded practical and rich info which we used to guide our planning for the next cohort of new Members; for example, they said the first few weeks were incredibly hectic, they were bombarded with paper, and suffered from information overload; so we concentrated more on personal visits *after* they were settled into their offices.
- Sometimes the research is, in effect, commissioned by other branches or units within the Library. For example, colleagues in our Information Resources branch were considering enhancing our electronic press clippings. Did Members want more newspapers included or to have the database go back more than the current year; either or both would require increased licensing costs. We interviewed a sample of Members and staff and found that while both options would be nice, they did not value them that highly. We decided not to enhance the database in these directions and saved a considerable amount that was allocated to other resources. In these ways, client research

can be used as a key decision-making tool by managers throughout the Library.

- I haven't been mentioning the traditional written questionnaire. Probably most of our libraries have mailed out a standardized and mostly quantitative set of questions in which clients are asked to tick off pre-determined choices or rate services on a scale. I actually don't think such highly structured surveys yield the nuanced information we need.
  - But written fixed choice questionnaires can be useful for specifically focussed issues. For example, we use short questions at the end of client training sessions to evaluate how useful the training was and identify further areas clients want covered.
  - Short questionnaires can also be a useful starting point in sunset reviews of services. We have recently sent questionnaires out with a paper status of legislation product. We want to discontinue the print version because we have a far richer electronic product on the Intranet and it takes considerable redundant time to produce, copy and distribute, time we would like to re-allocate to other services. We gave Members several yes/no choices on discontinuing and asked them to write in any specific things they like about the print product or reasons why we shouldn't scrap it. We are getting enough responses favouring the paper product that we may have to keep it. But we may change it to a subscription service (at the moment it goes to all Members automatically) to save production resources.
- This type of research highlights that when we ask clients for specific advice and direction, we had better be prepared to respond to what they say (sometimes even when we aren't doing everything clients wanted).
- We also want to use such specifically focussed research to build up our bigger picture of Members' needs, information use and expectations. In the case above of investigating preferences for electronic press services, we were also able to obtain useful information on how clients were using our Intranet and other electronic resources more generally. In fact, it is valuable to end even very focussed interviews by asking Members and their staff if they have any overall comments, especially any suggestions on new services or things we should be doing differently.

## **8: Be as comprehensive as resources allow**

- At the most intensive end of the continuum of assessment methods, a comprehensive set of **in-depth interviews with a broadly representative**

**sample** of Members and their staff can be tremendously useful. It will yield more nuanced and reliable information than smaller-scale projects. It can serve as a benchmark on changing client use and expectations, and as a standard against which we measure our own performance. A great deal of research and literature has been developed on public sector service quality research that can help us plan such projects.

- We like to do a series of such interviews in the mid to late period of each Parliament.
- This is the time to get in outside consultants if you can – highlighting another methodological issue. It is not appropriate for managers responsible for particular services to be evaluating how well they are being delivered; clients will not perceive them as objective and may not be frank with them. External consultants may also have interviewing and analytical skills that you don't have in-house.
- There is another methodological – or rather interpretive – issue that even the most sophisticated research must take into account. We can get reliable information on what Members and their staff want; that is, what they think they need. But that is not always the same as what they actually need. We are the research and information professionals, and part of the key value we add is in interpreting their requests and preferences, and using our expertise to help them understand what are the best research tools and strategies to serve their purposes.
- Not everyone is going to be able to afford the extensive projects our Australian colleagues undertake. But your interviews can be geared to the resources you have; even a week of a consultant's time to do 20 or so client interviews can be an investment that will yield tremendously valuable information. Another option is to have a trained Library staffer do the interviews, as long as they are not involved in direct service provision.

### **Conclusions: Client Insight Into Action**

What do we need to be able to do all this?

- First of all, a **strategy**: it is wasteful and ineffective – let alone irritating to busy Members – to have all kinds of people all over the Library launching their own client needs research. All needs assessment projects have to be well-focussed and co-ordinated.

