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University of Northumbria at Newcastle
School of Information Studies

Proceedings

of the
3rd NORTHUMBRIA INTERNATIONAL CONFERENCE
on
PERFORMANCE MEASUREMENT IN LIBRARIES AND INFORMATION SERVICES

"Value and Impact"

Friday 27 to Tuesday 31 August 1999

UNIVERSITY of NORTHUMBRIA at NEWCASTLE

School of Information Studies
University of Northumbria at Newcastle

PROCEEDINGS

of the

3rd NORTHUMBRIA INTERNATIONAL CONFERENCE

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PERFORMANCE MEASUREMENT in LIBRARIES and INFORMATION SERVICES

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Conference Proceedings Editor: Pat Wressell Associates

Editorial Note: The Proceedings contain the Conference Overview, four Keynote Papers, four Invited Papers, 34 Seminar Papers and the After-Dinner Speech. Two papers are not available for publication. American usage has been retained where used by contributors.

CONFERENCE OVERVIEW

Once again the Northumbria International Conference on Performance Measurement in Libraries and Information Services attracted about 130 people from 25 different countries. Developments in the field led the Editorial Board of this third Conference to recognise the need for performance measurement to move to the centre of management and consider how performance measurement affects the Value and the Impact of services. As Greenhalgh and Worpole (1995)[1] put it "There is a danger of measuring only those things which are easy to measure – book issues, attendances – and to disregard the positive social effects a library can have on its locality".

With this in mind, keynote and invited speakers from Australia, New Zealand, America and Europe led the debate. Jennifer Cram from Australia set the scene very powerfully, reminding the Conference that management is often blind to reality and thus assumptions are often unchallenged and myths are allowed to flourish. Measuring performance to reveal the real picture avoids this abyss and allows all of the stakeholders to see the service clearly.

However, the world of library and information services is living through turbulent times and in an optimistic session John Bertot of the USA eloquently pointed out that it is very "messy", particularly in relation to the measurement of electronic library services. His paper presented the clear developments of the past two years from the paper given by Wilf Lancaster on Evaluating the Digital Library (1998)[2]. We may be no closer to finding solutions, but the nature of the problems and their extent were clearly described by John. These included the urgent need for a controlled vocabulary, tracking software, helpful vendors, trained staff, new methodologies and, importantly, meaningful standards.

Chuck McClure as ever gave a powerful performance, though much less optimistic than John Bertot, his fellow researcher from the USA. He graphically conveyed the problems that beset the measurement of performance and particularly the benchmarking process, when there are few standards and those there are perhaps mean different things to different people. He argued strongly for rough, quick – although meaningful – data which could then be used to tell the "story" to funders and politicians. This was the most useful way of getting "best value" for data and using it to create maximum impact.

Benchmarking was the theme for Stephen Town of the University of Cranfield in the UK. Performance measurement depends on effective benchmarks and yet many managers see the process as being one of theft, of stealing valuable information. The process often causes strife and staff can feel very threatened by any comparisons that arise. However, when the process is used effectively and correctly, it can become a major professional force, with members of benchmarking groups supporting each other. The results can often be an improvement in services for all.

Together with a small team, Ian Winkworth of the University of Northumbria in the UK had researched the role of Government information. The resulting paper was truly international, comparing the information gathered on library services by Central Governments throughout the world, as far as the information could be acquired. Ian then looked at the use made of the information and its impact. Ian proved conclusively that in most countries there is still a long way to go before the data generated becomes meaningful or can be used effectively.

David Fuegi of the UK is the consultant employed by the UK Government to evaluate Public Library Annual Plans and to start the process of drawing up the Standards for Public Libraries in England and Wales. He believed that although in these countries public libraries are the

responsibility of local government, central government was taking a keen interest in the development and imposition of standards of service. However, as Bertot had already demonstrated, standards are complex and difficult. He envisaged that there would undoubtedly be difficulties with implementation.

In a very practical paper Roswitha Poll from Germany asked "What does it cost to be good?". Other questions followed from this: "What is good?", "Could we be cheaper without losing quality?" Once again it was stated that benchmarks were needed in order to undertake meaningful cost analysis frameworks on which to base decisions. Roswitha produced as an example the careful and detailed data for which the University of Münster is well known and which can be used by others for benchmarking purposes.

Philip Calvert from New Zealand was the final keynote speaker and took us back most usefully to the central tenet of all of our services, the user. In a well-researched paper he presents a valuable "stakeholder" approach. We need to look at performance measurement in terms of its impact on the clients, and he draws to our attention services that have no customer-related measures – sadly, not uncommon.

In the six years that have passed since the first Conference, much work has been done in the field of performance measurement and this was clearly represented by the seminar papers that provide a rich vein for those interested in the subject. Themes of the conference included: Balanced Scorecards, classification of performance indicators, measurement of team and individual performance, cost benefit analysis, and measuring user information-seeking behaviour. In fact an incredibly rich series of papers is contained within. We hope you enjoy reading the Proceedings of the Conference nearly as much as we enjoyed being there.

References: [1] Greenhalgh, L. and Walpole, K. (1995) *Libraries in a world of cultural change*. London: UCL

[2] Lancaster, F. W. (1998) 'Evaluating the digital Library' in Department of Information and Library Management, University of Northumbria at Newcastle *Proceedings of the 2nd Northumbria International Conference on Performance Measurement in Libraries and Information Services, 7-11 September 1997*. Newcastle upon Tyne: Information North

Sandra Parker

School of Information Studies
University of Northumbria at Newcastle

Announcement

4th Northumbria International Conference
on
Performance Measurement in Libraries and Information Services
at the
University of Pittsburgh, USA

10 to 14 August 2001

To precede the IFLA Conference in Boston

CONTENTS

KEYNOTE
AND
INVITED PAPERS

Developing national network statistics and performance measures for U.S. public libraries: models, methodologies and issues

John Carlo Bertot, Associate Professor, School of Information Science & Policy, University at Albany, State University of New York, USA

Libraries continue to adopt and integrate electronic services into their operations. Such services as Internet-based databases, Web site development and maintenance, online reference/assistance, largely go unmeasured by libraries. The issues surrounding the lack of measurement of electronic library services are complex and include:

- the lack of agreement as to what services to measure;
- the lack of agreement as to how to measure services; and
- the lack of agreement as to the interpretation of electronic services measurement data.

This paper describes the efforts of the author, in conjunction with Charles R. McClure, to measure electronic library services in U.S. public libraries and statewide state library-run networks. The paper provides descriptions of measurement variables, the definitions of those variables, and measurement techniques to collect data on those variables.

INTRODUCTION

U.S. public library Internet connectivity continues at a rapid pace, from 20.9% of public library systems having an Internet connection in 1994 (McClure, Bertot and Zweizig, 1994) to 83.6% of public library outlets in 1998 (Bertot and McClure, 1998). As public library Internet connectivity increases, so too does the public library's familiarity with the Internet and Internet-based services. As a result, more public libraries are investing in the development of an electronic presence – both to provide and to consume networked resources. The networked environment, however, requires that public libraries develop statistics and performance measures that capture data about the use of the technologies, services, and resources to which public libraries provide access.

While there is widespread agreement in the U.S. public library community that such statistics and measures are necessary – even vital to the future of public libraries – there is a lack of tested models and methodologies to guide the development of network statistics and performance measures. Also at issue is determining which statistics and measures can provide the most useful data about library electronic service and resource use – for multiple audiences – for the least amount of data collection burden on public libraries. Finally, there is a need to develop a national data collection framework that captures public library network data throughout public libraries in the United States. While such a model exists for traditional library service measurement, the prevailing data collection model is increasingly ill-suited to the needs of the networked environment.

This paper presents preliminary findings from a study in progress to develop national network statistics and performance measures for U.S. public libraries. The study, *Developing National Statistics and Performance Measures for Public Libraries in the Networked Environment,* is funded by the U.S. Institute of Museum and Library Services (IMLS) as well as the state libraries in Maryland, Delaware, Utah, Michigan, North Carolina, and Pennsylvania. Additional background information about the project and a range of working papers can be found at <http://www.albany.edu/~imlsstat/>.

As of July 1999 the study team, comprised of the author, Charles R. McClure and Joe Ryan, completed site visits to each of the above identified states. In addition, the study team performed a number of additional analyses related to various aspects of the study (see <http://www.albany.edu/~imlsstat/> for more detail). This paper incorporates findings from the various study data collection activities to date. The findings identified here describe key issues that require consideration and resolution in order to:

- identify a core set of network statistics and performance measures that describe essential public library network resource usage;
- provide a number of models through which to develop core public library network statistics and measures; and
- describe selected methodologies through which to capture public library network resource usage data.

Thus, a first and critical step in developing national statistics and performance measures for public libraries in the networked environment is to provide a sense of the means through which it is possible to develop, define, and operationalize these statistics and measures.

As a basis to discuss these issues, it is important to define "network-based resources and services". The current definition used by the study team is:

> Network-based resources and services are those electronic information resources and/or services that users access at a public library or access via a public, regional, or statewide library telecommunications

network. Examples of electronic network *resources* include: public, regional, or state library hosted or authored Web sites or library or licensed databases (eg. Infotrac, SearchBank, EbscoHost). Examples of electronic network *services* include: provision of access to networks via public access workstations or dial-in/ remote access; network services such as e-mail, listservs, chat, online reference/assistance; and training in use of these resources and services.

The study team expects this definition will change as the study continues its data collection activities.

MODELS FOR DEVELOPING NATIONAL STATISTICS AND PERFORMANCE MEASURES

The study has thus far identified numerous models to use as a framework for developing statistics and performance measures (see Table 1 and Figures 1 and 2). Each model presents a different lens for developing statistics and performance measures. At this point, the study team is not indicating which model is the most appropriate – indeed, preliminary indications are that no one model is best; rather, each has its utility and can serve to provide a useful means for the development of statistics and performance measures. Moreover, there is a sense that it is possible to combine aspects of the models to generate statistics and measures.

The Network Component Model

As first described by Bertot and McClure (Bertot and McClure, 1998), this model provides a two-dimensional framework for the development of electronic statistics and performance measures (see Table 1). This model suggests that there are numerous components to electronic measures:

- *Technical infrastructure:* the hardware, software, equipment, communication lines, and technical aspects of the network (eg. workstations, modems, servers);
- *Information content:* the information resources available on the network (eg. local government information, special collections);
- *Information services:* the activities in which users can engage and the services that users may use to complete various tasks (eg. EbscoHost, UnCover, online applications);
- *Support:* the assistance and support services provided to help users to better use the network (eg. training, help desk); and
- *Management:* the human resources, governance, planning, and fiscal aspects of the network (eg. network staff, advisory boards, budgeting).

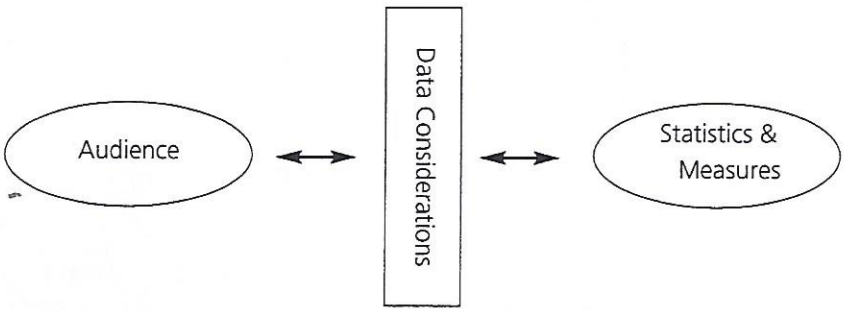
In addition, there are different types of evaluation criteria that are possible to describe public library Internet-based use and services:

- *Extensiveness:* how much of a service the network provides (eg. number of users accessing a Web page per week, number of remote dial-ins per week);
- *Efficiency:* the use of resources in providing or accessing networked information services (eg. cost per session in providing access to remote users of an online database, or average number of times users are unable to successfully connect to the library's servers);
- *Effectiveness:* how well the networked information service met the objectives of the provider or the user (eg. success rate of identifying and accessing the information needed by the user);
- *Service quality:* how well a service or activity is done (eg. percentage of transactions in which users acquire the information they need);
- *Impact:* how a service made a difference in some other activity or situation (eg. the degree to which network users enhanced their ability to gain employment or pursue business);
- *Usefulness:* the degree to which the services are useful or appropriate for individual users (eg. percentage of services of interest to different types of user audiences); and

Table 1 The Network Component Model

	Network Evaluation Criteria						
	Extensiveness	Efficiency	Effectiveness	Service Quality	Impact	Usefulness	Adoption
Network Component							
Technical Infrastructure							
Information Content							
Information Services							
Support							
Management							

Figure 1 Audience Model for Developing Network Statistics and Performance Measures



- *Adoption:* the extent to which institutions or users integrate and adopt electronic networked resources or services into organizational or individual activities (eg. answering reference questions, generating inter-library loan requests).

These types of criteria provide an important roadmap for thinking about the type of data elements and statistics that would be needed to produce such measures.

The Audience Model

In this approach, the consumer of the data is the primary lens for the development and collection of network statistics and performance measures (see Figure 1). Identified audiences include:

- library governance boards;
- local government officials (city, municipal, county);
- state government officials (legislative and executive);
- fundors (primarily external funding entities such as granting institutions);
- national policy making groups (eg. Congress, Executive agencies);
- professional organizations (eg. ALA, PLA); and
- researchers.

Considerations for each of these audiences in terms of the statistics and measures are:

- informational needs;
- ability to interpret the data;
- utility of the data for decision making, policy formation, or other purposes; and
- comparability to other organizations under the purview of the audience members that engage in network-based activities (eg. other city/county agencies that provide Web-based services).

Together, the audience and the audience factors combine to form the basis for the development of network statistics and performance measures.

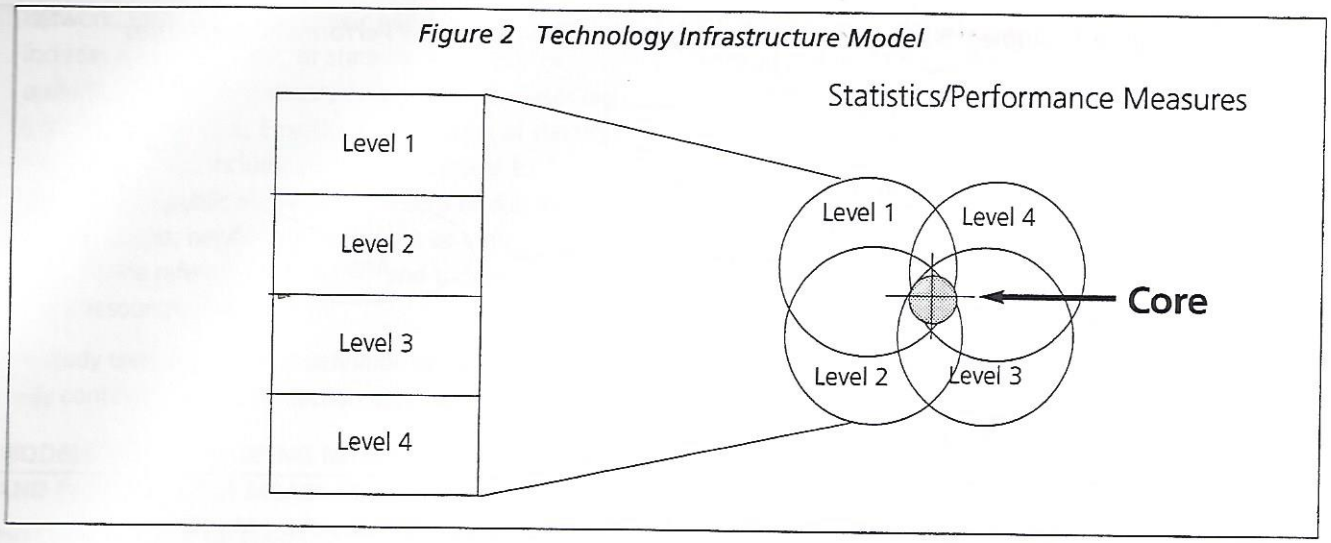
The Technology Infrastructure Model

At present, public libraries and state library agencies have vastly differing levels of installed information technology infrastructure, level of services and content running over that infrastructure, and different plans for the development of library and state technology architectures. These differing levels of technology implementation have a direct impact on the relevance, feasibility to collect, and ability to use network statistics and performance measures. Thus, it is possible to develop statistics and performance based on a library's or state library agency's current state of technology infrastructure (see Figure 2).

Based on discussions with study participants, reviews of the literature (see <http://www.nysl.nysed.gov/libdev/edl/thirdpln.htm/>, for example), and research conducted by the authors in previous studies (see, for example, Bertot and McClure, 1996; McClure, Bertot and Beachboard, 1995), it is possible to identify stages of technology implementation at the library level. A rough means to categorize these levels is:

- *Level 1* – Stand-alone public access workstations that offer dial-up access to the Internet. Workstation may also provide access to CD-ROM-based material. May have access to online (Internet) databases through library subscription, but more likely through the state library's licensing agreement;
- *Level 2* – Stand-alone public access workstations with dial-up connectivity to the Internet, plus a local area network that may also offer public Internet access through a dedicated leased-line connection. CD-ROM material access may be through network or single workstations. May have access to online (Internet) databases through library subscription as well as through the state library's licensing agreement;
- *Level 3* – Networked facilities with leased-line access to the Internet. CD-ROM material access through network or single workstations. Access to online (Internet) databases through library subscription as well as through the state library's licensing agreement. Library has a Web presence; and

Figure 2 Technology Infrastructure Model



- *Level 4* – Networked facilities with leased-line access to the Internet. CD-ROM material access through network or single workstations. Access to online (Internet) databases through library subscription as well as through the state library's licensing agreement. Library has a Web presence and is developing unique content and resources for the site.

Each level indicates a differing data collection and measurement need, level of effort required to collect the data, and an augmented level of understanding of technology and statistics to understand truly the meaning of the captured electronic data. The extent to which it is possible to develop a core set of network statistics and performance measures that are relevant, useful, and informative across all levels of technology infrastructure remain unclear at this time.

Composite Model

While each of the above models – Network Component, Audience, and Technology Infrastructure – provides some notion of mutual exclusivity to the development, collection, maintenance, and interpretation of network statistics and performance measure, it is also possible to combine aspects of each model for the creation of network statistics and performance measures.

Thus, public libraries and state library agencies may consider the audience of the intended statistics and performance measures while simultaneously considering the network components and evaluation criteria presented in the Network Component Model. Another approach might be to overlay the Technology Infrastructure Model on the Network Component Model, developing measures and statistics that account for the technology infrastructure of the library or state library agency for aspects (eg. technology, technical support) of the network.

The above models represent selected lenses for developing network statistics and performance measures identified by the study team thus far. There are likely other models that would provide libraries and state library agencies with a tool to develop network statistics and performance measures.

The next section of the paper presents selected methodologies for developing network statistics and performance measures.

METHODOLOGIES FOR DEVELOPING NETWORK STATISTICS AND PERFORMANCE MEASURES

Developing valid and reliable network statistics and performance measures requires researchers and professionals to consider using traditional qualitative and quantitative methodologies (eg. focus groups, interviews, surveys), adapting traditional methodologies (eg. transforming mail surveys to pop-up Web-based surveys), or creating new methodologies (eg. Web-based transaction log and Web URL analysis) to capture network usage data (see Table 2). More likely, measuring network use will require a combination of the above – existing techniques, enhancements and/or modification to existing techniques, and the development of new techniques – to produce effective network statistics and performance measures.

Those collecting network-based statistics and performance measures, depending on the collection technique(s) selected, need to:

- know the capabilities and limitations of the selected methodology(ies);
- ensure that like network aspects are being compared across often separate services (eg. database usage from one vendor versus another);
- ensure the adherence to standard statistic definitions, operationalization, and collection techniques across libraries and states;
- understand precisely what the data represent in terms of network usage; and
- present the findings in a meaningful way to consumers of the data.

Table 2 Methodologies for Measuring Electronic Network Services

Qualitative	
Technique	**Function/Purpose**
Case Sites	In-depth exploration of selected communities and target audiences in those communities, use of and involvement with the network. Use findings to inform broader quantitative data collection activities such as mail and electronic surveys.
Content Analysis	Gather various documentation and reports to review historical development and evolution of network-related activities.
Focus Groups	Explore identified key issue areas of network content, services, management, and performance. Use findings to inform broader quantitative data collection activities such as mail and electronic surveys.
Small Group and Individual Interviews	In-depth exploration of network content, services, management, and performance with key project administrators and users. Assess the relationship between components of the network and future educational use and development of network resources. Use findings to inform broader quantitative data collection activities such as mail and electronic surveys.
Critical Path Analysis	In-depth exploration of user-based interactions with project-related components (eg. training, workstation use, and searching). Use findings to uncover specific instance issues. Particularly appropriate for in-depth analysis of training and use issues.
Quantitative	
Technique	**Function/Purpose**
Mail/Electronic Surveys	Further explore identified key issue areas of network content, services, management, and performance with broader project population. Test findings from qualitative data collection activities with broader network population.
Network Traffic Measures	Collect network/terminal traffic use statistics such as users, user access points, information and service content use, and network server and router load. Provides sense of network load, capacity and what services are used with what frequency.
Web Log File Analysis	Measure Web-based services by the analysis of Web server log files. Provides sense of users and locations from which to access the services, server traffic, type of technology users have, and errors made.

The above represent substantial methodological challenges for the networked environment that require familiarization with the topic of both measurement and network aspects.