- Part of the strategy is also communications to Members. It is always useful to follow-up with the participants in projects to tell them what overall results were found and what we are going to do about it. Every time we follow-up in this way, we are reinforcing the theme that we do listen and respond to clients.
- More generally, if you have a regular communications vehicle to Members, it is worth keeping them up to date on projects, findings and action taken in response.
- We also need the requisite research **skills**. They are not that arcane; many researchers or managers with social science training will have studied or conducted such research. External training can also be a good investment.
- Returning to the beginning, we need **the commitment to act** on the knowledge we gain about our clients' needs, expectations and use patterns, and actually build that into our service planning and delivery.
- And finally, we need processes and structures to **translate the knowledge** we gain on clients into sound strategic and operational planning. Key facets of this are:
  - A team or responsible manager to co-ordinate and implement the various needs assessment projects. My Library has a cross-branch Client Relations Team to play this strategic and co-ordinating role. It also acts as the forum for prioritizing and dovetailing the various issues that could be investigated and as a clearing house where managers or staff can bring issues and ideas they think should be addressed.
  - We also have a designated co-ordinator to keep track of the various projects and conduct a good number of them directly; these are part-time responsibilities combined with other parts of a person's job.
  - We need clear and consistent planning loops to feed the knowledge gained to the managers or planning forums who need to know (plus expectations that all managers will respond to results relevant to their spheres).
  - We also need an appropriate use policy: even using just a few of these methods, plus keeping service stats, you will end up collecting a great deal of personal information on clients' service use and opinions. Confidentiality is one of our core values, and must be absolutely guaranteed. But we also have to analyze the purposes for which we can use the information we collect, who should see what level of detail on client research and feedback, how long we keep the info, etc.

We can be modest in our own expectations. We never get to make our strategic and operational decisions with all the information we would like. And we are never going to understand everything about our Members; they are too unpredictable and their environment changes too fast for that. But the more information we have on Members' expectations, preferences, service use and satisfaction, the better we will be able to plan and refine our services to best meet their needs.

Deciding which methods to use is never an all-or-nothing proposition. If we don't have the resources for comprehensive and systematic interviews, it doesn't mean we do nothing. We can use the most effective methods possible at the time and within our resources. We save up those issues that are best handled in a comprehensive survey and we work away at issues that can be effectively done with small projects.

We can also be flexible; adapting those methods that work best in our particular environment. And if a method didn't work too well, then we can try another. I have emphasized seeing these different methods – and many others that other libraries have used – as a **broad continuum** from which we can draw the best methods to suit the situation.

By seeing these methods as a continuum we can also think about how to effectively use them together:

- these different methods can be used to test each other:
  - We may see a pattern in what we are hearing informally from Member's staff and want to assess its validity with more systematic methods. For example, in our internal forums many front-line staff had heard clients say something along the lines of "we're sorry to bother you .. we know you are so busy." We are busy, of course, but we never want clients to be discouraged from calling. We tested to see how widespread and significant this perception was in a series of qualitative interviews (and found that it was not a barrier).
  - Do hit stats on Intranet products confirm what staff are hearing on which products clients use the most? Are both of these sources consistent with what we hear directly from clients in interviews or contact-point research? These different sources did show the same broad patterns, and this helped us prioritize which products to enhance.
  - It is prudent to worry about the methodological rigour of individual projects, and we must be cautious about interpreting the results. But reliability and insight come not just from designing individual projects well,

but from using a wide range of solid methods and investigating particular issues from several angles, all to build up a comprehensive overall picture of clients' research and information needs.

- the real challenge – and the real value – is in analyzing the results from all the various methods and projects as a whole, taking account of each's methodological limitations and specific focus, but looking for common patterns and insights. I think we build up our understanding of Members' needs through a continual process of learning about them in different ways, and testing and re-testing our findings and conclusions.

Finally, to return again to the point about acting on whatever needs assessment we do: one of our scarcest resources is management 'thinking time'. We need to somehow build in the time to reflect on the results and incorporate them into our planning and service delivery. Making effective use of what we have learned is the whole point.

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## **GIS AND DATA SHARING IN LIBRARIES: CONSIDERATIONS FOR DIGITAL LIBRARIES\***

**By Nancy C. Hyland**

### **Introduction**

The Cornell University Geospatial Information Repository (CUGIR) is a Web-based repository providing searching, browsing and download access to geospatial data and metadata for New York State. Subjects such as landforms and topography, soils, hydrology, environmental hazards, agricultural activities, and wildlife and natural resource management are appropriate for inclusion in CUGIR. Most data in CUGIR come from government sources.

Cornell University's Mann Library has provided support for Geographic Information Systems since 1994. Demand for government GIS data increased exponentially and it was often difficult for users and librarians to obtain the data. CUGIR was created to fill that need. Since its start in the fall of 1998 at Mann, more than 100,000 geographic datasets have been downloaded. The CUGIR team continues to work with government agencies to provide data to researchers, planners and other government agencies.

### **What is GIS?**

Geographic Information Systems (GIS) consist of hardware, software, and data that can be combined to create a relational database to be used for the retrieval and analysis of any information with a spatial component. Although GIS is sometimes thought of simply as a map-making tool, it is the capacity of a GIS to store and link to information behind a point on a map that makes it so powerful. Many emergency response systems, for example, employ a GIS. When a call is made to the emergency system, a dispatcher, simply by knowing the number from which the call was placed, knows the location of the caller, the fastest travel route to get there, whether any hazardous materials are within a two-block radius of the location, and which emergency workers are closest to the scene. Data can be used from many different sources and organizations in these systems.

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\* Paper presented at the 68<sup>th</sup> General Conference and Council of the International Federation of Library Associations and Institutions, August, 16 – 24, 2002 in Glasgow



A GIS can also assist in the analysis and understanding of demographic, environmental and agricultural issues. Many government agencies make planning and environmental decisions based upon analyses that include the use of geographic information systems. One might, for example, relate information about the water run-off from agricultural areas near wetlands boundaries in order to tell which areas need stricter pesticide regulations. Governing bodies often encourage citizens to get involved through participation in town hearings and meetings with GIS analysts. These analysts create maps using GIS based upon the variables unique to the particular planning decision. Maps provide a powerful way for users to understand complex sets of data quickly.

Data are created by taking measurements on the ground with a global positioning system survey, by remote sensing using aerial photography or satellite images, and by digitizing existing maps. Once digital base-maps are created, they can then be linked with any numeric or attribute data that has a spatial component. These digital base maps are costly and time-consuming to produce. Not surprisingly countries with more highly developed infrastructures have more highly developed GIS infrastructures and have, therefore, produced more data. However, core datasets, such as digital elevation models, hydrography, and topographic data, exist for nearly the entire world. Without data, a GIS is of no use at all. Data are becoming more widely available but can still be difficult for end-users to locate.

Because of the nature of GIS data, governments have not distributed the data as widely as other paper and text government documents. New distribution models have had to evolve. The United States Federal Geographic Spatial Data Committee (FGDC) has advocated for better distribution of GIS data within the United States and internationally with its National Spatial Data Infrastructure (NSDI). It is a series of data-sharing nodes linked together with a common metadata standard and search interface.<sup>1</sup> The NSDI now consists of over 250 national and international digital nodes. By setting data and metadata standards in the NSDI, the FGDC has made significant contributions towards the globalization of GIS data sharing. Since libraries are already committed to preserving, organizing and providing access to information, they are ideal places for such nodes to reside.

## **GIS in Libraries**

If a library is considering adding GIS support to its services, the first consideration should be the level of staff commitment it can make. There are three general possible modes of GIS services: “bare-bones” GIS services, a physical GIS

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<sup>1</sup> National Research Council (1994). Promoting the National Spatial Data Infrastructure Through Partnerships. Washington, D. C., National Academy Press.

collection, and the digital library (or clearinghouse node). The following recommendations are based upon Mann Library's eight years of GIS service and support.