Also related to methodology is the issue of what aspects of network services and resources should a methodology(ies) measure. Moreover, there is a need to determine what type of methodology(ies) is appropriate for what type of network use data. For example, participants at the site visits indicated strongly the need for user-based data – demographic, use of network resources, and impact data. In other words, library staff and managers (as well as others) want to know who is using the network, for what they are using the network, and what difference using the network made. While demographic and use data are possible to collect through such methodologies as surveys, impact data is perhaps best collected through interviews and focus groups. While not impossible, it is extremely complicated to develop *national* statistics and measures that rely upon focus group and/or other qualitative data collection techniques.

PRELIMINARY NETWORK STATISTICS AND PERFORMANCE MEASURES

Tables 3 and 4 represent the current iteration (as of July 1999) of the working group of network statistics and

performance measures developed by the study team through the various project data collection activities. This list will evolve throughout the duration of the study until a core set of statistics and measures is agreed upon, defined, and field-tested by the study participants and researchers.

Network Statistics

The study has identified five key areas for network statistics development:

- *Public access workstations:* measures here center on the availability of workstations to the public and the use of

Table 3 Proposed Core Data Elements/Statistics for the Networked Environment (as of July 1999)

Data Element/Statistic	Definition
Public Access Workstations	
# Public access workstations	Count of the number of public access graphical workstations. Refinements include: those connected to the Internet; those that are not connected, but provide access to other types of software (eg. Microsoft Office products); or combination workstations that provide Internet access as well as access to other applications.
Public access workstation usage	Measure of public access workstation usage through count of users.
Maximum speed of public access Internet workstations	Indication of the maximum speed of public Internet access, eg. 56kbps, ISDN, T1.
Databases	
# Unique electronic titles	Count of the number of unique database titles available at the library. These include both those available online or through CD-ROM/DVD-ROM format. Refinements include full-text versus abstracted titles.
# Electronic title sessions (adapted from ICOLC, http://www.library.yale.edu/consortia/webstats.htm)	Overall count of the number of sessions (logins) initiated to the databases. Refinements include breakdowns by title, by format (eg. online versus CD-ROM), time of day, IP address.
# Electronic title queries/searches (adapted from ICOLC, http://www.library.yale.edu/consortia/webstats.htm)	Overall count of the number of searches conducted in the library's databases. Subsequent activities by users (eg. browsing, printing) are not considered part of the search process. Refinements include breakdowns by title, by format (eg. online versus CD-ROM), time of day, IP address.
# Electronic title views (adapted from ICOLC, http://www.library.yale.edu/consortia/webstats.htm)	Overall count of the number of database content views (eg. abstracts, full-text articles). Refinements include breaking down the views by user action – printing, e-mailing, saving to disk – and type of document (eg. PDF, text, image, video).
Electronic material expenditures	Total expenditures for electronic material subscription expenditures (eg. CD-ROM, Internet).
Electronic Services	
# Electronic reference transactions	Count of the number of reference questions/requests received electronically (eg. via e-mail).
Virtual Visits	
# Web visits	A *visit* is a user who visited a Web site regardless of the number of pages or elements viewed. If a user looked at 16 pages and 54 graphic images while at a Web site, that user registers one visit on the Web server. Due to various Web server issues, this measure is an *estimate* of the visits to the Web site.
# Remote logins	A count of the number of remote logins (sessions) to non Web-based library resources such as OPACs, bulletin boards.
Training	
# Users trained through structured technology training sessions	Count of the number of users trained in structured technology training sessions conducted by the library. 'Structured' means a course with a designed curriculum intended to demonstrate the use of a technology such as the Web, Internet searching, personal computing, etc.
# User technology training contacts	Count of the number of technology training-related contacts. A contact is designed to capture informal training sessions conducted by library staff intended to demonstrate the use of library workstations, aspects of the applications available on those workstations, etc.
Staff technology training per year	The total number of formal/structured technology training sessions attended by library staff during the calendar year (or fiscal year). Refinements: types of training sessions attended.

Table 4 Proposed Performance Measures for the Networked Environment (as of July 1999)

Performance Measure	Definition
Public access library workstations workstations per capita Alternative: per registered borrower	The number of public access workstations in the library divided by the population of the library's legal service area. Refinements: connected, non-connected, but provide software, combination; connected at 56k or less v. workstations connected at greater than 56k; graphical/text terminals; filtered/non-filtered workstations; stand-alone/networked.
Electronic reference transactions per capita Alternative: per registered borrower	The number of reference transactions conducted via e-mail or via a library's Web site divided by the population of the library's legal service area.
Web visits per month Alternative: 2-week period each quarter	A *visit* is a user who visited a Web site regardless of the number of pages or elements viewed. If a user looked at 16 pages and 54 graphic images while at a Web site, that user registers one visit on the Web server. A visit is usually determined by a user's IP address, which can be misleading due to Internet Service Providers (ISPs and Firewalls or Proxy Servers). Thus, this measure is an *estimate* of the visits. Refinements: internal library user versus remote user.
Database visits per month Alternative: 2-week period each quarter	A *visit* is a user who initiates a session using an online or CD-based database regardless of the number of searches, views, or other actions undertaken during that session. Using PC, network, or vendor-supplied statistics, libraries would compile an aggregate of database visits on a monthly basis. Refinements: # searches, views.
% of annual budget for information technology expenditures	All expenditures for information technology (example list of expenditures to be developed) divided by the total annual expenditures of the library.
% of annual materials budget for electronic resources	All expenditures for electronic resources (example list to be developed) divided by the total annual materials expenditures.
Public technology training per month Alternative: 2-week period each quarter	The total number of users per month that library staff have provided technology training in a formal or pre-scheduled session.
Public contact technology training per month Alternative: 2-week period each quarter	The total number of users per month that library staff provided informal contact (eg. 3-5 minutes to get users started) training sessions to in-library visitors.
Overall public access workstation use Alternative: 2-week period each quarter	The % of time that public access workstations are in use divided by the number of hours of library operation during that time period.
Saturation of network use/resources Alternative: 2-week period each quarter	The percentage of network resource use (eg. number of modems in use; telnet/remote logins; bandwidth consumption) per measure of time (as measured in some increment of time such as hour, day, week, or month).

those workstations, to include the overall number, type, speed of access, and time in use;

- *Databases:* measures under this category focus on tracking the use of online databases to which the library provides access, to include the number of databases from where users access the databases, the number of sessions initiated by users, and the types of uses (eg. downloading, printing, e-mailing) users make of the database information;
- *Electronic services:* these measures begin to generate data on the types of services provided electronically by libraries. Such services includes electronic reference services provided to patrons by library reference staff;
- *Virtual visits:* libraries are particularly interested in capturing visit information – a measure that has its origin in the counting of visitors through turnstiles. With the advent of electronic services and resources, patrons do not have to enter a facility to enjoy library resources; and
- *Training:* as libraries continue their use of and involvement with the Internet, new aspects of libraries' services are emerging. One that is evolving is that of training – both of users and staff. Training occurs through formal and informal sessions, and there is a need to capture data about these sessions.

Together, these five categories form a preliminary core framework for the development of network statistics.

Performance Measures

Network statistics/data elements and performance measures differ. Essentially, statistics are single data elements that are necessary to capture, maintain, and analyze to inform the current state of public library and/or statewide network usage (see Table 3).

Performance measures, on the other hand, combine various statistics/data elements for the purpose of benchmarking and decision-making activities at the public library, state, or national levels (see Table 4). Table 4 presents sample performance measures that the site visit participants identified as necessary and useful measures for benchmarking library network services comparing individual and groups of libraries across the United States.

A NATIONAL DATA COLLECTION MODEL

As discussed by Charles R. McClure in his paper in these Proceedings, there exists a national public library data collection system in the United States. This is a collaborative data collection process managed by the U.S. National Center for Education Statistics (NCES), the U.S. National Commission on Libraries and Information Science, the state library agencies, and public libraries. Various public library data (eg. circulation counts, operating budgets) are collected annually from public libraries by the state library agencies according to an adopted set of data elements, definitions of those elements, and operationalized methodologies of those elements. The data are then compiled by the state library agencies for statewide reports, but also to send to NCES. NCES compiles the data from all the states and then issues national reports and releases electronic copies of the raw data.

For many reasons such as the state data coordinators and the state libraries, this system works quite well. For other reasons, however, the system has its problems. For example, new data elements require approximately two to three years from ratification to actual collection. Also, it takes the NCES approximately two to three years to release the public library data. For example, the 1998 public library report contains 1995 public library data.

Such a slow-moving process is inadequate for the networked environment, where the statistics will most likely have a useful lifecycle of three to five years (see the McClure paper in these Proceedings for a further discussion of this issue). Thus, there is a need for a new mechanism, or at least a substantially modified one, for the collection, compilation, and dissemination of national public library network statistics and performance measure data.

CONCLUSION

This paper presented numerous issues regarding models and methodologies for the development of national network statistics and performance measures for U.S. public libraries. The paper also identified preliminary network statistics and performance measures based on a study being conducted by the author and others to develop national network statistics and performance measures. The preliminary findings from the study indicate that:

- several models/frameworks exist that can serve as guides for developing network statistics and performance measures;
- methodologies for collecting network statistics will likely be a mixture of existing qualitative and quantitative methods (eg. surveys, focus groups), adaptations of existing methods (eg. Web-based pop-up surveys), and new methods developed specifically to collect network statistics (eg. Web log analysis);
- a core set of network statistics encompasses five critical areas of measure – public access workstations, databases, electronic services, virtual visits, and training; and
- a new system for national public library network statistics and performance measure data collection is likely necessary in the U.S.

Together, these issues indicate that developing a core set of network statistics and performance measures for U.S. public libraries is possible. It will be necessary, however, to resolve the methodological issues so as to ensure the collection of valid and reliable network statistics across all public libraries in the U.S. The field-test phase of the research project discussed in this paper is to begin in the fall of 1999. This phase of the project will address the network statistics and methodologies. Readers are encouraged to check the project's Web site at <http://www.albany.edu/~imlsstat/> for details of the field test as it progresses.

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Integrated performance measures in New Zealand

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Measures of library effectiveness have been compared with the results of service quality surveys with the intention of producing integrated measures of academic library service quality. The resulting parsimonious set of measures will ideally combine the service quality dimensions of conformance and expectations, yet still be manageable for collection and analysis. Several measures have been proposed in the areas of library hours, the collection, access, the building and its environment, equipment, and staff. These closely match previously established dimensions of service quality. New Zealand's university librarians still collect traditional performance measures for sound political reasons, but will add suitable customer-related measures if they can identify them.

During the past eight years I have worked on two major research projects relevant to the topic of performance measurement. The first research project examined library effectiveness. Rowena Cullen and I looked first at New Zealand's public libraries, then at the seven university libraries. We wanted to achieve a better understanding of how library stakeholders viewed the concept of library effectiveness, and if we could do that, then we wanted to know how best to measure it. In a second research project I partnered Peter Hernon in an examination of the concept of customer service quality as it was understood by university library staff in New Zealand. We developed an instrument to assess service quality by using gap analysis, and then we encouraged individual university libraries to do their own surveys with our artifact (Hernon and Calvert, 1996).

After completing the service quality work with Peter, I became interested in the possibility of merging, or at the least of discovering some overlap between results from the two separate projects. Because I had drawn upon the seven university libraries during both research projects there were already some results that could be compared. There was also similarity between the two projects in that both were based upon empirical data, hence they produced objective views of effectiveness and service quality as judged by stakeholders and customers. The difficulty was that the service quality work had not produced "measures" as such, so my interest has centred on whether or not measures of library effectiveness can also be used to measure service quality.

My intentions for the study that preceded this paper were to:

- compare previous research I had done into library effectiveness and service quality, to see what both had told us about measuring customer service;
- identify a parsimonious set of measures of effectiveness that also measure service quality;
- see if the resulting measures covered all the "dimensions" of service quality in NZ's university libraries.

Secondary intentions were to:

- review current performance measurement practice in New Zealand's university libraries to see to what degree customer-related measures are being measured and reported (specifically I looked at the library's annual reports);
- assess the degree to which university librarians consider measurement to be essentially political and thus how much use can be made of customer-related measures.

Objective

To propose customer-related measures that coincide with established measures of library effectiveness.

One of the items on a recently published service quality research agenda (Hernon, Nitecki and Altman, 1999, p. 14) is "Develop customer-based measures that complement or replace performance, input and output measures. Which measures are most meaningful to a library for purposes of planning and accountability?"

Another way of expressing it would be to say that libraries can use the measures advocated here, not only to analyse efficiency in terms of workflow, etc. but to set targets of service quality and then see if the library reaches those targets.

MAKING SENSE OF ACADEMIC LIBRARIES

When we try to understand the nature of academic libraries it soon becomes apparent that we are dealing with complex organisations that perform many different functions to satisfy different roles and separate customer groups. We cannot, yet, establish just one way of assessing the performance of such complex organisations. What we are doing is more like taking a large semi-transparent object and looking into it from one perspective, then moving around the object and looking at it from a different viewpoint. I do not claim that effectiveness is the same as service quality. It's just the overlap that interests me.

LIBRARY EFFECTIVENESS

I had investigated the measurement of library effectiveness

with Rowena Cullen. Our research had "effectiveness" as its focus, and our understanding of that was the "doing well of something that the organisation is expected to do" (Cullen and Calvert, 1995). One then has to ask who or what it is that places the expectations on the organisation, so we put a great deal of effort into determining the social context of the "performance" that was to be measured. We favoured the strategic constituencies model of organisational effectiveness and hence divided our surveys into "stakeholder" groups and asked each one separately their view of the effective library. We created a pool of indicators that public and academic libraries can use to measure their effectiveness, as viewed by stakeholder groups. As a result of the surveys, we have lists of ranked indicators that each stakeholder group recognises as the best indicators of library effectiveness.

It's important to note here that even the stakeholder approach produced results that recognise the importance of some traditional input and output measures. It also shows, though, that stakeholders would like to see other measures focused directly upon the service provided by the library. The indicators don't come marked with a flag saying "this is customer-related", so I needed a cross-check on that.

Some of the relevant indicators are: availability of reference staff when needed; proportion of items wanted by user finally obtained; speed and accuracy of reshelving materials; provision of multiple copies of items in high use; proportion of library materials listed on computer catalogue. These are just some examples of highly ranked indicators from the lists. As a result of the research we now know which indicators each stakeholder group values most highly as indicators of good library effectiveness. And we have grouped indicators together into "dimensions" of effectiveness to further our understanding of the concept. They are indicators and need to be operationalised into measures, but that is relatively easy. For example, the reshelving indicator can become "the time taken for each item to move from the return counter to the shelf". The same can be done for reshelving accuracy.

We were concerned with matters of internal management and the allocation of resources, accountability to stakeholders and hence the matter of reporting. Simply, we expected university libraries to use our measures to demonstrate to their stakeholders that the organisation was effective.

CUSTOMER SERVICE – DIFFERENT VIEWS OF SERVICE QUALITY

So, having started from an assumption that we can justify different ways of viewing the organisation, there is a need to reduce its complexity to something comprehensible. An article by Kroon (Kroon, 1995) is very useful when considering service quality in service organisations. He created a framework containing four "dimensions" of quality, together with examples, their respective benefits, and toolboxes. His four dimensions are:

- Conformance quality
- Quality as expectations
- Quality as market perceived
- Strategic quality.

It is the first two of his dimensions that will receive my attention.

QUALITY AS EXPECTATIONS

Hernon and I favoured the use of "gap analysis", or a comparison of the expectations that customers have of service they should receive compared to the service they perceive they actually get, in order to assess service quality in academic libraries. This is based on a belief that service quality is what the customer says it is, and an improvement in quality is a reduction in the difference between expectations and performance. This is Kroon's "quality as expectations" dimension. The primary advantage of the method is that by identifying the largest gaps in service quality, management can focus scarce resources upon the things that matter *according to the customers*.

CONFORMANCE QUALITY

The second of Kroon's dimensions of service that I wish to discuss is conformance quality. This is based upon reducing errors, defects and mistakes that lower customer service quality. The influence of Deming is obviously strong here, and in product-centred businesses the focus may often be on reducing errors in a manufacturing process. In a service organisation we need to know about matters such as incorrect referral (eg. does the customer get sent to the right person to deal with a request for information?), or the time it takes to serve a customer (eg. at a service desk, or the time it takes for them to get into the organisation's Web site), as examples. After discovering the lack of conformance, the organisation must set to standardise its service or product by remedial action. It is the variation from the norm that is assessed in this dimension of service; hence some form of measurement is essential or else the management cannot tell how often and by how much the variations occur. In this paper I am using "measurement" in the sense of it being just a tool. It is the collection of objective data about performance (ie. the doing of something). The results of measurement are not in themselves good or bad, but require analysis of the context in which the activity was performed.

CONNECTIONS BETWEEN THE TWO DIMENSIONS

Kroon did not attempt to connect his service dimensions. About as far as he goes is to suggest that no organisation

should try to deal with all four dimensions immediately, but should start with one or preferably two. If an organisation decided to use the conformance quality dimension alone, he said, the result could be an internal focus that risks missing the input of the customers. Questions such as "how many?" can satisfy management needs, but don't tell us about changing customer preferences, which assumes management already knows what the customers want, and that is not assured by any means. The collapse of the Swiss watch industry is often quoted as a reminder of an internal focus on quality that led to disaster when customer preferences changed but were not detected by management. Monitoring conformance quality should be connected to evaluation of customer service perceptions, which suggests the use of gap analysis.

The same truths hold for a focus only on service quality as revealed by gap analysis, and this is where my interest now lies. Surveys of service quality tell us where the gaps are, but they don't reveal much, if anything, about how those gaps appeared in our organisations. Hill (1996, p. 7) points out that "the overall gap which results in a dissatisfied customer is the gap between expectations and experience, but the root cause of that dissatisfaction can usually be traced back to one of five earlier gaps." He lists these as:

- promotional;
- understanding;
- procedural (promptness, dealing with backlogs, flexibility, customer feedback);
- behavioural (attitude, appearance, politeness, body language);
- perception.

The suggestion being made is that if we dealt with the five gaps he has listed, the later, bigger, service quality gap would not have appeared. The gaps he labelled "procedural" and "behavioural" can both be subject to conformance measurement as they are tangible aspects of the organisation's activities. Procedural factors can be measured, such as whether a customer spends more than two minutes in a queue for an OPAC terminal. Behavioural factors can be measured, and for examples we look to the retail trade. Supermarket managers expect their staff to greet customers, to have eye contact, and to conclude any interaction with a question such as "Is that all?" These behaviours are tested and measured. Service stations use discrete observation to ensure employees greet customers, and promote specials, etc. In a library we only have to establish what we expect of staff in behavioural terms and then we can measure it.

EFFECTIVENESS AND THE OVERLAP WITH SERVICE QUALITY

Stakeholder groups are not as self-centred as one might imagine. The results of the research showed a fairly high amount of consistency between the stakeholder groups, though inevitably the funding agents placed more emphasis on good management and the customer groups placed more emphasis on services within the library. As one member of a funding group once told me, all stakeholder groups want a good library service, but they express their views of effectiveness slightly differently. The outcomes should be the same. So even a concentration upon results from the customer groups does not mean that the other stakeholder groups are ignored.

QUESTIONS FOR MEASURING LIBRARY PERFORMANCE

Hernon and Altman (Hernon and Altman 1998, p. 51-54) produced an excellent list of eleven types of question that can be used in the measurement of library performance. They phrased each one as a "how?" question. The list proceeds from the highly quantitative to the highly qualitative, and the focus shifts from an internal to an external perspective as well.

• How much?	Cost. Physical facilities.
• How many?	Workload. Customer activities.
• How economical?	Thrift.
• How prompt?	Speed.
• How accurate?	Reference. Technical processes.
• How responsive?	Anticipation.
• How well?	Furthering goals.
• How valuable?	Comparisons with doing something else.
• How reliable?	Consistency.
• How courteous?	Transaction standards.
• How satisfied?	Relative to expectations.

It is apparent that we (librarians) are most comfortable with the question types at the start of the list. We understand them, largely through familiarity, perhaps. We recognise the data that is produced because it is usually simple data that makes for easy analysis, and also for simple comparisons with other similar organisations.

CUSTOMER-RELATED MEASURES

What is a customer-related measure? For sure, there is no easy answer to this. One assumes that all, or certainly nearly all, librarians regard the customer's information needs as their organisation's main "reason to be", and this is usually embodied in a mission plan or some similar document. So any activity performed with the intention of ultimately meeting those information needs could be measured and called customer-related. This is the reason why we still collect input measures, presumably, because the size of the collection management fund is connected

to the library's ability to purchase materials that will be used by the customers. Let me take an example. One of the indicators that might be ranked highly by customers in an effectiveness survey is "The total number of volumes in the collection". They are sophisticated enough to see that a large collection can help the library to do what it is supposed to be doing. But, even if you have 500,000 volumes or more, that is not directly relevant to the customer. They might be avid readers, but . . . . What they are really interested in is the satisfaction of their information needs, and that means having just one or two of the "right" books at the right time. That's the way the customer will view service quality.

Hernon and Altman (Hernon and Altman, 1998, p. 69) produced a neat framework of measures relating to library service. In their opinion, the viewpoint of the customer is best expressed by output and/or customer-related measures. The measures should indicate one or more of effectiveness, satisfaction, or service quality. The measures should address the questions: how well, how valuable, how reliable, how responsive, and how satisfied. So, if effectiveness is one aspect of measuring the library from the customer's point of view – and why not, as they are a stakeholder group – discovering the overlap between established measures of effectiveness and new measures of service quality will be rewarding.