The first requires only the time commitment of a public services librarian who can help patrons navigate various data nodes and has a familiarity with free GIS software resources, such as ESRI's ArcExplorer that is available at <http://www.esri.com>. Any public services librarian with an interest and aptitude should be able to provide a minimum-level GIS service after about twenty hours of work in either a hands-on workshop or through a self-paced tutorial, as well as through learning the types of data available at such sites as:

- The GIS Data Depot <http://www.gisdatadepot.com/>
- [http://www.gisnet.com/notebook/GIS\\_Resources.htm](http://www.gisnet.com/notebook/GIS_Resources.htm)
- US based data <http://www.cast.uark.edu/local/hunt/index.html>
- <http://www.fgdc.gov/nsdi/nsdi.html>
- <http://www.gsdi.org/main2.html>
- <http://www.spatial.maine.edu/~onsrud/GSDI.htm>
- <http://www.gisdevelopment.net/tutorials/>
- <http://www.csc.noaa.gov/products/sccoasts/html/gistut.htm>

At this minimum level, it is not possible to guide patrons through the entire process of creating a fully-integrated GIS. Rather, the library would serve simply as an intermediary helping the user to find the data and providing only the most basic of support for web-based mapping systems.

Supporting a physical GIS collection requires more monetary and staff resources. In addition to the hardware and software costs, considerable staff time needs to be allotted to cataloging compact disks, and providing public service support and software training, as well as the purchasing of the data disks themselves. A number of articles have appeared in the library literature with information on creating GIS services at this level. I encourage those who are interested in starting a physical GIS data collection to read Dean Jue's "Implementing GIS in the Public Library Arena"<sup>2</sup> and Jurg Buhler's "Digital Maps in Map Collections."<sup>3</sup>

At Mann Library, most of our GIS efforts focus on the third type of library GIS service: a remotely accessible digital collection, or a geolibrary. Providing access to GIS data in a digital library requires staff participation from across the library's

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<sup>2</sup> Jue, D. K. (1996). Implementing GIS in the Public Library Arena. 1995 Clinic on Library applications of Data Processing, Urbana, IL, University of Illinois.

<sup>3</sup> Buhler, J. (1999). "Digital Maps in Map Collections - Presenting New Electronic Media." LIBER Quarterly, the journal of the European research libraries 9(2): 228-234.

functional departments. CUGIR has been an NSDI node since 1998. At Mann, librarians from technical services, collection development, information technology and public services all participate in this endeavor. The technical services librarian supports metadata services within CUGIR. There are a number of metadata used in a GIS service. At present, data are described with FGDC metadata standards. In the summer of 2002, the FGDC standard will merge with the International Organisation for Standardisation (ISO). CUGIR is in the process of converting our current FGDC metadata to ISO. Our metadata is also converted into xml, sgml, html, DublinCore and MARC to allow for the broadest possible access to the data.<sup>4</sup> In addition another type of metadata has emerged called "service metadata." They describe the capabilities of experimental web-mapping servers that will be able to share data seamlessly. Our information technology team member supports the server on which CUGIR is housed, is designing a new relational database for better access, and provides all programming needed for the web and Z39.50 interface. Collection development assists in refining the preservation and collection policies. Finally, the public services librarian is responsible for end-user support and is the primary contact and negotiator with data partners.

### **Data Partners and Negotiation**

We started CUGIR in partnerships with the New York State Department of Environmental Conservation (NYSDEC) and the Soil Information Systems Laboratory (SISL). Most of the data available at CUGIR are either directly from or derived from government sources. Other local government data have also been added in partnership with local planning offices. We have found these partnerships to be very rewarding, however, there are a number of issues that ought to be negotiated from the beginning in forging partnerships with government agencies.

*What's in it for you; what's in it for them?*

As with any negotiation, it helps to spell out the benefits each party would receive from the partnership. In a sense, CUGIR functions as a remote intranet for the offices. The GIS data are very large and can consist of hundreds of different files. Some employees within the agencies reported that they previously had to keep data on their hard drives or contact a colleague in another building who happened to have the data on CD. Since the data became available on CUGIR, access to their own data is simpler and faster. Furthermore, most government offices who produce GIS data spend a significant amount of time creating and enhancing the

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<sup>4</sup> Chandler, A. and E. Westbrooks (2002). "Distributing Non-MARC Metadata: The CUGIR Metadata Sharing Project." Library Collections, Acquisitions & Technical Services Forthcoming

data. They are ill equipped or simply do not have the time to respond to public requests to provide the data on CD. Allowing the library to provide access eliminates the need for end-user support related to access.

The nature of GIS data makes it difficult and sometimes impossible to use without adequate metadata. Many GIS professionals find metadata creation to be an onerous task. It not only helps tremendously for the general public who might want to use the data, but may also be the only documentation a worker leaves. Job turnover can translate into a fair amount of duplicated work if metadata are incomplete. Catalogers, on the other hand, are quite adept at describing work and data and take quite easily to the FGDC and other metadata standards. Unlike a traditional catalog record, metadata cannot be created without the input of the data creator. Staff at CUGIR work closely with our data partners and provide training and advice on the creation of metadata. We are also the final metadata editors and ensure compliance with current metadata standards. Our partnerships with government agencies help keep us aware of trends within the GIS community so we are better able to serve our patrons.

#### *Preservation, Versions and Updates*

Another issue to consider in negotiations for data is preservation. There was great hope at the advent of digital and online information that preservation worries would be relieved. Once an item is digitized, it is easy to reproduce, and, therefore, there would be less worry about losing a document. Indeed many preservation efforts in the past decade have involved converting documents or other items in analog format into digital. The lifespan of digital documents, however, is far shorter than any counterparts, in part because of media degradation. There is almost a direct inverse correlation between how long it takes to produce a document and the life expectancy of the medium on which is it stored.<sup>5</sup> A clear plan should be made to handle older and outdated versions of the data and needs to be negotiated with the data partners.

Many data are constantly being updated and corrected, which has implications for preservation. When data are updated, it is important to ascertain whether they are an update or a new version. If the data are simply an update, it may only be a correction of previous mistakes. In this case, it may make the most sense simply to destroy the earlier data. Indeed, data producers often want any previous data in a series to be destroyed immediately. One may argue, however, that if a project is

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<sup>5</sup> Conway, P. (1996). "Preservation in the Digital World." Commission on Preservation & Access, Council on Library and Information Resources: 24pp.

underway or completed, it may be important to get the imperfect data as they are the data of record for a particular time period.

In some cases data are updated because the agency has decided to employ a new projection, coordinate system or datum. These are key geographical concepts employed in GIS. Put simplistically, they are different mathematical models that allow the three dimensions of the earth to appear in two dimensions on screen or on paper. For further explanation see “Datums And Projections: A Brief Guide” at <http://biology.usgs.gov/geotech/documents/datum.html>.<sup>6</sup> If an end-user is overlaying data from different sources, the three models must match. If, for example, a soil coverage is overlaid with a hydrography coverage and they are in different datums, the soil in the stream bed may appear to be thirty meters from the stream itself.

Once an organization decides to change one of the three models and updates accordingly or has made corrections, they may want previous data destroyed. This may be for legal liability reasons, but we have also discovered that it is often the case that the organizations do not want the end-user to confuse older and current data. If two datasets exist in the digital library with the same name, this can easily happen. Although information about the dates and versions is listed in the metadata, they distrust that users will read it, perhaps justifiably so. In our case, we are creating an archival area. The user will not be able to download the data without being notified of the data’s currency. Because we can create an archive, some organizations are willing to allow us to continue access to older data.

It is possible to transfer the older data from one medium to another without making them accessible online. This strategy can work well but needs to be done carefully. If, for example, I were to copy some of the outdated CUGIR data onto CDs, I would not only need to document very carefully what the data are and include all pertinent metadata, but I would also need to record how the data was transferred onto the CD, such as the hardware and software used in the process of copying the data. It would also be necessary to have a detailed plan on when to refresh the data again. Simply putting the CDs in a box and then forgetting about them will mean that the data will eventually be lost. If it is understood by the institution that the data are to be refreshed again in a specified number of years with explicit details recorded, the data are less likely to be lost. Keeping data accessible and online makes data less likely to be forgotten.

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<sup>6</sup> Brown, K. (1999). “Datums And Projections: A Brief Guide.” USGS Center for Biological Informatics. 2002.

## *Data Access and Ownership*

In addition to issues of preservation, several key questions should be spelled out with data partners regarding access and ownership:

### **1. Who owns the data and what does it cost?**

Once the data is available at the geolibrary, does the clearinghouse own the data or does the government agency? This should be determined even if the data is free to the library. Unforeseen events can make question of ownership crucial to continued access.

### **2. How may the data be used?**

As a general policy all data at CUGIR may be used in any application and may be used in a commercial product. This is spelled out in the metadata and does not have to be applied to an entire clearinghouse. If data is made with use restrictions, we have no technological limitations to doing so, and we can make such decisions on a case-by-case basis.