The library can benefit from using integrated measures for a variety of reasons. Firstly, the new measures of customer service should be useful in their own right. Secondly, measures should be recorded and reported. This will aid accountability. Personally, I would like to see measures of service quality used for accountability purposes, as well as internal management purposes. Why not tell our stakeholders how well we meet the expectations of customers? Thirdly, data collection is time consuming, and so is the analysis of our measures. Integration might spare some resources otherwise used for data collection, and should, similarly, make analysis easier.

EFFECTIVENESS INDICATORS AS SERVICE QUALITY MEASURES

This brings me to a comparison of the library effectiveness research and the search for customer-related measures. The objective of this is to show that measures used for one purpose can also be used for another. If libraries collect and analyse data that they use to demonstrate their effectiveness to their stakeholders, can they also use the same measures as a way of assessing customer service? The effectiveness research asked six stakeholder groups (resource allocators, senior library staff, other library staff, academic staff, graduate students, and undergraduate students), to rate 105 indicators of effectiveness. Customers are surprisingly sophisticated and can see clearly the difference between effectiveness and service quality.

Hours

As a start, let's take the commonly discussed topic of library opening hours. The effectiveness indicator is "match of hours open with user needs". This was the effectiveness measure most highly ranked by graduate students and second highest by undergraduate students (Cullen and Calvert, 1995, p. 444). One of the service quality indicators was "it is easy to find out in advance when the library is open". This actually becomes a "How well?" question. Measurement of this almost certainly has to be done by survey. Surveys of all potential customers can include a question on opening hours, and how well they match the individual's needs. What each library will need is established criteria to use for judging success. You can't please all the people all the time, unless you stay open 24 hours per day, so how about "the library is open 95% of the hours expected by customers" or alternatively, "95% of customers are fully satisfied with the library's opening hours"?

In-house use studies might be helpful, but they will only reveal the number of students who can come to the library while it is open, not the students who cannot use the library because the hours don't match their needs. If the library does not open in the evening you might find a student makes a special effort to visit early in the morning, but it doesn't necessarily mean he/she is happy about it. Our service quality research pointed to this as a special problem for part-time students who want to carry out a quick visit to the library just before or after class. I think it is possible to build in some aspect of "how valuable?" to this measure by asking what the customers would do if library hours make it impossible for them to use the library when it is convenient for them.

The Collection

Most university libraries will be able to produce data that will measure the indicator most highly ranked by undergraduates in the effectiveness survey, which was "provision of multiple copies of items in high use". Presumably the "high use" is easy to detect, then a match can be made to the catalogue to see how many copies are owned, on average, of all high use items. This is close to the service quality indicator of "the range of materials meets my course needs". Materials availability surveys have been well documented in the literature so there's not need to elaborate on them here. I will add that these indicators could be used as measures of impact.

A related effectiveness indicator looked at the currency of materials, and a service quality indicator raised the thorny issue of the accuracy of materials. Sampling the shelves is the best way of measuring for currency, provided it is backed up by a thorough weeding programme. Some aspects of accuracy (the "how accurate?" question) can also be checked by sampling, such as the accuracy of the catalogue (not all our bibliographic records are accurate),

and the accuracy of reshelving – there was a highly ranked service quality indicator of "materials in their proper place on the shelves". We can then go on to the very tricky question of reference accuracy and that might be measured by unobtrusive testing.

Access

An effectiveness indicator ranked fairly highly by all students was "proportion of items wanted by user finally obtained". Accuracy of shelving, mentioned previously, is clearly going to be a factor in that, and fill rate sampling can also be used. However, most academic librarians already collect much relevant data for this indicator. For inter-library loans they know how many requests are satisfied within a fixed period of time, eg. seven days or 14 days. If the librarians knew what customers expected in terms of delivery times (and that should be reasonably easy to determine) then this could become a customer-related measure. It is not necessary to go faster and faster if, as some research suggests, there is a window of acceptability for speed of response to ILL requests. This measure is recommended by IFLA (Poll and te Boekhorst, 1996, p. 94). Several libraries have engaged in benchmarking exercises to compare their performance on this function.

It's a frustration to many academic librarians to discover just how mundane our customers' expectations can be. Give them all that technology and what do they expect? "Speed of reshelving", that's what Waikato University found, via a service quality gap analysis survey, that this was one of the two highest ranked problems identified by customers, so now they employ more part-time shelvers (Harwood and Bydder, 1998). But one can ask "why had it got to that point?" Why was this problem not detected before a large gap between expectations and performance had developed? That suggests some conformance monitoring would have helped.

The Building and its Environment

Perhaps surprisingly, this dimension of effectiveness was matched by high rankings in the service quality survey. Indeed, among students noise is a major issue. There are simple units to measure noise, lighting and humidity, but then we need to know the degree of "acceptability" amongst our customers to changes in the environment. With that established, it should be easy to use conformance measures to stabilise the environment. To pursue this point further, a survey may tell us that there is customer dissatisfaction with "noise" in the library but it won't tell us specifics. At Waikato University they discovered noise was a problem by using gap analysis, but then followed up with focus groups to identify the most specific problem, which happened to be some noisy lift doors: a problem that was fixed quite quickly as a result.

Seat availability is another very highly ranked indicator of service quality – possibly the highest in some libraries. Seat sampling is often conducted, but needs to be converted into a measure, a proportion, of available space at set times of the day. It's no good saying we have 70% occupancy when students can't find a seat at all during peak hours. How about "at any one time, 95% of customers have found a seat if they want one"?

Equipment

Keeping equipment such as photocopiers, printers (if provided), OPAC workstations, etc., in good working order ranks very highly in the customer's view of service quality. It's also an element in effectiveness, as judged by students, at least. Photocopiers are extremely important to part-time students, according to our research findings. They don't have long to use the library, so they want to find the documents they want and then photocopy them. If you ask the "how valuable?" question of part-time students and their access to photocopiers, you will get a very high measure of value. Logging the downtime of equipment should be relatively easy, though this may vary according to local service provision.

Although it doesn't exactly fit in this section, downtime of remote databases is an aspect of service quality that can be measured by logging downtime. This approach can be extended to our own services, such as documents on the library's Web site. Sterne (Sterne, 1996, p. 144) suggests traditional measures such as counting the number of visitors, where they came from, what browser software they used, how many pages of information they viewed, what pages were the most popular, the number of submitted problem reports, the number of problems resolved within 48 hours, and the traffic load by hour of day/day or week. It's easy to see several traditional "how many?" questions in this list, and already librarians are using counters to log the number of hits their pages receive, and it is also useful for marketing purposes to know the source of the hits. None of this tells us about service quality. Sterne's suggested measures of the number of submitted problem reports, and the number of problems resolved within 48 hours, come close to being service quality measures, and at least they fit into Kroon's dimension of conformance quality. A variation of this is the use of log reports on particular download problems experienced. If customers experience problems with a system then it's possible they won't come back, and that's a measure of value. I like the connection made between difficulties experienced with the system and the number of customers who don't come back.

Staff

Academic staff ranked the indicator "expert staff assistance to users available when needed" as their number one. Perhaps this can only be measured by using composite data. Managers will know the numbers of qualified staff posted to information desks at any time of the day, but of course customers don't actually care about

qualifications as long as they get what they need. Managers can calculate peak times by using reference desk statistics and entry counts. There's also a relationship here to opening hours and the same survey could be used to uncover dissatisfaction, if there is any.

Both senior library staff and other library staff ranked "helpfulness, courtesy of staff" as their top ranked indicator of effectiveness and it was also highly ranked by customers. Naturally this is a subjective judgement, hence is best measured by survey, and specific surveys are better for this. I especially like the survey questions used by one New Zealand university. The question is framed as: "If you consulted members of the library staff today, how satisfied were you with the following aspects of their performance: (i) their professional skills (knowledge, ability to find information, etc.); (ii) their interpersonal skills (courtesy, approachability, responsiveness, etc.)?". Going back to something mentioned previously, if you know what behaviours you want from staff, it is certainly possible to use measures for that, and we can use Hernon and Altman's "how courteous?" question here.

Summing up this section, it is clear that we could develop measures that assess key indicators of library effectiveness as rated by stakeholders, and at the same time use them to assess service quality. We can phrase the questions using many of the question types given to us by Hernon and Altman. Not all libraries currently collect the necessary data, however. Nor do all the indicators lend themselves to conformance quality measurement.

THE DIMENSIONS OF SERVICE QUALITY

The next step in the process is to assess how well the measures mentioned so far cover the dimensions of service quality. Calvert and Hernon (Calvert and Hernon, 1997) used factor analysis of their data set to uncover nine robust dimensions of service quality. They are:

- Guidance
- Waiting times
- Electronic services
- Library staff; and materials in their correct place
- Equipment in good working order
- Material arriving in a set time
- Building and library environment
- Furniture and facilities
- Materials for course needs.

The only one of those dimensions not already covered by a measure proposed earlier is that of "guidance". As guidance involves the OPAC as well as library signage, some measure of the proportion of the library's collection included in the catalogue will be a worthwhile measure. If the library also surveys customer perceptions of how well the catalogue meets expectations, the combination of the two should demonstrate effectiveness. It is reassuring to see that measures of effectiveness can be converted to measures of service quality and still cover all the nine broad dimensions of service quality.

USE OF MEASURES IN NEW ZEALAND'S UNIVERSITY LIBRARIES

To investigate this further, I asked all seven university librarians in New Zealand to send me copies of their annual reports, plus any other measurements that they collected but did not use in their reports. My intention was to count the number of occurrences of the eleven types of questions from Hernon and Altman's book. I soon realised how pointless this exercise was going to be. Nearly all the measurements in the annual reports fell into the first two categories of "how much?" and "how many?" and a few could be classified as "how prompt?" These are examples that I culled from annual reports that have relevance to customer service, though the measures very rarely look at actual service as the activity measured is at least one stage removed from service quality.

- How much?

  Expenditure on electronic resources as a proportion of total collection expenditure.

- How many?

  Web page hits

  Hours of Internet tutorials

  Number of students attending tutorials.

- How prompt?

  Percentage of items ready for shelves within two weeks/four weeks

  Average number of days from order to receipt.

I also discovered that one of my secondary objectives: to discover how far measures are political, did not generate much discussion. University librarians readily acknowledge the need to use more customer-related measures – they are seeking them at this time – but they will not drop existing measures of inputs, etc. Such measures are political because they are used as measures of accountability. They are used in arguments for more funds, more staff, and so on. Naively I had wondered if customer-related measures might replace traditional measures, but the answer was a resounding NO.

I did find one reason for using customer-related measures, however. Some librarians talked about the problems they had experienced during "convergence". One library had described itself in quantitative terms of the number of transactions it processed, the number of databases it stored, the number of workstations it had, and so on. Senior university management had looked at the data and concluded that the library was second best to the IT

section, largely because the library had described itself in the same way the IT section had, and had come out looking inferior. What the library had failed to do was to describe its individual strengths and its character, which, at least some of us believe, lies in customer service. By using customer-related measures the library can demonstrate its distinct character and separate itself from the IT section if that is felt to be desirable.

REPORTING

Is it surprising that annual reports don't include customer measures? No, it's not surprising because librarians have a convention that sets the standard for the way we write them. Mostly input measures of the budget and collection size, and output measures of circulation, are what gets recorded in annual reports. The reports are targeted, in the main, at (the stakeholder groups) of senior university management and the library's own staff. Are we sure that our accountability is measured by this kind of data? I surveyed the university librarians and they said Yes, these measures must stay. They provide important efficiency and workload indicators, as well as being a basis for cross-institutional comparison. All New Zealand's university libraries contribute data to CONZUL (New Zealand university libraries) and to CAUL (Australian university libraries), and those data sets have remained fairly stable for some years. They permit comparison with other universities, and they allow for the analysis of trends, both of which are valid uses of performance measures. OK, but why not include more measures directly related to customer service? My conclusion is that convention has a lot to do with the measures we include in annual reports, and it's probably a convention we should seek to change.

Another aspect of reporting emanates from the increasing use of customer service contracts/pledges, or whatever they are called. Hirshon (Hirshon, 1996, p. 7) makes the point that service plans should contain "specific quality measures for each service", and naturally the measures have to be reported or else the contact is one-sided.

CONCLUSIONS

Selected measures of effectiveness can be used to double as service quality measures. Indeed, effectiveness, as judged by the customers, is a measure of service quality. We can produce measures that assess effectiveness, satisfaction or service quality, using the "how" questions from the list. This can save resources needed for data collection and analysis, and also improve reporting to stakeholder groups, both via annual reports and customer service plans.

At this stage the measures may be too local for inter-library comparison. I don't know if national measures are possible – it's early days yet.

I'd like to see more work on data collection methods to help us answer those difficult questions in Hernon and Altman's list, such as "how valuable?" and "how reliable?" The growing role of electronic resources is also going to pose us problems of measurement which need to be addressed. As long as new measures include the customer, the objective of this paper will be satisfied.

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"Six impossible things before breakfast": a multidimensional approach to measuring the value of libraries

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A realistic performance measurement regime requires acceptance and management of ambiguity and contradiction, and an understanding of the complexity of defining value in the context of libraries. Methodology for measuring value in a corporate library service is described, and models, taxonomies, service business research findings, and behavioural and psychological insights useful to inform performance measurement practice in relation to value are discussed. A conceptual framework for value measurement is proposed. Factors that contribute to ambiguity and contradiction are identified, with emphasis on the role of customer satisfaction assessment and conventional notions of accountability.

INTRODUCTION

There is no litmus test for value because defining value in the context of libraries is complex, individual stakeholders are unique, performance measurement is essentially spatial, and operating in an environment that is neither causal nor predictive creates complications. In this paper I will discuss some of the models, taxonomies, service business research findings, and behavioural and psychological insights I have found useful to inform performance measurement practice in relation to value. I will also briefly describe how we have centralised identifying and reporting value in my library service. However, I have no neat formulae or standards to share with you because each value judgement needs to be guided by explicit hypotheses.

To identify and test the hypotheses underlying value judgement requires eliminating three sources of sclerosis – blindness to reality – which plague most organisations: unchallenged assumptions, organisational myths and organisational taboos.

Assumptions that are unchallenged underpin virtually every activity in every organisation. These assumptions can be obvious, or they can be well hidden. Invariably, they are taken for granted and allowed to go unchallenged for long periods of time. As a result, some grow into myths partially or completely detached from reality, and even when shattered they can rise again. Over time, some incorrect assumptions survive attacks and contrary evidence to become untouchable, so that reality is bent to fit the taboo, not vice versa (Gilad, 1996).

To be able to measure the value of a library, we must, therefore, understand that the Cartesian "I think, therefore I am" does not work. Libraries have no inherent objective value. Value is (subjectively) assigned and is related to perception of actual or potential benefit. Rather, libraries create value by leveraging intangible assets in such a way as to add value and create benefits. They do not manage value. They manage processes and activities and they make decisions that *might* lead to production of value to the users of the library and to the parent organisation.

Libraries can thus be seen to constitute a potential of benefit. One of the difficulties in attempting to measure the value of a library is the near impossibility of measuring its intellectual output, because that is wholly dependent on the proportionate intellectual input of the library user. For example, the library acquires published information – intellectual output of authors and publishers. Then it might enhance the publication or information by organising and possibly analysing it. When the library hands the publication or information to a customer, that customer in turn adds value by evaluating the information presented in the context of his or her personal knowledge, experience and judgement. When the customer uses the information or publication, for example, to inform a decision, whatever decision is taken is based, not on the original information, but on this refined information. So, while clearly the library adds some value, it is not clear exactly how much it adds. This situation has been further obscured by the term "value-added" to denote any service for which it is practical to charge, a term that could also be taken to imply the corollary, that librarians add no value to the so-called core services they deliver. (1)

The extent to which a library's potential is realised as a benefit to any individual, organisation or community thus depends to a large extent on the competences of individuals in accessing and using library services and materials and what proportionate value the user adds. The impact any library has on any individual or community is unique because of the uniqueness of its collection and its users. Indeed, the impact of a library could be deemed to be an accumulation of the impacts of the thoughts of totally unrelated authors. In this sense, the impact of a library is the impact of the choices an individual makes of which items and services he or she uses and the sequence in which he or she will use them. It follows then that the primary purpose of measuring the value of a library must be to see if the library is doing well, not to judge whether it is doing better or worse than other libraries.

Value is a psychological construct. It may be intrinsic or extrinsic, but it is always subjective. Most of us, for example, would agree that car accidents have an immense

impact on the individuals involved, as well as a range of impacts on the community, the vehicle industry, insurance premiums and so on. It would seem, therefore, that they must always have a negative value. However, dissect the Gross Domestic Product of any country, and you will find that car accidents are seen to have a positive contribution to the GDP because the money spent on medical expenses, car repairs, and funerals increases the total.

Value, therefore, depends on perspective and user competence.

VALUE AND IMPACT

Something can have value but no impact on an activity or individual. Equally, something can have impact, but no value for those it has an impact on. What is the difference between value and impact? Does the difference matter? Although it has become reasonably common to speak of value and impact as if they are essentially bundled together, which in some senses they are, there is a fundamental difference between the two, and therefore that difference matters a great deal. Nonetheless, it can be demonstrated that there is a sequential relationship between library impact and library value.

Although impact is also commonly used as a synonym for outcomes, I make a fine distinction between impact and outcomes. The impact of an event or activity is the effect it has on other activities, or on the providers, recipients or beneficiaries of those activities. Outcomes, on the other hand, are the *realised* benefits or detriments that flow from those impacts. To measure value is to measure outcomes, which include the benefits which flow from the library's outputs. It follows then, that to arrive at an estimation of value requires identification of and assessment of realised benefits. It also requires that we move beyond an internally constructed performance spectrum that generally reflects a linear progression from Inputs through Activities to Outputs.

THE PERFORMANCE SPECTRUM

To be able to think beyond the traditional internally constructed performance spectrum is a prerequisite for effective resource allocation and evaluation. In recent years libraries have talked around the notion of outcomes, and some researchers have done some serious work in this area, though I am not convinced that libraries have been altogether effective in moving beyond citing this work as a global proof of the holiness of the library mission, and few libraries seem to be doing more than describe what they assume to be the outcomes of the provision of their services.

In distinguishing between outputs and outcomes, the South Australian guidelines on program evaluation and review use the example of an output as "a client served" and an outcome as "a client helped". I would argue for the inclusion of Customers as a separate category in the performance spectrum, as well as the division of outcomes into Direct or Immediate Outcomes and Longer Term Outcomes because these help to clarify the difference between operational, tactical and strategic approaches to performance (Figure 1). Distinguishing between intermediate outcomes and longer-term outcomes draws attention to cause-effect linkages and identifies lower-level outcomes that are within the control of the library (Ince, 1992). The library may not be solely responsible for long-term outcomes, but I suggest that though you may be judged on immediate outcomes, those immediate outcomes cannot be established without reference to the long-term outcomes, which are a reminder of the moral imperative that underlies all public service.

While, in practice, basing longer-term outcomes on untested assumptions is not unusual, outcome indicators have a specific role in strategic management: to initiate strategies that deliver appropriate benefits. Outcome indicators must, therefore, connect directly with specific tasks.

I first started looking at measuring the value of a library about 15 years ago from the point of view of reporting on the library's value to its parent body. My interest was totally pragmatic, prompted by my search for the underlying logic behind the apparent absence of evidence-based decision making by local government authorities in

Figure 1 Performance Spectrum

Inputs	Activities	Outputs	Customers	Direct/ Immediate Outcomes (Programme)	Longer-Term Outcomes (Policy)
Resources provided	Efficiency Indicators	Things done	Number and groupings	Impact	Value
HOW we do things			WHO we do them with	WHAT (do we want to achieve)? /WHY we do things	
Operational Orientation					
Tactical Orientation					
		Strategic Orientation			

relation to their libraries. While I already recognised that the only viable rationale for a library is to supply value to the direct users of library services, it quickly became clear to me that there are two equally impelling reasons for a library to measure the value it delivers to its parent body and to the beneficiaries of its services. These are to ensure that decision making within and about the library is evidence-based, but what is more important, to ensure the library survives.

Like Alice, I soon discovered that I had moved into an alternative universe. You may recall that in *Through the Looking Glass*, Alice asserts the philosophical proposition that something cannot be both true and false at the same time, whereupon the White Queen contradicts her: "When I was your age, I always did it for half-an-hour a day. Why, sometimes, I've believed as many as six impossible things before breakfast." (Carroll, n.d.). There are so many ambiguous and contradictory aspects to measuring the value of libraries that believing impossible things almost becomes routine.

THE STRATEGIC TRIANGLE

The source of ambiguity and contradiction lies, in part, in the environment in which libraries operate. Moore (1995) calls this the strategic triangle. The three corners of the triangle represent metanetworks. In order to produce services that are valuable to the beneficiaries of our services, we are required to work within these metanetworks to strategically manage our libraries in an operationally feasible manner within the constraints of political legitimacy and support.

Economic rationalism requires establishing the monetary bottom line, but this does not exclude intangibles. In the 1990s, however, the focus has shifted to performance and "value" is the new language of strategy. To legitimately claim credit for its contribution to an outcome, a library must be able to demonstrate a credible connection between its output and longer-term outcomes. Cause and effect is difficult to identify and demonstrate; indeed, establishing the link between the activity and observed outcomes can be extremely complex because causality is relative to social context (O'Faircheallaigh, 1992). While customers are beneficiaries of library services, identification of the customer may be quite difficult and they are not the *only* beneficiaries. The library delivers value not only to the direct user, but also to any agents between the library and the user, as well as to consequent beneficiaries. Benefits to the parent body, to future generations and to the wider community must be included in estimations of value. Even more difficult is identifying causative indicators for the effect we have judged to be a social or organisational good and thus a worthy outcome of library provision. Therefore libraries face the difficult task not only of identifying those social and organisational goods to which the library contributes, but of demonstrating the gains or increase in those goods which can be *directly attributed to the library*. This requires unrelenting and continuous questioning of assumptions and, in particular, identification of other variables. It is all too easy to fall into the trap of spook mathematics. For example, there appears to be a correlation in Germany between the decline of the stork population and the falling human birth rate (*The Economist*, n.d.). Nonetheless, unless you are able to confirm that storks bring babies, you should not use stork population figures as an indicator of human fertility.

CONCEPTUAL FRAMEWORK FOR MEASURING VALUE

When we attempt to establish the value of a library we have to deal with a multi-perspective construct that requires recognition that not all appropriate measures can be precise, quantifiable, and able to be replicated. I therefore propose a conceptual framework for measuring value (Figure 3). This proposed framework is compatible with the conceptual framework for evaluation described by Rowena Cullen in her keynote address at the 2nd Northumbria Conference (Cullen, 1998).

The framework has four components: the library, the spatial context in which the library operates, the stakeholders, who interact among themselves as well as

Figure 2 The Strategic Triangle

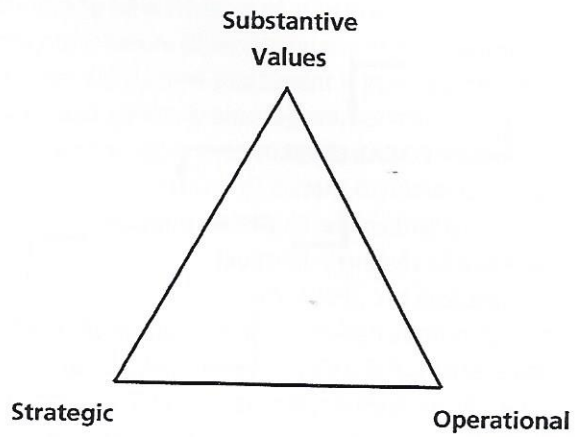
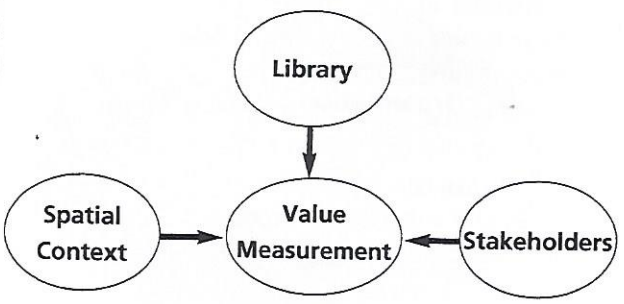


Figure 3 Outline of a Conceptual Framework for Value Measurement



with the library, and the monitoring and evaluation process.

It is not, however, sufficient to merely adopt a "customer focus". Ever since Karl Albrecht (1988) described moments of truth, we have been seduced by the methods and viewpoints of the retail industry. Many of those insights have enabled us to implement much needed improvements in our approach to service delivery, but these have come bundled with an economic approach concerned with resources and the long-term profitability of customers (Grönroos, 1994). Another inherent problem with the so-called "customer focuses" we have learned in the last decade, is that the customer perspective is generally modelled by the service provider. It often then tends to reflect what the library values, and assumes the customers value, rather than what the customers really do value. Unless a library realigns its perception of its own role from service delivery to intervention, its assessment of the value of its services will be tainted. Central to my proposed framework is the absolute requirement for a perceptual shift as to the role of the library. The library must not be seen purely as a deliverer of services, but as an intervener in the social and/or economic well being of individuals, groups and the community within the spatial context, that is, the library is a deliverer of benefits.

Component 1: The Library

The first component (Figure 4) of the conceptual framework is the library, which can be defined as a specific activity of the parent organisation intended to influence a particular system, that is, a particular situation in which the organisation operates. Any of three related elements: the activity (that is, the library or one of the library's services), the organisation or the system provides an entry point to any one of the others. Interactions can be identified between every combination of these.

The organisation as a whole will assess its impact on the system. However, the activity level (the library) should be assessing its relevance and the impact of its activities in relation not only to the system, but also to the purpose of the parent organisation. Because the system within which the library is situated and within which library activities take place always comprises some sort of community, the system cannot assess itself. Organisations of people who act within the system must assess it. Assessing the system enables an organisation to improve its understanding of the context in which it is operating and the conditions it is trying to influence, to examine the relevance of its mission and to articulate its vision for the future. Putting activity and organisational self-assessment into a framework of system assessment helps to prevent unnecessary duplication and ties the system assessment to the library's stakeholders'.(2)

Component 2: The Spatial Context

Almost all indicators of value are spatial in nature, that is, information is usually specific to a spatial level within a system (Figure 5). Not only do those levels affect each other, but decision makers and decision-making processes are different in each level. Spatial levels also relate to complexity levels. If you consider only the focal level your assessment will show average conditions, average value, not the differences that underlie them. It will also ignore the extent to which the focal level influences and is influenced by the levels above and below. There is an inverse relationship between aggregation of data (higher spatial complexity level) and usability of information at the local level, so it is important that information is also drawn from the differentiation level immediately below the focal level. For example, if you are looking at the value of a multi-branch library system, the differentiation level will be the individual branch. To measure and use value information efficiently and to influence decisions, a library needs to define a series of assessment levels and focus on one of them. Outside of the focal and differentiation it is sufficient to identify the key influences and (if possible) assess their effects, but not necessary to try to track them from level to level (IUCN International Assessment Team, 1997).

Figure 4 The Elements

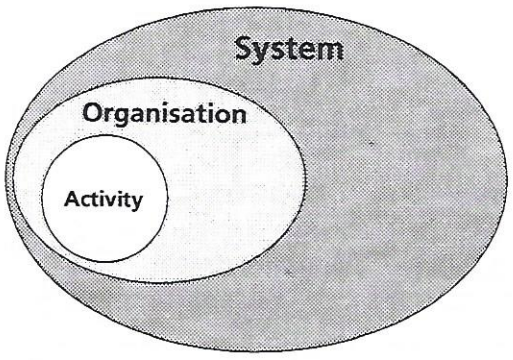


Figure 5 Spacial Context

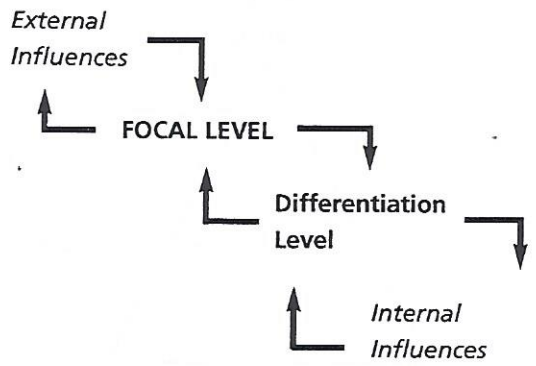
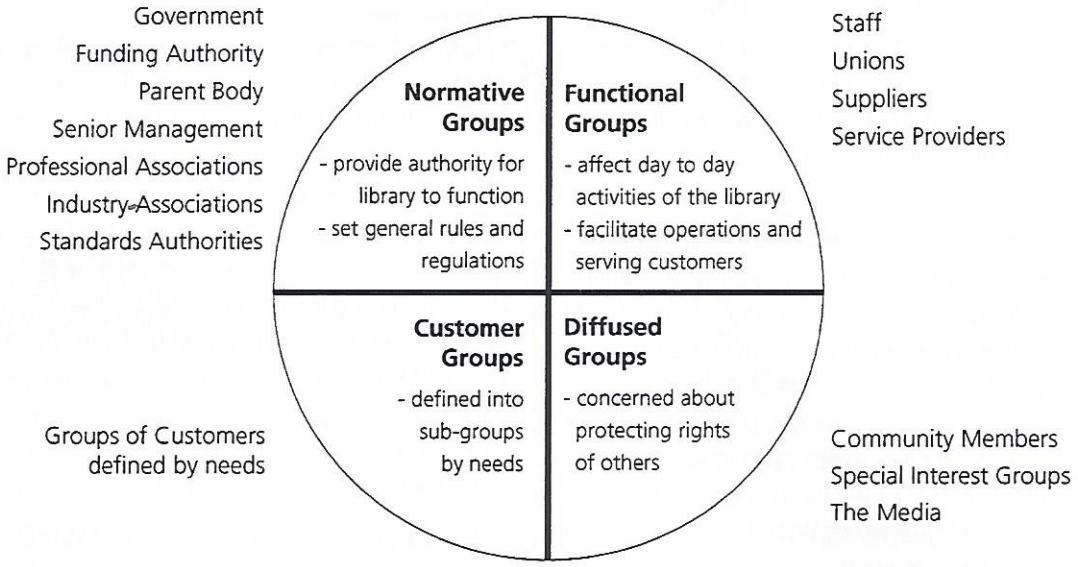


Figure 6 Stakeholder Groupings



Component 3: The Stakeholders

To be able to plan for and deliver value requires that a library understands who its stakeholders are, and what constitutes value to those stakeholders.

All libraries will have four groups of stakeholders, each with its own unique requirements, and all the component groups listed in Figure 6 will be relevant in some way.

Component 4: Value Measurement

In attempting to measure value, a library is not attempting to establish an objective truth but to gather and analyse information that, on the macro level, can be used to support the contention that the library is worthy of continued funding, and on the micro level can be used to make decisions about resource allocation. Thus extra effort expended to go from approximately right to exactly right, though vital in some situations, in others is a waste of time and money (Thor, 1998).

Customer Satisfaction

Though frequently promulgated as the main goal for the library, *the extent to which customers are satisfied* is also often presented as an outcome indicator, and assumed therefore to be a measure of effectiveness rather than the surrogate measure of service quality and value it is. Customer satisfaction assessment is inward and backward looking and generally time-lagged, sometimes severely. It is also tactical rather than strategic (Gale, 1997). Indeed, emphasis on satisfaction of current customer demands can inhibit the development of innovations that can meet the future, or current, but unstated, demands of those very same customers (Christensen, 1997). Yet customer satisfaction is also commonly classified as an output. It is neither outcome nor output. Rather, it is a qualitative assessment of library outputs and a measure of loyalty (McGuire, 1999). While customer satisfaction information is both primary and direct evaluation information, the *realised benefit* those outputs return to the individual user, the community or organisation the library serves, and the library's parent body, is the outcome. Therefore, customer satisfaction can be only an interim measure of value, which has severe limitations. In order to understand the limitations of satisfaction as a measure of value, it is imperative to understand the peculiarities of satisfaction as a psychological construct.

Gathering, analysing and using customer satisfaction data is complicated by lack of clarity about what customer satisfaction ratings measure. There is sound empirical basis to suggest that satisfaction data collected using different modes are not comparable. Comparisons are difficult or compromised because the distribution of self reports of customer satisfaction tend to be negatively skewed, while methods of collecting information can unduly influence the results (Peterson and Wilson, 1992).

For example: as much as a 12% differential in levels of satisfaction occurs between data collected using oral administration of satisfaction questions and data collected from self-administered questionnaires (Peterson and Wilson, 1992). On the other hand, where self-administration is in the form of e-mail research, findings suggest that the ephemeral quality of the message encourages the customer to respond in a more candid fashion (Thach, 1995). Whether the question is positively or negatively framed affects the resulting judgments. There appears also to be a relationship between the level of customer satisfaction obtained in a survey and the timing of the measurement (Peterson and Wilson, 1992). Feinberg et al (1995) have suggested that Likert-type questionnaires are culturally based, with both the determination of areas covered by the questions, and the meaning of the words, culturally determined. There is no practical way to check whether questions have been

misinterpreted or whether deliberately misleading answers have been given. Low customer expectations may also present obstacles (Schlichter and Pemberton, 1992). Interviews, while delivering more complete and revealing answers, are expensive and dependent on interviewer skill and impartiality, and focus groups may not accurately represent the attitudes of the entire customer group (Young, 1993).

Another difficulty particularly relevant to library and information services is that there is a perceptual overlap between information as a commodity and information as a process. The values assigned to the product are often confounded with the values assigned to the service (Dalton, 1992). Murfin and Gugelchuk (1987) found that there may be a difference between satisfaction with the service and satisfaction with the information provided despite the findings of numerous unobtrusive studies that nearly half of all simple reference query responses are incorrect (Crews, 1998; Von Seggern, 1987).

Bias

All measurement data are collected through some form of observation. The investigator either "watches" what happens, or seeks self-observations from a user of the product or service. Value is clearly a judgement. But, the act of judging implies a definition of what is good or desirable and what is bad or undesirable, and we have no conceptual framework which explicitly defines what is considered good or bad getting better or deteriorating. Therefore we have no means to ensure consistency in such judgements, nor is it easy to aggregate various indicators. The "I know it when I see it" test that has been applied to both quality and obscenity, is woefully inadequate, though it incorporates a multiplicity of judgements. If a library chooses only a few indicators, it will measure only selected aspects of value. If it attempts to be more comprehensive it will end up with what is tantamount to noise and extreme difficulty in deciphering how well the library is doing. It is impossible to compare the library with other libraries, because a comparable conceptual framework is still to be developed.

The conceptual framework of value measurement I have proposed highlights the centrality of the multiple constituencies model of organisational effectiveness to the measurement of library value (Figure 7). Calvert (1997) has pointed out how rarely libraries adopt this model. But because individual stakeholders and stakeholder groups will have individual perspectives on value, for this purpose I cannot see any alternative. However, the multiple constituencies model is largely a marketing model, and does not of itself provide sufficient control to ensure that library outputs will return value. That control must be provided by other means.

All humans suffer from a cognitive inability to eliminate bias from their interpretation of information. Consequently objectivity is a psychological impossibility (Messick and Sentis, 1979; Messick, 1995; Bazerman et al, 1997). As a result, quantitative data cannot be assumed to be more objective than qualitative data. A statistic is susceptible to misleading presentation and interpretation, just as a judgment may be based on insufficient information. An accurate, soundly based judgement may be as objective as a set of statistics. However, it is difficult to know when a judgement is unbiased because bias typically enters unconsciously and unintentionally at the stage of making judgements (though this does not preclude deliberate misrepresentation at reporting stage). So-called impartial judgements are therefore likely to be unconsciously biased in a manner that is commensurate with the judge's self-interest (Messick and Sentis, 1979), regardless of the circumstances and the methodology.

The strategic triangle demonstrates three meta-perspectives. The stakeholder groups imply a wide variety of individual perspectives, but it is only when we *also* apply Gummeson's model of three organisational perspectives, which he described as tribes with different mindsets (Barron and Harris, 1995) that the role of perspective is highlighted and it becomes clear that who makes the evaluation, and/or the priority given to certain stakeholder groups, can make a significant difference to value judgements.

The mindset tribes Gummeson describes are:

- productivity tribe – "the time and motion experts"
- quality tribe – "customer champions"
- profitability tribe – "the bean counters".

Performance measures in practice reflect the interactions among these three mindsets. Some of the stakeholders will be viewing services and interpreting their value through more than one of these filters.

Tribal mindsets reflect the choice of the first variable, from which all consequences inevitably follow. Within organisations, this is also reflected in the reality of performance measurement. The measures for the mandated goals for the person at the top will automatically become the goals of the next level down in the organisational hierarchy, and so on. An essential prerequisite, therefore, is the capacity to demonstrate the value of the library both to the community and to the achievement of the strategic goals of the organisation and the mandated goals of the CEO and other senior officers external to the library.

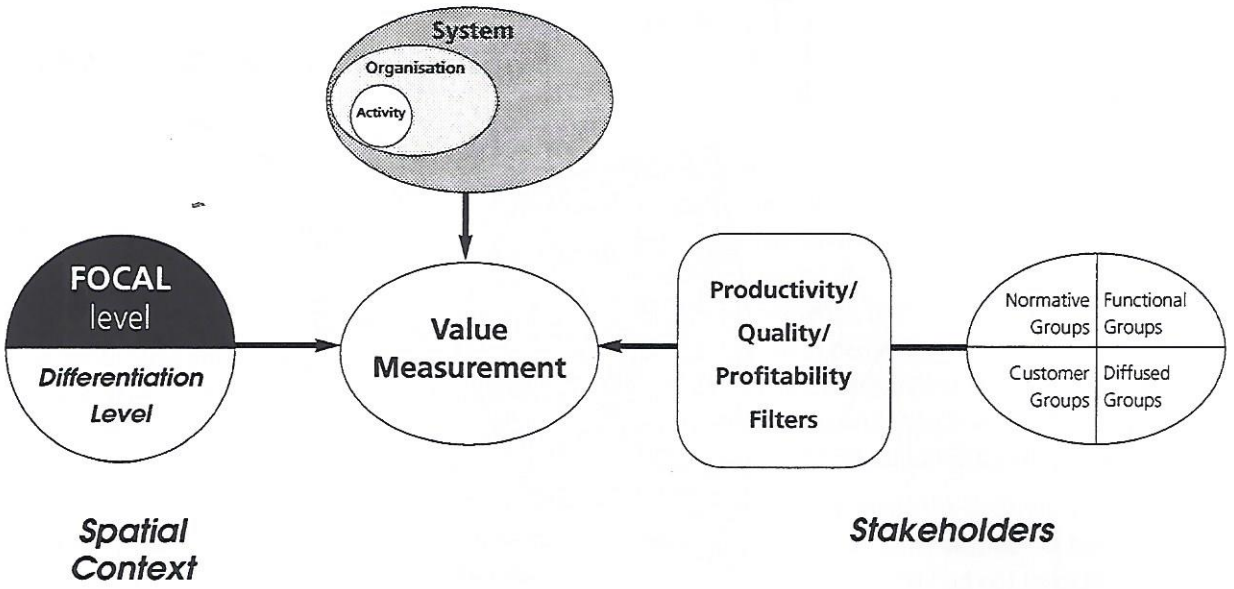
Accountability

In the public sector, this prerequisite is characterised as accountability. There are three separate but essential elements to accountability (Mosher, 1979).

These are:

- information;

Figure 7 Conceptual Framework for Value Measurement



- receivers or discoverers of that information, who must have both the capacity and the will to use the information; and
- some form of recourse.

Conventional notions of accountability suggest there is no point in developing outcome indicators for your activity or program if you cannot be held accountable for the end result inherent in the indicators. Such a viewpoint limits the capacity of a library to measure and report on value.

The hierarchical nature of the accountability chain in the public sector (Humphry, 1992) and the asymmetrical nature of authority relationships (Mulgan, 1997) impact negatively on the quality of information derived from the very processes designed to ensure accountability. Psychologists characterise this as "self-serving bias" (Messick and Sentis, 1979). The traditional hierarchical view of accountability to official superiors is designed to serve only the party who delegates responsibility (Desautels, 1997). In particular, individuals who know the expectations of those to whom they are accountable tend to conform to those expectations (London et al, 1997). Therefore, unless the library adopts a moral notion of accountability, rather than a conventional organisational one, its attempts to establish value indicators will short-change many of the current beneficiaries, and will completely ignore future beneficiaries.

DEFINING VALUE

Having explored some of the ways in which assessment of value is dependent on personal perspective, I want to return to the thorny issue of defining value, an issue so complex that there is a whole philosophical discipline dedicated to it. There is a number of ways in which value commonly is defined: axiology identifies about 20 of them, including aesthetic, ethical and economic values.

From the economic point of view there are two kinds of value – value in exchange and value in use. Economists tend to define value as the amount paid for goods and services. In that view, fees become a surrogate measurement of value and benefit as measured by demand. In a more general sense, value equates to what the economists define as worth – either what is gained or the monetary value derived. Value is often seen as a side effect, not necessarily an objective of a library. Therefore economic benefits are frequently overlooked in consideration of the value of a library even though they are important and more conceptually amenable to quantification than social benefits.

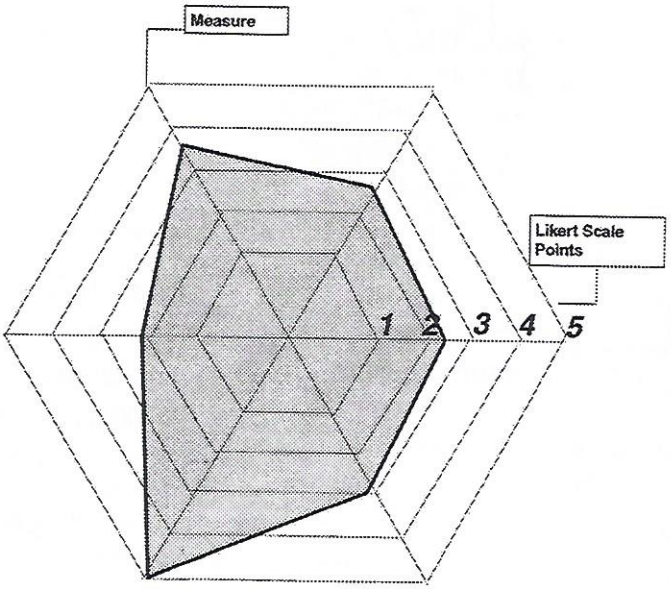
While social and personal benefits constitute the moral imperative for libraries, and should therefore drive strategies, unquantified statements regarding benefits that can be directly attributed to the library are easy to discount and can be dismissed as wishful thinking because of the multiplicity of other variables that may contribute to the benefit.

If we take the various measures or indicators of value developed for an individual library and plot them visually, the difficulty of reaching any conclusion as to overall value becomes apparent (Figure 8).