### **3. Who may download the data?**

Many geospatial clearinghouses have mechanisms in place to restrict who may access some or all of their data. At CUGIR, there are no purposeful restrictions on downloaded data. Some government agencies decided not to add their data to CUGIR because of this. This should be made clear at the beginning of the negotiation.

At CUGIR we deliberately wanted all data to be accessible without restrictions. We were, therefore, not able to add some specific geospatial data to CUGIR, but it did allow us to provide a fast and easy-to-use interface. It seemed to us that CUGIR was providing access to data that had no significant risk and wide distribution of the data was for the public good. In February of 2002, the New York State Office of Public Security requested that CUGIR shut down completely until a review of the data was conducted assessing any risk to national security. Any reference to bridges or airports could be considered a threat. CUGIR conducted a risk assessment of the data available and kept the clearinghouse open despite the request.<sup>7</sup> We did inform our data partners of our decision and one partner did request that we remove their data until they could conduct their own risk assessment and we complied with this request.

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<sup>7</sup> Knezo, G. J. (2002). "Possible Impacts of Major Counter Terrorism Security Actions on Research, Development and Higher Education." Congressional Research Service.

## *Risk Assessment*

We did comply with part of the request issued to us in February and reviewed all data available at CUGIR. Two members of the Mann Library staff conducted a risk assessment of all CUGIR data. They formulated two main criteria for the assessment: risk level and availability. For risk level, they looked at each dataset thinking of any possible use criminals and terrorists could possibly do with the information. The second criterion dealt with the availability of the same data from other sources. It was determined that distribution was an important factor because even if one might consider the location of an airport to be a significant security risk, if that information is available in thousands of other places, it cannot be classified as a security risk in a practical way. In the rankings, data were given rankings of 1 through 5, with a 1 being the lowest level of risk and 5 indicating the highest.<sup>8</sup> The analysis showed that our only data that posed any kind of risk are widely distributed in other formats. The method for our analysis was based on preservation risk assessments that Mann Library has conducted on numeric data that we provide in cooperation with the United States Department of Agriculture.<sup>9</sup> Our review was shared with the agency that had removed all of their data. At the time of this writing, nearly all data are restored to CUGIR, with the exception of three series. Such risk assessments are recommended for geolibrary data before a problem arises. Every data will have unique characteristics that should be evaluated individually.

Another risk factor involved with geospatial data concerns civil-legal liability. With the amount of information and high degree of detail, mistakes are nearly inevitable on the part of the data producers. Many agencies are loath to provide public access for fear that an error may result in a lawsuit. All data within CUGIR have a liability disclaimer stating among other things, that “the burden for determining fitness for use lies entirely with the user.” Providing such disclaimers should be standard practice in any digital library.

## **Conclusion**

The nature of GIS data requires some flexibility to be built into the digital library. Carefully planned partnerships with data producers and working to accommodate

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<sup>8</sup> Martindale, J. (2002). National Security and Access to GIS Data via the Internet: Cornell University Geospatial Information Repository (CUGIR). ESRI Education User Conference, San Diego, CA, Forthcoming.

<sup>9</sup> Lawrence, G., W. Kehoe, et al. (1999). Risk Management of Digital Information: A File Format Investigation: A Report Prepared for the Council of Library and Information Resources. Ithaca, NY, Cornell University: 1-19.

their requests make the process run as smoothly as possible. Libraries are ideally suited for providing long-term, user-friendly access to the data. Partnering with government organizations provides benefits both for the library and for the organization. With careful planning, we at Mann Library hope to continue to provide a quality service at CUGIR for years to come.

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## **NEW ACTIVITIES AT THE WORLD HEALTH ORGANIZATION LIBRARY\***

**By Yvonne Grandbois**

### **The Opportunity to Grow**

Change is in the air at the World Health Organization (<http://www.who.int>). It has been this way since Dr Gro Harlem Brundtland began her mandate as Director-General four years ago and walked in with new ideas, new energy and a pledge to place health at the core of the international development agenda. (<http://www.who.int/dg/>)

In keeping with this spirit of change and renewal, the WHO Library decided to seize the opportunity to renew itself as well. We decided to begin with our name. The WHO Library had been known for decades as the Office of Library and Health Literature Services, and had served well under this banner. A staff brainstorming session produced our new name: Library Information Networks for Knowledge, whose acronym is LINK. As a large part of our mandate is to link people, libraries, resources and knowledge, we agreed that this was a fit.