To obtain a clear message about the value of a library you need a common unit that allows you to combine indicators. The most widely used common unit is money. It is possible to attach a dollar value even to intangibles as long as you also acknowledge that that dollar value can only express a fraction of the value of some classes of benefit.

For this reason, much of my work in attempting to demonstrate the value of my library services, first in the public library environment and latterly in the special library

Figure 8 Visual Representation of Measurements



and school library environment, has focused on quantifying and reporting value, particularly in the form of return-on-investment information couched in financial terms. Documenting the monetary value of the benefits the library delivers can be facilitated by analysing what constitutes economic benefit (Figure 9).

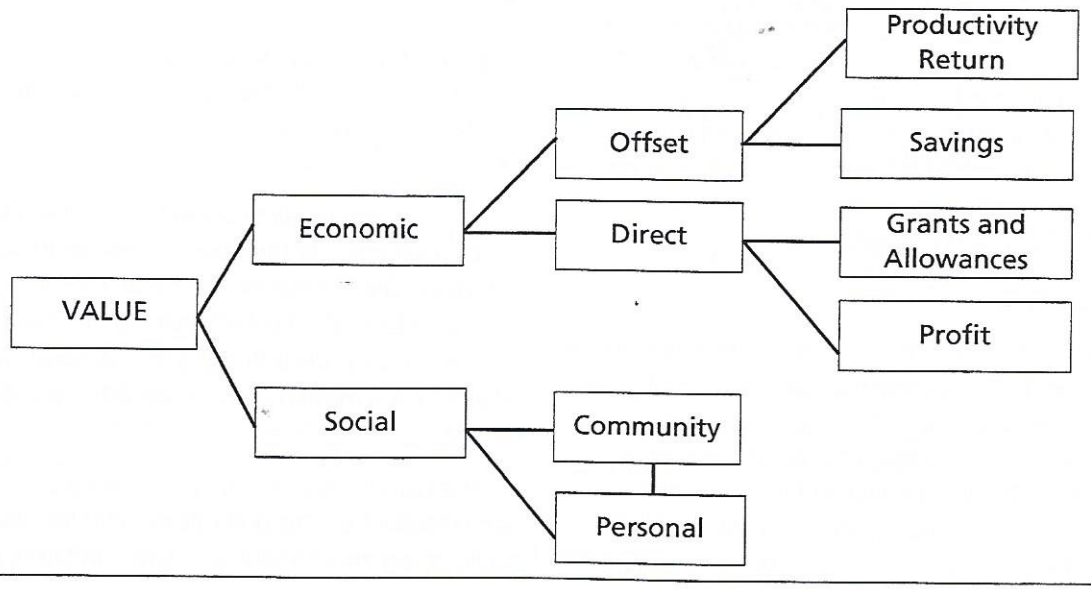
To assign monetary value to intangibles all that is required is to state your assumptions. For example, it is possible to estimate a public library's contribution to the economy of the local area by documenting the following:

- an estimation of the proportion of staff salaries recycled into the community or returned to the community by other levels of government in tax-funded expenditure;
- value of reduction in waste disposal resulting from sharing of books, magazines and newspapers;
- value of local authority information distribution costs offset by circulating that information via the library;
- the amount of personal discretionary expenditure not spent on library-type materials and services and therefore freed up to be spent in other ways in the community.

In this last category, all communities have leakage to those places where the books, magazines or newspapers the community reads are published and/or printed. This can involve leakage of revenue outside the country. Even a very conservative estimate of locally redirected expenditure per capita can add up to a healthy injection of funds into the local economy, representing a very positive return on investment in the total annual budget for the library.

The calculations must include the investment in the

Figure 9 Aspects of Value



collection, in staff, and in operational costs. I advise that the temptation to exclude the library materials vote on the grounds of it being capital expenditure be resisted.

EDUCATION QUEENSLAND LIBRARY PRACTICE

Finally, I want to briefly describe the in-depth holistic data gathering undertaken in the Education Queensland corporate library service. I have deliberately left this until last because it looks so simple, yet it is critical to understand that the analysis and decision making that went into building the system were very complex.

Because our services are focused on contribution to meeting the goals of the organisation, and therefore research services are central to what we do, we use collection of reference satisfaction data at point of transaction as a means of acquiring usable information about the extent to which we satisfy information requests (defined by the customer), the amount of time we have saved the customer by doing the research on the customer's behalf (as estimated by the customer) and the way in which the information will contribute to the meeting of the organisation's goals, together with the monetary value of the information in use. On the way, we also acquire usable information on both the macro and micro levels about appropriateness of the collections.

The return-on-investment realised by my library service thus does not only relate to the value of the information as it is used. It also itemises the productivity gains resulting from having librarians do the research rather than people whose main role is contributing directly to the achievement of the organisation's goals. We report accumulated benefits by using relevant salaries to quantify the productivity gains, to which we add the estimations of dollar value of the information and appropriate narrative about the contribution to the organisational goals. Staff members are required to have an in-depth understanding of what those goals are, and an absolute commitment to the long-term outcome for the organisation – well educated and balanced citizens.

While this reporting method cannot be entirely statistical, the combination of hard monetary-value benefits and narrative has enabled us to drastically reduce the volume of information reported.

The methodology is simple, but it has not been an easy one to implement. Because few people are accustomed to thinking in terms of what they gain from library or information use, in terms of time saved or mistakes avoided, increased knowledge and competitiveness, or better decisions, and because people were initially very suspicious that what we were trying to establish was what they might be willing to pay for our services, it has also taken a great deal of training of users. But we persist, because we also recognise that surrogates for value measurement are inadequate. Recently we have started exploring methods of calculating the offset savings delivered by the collection.

Sometimes, however, you need something external to highlight aspects of the value of libraries. When I worked in local government I used to observe every year that the library would never achieve the funding that engineering services did, because we could not invoke a threat that any politician would be brave enough to test. Local authorities are somewhat wary about the idea of raw sewerage running down the gutters. With the advent of Y2K, the information technology sector received an immense boost in perception of the mission critical nature of what they do. The combination of the introduction of accrual accounting and the Millennium Bug has delivered a minor benefit to Education Queensland libraries.

Some years ago, we made the decision to go against the tide of practice at that time, despite not being able to identify a single library that had not invoked the "no single item worth more than $2,000, or $5,000 or whatever the particular ceiling was" excuse to absolve it from valuing the library collection as an asset. The reason for our decision was our understanding that in accrual accounting terms, invoking such an excuse was tantamount to labelling our collections as an inexhaustible resource, which clearly they are not, requiring a healthy injection of funds annually to buy new materials. We developed a methodology that was a fair compromise between accuracy and ease, and which could be applied in school libraries as well as corporate libraries, and we valued our collections. We repeat the exercise annually. When the organisation began to analyse the risk posed by the Millennium Bug, library automation systems were initially excluded from the list of strategic systems. That decision was quickly reversed when the library collection valuations were included in the equation. The moral of the story is that one should never miss an opportunity to assign monetary value to aspects of one's library service.

CONCLUSION

In this paper I have attempted to demonstrate that defining value in the context of a library is extremely complex. Value is a construct that is difficult to explicate and therefore difficult to measure. It is a construct primarily of belief and thought, and only secondarily of evidence. Value is assigned and related to perception of actual or potential benefit. Thus even where your valuation model is quantitative, valuation is not objective, not timeless, and not precise, because you will not get every element of the valuation right. In the final event, it may be the *process* of valuation that is more important than the product, at least internally, because it requires that you rigorously examine all assumptions and the motivations of all parties.

We are never going to measure value precisely or perfectly. The information we gather is going to be

incomplete, biased by the organisation's focus, and by self-interest of stakeholders. Nonetheless, developing a performance measurement regime that balances traditional notions of efficiency and effectiveness (that is, fulfilling the organisation's strategic intent) with the resulting benefits to customers and beneficiaries, is critical to the survival of libraries, and a prerequisite for strategic development of library services. I reiterate that the purpose of measuring a library's value is primarily not to see whether the library is doing better or worse than others, but if it is doing well. There is, therefore, no more powerful or public signal of what your library stands for than the way it defines and measures its performance, and particularly, how it addresses the issue of measuring its value.

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Notes

1. For a more extensive discussion of this issue see Cram, Jennifer (1995) 'Moving from cost centre to profitable investment: managing the perception of a library's worth' in *Asia-Pacific library conference: conference proceedings volume one*. Brisbane, State Library of Queensland 177-189, and republished in *Australasian public libraries and information services* 8 (3) 107-113
2. I am indebted to a wide range of literature on ecosystem wellbeing and sustainable development for my understanding of the importance of a system framework for value assessment, and of the essentially spatial nature of assessment.

English Public Library Plans: analyses and other outcomes after year one

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The Department for Culture, Media and Sport (DCMS), which sponsors public libraries in England, now requires local authorities to submit Annual Library Plans. Drafting the specification and assessing the plans was contracted to IPF, the consultancy arm of CIPFA (Chartered Institute of Public Finance and Accountancy). "Trial" plans began in 1997. The "real thing" ran in 1998 and continues in 1999 with modified Guidelines. 1998 was a learning process. This year, we are placing more emphasis on "Best Value". Because of a lack of agreed objective criteria for assessing service performance, only the quality of the plans (not of the services) was assessed in 1998. Some authorities which stakeholders regarded as providing poor services submitted good plans and vice versa. Work is therefore about to begin on producing standards and guidelines to allow an assessment of public library services.

This presentation covers:

- Planning – context and requirements
- "Joined-up" – issues arising
- Service Standards – performance indicators (PIs) in context.

1. PLANNING IN CONTEXT

The public library service is one amongst many local authority services: 1.29% of English Local Authority service budgets this year (1.37% last year, 1998/99).

Library services also represent only a proportion of DCMS service aspirations in local government (see Table 1).

- Thus, although English local authorities plan to increase spending on libraries by 3.9% this year (1999/2000), the overall increase devoted to DCMS areas of interest is intended to increase by 5.4%. The aggregate effect of local decisions determines this shift, and the relative shift in spending patterns arises by default rather than national policy.
- In recent years, spending on libraries has decreased in real terms and was until 1998/99 effectively constrained to no cash increase per head of population at all (see Table 2).
- Therefore, the arguments for adopting a planning regime to defend and direct library services are compelling, because it is recognised that ultimately investment decisions are made locally and some practical structure is required to bridge national policy aspirations across all authorities.
- The planning guidelines aim to provide some flexibility for all authorities to report locally conceived aspirations in a recognisable manner. A compromise between a rigid structure and a freestyle document was proposed after examining the trial plans drafted in 1997. Last year (the first year in the formal DCMS planning regime, 1998), the emphasis in the assessment was put on:

  (a) establishing the position statement;

  (b) Guideline compliance;

  (c) awareness of national policy aspirations.
- For many of us the first year was a learning process. For my own part I realise that "any sensible dresser will tell you that hobnail boots don't go well with velvet gloves".
- In this, the second year of the planning regime, we are attempting to shift the emphasis towards securing "Best Value" in the provision of library services (with effect from 1 April 2000). At the same time, the Department is

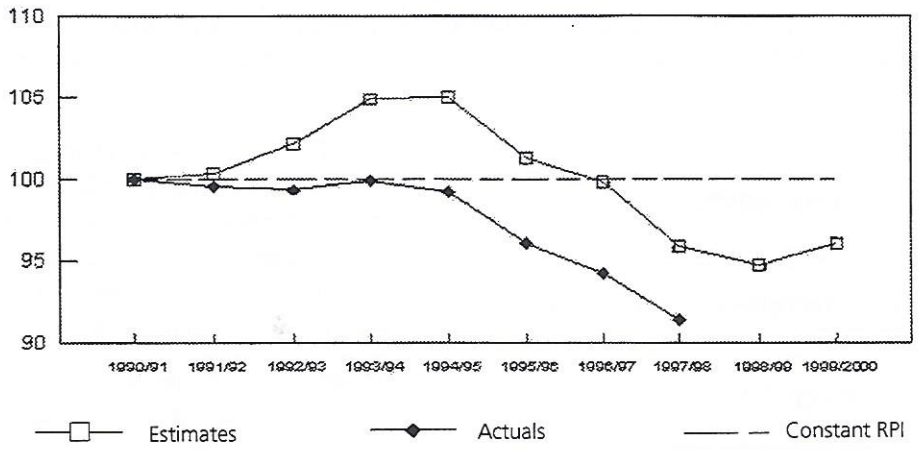
Table 1

	1998/99	1999/2000	Cash increase
Libraries	31.1%	30.6%	+3.9%
Other Culture & Heritage	11.4%	12.9%	+19.2%
Sport	25.3%	24.7%	+2.9%
Tourism	4.1%	4.3%	+9.3%
Parks & Open Spaces	28.1%	27.5%	+3.0%
	100.0% = £2.03bn	100.0% = £2.14bn	
		+5.4%	

Table 2

Net Expenditure/head (Average for England)	**Budget Intentions** £	**Actual Outturn** £
1995/96	12.08	12.02
1996/97	12.19	12.07
1997/98	12.08	12.08
1998/99	12.35	?
1999/2000	12.77	?

*Net Expenditure on Public Libraries (England) – **Real terms***



anxious that authorities should build on the use of IT and develop their social inclusion policies. As it is the second year in the planning cycle, most authorities will be free to confine their submission of the plan to Part "B" – "The Rolling Review".

- So what is new in the Guidelines this year?

  (a) A subtle but indicative change in wording from recognising "weaknesses" towards addressing "areas for improvement".

  (b) A recognition that locally defined targets need monitoring. (The emphasis on nationally defined PIs is mainly within Part "A" of the Plans.)

  (c) Consolidating the "review of performance" to note changes in PIs over the past year.

  (d) Requesting electronic submissions of the plan to allow for easier networking of good practice.

  (e) The possibility of a "front end" proforma to accompany plans identifying significant variations. This may be requested at the same time as the updates to the planning profiles are distributed.

  (f) The plans should be short but sufficient to properly justify the intentions of the local authority. Parts A+B = 100 pages maximum.

  (g) The Guidance does not require authorities to publish a set number of statistical tables or diagrams. The emphasis is on justifying an awareness of the significant trends – in identifying relevant issues and reviewing performance. In Part "B" where the performance review is reported, the acknowledgement of progress against local targets is important.

- The hope is that the "rolling programme" will be sufficiently well rehearsed for all authorities to demonstrate that they are following Best Value principles of continuous review from the outset – Best Value with "reality"!

2. "JOINED-UP"

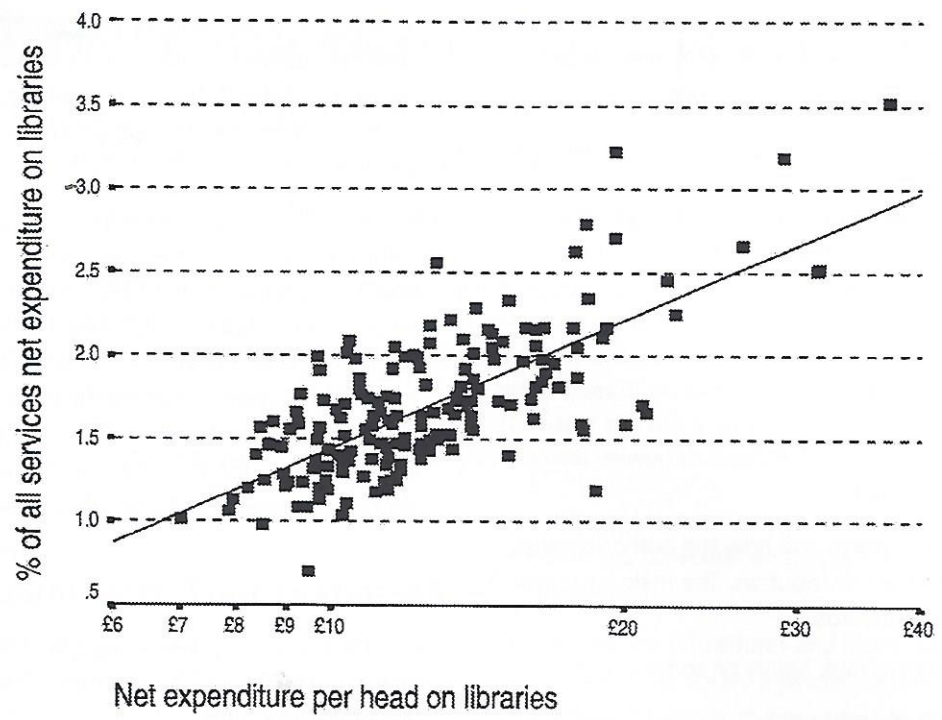
- "Best Value" is becoming an industry – however, it is still a pioneer industry and the rules are still being written. The need to co-ordinate applies as much to the arbiters of service standards as it does to service providers.

- The plan is seeking to "join-up":

  > Library Services – with other local authority services
  – with other local authorities
  – with other library sectors
  – with other partners;

  > Library objectives – with the overall mission of the local authority
  – with other organisations' objectives
  – with Central Government objectives.

Table 3 Library Authorities in England – 1998/99
(excluding City of London)



- Joining-up these strands requires investment of time and an act of faith on the part of many to pool the necessary resources.

  Higher spending on libraries means the authority must shift resources from other service areas – or (put another way) – higher real spending in libraries can arise from getting other services to account for the investment (see Table 3).

- The budget intentions for expenditure on Continuing Education including Youth and Community Services (£706 millions in 1999/2000), for instance, exceed aggregate library budgets (£656 millions).

- Last year's plans showed many instances of "joined-up resource thinking", but many were obviously prepared in a "financial shadow". Sometimes, the author of the plan was unable to get the appropriate central support to cost their options.

- The other side of joined-up is how co-operation develops between Government Departments and regulatory bodies such as the Audit Commission. The Commission's intentions are the subject of consultation at present. Given the role of the Library and Information Commission (and of the future Museums, Libraries and Archives Council) in facilitating the development of libraries, there is a need for all parties to keep in close contact.

- From my own view point I have observed the extensive efforts being made by authorities this year to network and share their approaches. It is hoped that this leads to further partnerships.

3. STANDARDS

- The real link which is capable of joining-up central and local policy determination in the planning process is a recognised set of service standards. Some have been defined:

  > Bourdillon Report in 1961

  > International Federation of Library Associations (IFLA) in 1973 (revised 1985)

  > Library Association (LA) Model Statement in 1995.

  However, not all local authorities subscribe to these.

- There is a conundrum:

- to define a level of service below which it would be unacceptable for any service to fall;

- keeping these defined standards under continuous review so that the minimum level does not become accepted as the norm.

- In last year's plans only two authorities omitted to describe their service levels, but it has to be said that there is no acknowledged norm. Each authority is operating from a different and unique historical base.

- The different historical bases apply to other services as well, and it will be a challenge to review the national definitions of standards for library services given that these need to acknowledge the level of service in other and complementary public services.

- It is in this "standards vacuum" that the approach to evaluating PIs has to operate. In order to inform

consideration of existing service levels and to assist in their continuous review, the "Planning Profile" of statistical indicators and trends has been circulated. It sets out the available nationally defined PIs for the convenience of those responsible for reviewing the plan – it is a factual, rather than a judgmental document.

- Already certain issues have arisen concerning the way in which PIs can or should be used in the process of performance review: Part 1 of the Profile sets out a selection of key indicators which are intended to describe the:

  > Deployment of the service

  > Use made of the service

  > Responsiveness of the service

  > Resources employed.

- Overall trends are shown and how the authority ranks each year in the class distribution. The main issue which arises relates to standards:

  > is it appropriate to rank highly on some indicators?

  > is it a measure of "parsimony" or "profligacy" to spend highly or lowly?

- Another issue concerns the availability of sufficient, consistent and up-to-date information to inform the Plans. A time series for new unitary authorities has yet to emerge and a good deal of special benchmarking amongst such authorities needs to take place.

- An update including the 1999/2000 budget estimates data will be circulated in the next two weeks and, following the equivalent data for 1998/99, actuals will be circulated as soon as the survey is sufficiently complete.

- DCMS has given the independent Committee on Public Library Statistics (CPLS) the brief to review the indicators and consider the format of the planning profile. This group is responsible for specifying the collection of the "CIPFA Statistics" and National Standard User Surveys, (known as "PLUS") and includes a broad representation.

- More recently a number of benchmarking groups have grown up to add to the earlier work undertaken by local groupings such as South East London Libraries Performance Indicators Group (SELPIG). These groups, which are complemented by the regional meetings of professional officers, are the best means of developing the locally defined indicators for tracking planning targets. The real reasons for difference can be explored and the processes for delivering the service compared in these group meetings.

- The library service – in contrast to many other public services – has a great deal of organised and developed background information available to inform the planning process. Now that there is a more concise focus on these available indicators, the debate is already beginning between authorities about how consistently they are reporting their statistics. In particular, the difficulty of accounting for joint working arrangements between authorities will have to be addressed by the compilers of the statistics if the indicators are to more usefully inform the planning process and monitor future achievements.

- However, the big gap, such as it is, relates to the lack of comparative data on electronic access to information, and it is essential for the CPLS to address this requirement. Data on public use of ICT through libraries will be required to monitor the success of policies, but they are also needed to determine standards and monitor investment policies. Any "bottleneck" in available funds for investment in this area can then be addressed properly in Public Library Plans.

References and Further Information

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These are also at <http://www.libecon2000.org/country/uk.htm> together with consultation on the proposed Guidelines for 1999, and discussion group.

Developing national statistics and performance measures for public libraries in the networked environment: preliminary issues for redesigning a national data collecting and reporting system in the USA

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This paper provides an overview for how one might think about strategies and techniques for evaluating networked library resources and services. The paper proposes an approach for considering types of assessment techniques and types of data collection that might be employed. This approach may also assist evaluators to consider which types of performance measures might be most useful given the context of the assessment. The paper also offers some practical guidelines and strategies that evaluators might consider as they evaluate networked library resources and services.

INTRODUCTION

Increasingly, libraries of all types are recognizing the importance of developing statistics and performance measures for the networked environment. They also are recognizing the need to establish national procedures for collecting and reporting such data. For public libraries in the USA, there has been some discussion about how best to (1) determine which networked statistics and performance measures are the best candidates to be collected and reported nationally, and (2) develop procedures that can define, approve, collect, and report the appropriate data elements in a timely and systematic fashion.

The purpose of this paper is to report on preliminary findings from a study in progress. The study is *Developing National Statistics and Performance Measures for Public Libraries in the Networked Environment* and is funded by the U.S. Institute for Museums and Library Services (IMLS) as well as the state libraries in Maryland, Delaware, Utah, Michigan, North Carolina, and Pennsylvania. Additional background information about the project and a range of working papers can be found at <http://www.albany.edu/~imlsstat/>.

As of summer, 1999 the study team, which includes the author, John Carlo Bertot, and Joe Ryan, have completed site visits to each of the above identified states. In addition, the study team has completed a number of additional analyses related to various aspects of the study (see < http://www.albany.edu/~imlsstat/> for more detail). This paper reports only on one aspect of the study by focusing on selected preliminary findings from the site visits. The findings emphasized here describe key issues that will need to be addressed and resolved in order to:

- determine which data elements should be collected nationally to produce statistics and performance measures describing public library networked information services and resources;
- insure the collection and reporting of accurate and timely data;
- organize the procedures and responsibilities for local libraries, state library agencies, and various Federal agencies to collect and report these data;
- use the statistics and performance measures for better library planning and decision making and to better direct national policy making related to public libraries and the networked environment.

Thus, a first and critical step in developing national statistics and performance measures for public libraries in the networked environment is to identify key issues broadly related to these topics. This paper provides a preliminary identification and discussion of these issues.

As a basis to discuss these issues, an important term that requires attention is "network-based resources and services" which the study team currently defines as:

> Network-based resources and services are those electronic information resources and/or services that users access at a public library or access via a public, regional, or statewide library telecommunications network. Examples of electronic network *resources* include: public, regional, or state library hosted or authored Web sites or library or licensed databases (eg., Infotrac, SearchBank, EbscoHost). Examples of electronic network *services* include: provision of access to networks via public access workstations or dial-in/remote access; network services such as e-mail, listservs, chat, online reference/assistance; and training in use of these resources and services.

The study team expects this definition to continue to evolve as the project itself evolves and additional data collection occurs.

In addition, it is useful to understand the process by which national public library statistics are currently developed in

the USA. A group called The Federal State Cooperative System (FSCS) is a collaborative public library data collection system that involves the U.S. National Center for Education Statistics (NCES, <http://www.nces.ed.gov/>), the U.S. National Commission on Libraries and Information Science (NCLIS <http://www.nclis.gov/>), and the 50 U.S. states and District of Columbia. Collectively, these various entities meet annually to discuss and coordinate public library data collection efforts at the local, state, and national levels.

The FSCS recommends to the NCES the data elements that will be collected by the state library agencies for the annual statistics. The state library agencies typically add other data elements that they wish to collect in that particular state as part of the annual survey that is administered to all the public libraries in a particular state. Once the state surveys are completed, data, at least the data requested by NCES, are returned to NCES for analysis and reporting. This process has been criticized because of the length of time that it can take between proposing recommendations to FSCS for changes in the data elements to be collected (such as networked-related data) to the time such data would then be collected by the state libraries and then finally reported nationally by NCES. This time period might be as long as four to five years. A review by the study team of recent networked data elements proposed to FSCS that failed to be approved appears at <http://www.albany.edu/~imlsstat/>.

Finally, it is not the intent of this paper to analyze and describe the various literatures related to developing national statistics and performance measures for public libraries in the networked environment. An annotated bibliography of selected writings on this topic as well as other related sources can be found on the project Web site at <http://www.albany.edu/~imlsstat/>. The paper does intend, however, to summarize a number of significant issues related to this topic in hopes of encouraging a wider discussion, debate, and resolution of these issues.

OVERVIEW OF KEY ISSUES

This section of the paper introduces and briefly discusses selected key issues that have been identified thus far from the various data collection efforts in the project. They are not intended to be a comprehensive discussion of all the key issues identified. Rather, they are intended to provide a flavor of the issues that will require additional attention and debate as the USA moves toward the development of national statistics and performance measures for the networked environment.

Conceptual Issues

- *Different Models/Frameworks for Developing National Network Statistics and Performance Measures*

There is a number of research models and frameworks for developing, defining, and measuring network statistics and performance measures. Each approach can affect the types of statistics and measures developed, the nature and use of those statistics and measures, the methodologies used to collect the statistic and measure data, and the presentation and interpretation of statistics and measure data.

The way in which one frames or models approaches to develop a process for collecting and reporting national public library statistics and performance measures has a significant effect on which data to collect, how to organize the collecting process, and determining appropriate roles of key or lead state and Federal agencies. For example, the study team currently is exploring a model that relies on Federal leadership, another on state leadership, and still another in which the statistics collecting and reporting process is "outsourced" to a non-governmental organization.

Other models or approaches for studying this topic offer different means to fund such a national effort in a time when all government units (including local public libraries) appear to be extremely pressed to meet current commitments – to say nothing about supporting new responsibilities in the area of national data collection. These various models will need to be detailed and analyzed against a set of meaningful criteria to determine which of the approaches offers the best set of benefits to the various stakeholder groups participating in the course of developing this process.

- *Core Statistics and Measures*

Is it possible to develop a limited number of core statistics and performance measures (6-8) that most states and libraries can agree upon for national data collection? Can this core set of statistics be part of a larger menu (12-15 additional statistics) from which libraries and states may select additional statistics and measures for collection and reporting?

The findings from the site visits clearly confirm that local libraries do not have the time, expertise, or interest in committing significant resources to collecting data on a range of networked services and resources. The study team also found that proposed "core" networking statistics varied in usefulness from library to library and from state to state. Nonetheless, if the nation is to have useful data to plan for and extend the role of public libraries in the networked environment, *some* agreement on which data are to be collected will be needed.

Methodology Issues

- *New and Variant Methodologies*

Network statistics and performance measures require researchers and professionals to consider the benefits and/or necessity of using traditional qualitative and quantitative methodologies (eg. focus groups, interviews, surveys), adapting traditional methodologies (eg. pop-up

Web-based surveys), or creating new methodologies (eg. Web-based transaction log analysis) to capture network usage data. The experience of the study team thus far is that it will be necessary to create new data collection methodologies to present a realistic picture of public library services and resources in a networked environment.

Reliance on new data collection methodologies, however, will require additional time and effort, as well as new skills, from the librarians who would be required to collect the data. For example, asking for detailed Web-based statistics would necessitate individual libraries using Web analysis software, an ability to implement and use that software at the local level, and a knowledge of how to obtain the necessary data from the software to report nationally. The degree to which such an effort is feasible, on a nation-wide effort, is problematic.

• *Data beyond the Control of Libraries and States*
Libraries and states are engaging in substantial licensing agreements for Internet-based database access with vendors (eg. OCLC, Ebsco, UMI, Gale/IAC). At present, libraries and state library agencies are dependent upon the vendors to provide them with a range of database usage statistics. Currently, the degree to which the database vendors respond to the library community's need for various statistics (eg. log-ons to a particular database, IP addresses of log-ons, time of day of log-on, and duration of the session or visit to a particular database) is mixed at best.
Further, the few vendors that do provide selected statistics may use different terms and definitions in their reporting – which makes the data non-comparable across different vendors. Increasingly, however, libraries need to have summary statistics of networked database use which are controlled by vendors and not the library. This issue is not unique to public libraries. All librarians will need to make known their data reporting needs to vendors better and agree among themselves as to the data needed; vendors will need to better listen and work with the library community to automate data collection and reporting in database software and to standardize data reporting techniques.

• *Samples rather than Populations*
To promote timely and responsive statistics and performance measures, more reliance on carefully developed samples rather than 100% population responses may be needed. Such may be needed at the local, state, and national levels. Currently, NCES strives to obtain 100% response rates before data will be analyzed and reported. The trade-off for obtaining 100% response from the population is an extended delay in reporting data.

For many librarians and policy makers, having data based on samples that produce relatively quick reporting (six months from data collection to data reporting) is well worth a small decrease in the accuracy of the data. Part of the issue here is having data and findings that are "good enough" for decision making at the national, state and local level as opposed to data that have high academic quality for in-depth assessment.

• *Move to Qualitative Data*
To address a range of performance issues related to using networked information resources and services it may be necessary to increase the reliance on collecting, analyzing and reporting various qualitative data. Likert scales that assess user satisfaction with a particular networked service, for example, may be very useful to better describing perceived usefulness of a service such as interactive Web-based reference service. The degree to which such approaches can then be compared across different libraries, however, is problematic.

Additional research will be needed to assess the degree to which statistics and performance measures based on qualitative techniques are useful for various stakeholder groups. At the local level, it is well-known that anecdotal information and other types of "human interest stories" can be quite powerful in supporting the use of networked library services. At the state and national level, however, such may not be true and the anecdotes may be difficult to aggregate into a "national" perspective. Work, however, in this area should continue.

• *Estimates of Network Services*
All nationally collected and reported data related to libraries and services are best seen as estimates – even those that are currently being collected. The fact of the matter is that there are limited reliability and validity checks that can be established over the data collection process. There needs to be recognition that any of the statistics and performance measures likely to be proposed for the networked environment will also result in *estimates* and will have varying levels of accuracy depending on how they are collected and reported. Estimates, however, are better than having nothing. Estimates can still be used as input for decision making and are likely to be "good enough" as opposed to having no data. Providing footnotes and explanations to the limitations of such data should be considered as an important component in any data reporting process and can reduce the misuse of interpreting such data.

Definitional Issues

• *Defining Networked Services*

The definition for this term is under development but currently is defined in the introduction to this paper. While there is agreement that networked statistics and performance measures must have clear and easily understandable definitions, many of these terms are complex and may require detailed definitions with detailed examples. Some of these definitions may have to include some arbitrary decisions as there are competing possible

definitions – none of which may be compelling. Thus, in the short term it may be less important which definition of terms is used than that there is some national agreement to use a particular definition until there are compelling reasons to change it.

- *Developing and Defining Network Statistics and Performance Measure*

The study team has developed a preliminary list of statistics/performance measures based on research/review of state library Web sites. These statistics and performance measures have been assessed during the site visits. There continues to be some discussion among interviewees as to the appropriate definitions to use with these statistics and performance measures. Interestingly, some states have moved forward in collecting their own data elements that describe networked services and resources. In the absence of national definitions, and as states develop their own definition for what constitutes, for example, "networked based reference service," it will become increasingly more difficult to reach consensus on definitions for key terms.

- *Rethinking "Population Served" and "Per Capita" Measures*

In the networked environment, the "legal population served" loses meaning because anyone from around the world can access and obtain services off, for example, a library Web site. Thus, traditional measures that index service provision or costs to legal population served (or some local geographical area) may be inappropriate. As an example, the performance measure "reference transactions per capita" can include electronic reference transactions that might originate from around the world. But in fact the determination of the "per capita" part of the measures is based on an estimate of legal population served – which may come from the state or another government unit. It is unclear how such "per capita" measures can be translated into the networked environment.

Issues Related to the Use of Networked Statistics and Performance Measures

- *Evolving Development of Statistics and Performance Measures*

The process of developing network statistics and performance measures is evolutionary. As a result, the study team continues to refine network statistic and performance measure definitions, the statistics and measures of interest and use, and methodological issues regarding the collection and presentation of network statistics and measures based on the various data collection activities the study team undertakes. There may be a period of time where these definitions change over time because the ability to measure networked services and resources may also change over time. Thus, definitions that make sense today, may be more reliable or accurate once research methods and measurement techniques improve.

- *Implications for Longitudinal Aspects of Network Statistics and Performance Measures*

The rapidly changing nature of information technology will have a substantial impact on the life-cycle of the network statistics and performance measures developed through this study (as well as those efforts undertaken by others working in this area). It is very likely that it will not be possible to have longitudinal data describing networked information resources and services that extend beyond three to five years. The mindset of producing statistics that are meaningful over long periods of time (eg. circulation per capita; attendance counts; reference transactions; etc.) may need to change.

For example, collecting data to describe the degree to which public libraries in the USA are connected to the Internet was especially important in the early to mid-1990s. However, as that percentage approaches 90% (as it is expected to do early in the new century), its importance is considerably less. More important might be to describe the type of connectivity and the types of services being provided by that connection. Five years from now, it may be less important to describe the type of public library connectivity if 90% or more have T-3 or better levels of connectivity. By then, some new type of statistic – not previously considered because of changes in technology and access – may be more appropriate to describe library networked services and resources.

- *Comparability of Numbers Across Libraries and States*

To what extent can these national statistics and performance measures be compared across libraries and states? The answer lies, at least in part, on having carefully developed procedures and definitions that facilitate libraries collecting data in the same way and under similar conditions. The issue of comparability and accuracy of the data across different states and libraries is not a new issue. The results of the site visits, however, suggest that insuring accuracy or data so that such comparability can occur may be *more* challenging for networked services and resources than for traditional services currently being collected.

- *Reporting back to Libraries*

Until the states and national agencies do a better job of analyzing and reporting back to individual libraries statistics that are timely and useful for decision making, there will be limited commitment to collecting such data. Successful reporting back to individual libraries will require customized analyses, intended to assist them in local decision making, done in a very timely fashion.

A common complaint heard by the study team during the site visits was that much of the data they collected was not reported back to them in a manner in which they could use it for local decision making. Some interesting approaches, however, are evolving. Some states, such as Kentucky <http://www.kdla.state.ky.us/libserv/stats.htm>,

are currently experimenting with interactive Web sites that allow local libraries to analyze the state database of statistics and print off their own reports and graphs. Some private sector firms such as Bibliostat <http://www.bibliostat.com/> are implementing systems that allow libraries to do realtime comparisons and benchmarking against other "peer libraries." Additional work needs to be done in this area to promote ways in which local libraries can make better use of the data they collect.

Issues Related to Library Technology and Uses

• *Technology Infrastructure and Configuration*
Based on the research conducted thus far by the study team, no two libraries have the same information technology infrastructure, configuration, or systems implementation. Moreover, while libraries may use similar applications and hardware, no two are implemented in the same manner. This creates a substantial challenge for the collection of the *same data* from libraries using similar (but different) technology in various configurations. Another implication is that the development of instructions to libraries about how best to collect networked data may require multiple approaches to accommodate differences in local technology infrastructure configuration.

• *My Technology, My Outlook*
A library facility's infrastructure and use of technology leads to a local view of network statistics. That is, study participants base their need for electronic network statistics on their facility's use of and involvement with network resources and services. As such, it is often difficult for individual libraries to see the need for certain statistics and performance measures that do not *directly reflect* their facility's current implementation and use of various network services and resources. Generally, librarians want to collect networked data only if it makes sense for their particular situation and for their particular technology.

Data Collection Issues

• *Automated Data Collection*
From both a Web-based environment as well as a vendor-supplied database environment, there is a need for networked services and resources to be described automatically and unobtrusively by the system itself rather than through overt data collection efforts on the part of state libraries and individual libraries. For example, there is a number of software programs that can track uses and services provided via the library's Web site. Libraries may also be able to write their own programs to track/monitor Web and other types of uses. Many librarians commented that they simply do not have the time, expertise, or interest in collecting such data for the state or the national government unless the data collection process is automated and unobtrusive.

• *Working with Vendors*
Related to the issue above is the need for the library community to be more forceful in detailing contract language that requires database vendors to be better able to supply specific types of statistical information from the use of these databases. Increasingly, the library community will be dependent on statistics from vendors if such statistics are to be obtained. Progress could be made on this issue if lead libraries would agree amongst themselves as to the type and definition of the various statistics that should be provided by the vendors. The database vendors cannot be expected to provide customized and/or unique sets of statistics to each of their customers.

• *Composite/Unit of Service Approach*
Many libraries and state library agencies are looking for some type of single/composite measure that captures the *Units of Service* that a library provides, rather than a single count/statistics that focuses on a single measure of library services (eg. circulation). Such an approach removes the reliance upon single service measures such as circulation as indicators of library service consumption. For example, some librarians recommended to the study team that a unit of service might be "networked services provided" which would include electronic reference requests, log-ins on the library's Web site, and downloads of full-text articles from the library (or database provider's) server. The extent to which a composite measure that is valid, reliable, and useful is possible to create remains unclear at this time.

• *Statistics to Address Policy Issues*
The statistics and performance measures needed from year to year to address state and national policy issues are likely to vary. A national statistical system needs to be "fleet footed" enough to be able to both anticipate and respond timely to such policy issues affecting library services. For example, a current debate in the USA is the role of libraries in supporting the development of universal service to the nation's residents. When the initial debates occurred in Congress regarding universal service issues (as described in the Telecommunications Act of 1996), the library community had very little data with which to address these issues and propose strategies for appropriate roles of public libraries to support the provisions of universal service in the new law.

• *The Burden of Data Collection at the Local Library*
To reduce overall burdens of data collection it may be appropriate to consider collecting certain data to produce certain statistics and performance measures every other year or every third year, etc. In some instances a serious reduction in data currently being collected may be necessary if new networked statistics are to be collected. Many local public librarians report that the existing annual surveys administered by the state library agencies are "excessive" in time demands. Indeed, some state library agencies add hundreds of additional data elements to the annual survey beyond those required by the NCES.

Implementation Issues

• *Developing Statistics and Measures are Less the Problem*
The study team has identified numerous public library statistics and measures currently being collected by state library agencies that describe networked services, programs, use, and resources <http://www.albany.edu/~imlsstat/state.analysis.pdf>. The site visits confirm that some states are also developing additional statistics and performance measures for statewide collection.

Concerns about data comparability, the burden of such collection efforts, ensuring accurate and timely national reporting, and implementing such a system nation-wide may be more problematic than developing and agreeing on the statistics and performance measures to be used as a basis for national data collection and reporting. A major issue encountered by the study team during the site visits was how best to *reduce* the potential list of statistics related to networked services and resources.

• *Coordinating the Development of Network Statistics and Performance Measures*
The importance of capturing library network services usage data is an issue with which numerous national and international library professional organizations, standards development committees, researchers, library organizations, library consortia and coalitions, and consultants have been wrestling substantially in recent times. These efforts yield, unfortunately, often uncoordinated approaches to the development of statistics and performance measures, differing statistic and measure definitions, variations on elements for data collection that reflect local/ organizational issues and context, and the adoption of different data collection techniques.

• *Scalability of Network Statistics and Performance Measures*
The collection of national network statistics and performance measures implies that it is possible to collect network statistics and performance measure data at the local library level and aggregate those data to a state and national basis. Preliminary data collection activities suggest that the scalability issue is complex and not easily resolved.

For example, the data need to be scalable in the sense that the data collected at the local library are important and useful for that library, for the state, and at a national level. If the local library believes that the data are not useful locally, librarians may not collect the data nor be committed to collecting them accurately. Scalable also implies that when the data from all the various local libraries and the 50 states are collated or aggregated, they are still useful and meaningful.

• *Implementation of Procedures*
Any set of new networked statistics and performance measures will require a "roll-out" period that adequately educates and prepares libraries to collect the required data. This roll-out period will need to be coordinated by state library agencies and others, and it may take one to two years to complete prior to any actual data collection.

It has been suggested to the study team during the site visits that that *any* new procedures for data collection (including the introduction of new data elements) should first be pre-tested with collection instructions. After the pre-test, the revisions and changes should be confirmed as appropriate with selected representatives at state library agencies. Then the FSCS coordinators at the individual states should be briefed and trained. Finally, the local libraries would be briefed on the data collection process and be given a year to prepare.

• *Rewards and Incentives*
It is not clear if there are adequate rewards and incentives for state library and individual libraries to initiate a regime of collecting new networked statistics and performance measures given other demands on their time. There is some evidence that local libraries see the current system as completely unworkable, too time-consuming, and providing useless data for them for local decision making.

A key aspect of successfully implementing a national program to collect and report statistics describing networked activities and services will be also implementing a reward and incentive system for local libraries to *want* to contribute to the program. Additional thought will be necessary to identify a range of possible incentives and rewards that encourage local libraries to participate. The assumption that local libraries will continue to participate in the annual surveys that include additional data collecting requirements related to networked services and resources without such incentives should be re-examined.

Leadership Issues

• *Reliance on Key State Library Leaders*
State library agencies that are "leaders" in the collection of statistics and performance measures for networked information services and resources should be rewarded and encouraged to experiment with such efforts. A number of states are already experimenting with the collection of such data. Some are using innovative techniques for collecting state-wide data electronically. Still others are develop Web sites that allow for interactive use and analysis of the annual survey data. Other states, once made aware of these innovations, are likely to follow these efforts as they evolve.

• *National Leadership*
There is a sense that the current national organization for selecting, collecting, analyzing, and reporting public library statistics may not be appropriate for the collection of national network statistics and performance measures. As mentioned earlier, the process for recommending and then implementing the collection of new data elements is cumbersome and time-consuming at best. The time lag between submission of data and the reporting of that data is excessive – sometimes two years or more.