Fortunately the WHO Library finds itself in a very favourable constellation in the structure of WHO, belonging to a cluster called Evidence and Information for Policy, and in the Department of Health Information Management and Dissemination. The Library shares this department with the Publishing unit, the Web, Marketing and Dissemination, the WHO Bulletin and the World Health Report. While respecting individual units' expertise, there is a lot of interactivity between these units, leading to a richer mix for all.

At our invitation, the Director-General came to the Library at the start of her mandate, spent time looking and listening, asking questions. Her office began to use our services, and she has kept a pulse on our activities. Having this type of support from the top, and back-up from the levels in between, we gained confidence in doing things differently and presenting ideas for new projects.

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\* Paper presented at the 68<sup>th</sup> General Conference and Council of the International Federation of Library Associations and Institutions, August, 16 – 24, 2002 in Glasgow

This paper outlines some of the new activities that library staff have brought forward. Parallel to the new configuration at the WHO, technologies, content, approaches and needs were changing, and the time was right.

### **Our Mandate**

Like other United Nations agencies, the WHO has a multi-faceted clientele, starting with its own personnel, spread out over six regional offices and headquarters in Geneva. We serve ministries of health and other government offices, the other UN and international agencies, NGO's, diplomatic missions, and because of our services on the Web, the general public worldwide.

One of our prime mandates is to ensure that the published work of the Organization is made accessible to our current user base as well as for posterity. Often the Library is the only place in the world where one can find WHO material that has research value today in the public health sector. We also provide access to worldwide health, medically-related and development information sources in a constantly expanding scope as health impacts on more and more disciplines.

### **Traditional Services**

The WHO Library provides the core services found in most libraries of the United Nations system. The Library is open 47.5 hours a week. Our reference librarians provide assistance to over 4000 users per year, answer hundreds of e-mail queries every month. Our document delivery services are booming. Our WHOLIS database is available on the Web, and we maintain a thesaurus in three languages. With its over 75,000 records, WHOLIS is not only the collective memory of the WHO, it contains records of specialized and highly selective sources of non-WHO and commercially published material in health, development and related disciplines. The Collection Development subunit takes care of selection and acquisitions as well as the accessioning of materials, and participates in the UN system-wide Consortium. The Technical Cooperation subunit works at strengthening library services in the field. Finally, our IT Services department makes our digital initiatives a reality.

### **The Hybrid Library (<http://www.who.int/library>)**

New activities at the WHO Library can be categorized by a term that is found more and more in library literature, that is, the hybrid library. The term hybrid had its origins in Darwinian theories of evolution and has entered the language of information professionals. It is used to describe new types of library services that attempt to integrate traditional print with electronic information resources. It is

generally seen as a halfway step towards the full digital library, the route being traditional, automated, hybrid and finally digital libraries.

**Full-text Links from WHOLIS Database (<http://www.who.int/library/database/>)**

The news as far as the WHO Library Database (WHOLIS) is concerned is that it now provides over 20,000 links from the bibliographic record to the full text of WHO technical documents, press materials, WHO out-of-print publications, selected WHO current publications, WHO Bulletin articles, and historical resources. These items are either scanned from the print by the Library or linked from existing electronic files.

Therefore WHOLIS also functions as a powerful document distribution tool. Over 1000 documents are downloaded from this database per day.

**WHO in the Scientific Press**

A very popular current awareness service has been WHO in the Scientific Press. This is a true hybrid in that it exists in both paper and recently, electronic form. Around 400 health related journals are regularly read by a librarian, and items concerning the work of the WHO, plus articles authored by WHO staff, are selected, photocopied and posted in the library for all to read, and photocopy if necessary. The development of the WHO intranet, and the changes in publishers' policies gave us the opportunity to download or scan these articles and to make them available to the WHO community. This service is available on the WHO intranet only.