The key organizations involved in this national data collection and reporting process currently are the U.S. National Center for Educational Statistics (NCES), the U.S. National Commission on Libraries and Information Science (NCLIS), the Institute on Museums and Library Services (IMLS), and the state library agencies. New models and organizations (as well as the possible involvement of those currently involved) should be considered for this program that would include non-government agencies, educational institutions, or other types of government, private sector/library consortia arrangements.

- *Resources for the National Data Collection and Reporting Effort*

Another factor to consider is the degree to which the U.S. government adequately supports the national data collection and reporting process for public libraries. While it certainly is true that government agencies everywhere are finding budgets to be tight, an analysis of the costs associated with the current data collection program may be useful to determine what organizations are paying for what types of expenses related to the national data collection and reporting program.

Further, some thought should be given to any additional expenses that might be incurred by various organizations if the data collection and reporting process is to be expanded with the addition of a number of new data elements related to networked services and resources. It may be that some approaches for expanding the program to cover networked services and resources may be more cost-effective than others.

Education Issues

- *Re-Educating Local Community Leaders*

Librarians have spent decades convincing local governing boards that circulation counts, attendance records, reference transactions, etc. that go up annually are a "good thing." Now that these and other traditional counts are stagnant or declining in many cases, librarians have to re-educate governing boards that Web hits, electronic reference questions, full-text down-loads, and other indicators are as or more important than the traditional measures.

The move to delivery of and access to a range of electronic services and resources via the networked environment by libraries in recent years has not been "counted" or adequately reported as part of the overall presentation of public library activities. Thus, to some extent, public libraries are inadequately representing and describing what it is they do in and for the local community. Local community leaders may not understand services delivery and use in a networked environment. In such cases, re-education will be more than explaining the use of different or augmented statistics to describe library services in this evolving networked environment.

- *Education and Buy-in for Network Statistics and Performance Measures*

Although there appears to be substantial interest in the collection of network statistics and performance measures at the state library and national levels, there is mixed interest at the local library outlet and system level. Some librarians have yet to recognize the impact and implications arising from the move to delivery of information services in a networked environment, or the changing role of the library in this environment. There also is some limited appreciation of the usefulness and importance of having national data related to the public library in the networked environment to propose and debate various policy issues in Congress and the administration.

RESOLVING THE ISSUES

These issues begin to identify areas where additional discussion, debate, and hopefully resolution can occur. As suggested earlier in the paper, this project is still in progress and the degree to which the various issues identified above can, in fact, be resolved remains to be seen. Overall, however, the confluence of these issues presents significant challenges for re-inventing a national system to collect and report public library statistics that describe networked information services and activities.

To some degree, initial findings from the project suggest that defining networked-based statistics and performance measures may be more straightforward than re-inventing the process to collect and report such data (see Bertot's paper in these Proceedings). Not surprisingly, there is a range of political issues affecting the development of a national process to collect and report data that may take considerable time and resources to resolve. While Federal government involvement is important, it may be more appropriate to develop possible models for a national data collection and reporting system that does not require a U.S. Federal agency as the primary or lead organization. Final recommendations from the project regarding such models can be found on the project home page at <http://www.albany.edu/~imlsstat/>.

The costs of quality: cost analysis and cost management as counterpart to performance measurement

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"It is an unusual business that cannot say how much it costs to deliver any of its products; and I do not believe we will continue to get away with it." (J. Stephen Town)

Libraries are not only confronted with dwindling resources, rising prices and additional tasks, but are also subject to the general demand for transparency and justification of expenditure. Performance measurement has given libraries a tool for assessing whether they reach good quality; cost analysis shows whether that quality has a reasonable price.

For two years the German Research Association has funded a project for testing methods of cost analysis and drawing up a handbook for use in academic libraries. The aims of the project were to introduce and further cost analysis in libraries and to provide them with a practical tool. The University and Regional Library of Münster, collaborating with two other university libraries, has undertaken this project in four steps:

1. Review of methods
2. Implementation of activity-based costing in Münster university library
3. Evaluation and testing of a suitable software
4. Handbook of activity-based costing in libraries.

Identifying the costs and cost structure of each library service and activity will help libraries to decide on:

- allocation of resources
- outsourcing and insourcing
- enlarging, reducing or introducing services.

The paper shows the method of analysis, actual cost data that were ascertained in the process, and examples of how to use cost transparency for identifying unnecessary costs and for cost management.

When I chose the theme of cost analysis for the 3rd Northumbria Conference, I felt myself backed up by what Stephen Town said at the same Conference two years ago: libraries cannot afford any longer to be ignorant of the costs of their services.

It was a great step forward in the last decades to develop tools for evaluating the quality of our products and services. Performance measurement as it stands now can show us:

- whether the library performs according to its mission and goals;
- whether its services match users' needs;
- whether it attains good quality compared to others;

in short: whether the library is "good".

But what does it cost to be good?

Libraries today have to enlarge or reconstruct services or to introduce new services, and they should, of course, know what costs will occur because of those changes – but in most cases they do not even know the costs of today.

Handbooks and standards of performance evaluation for the most part have left out the question of costs, because the methods for assessing costs are missing. But effectiveness cannot only mean good quality; it includes cost-effectiveness or efficiency.

"Efficiency is doing something well. Effectiveness is doing the right thing well." (Mackenzie, 1990)

So cost analysis can be seen as counterpart or complement to performance measurement.

WHY SHOULD WE MEASURE COSTS?

What most libraries assess by now are the yearly data concerning income and expenditure of the library:

- Income (from different sources)
- Expenditure
  - on collection building and maintenance
  - on automation
  - on the operating of the library
  - on staff.

Very often these data are incomplete, as data like costs of heating or data transmission are the responsibility of the institution and therefore unknown to the library; and I suppose that depreciation of building, equipment and computer system is seldom included as yet.

The revised draft of the standard ISO 2789 (International Library Statistics) will contain many new differentiations as to expenses, especially with regard to electronic media. But still, as in traditional statistics, it means "expenses", not "costs", and that means sums that appear on bills or payrolls.

"Costs", on the other hand, can be defined as:

> the consumption of resources to acquire, produce or maintain goods or services within a defined period. (1)

The consumption of resources for one product:

- can originate in different departments of the library (eg. document delivery involves lending department and magazines);
- can stretch over several years (depreciation);
- can concern resources administered outside the library (institution, government . . .).

Libraries know the price of each book or computer they acquire, but not the price of their products:

- how much does it cost till a new document is ready for use?
- how much for one reference question answered?

There have been serious efforts to assess the costs of certain single products, most of them because of situations where libraries had to decide on introducing or buying new services, outsourcing services or taking fees. Literature shows that the most interesting areas for cost analysis were:

- cataloguing (comparing in-house cataloguing with outsourcing or shared cataloguing);
- document delivery (introducing electronic document delivery, question of fees).

These analyses always deal with one special service, not with the library as a whole. It is a pity that most of the data given in the literature do not allow for comparison even for one service (eg. cost of one title catalogued), as the methods used and the cost factors included differ considerably.

One interesting handbook has recently appeared (Snyder and Davenport, 1997), that deals with cost analysis in libraries and information services. As the title says, this handbook concentrates on decision making for the digital age, eg. for computerization of the library.

THE PROJECT IN MÜNSTER

The results shown in this paper rely on a project funded by the German Research Association and chaired by the University and Regional Library Münster. Partners were the University and Regional Library Düsseldorf and the University Library Paderborn. The project was supported by the faculty of economics in Münster and by a commercial firm that is well known for its role in cost accounting for service institutions. The start was in April 1997, and the project finished with a handbook (including the necessary software) in July 1999 (Ceynowa and Coners, 1999).

After a review of existing cost analysis methods, experts and libraries decided for **activity-based** costing as best adapted for evaluating library products. (2) The method was tested in the three project libraries and other interested libraries. The results of the project stages were widely published and got nearly too much response: while the handbook was still being written, the team in Münster was already involved in supporting cost analysis projects in different libraries.

Since August 1999, the project is succeeded by a second one that will result in an all-round controlling system for academic libraries, probably using the balanced scorecard. This time, the partners are the Bavarian State Library and Bremen State and University Library.

By the Section for University and Other General Research Libraries of IFLA, where our guidelines for performance measurement originated, another project was proposed: Guidelines for cost analysis in academic libraries. Originally we hoped to get much input from a working group and members of the section. But as experience with cost analysis is scarce, we had to decide on waiting for the results of the German project, and then to prepare an English version that will, of course, have to make allowance for differing conditions in other countries. We hope to finish that handbook early next year.

COST ANALYSIS

A general overview shows the connection between services and costs:

Cost analysis in public service institutions like libraries is affected by several problems:

1. *The products of libraries are non-material*

   Libraries do not produce physical objects; they produce services. The production process cannot be separated from the product; production and delivery of a service coincide. A typical example in normal life would be haircutting (service = product); the same applies to reference service.

2. *Capacity costs are predominant*

   Libraries must build up and maintain a huge potential for the delivery of services: qualified staff, collections, reading-rooms, etc. Most of the costs will not only occur in relation to the actual use of this potential, but are also independent of the number of uses.

3. *Many costs are fixed*

   If circulation goes down, this will not immediately reduce the costs of the circulation department. It will need medium-term or even long-term planning to

Figure 1

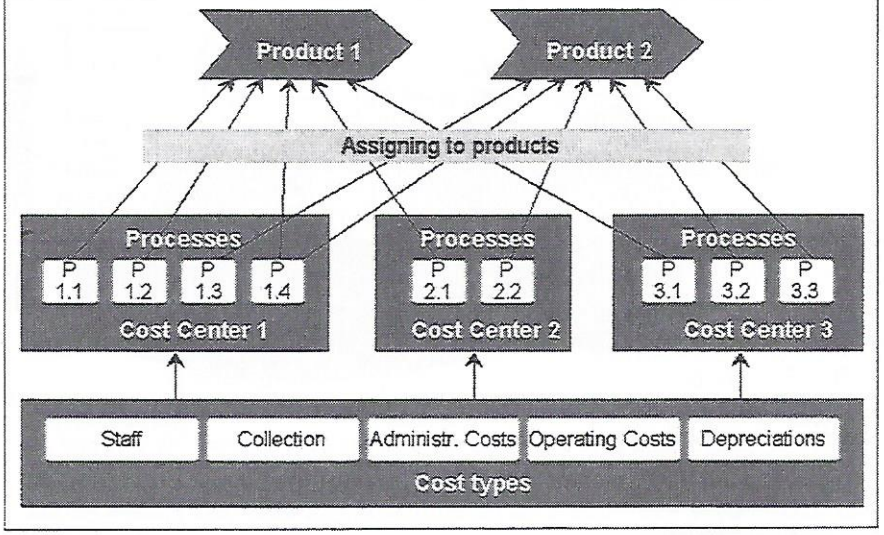
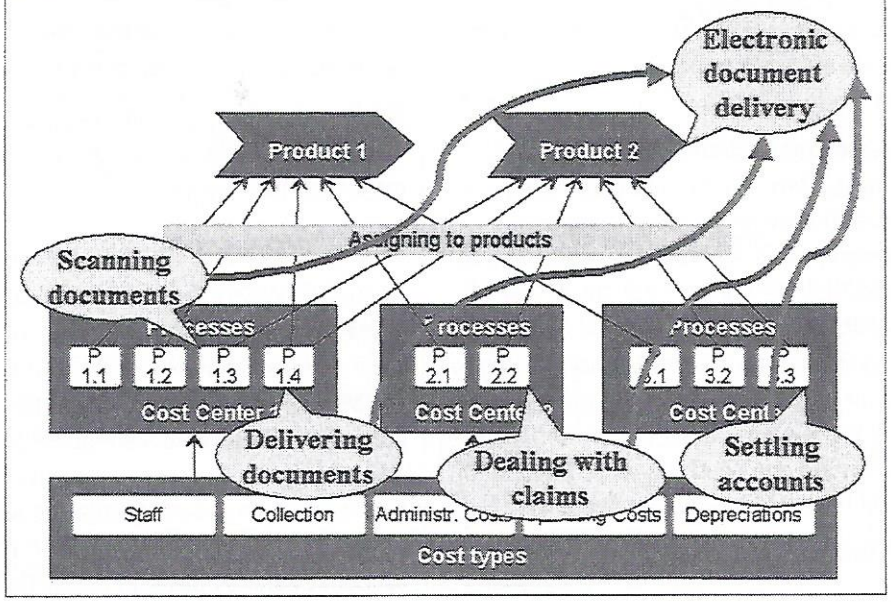


Figure 2



adapt the resources spent on a service to the use of that service.

Cost accounting is a management information system that assigns costs to products and services created by the library. It comprises cost type accounting, cost center accounting and cost unit accounting.

The model of cost analysis can be summarized in one question:

Which **resources**	(cost type accounting)
are consumed **where**	(cost center accounting)
by which **activities**	(activity based analysis)
with what **result**?	(cost unit accounting).

The different steps can be defined thus:

Cost type accounting: the ascertainment and calculation of all relevant cost factors of a library within an accounting period;

Cost center accounting: the calculation of the costs of the various sections or departments of the library;

Cost unit accounting: the calculation of a single unit or performance of the library's products/services.

The overview (Figure 1, above) shows the way of assigning cost types to cost centers, then to processes or activities occurring in the cost centers, and finally to the products or services.

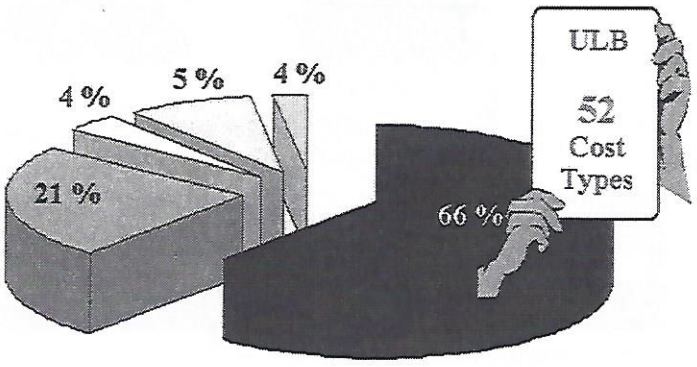
One example may demonstrate how the costs for one product (electronic document delivery) are composed of process costs originating in different cost centers or departments (Figure 2).

COST TYPE ACCOUNTING

The first step – cost type accounting – will prove difficult when realized for the first time.

- Data may not be easily available. As the library is not autonomous, but in most cases part of an institution,

Figure 3



Staff costs	16.357.001,19
Collection costs	5.126.907,43
Administration Costs	911.288,96
Operating Costs	1.384.577,58
Depreciations	990.760,15
Σ Total	24.770.535,31 DM

many expenses are paid outside the library (eg. heating, cleaning, telephone etc.) and must be collected from different sources.

- Standards for depreciation differ between countries, often between institutions. We have calculated the imputed depreciation allowances for building and inventory (equipment, facilities, hardware) according to the purchase costs, not the replacement costs (costs that would be needed to replace the asset at the end of the period of use). As libraries do not have the obligation to generate profits for financing replacements beforehand, an orientation by the purchase costs seems sensible. For calculating depreciation, we need the supposed time of use for assets. We have taken a standard time of

  - 50 years for buildings,
  - 10 years for equipment,
  - 4 years for computer hardware.

- Staff costs could be calculated in different ways. In most cases, it would be possible to get the data of the real costs. But the disadvantage is that the data then would be influenced by the personal circumstances of the individuals. A cataloguing department with persons aged over 40 and each with several children would appear as more cost-expensive than one with young unmarried employees – though the job ranking is the same. Therefore, we propose that standardized average rates should be taken as a basis. Such standardized rates are in most cases available, as we learned from other libraries.

Calculation of the total costs of a library allows a rough estimate of whether resources are spent where the library intends to spend them, whether costs are high or low compared to other libraries, in what direction certain cost types are developing within years, and the relation of fixed and variable costs.

The cost structure of the Münster Library shows – as might be expected – a majority of staff costs (3) (Figure 3).

The list of cost factors that was drawn up in our project (see Annex A) was tested with other libraries and proved rather comprehensive.

COST CENTER ACCOUNTING

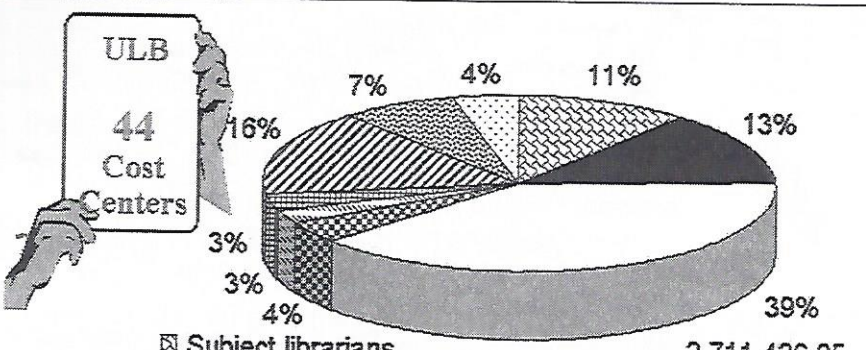
Because of practical reasons, cost center accounting will best follow the existing organizational structure of the library: departments, working groups, etc. This facilitates the assignment of costs. Cost center accounting is most important, if the centers are budgeted and are responsible as well for their resources as for their products. This might be the case in a separate undergraduate library or a printing and photocopying department. Usually, in academic libraries the high proportion of fixed costs and the cooperation of various cost centers in the production of services do not allow much space for cost management in a cost center. But the step of assigning costs to cost centers is necessary for assessing the costs of the separate activities or processes.

Two forms of allocation have to be distinguished when assigning the library's total costs to its cost centers:

- some costs can be registered exactly per cost center, eg. staff costs, telecommunication, travelling expenses;
- others must be allocated by keys, eg. depreciation or cleaning (per m^2), software maintenance (per PC).

The costs for collection building and collection maintenance have been dealt with differently in cost analysis. If there are separate subject departments that can be regarded as cost centers, collection costs for that subject can be allocated to them. It has even been proposed to fix depreciation periods for media, so that the yearly costs can be allocated according to the years of depreciation. We did not think it possible to fix dates of

Figure 4



Subject librarians	2.711.426,05
Book processing	3.284.062,58
User services	9.640.321,81
Services as regional deposit library	916.855,38
Collection maintenance	635.936,12
Services for departmental libraries	751.252,30
Branch libraries	3.941.089,17
General administration	1.856.416,09
Data processing	1.033.175,81
Σ Total	24.770.535,31 DM

general uselessness for literature in a subject – and we do not think that it makes sense in a cost analysis of libraries. Libraries know the costs of media very well; what they must assess is the costs of their services.

In our method, the costs for collection building are allocated neither to cost centers nor to processes. The collection is regarded as the external factor by the help of which services and products are produced. The services and products consist of collecting, offering and lending media – not of the media themselves.

In our library 44 cost centers were defined. Figure 4 shows broad groups of cost centers and their yearly costs.

ANALYSIS OF PROCESSES/ACTIVITIES

In this analysis, the cost center becomes relevant as an intermediate step: all activities occurring in a cost center are listed up in interviews with staff, and the total costs of the center can then be allocated to the separate activities. As staff costs are predominant, all other cost centers can be allocated to an activity according to the percentage of staff time spent on that activity.

Staff fill out log sheets for two weeks. This of course has to be negotiated before with staff representatives, and it must be ensured that this is no measurement of a person's performance, but only of the time needed for each activity. The results of the log sheets are then extrapolated to a year with due consideration of holidays and absences due to illness.

In our project we defined 442 separate processes or activities. In the circulation department the most important processes are:

- recording loans
- cancelling loans
- issuing user cards
- monitoring loan periods
- account of fines
- delivery in electronic form.

An example of the cost center "Subject librarians" shows the results for the process "subject cataloguing":

• percentage of staff time spent on subject cataloguing	17.6%
• process time	3 man years or 4.467 hrs
• process costs	477.221 DM
• number of documents catalogued	14.635
• unit costs	32,60 DM
• time per unit	18 minutes.

What activities are chosen for separate analysis will, of course, depend on the library's needs for controlling and planning. Münster for instance wanted to assess the costs of its duties as regional library and, therefore, book processing for legal deposit documents was dealt with separately.

Furthermore, it will always be worthwhile to differentiate between those activities that are directly involved in a product (ordering, cataloguing) and activities like controlling or administration.

COST UNIT ACCOUNTING

Finally, the costs of a process are divided by the number of "cost drivers" for that special process, that is the number of units of the product or service, eg.:

- number of reference transactions
- number of documents issued.