**GIFT (Global Information Full-Text)**

The GIFT (Global Information Full Text) project came as a result of the obvious need for quality and recent information which in medicine and public health is found mainly (80%) in periodicals. Secondly, although the Library had been working on bridging the "information gap" between WHO components through collaboration with regional office libraries, there was no equity as to the access to information.

"One WHO" was a direction brought in by Dr Brundtland, and this project is an attempt to provide access to information to all of WHO. The timing was also right in that internet technologies had facilitated the flow of health information and the major publishers in medical, biomedical and related social sciences were all online.

The WHO Library negotiated a package for the whole of WHO - something the publishers and agents had never allowed before. This package includes databases and online journals for all WHO regional offices, country offices, specialized

offices as well as headquarters. Included are databases available in the Ovid system, the Web of Knowledge, and access to 1000 online journal subscriptions through an outsourced interface with an alphabetic integrated menu.

This move to a very comprehensive digital journals library has been received with enthusiasm by users who have been clamouring for this, and with incredulity by users farther afield who have been suddenly flooded with more than they can integrate. Therefore next steps in the GIFT process are more training, including modules and guidelines for regions and countries, more interlinking, and the analysis of usage statistics to see what is being used, where.

### **HINARI (Health InterNetwork Access to Research Initiative)**

**<http://www.healthinternetwork.net>**

You may have seen the extensive media coverage that accompanied this initiative, which is part of the Health InterNetwork launched by the Secretary General of the United Nations in September 2000.

HINARI is the first phase of the Health InterNetwork project created to bridge the digital divide in health. It provides access to a vast library of the latest and best information on public health: more than 2000 of the major international electronic journals in health and related disciplines have been made available free to institutions in 68 countries. Access at very reduced rates will soon be extended to an additional 42 countries. The WHO Library Collection Development Librarian, seconded to this initiative, negotiated this "first" with the major scientific, medical and technical publishers.

### **The Blue Trunks (<http://www.who.int/library/country/trunks/>)**

At the other end of the spectrum, far from the electronic buzz of the GIFT project is a completely print based initiative known as the Blue Trunk Library. This is a mini-library, containing basic primary health care manuals, housed in a blue metal trunk, that was originally designed for districts in Africa where there are very few resources or personnel in the health sector. We now have over 1000 of these blue trunks, mainly in Africa but also in the Eastern Mediterranean region. This initiative has been very well received by both recipients and donors alike, and soon will be going global as a WHO information product. We are open to partnerships in this initiative.

### **Historical Resources (<http://www.who.int/library/historical/>)**

Since the founding of WHO in 1948, the WHO Library systematically indexes and preserves the documentation arising from WHO activities. We have a Historical

Resources Collection reference area where scholars and researchers often come to investigate the early years of WHO and public health. Most often archival research must be done on-site, but we have undertaken an ambitious project to scan some of the most important source documents and make the full text available from our web site. From the WHO Library web site, researchers world-wide can find the full text of disease classifications and nomenclature documents, history of international health organizations, history of WHO, including the first World Health Assembly in 1948, malaria documents, rare books on plague, smallpox and epidemiology. Facsimiles have been made so that print copies can be used by clients without harming the original.

A complete view of what we offer can be found on the WHO Library Web Site. (<http://www.who.int/library>). Our Library page is accessed over 100,000 times per day and is one of the most used of the WHO web site. In terms of the Organization's website, (<http://www.who.int>), the Library gives advice on a consistent and appropriate way to apply metadata to web pages, is part of the web working group and contributes to the WHO intranet as well.

### **Moving Forward**

Today's libraries are in a strategic position to offer services in a vast array of forms, encompassing a wide range of options. For the UN System libraries, serving both the best and least equipped of clientele, there is no debate as to print vs. electronic. We need to have both. This paper has given a few examples of the hybrid library approach to information services in an international context.

WHO Library has done much to provide health information services to the One WHO and through our contribution to the WHO agenda of placing health at the core of development. In coming years our priority will be to continue to provide print based resources and training for those presently excluded from connectivity, and to provide better targeted access appropriate to local needs and conditions. Until every one of our constituents is connected to electronic resources, WHO Library will continue to be a hybrid library, allowing health information for all.

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