Figure 5

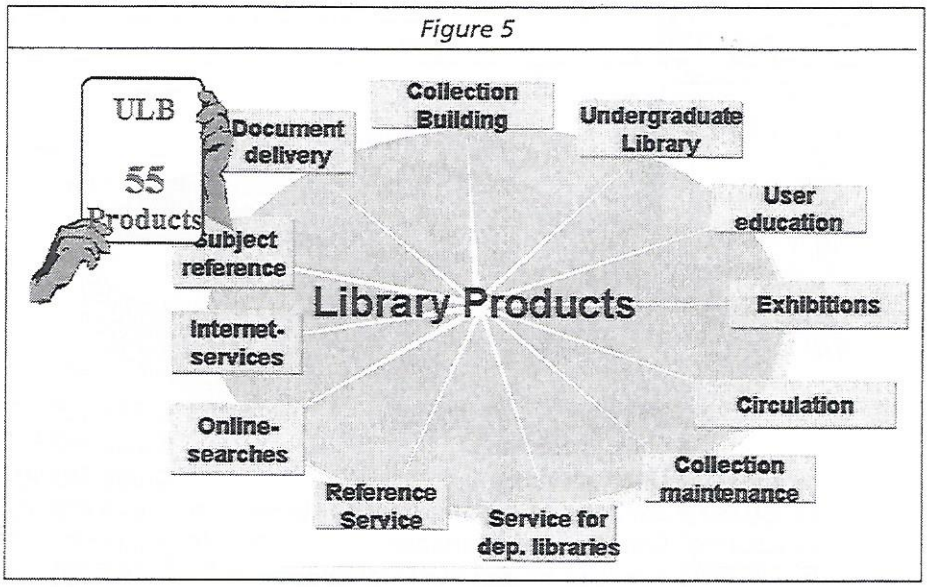
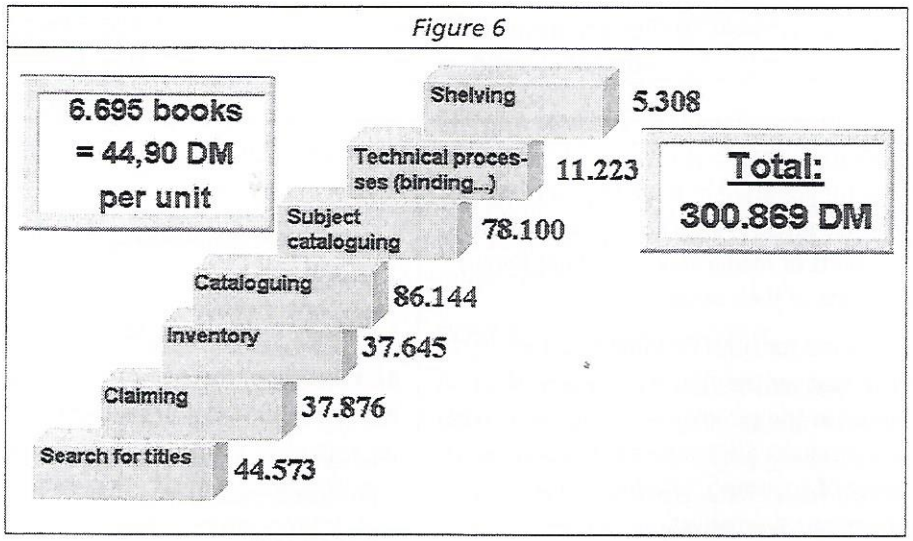


Figure 6



We defined 55 "products" of the library (see Annex B), that are shown above in comprehensive groups (Figure 5).

The example of book processing for legal deposit documents (Figure 6) shows seven steps in all, ranging from spotting a relevant document to placing it on the shelves. Five cost centers are involved in the whole process.

COST MANAGEMENT

The cost analysis in our library resulted in 4.698 different data that can be combined and searched with the help of the software.

The first comprehensive analysis, of course, gave us much better knowledge of where and why resources are spent. We know by now:

- the total cost of the library in a year
- the costs originating in cost centers
- the costs of processes/activities
- the costs of each single product or service
- and – a by-product of the cost analysis – the time needed for the production of one unit (eg. one book catalogued).

How can we use all these data for the management of resources?

If we want to achieve a better output, we can either optimize the processes or try to obtain the same result with less resources (Figure 7).

Possible starting points for process optimization might be:

- muddled responsibilities
- detours in processes
- waiting times
- unnecessary controls
- too complex processes
- duplication of processes
- error correction
- the use of different media in the same process.

An example from the book processing department shows where we found disposable capacity: controlling what had

Figure 7

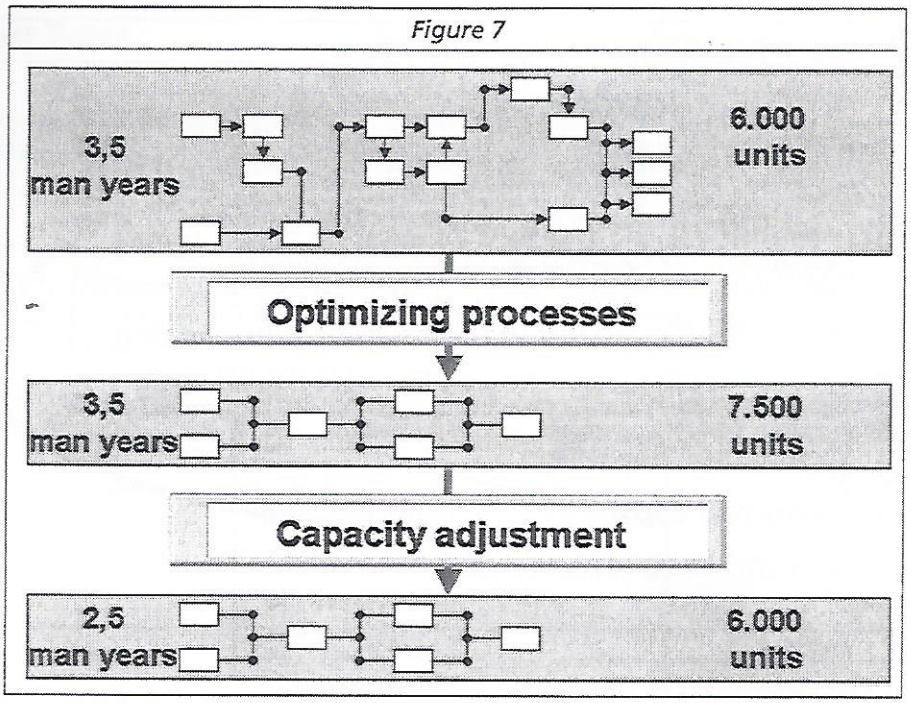


Figure 8

Processes	%	Process time (man years)	process costs
1. Monographs: copy cataloguing	37		
2. Monographs: original cataloguing	11		
3. Multi-volume publ.: copy cat.	3		
4. Multi-volume publ.: original cat.	3		
5. Special collection documents	12		
6. Electronic media	0		
7. Other special media	2		
8. Controlling cataloguing	10,62%	0,52	57.336,68
9. E-mails in cooperative cataloguing	2,78%	0,14	14.992,28
10. Maintaining catalogue	4,90%	0,24	26.449,58
11. Support for retrospective cat.	5,22%	0,26	28.179,46
12. Organization	4,88%	0,24	26.374,37
Sum:	100,00%	4,89	539.947,57 DM

Disposable capacity 0,66 man years

been done took up to 13% of the time spent on cataloguing (Figure 8).

The principle of every person being responsible for his or her work ("first time right") gave us a disposable capacity of – theoretically – 0.66 man years. And though controlling could not be totally deleted, the result was 0.5 man years free for retrospective cataloguing.

Another example shows that it might be difficult to decide what staff capacity is really necessary for a certain service (Figure 9). Over four years the book processing team of our undergraduate library acquired and catalogued a varying amount of textbooks with the same staff capacity; in 1997 it came up to 8.051 books. The question is whether this is already maximal capacity for the team, or whether even that high output could be increased. This can best be solved by comparison with other libraries.

Optimizing processes can help to:

- gain in productivity without higher costs,
- or to reduce costs without loss in productivity.

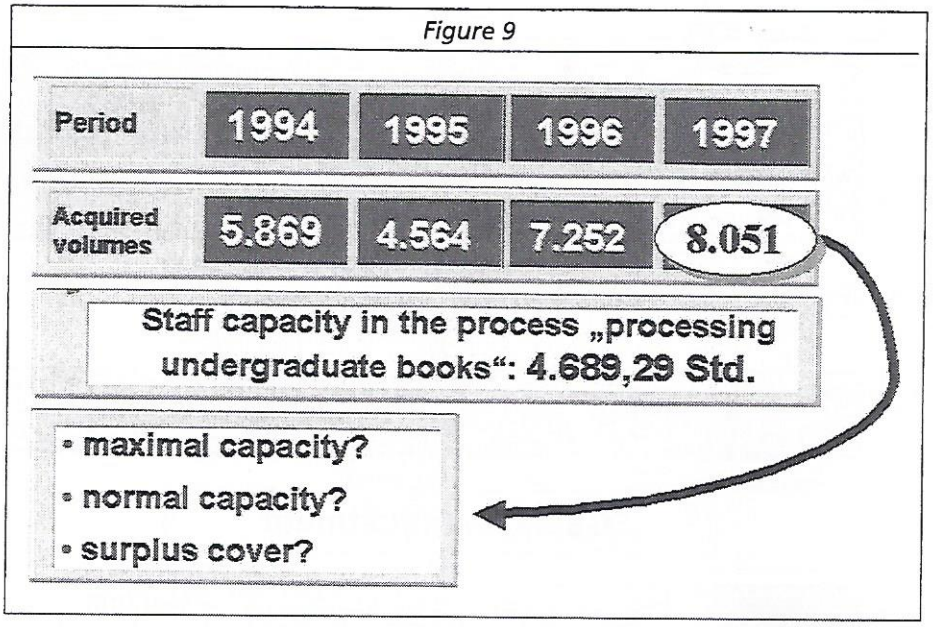
The results of a cost analysis can be used in various ways:

- to justify claims for resources (eg. service level agreements)
- to estimate costs
  - for new or enlarged services
  - gained by reduction or deletion of services
  - for taking fees
- benchmarking
- decision on outsourcing
- process optimization, especially to adapt capacity costs to output
- comparing cost-efficiency and quality.

The last issue brings us back to the main theme of this Conference: quality.

The goal would be to produce more or better service with the same or even lower costs. But you may have to decide between two issues:

Figure 9



Do you want to be "good" or "cheap"?

Two examples from our library:

1. Reference service

• cost of one reference transaction	4.53 DM
• reference fill rate	60%
• satisfaction rate (5-point scale)	1.9

This quality is achieved by the reference desk being staffed with professional librarians (at least one, often two or three) from 8.00 to 19.00. We could lower costs by letting student assistants take the hours before 10.00 or after 17.00, but probably the fill rate and the satisfaction rate would go down.

2. Subject cataloguing

• cost of one document catalogued	32,60 DM
• subject search success rate of users	87%
• satisfaction of partner libraries in cooperative cataloguing	very high

The quality and the users' success in catalogue searching are high. Subject cataloguing is done by librarians with full academic qualification in their subject, and their subject headings are controlled by a special group. But the costs per title are considerable, and even if quality should suffer, we must try to be less scrupulous.

During this Conference, several colleagues told me they expected me to speak about cost analysis in the same way as two years ago about performance measurement: the house that Jack built . . . I am sorry, but I could not. Costs are a grave matter; knowing for the first time the total costs of your library will inevitably make you serious.

But I can at least end with some adequate citations on the topic of costs:

The first impression when doing a cost analysis might be

"The price spoils the pleasure"
(French proverb)

But when it comes to possible cost management, you will feel

". . . if money go before, all ways do lie open"
(Shakespeare)

And even small resources saved here and there could accumulate

"Penny and penny laid up will be many"
(English proverb).

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Snyder, Herbert and Davenport, Elisabeth (1997) *Costing and pricing in the digital age: a practical guide for information services.* London: Library Association

Notes

1. A similar definition appears in various handbooks of economics.
2. Activity based costing was developed in the eighties in the USA. See eg. Johnson, H. Thomas and Kaplan, Robert S. (1987) *Relevance lost: the rise and fall of management accounting*. Boston, Mass.: Harvard Business Press; Cooper, Robin and Kaplan, Robert S. (1988) 'Measure costs right: make the right decision' *Harvard business review 66* 96-103
3. All costs relate to the year 1997 and are DM.

Annex A – Cost Types

1 Staff Costs	2 Costs of Collection building and maintenance	3 Administrative Costs
11 Professionals	**21 Research literature**	**31 Communication**
12 Non-Professionals	211 Monographs	311 Telecommunications
13 Student assistants	212 Periodicals	312 Postage
14 Others	**22 Electronic media**	313 Data transmission
15 Administrative overheads extra charge	221 Acquisition	**320 Costs of maintenance/repair**
	222 Licenses	321 Technical equipment
	23 Other media	322 ADP equipment/software maintenance
	24 Preservation	323 Other equipment, machines furniture
	241 Binding	**330 Materials**
	242 Restoration	331 Equipment (not ADP)
	243 Filming	332 ADP-consumables incl. hard- & software
	244 Deacidification	333 Supplies (office stationery, sundry supplies etc.
		340 Standard allowance copiers
		350 Travel expenses
		360 Continuing education
		370 Other current costs of materials

4 Operating Costs	5 Depreciations
41 Costs of energy	**51 Depreciations building and technical equipment**
411 Heating	**52 Depreciations movable property**
412 Power	521 Depreciations ADP-equipment
413 Water and sewage	522 Depreciations other equipment and machines
42 Cleaning expenses	523 Depreciations office and library furniture
43 Costs of waste disposal	524 Depreciation service vehicle
44 Costs of security	**530 Depreciations software**
45 Building maintenance costs	
46 Other operating costs	

Annex B – Product Catalogue in Libraries

- **Product Group 1: Building of Media Collection**
  (Acquisition, Indexing, Book Processing)
  - Textbooks
  - Monographs
  - Periodicals
  - Electronic media
  - Other non-book-materials
- **Product Group 2: Information Services**
  - Reference service (general)
  - Reference service: (subjects)
  - Online searches (online information service)
  - Internet-based information services
    (eg. access to networked CD-ROM databases, electronic documents, Web-Opac)
  - Support of in-house use
- **Product Group 3: Circulation of Media**
  - Lending of books from open stacks (self-service)
  - Lending of books from closed stacks
- **Product Group 4: Inter-Library Loan**
  - Supplying monographs/articles (conventional lending function in ILL)
  - Demanding and providing monographs/articles (conventional inter-library borrowing)
  - Electronic document delivery
- **Product Group 5: User Education**
  - Introductions to library use
  - Instructions in using electronic media
- **Product Group 6: Archival and Restoration Services**
  - Production of microfilms and microfiches
  - Digitization
  - Conservational treatment
  - Restoration
  - Mass deacidification
- **Product Group 7: Providing Valuable/Historical/Rare Collections**
  (Collection Processing and Providing for Use, Advising Users)
- **Product Group 8: Exhibitions and Events**
- **Product Group 9: Special Services as eg.**
  - Special subject collection in a cooperative collection plan
  - Tasks of a deposit and regional library
  - Services for departmental libraries
- **Product Group 10: Internal Services**
  - Library management and administration
  - Computer services
  - Public relations

Benchmarking: strife, theft or communion?

J. Stephen Town, Cranfield University, UK

Benchmarking has been actively used as a technique for performance improvement in UK academic libraries since 1993. The paper will consider the history, development and experience of the use of benchmarking in UK academic libraries through a selection of case studies. Conclusions will be drawn about the applicability of benchmarking to the academic library situation, and the particular issues which have commonly arisen.

The paper describes the SCONUL Benchmarking Pilot projects developed on the basis of this previous experience. The pilots included the following areas: advice and enquiry desks; information skills training; counter services and library environment. The outcome of the overall exercise is discussed together with some specific deliverables arising. The paper attempts to suggest an agenda and actions for the further development of the technique.

INTRODUCTION

When I offered the title of this paper with its faintly religious tone I was not aware that I would be speaking after lunch on a Sunday. Perhaps it is coincidence or perhaps inevitable that the organisers would programme it for this particular day. Therefore like all good sermons this one is divided into three parts: firstly I intend to talk briefly about what benchmarking is and has been within British academic librarianship over the last six years; secondly to say something about more recent activity and in particular the SCONUL Benchmarking Pilots project; and finally to draw some conclusions and offer some wider challenges for the future.

Benchmarking is a technique drawn from industrial management. As such it inevitably draws some negativity and cynicism. A professional colleague recently said to me in all seriousness that "we do not have to worry about benchmarking any more – it's so 'eighties'". In a British national newspaper benchmarking was listed as one of twelve buzzwords for the modern office, selected to help one "talk without actually saying anything". In addition, and a very serious failing in our profession, is the fact that "Benchmarking has no acronym".

The notion of benchmarking as "strife", that is born out of conflict and competition (as of course it was), may not appeal much to those who believe they are in a service profession where co-operation is more important than competition. This is probably not helped when the notion of strife is so strong in the imagery of benchmarking. An example is the use of the quotation from Sun Tzu's *Art of war* which is employed in several texts on benchmarking: "If you know yourself and know your enemy, you will not fear the result of a hundred battles". In a recent paper deconstructing knowledge management (KM) Streatfield and Wilson tell a fairy story about four management consultant goblins, three of whom chose to push individual management techniques but fail to make money whilst the fourth makes a pile out of KM. But it was the third goblin to whom my interest was drawn. Goblin 3 says "I chose fear. All the companies were latching on to my 'Information for Competitive Advantage' until someone asked 'What happens when everyone is doing it?'". Benchmarking certainly is a technique for collecting information for competitive advantage, and the first funding for a library benchmarking exercise in the UK was provided for competitive reasons. But the link between benchmarking and competition is not essential, and one of my contentions today is that it not only does not matter if everyone is doing it, but also that it may be positively desirable for everyone to do it. Benchmarking by its very nature is not a solitary vice; it is a communion in the sense of "sharing" and "participation".

The notion of benchmarking as theft may also be off-putting. Roger Milliken defined benchmarking as "stealing shamelessly". In the UK it is not so much the theft that is poorly regarded, it is the social stigma of needing to steal. When seeking benchmarking partners in our first exercise we very occasionally met with the kind of dismissal reserved for those "in trade", but this is probably a limited British effect. The reality in industry is that benchmarking tends to be used more by the top-ranking companies than by others. Benchmarking may have started as a survival technique, but it is perhaps much more now an improvement or aspirational technique used by those with a certain value system. It has been said for instance that "Quality Assurance is law, whereas Total Quality Management (TQM) is religion". Benchmarking often typically fits a TQM context, and it does seem to me that actively being "in communion" with a group of benchmarking partners for the benefit of one's local parish of users within some sort of journey of improvement and learning is preferable to the often introspective bureaucracy of quality assurance. Both methods can of course have their appropriate place in the well-managed library service.

My contention is therefore that we might envision benchmarking in libraries as "communion" in the sense of its definition as "Sharing, participation; fellowship, mutual intercourse" and perhaps also as "A body professing a particular faith" where that faith is a management philosophy which includes improvement, and learning

from and involving others. It is this involvement with others that is often mentioned by participants as one of the intangible benefits of benchmarking, as we shall see later.

So far I have not mentioned libraries specifically, and it is perhaps worth relating this paper to the overall thrust of the Conference towards "Value and Impact". Oakland suggests that "Measurement and benchmarking are not separate sciences or unique theories of quality management, but rather strategic approaches to getting the best out of people, processes, products, plant and programmes". In other words benchmarking will deliver both value and impact.

From a brief perusal of the library literature on benchmarking a harsh view might be that benchmarking is "a technique that never was". Sixty-five recent papers retrieved through LISA using the term "benchmarking" can be reduced to 25 by weeding out multiple reports of the same activity and non-library related papers. Of these, ten are what might be termed exhortational or advisory, that is, how or why to do it without evidence of practical experience or library case studies; and five are about setting benchmarks rather than actual comparative benchmarking. Of the remaining ten, six describe real comparative exercises elsewhere in the world and four in the UK. Is this a fair representation? And if not why not? Is benchmarking a marginal activity for librarians given the relatively small number of papers produced in the recent past? In UK academic library terms the literature is clearly not representative of activity, as today I am able to present five case studies, two further "membership" examples, and six SCONUL pilots. There is also evidence of other less structured benchmarking. As an example of the latter, a method much used in the library sector is the use of e-mail discussion lists to share a problem, seek data or solutions, and ethically share the findings. This seems to me to be benchmarking.

One conclusion I would suggest is that because benchmarking is such an effective and revealing technique, reluctance to publish case studies openly might be expected. It is certainly true that of seven of the examples I intend to cover six had or have some embargo or limitation on open publication in respect of general identification of participants, specific identification of participants in results tables, or delay in publication for particular competitive reasons. This is of course bound to inhibit publication. A second conclusion is that from known benchmarking initiatives or exercises at least 40% of UK HE institutions have been involved in library benchmarking as participants. In academic libraries in the UK therefore this is not a marginal technique, and involvement appears to be increasing at an increasing rate.

The following cases outline the history and practice of benchmarking in the UK academic library sector.

CASE 1: CRANFIELD UNIVERSITY RMCS LIBRARY (1993)

The first major UK library benchmarking exercise was reported in the first of these Conferences and elsewhere (Town, 1995) and I will not therefore repeat the detail. The initiative was a response to two main contextual drivers: a library TQM initiative and an impending competition for the College's academic task. The approach taken was intended to demonstrate that large-scale multi-partner generic benchmarking could be undertaken successfully by libraries, and this was achieved despite a very tight timetable. Critical Success Factors (CSFs) were used to identify library key processes, and these were benchmarked against 20 partners (all academic libraries) using questionnaires and follow-up visits (to 18 partners). This involved an availability study, "mystery shopper" testing (16 partners), and a qualitative assessment. The three measurement studies were designed to try to quantify user-related measures so that comparisons could be made across all the libraries in the study. This was intended to provide a more rigorous and reproducible basis for identifying best-in-class performance. Strategic and management issues were also shared particularly in relation to convergence of libraries and computer centres.

Conclusions from the exercise were that best-in-class performance could be identified for the various processes from the partners; what was not obvious at the outset was how to identify best practice in academic libraries in order to select partners. Staff involvement seemed to be critical to successful benchmarking in that the people who really understand the relevant processes should be directly involved. The financial element of the exercise was unsatisfactory; few if any participants could immediately identify unit costs for key processes. Process mapping before embarking on such exercises is advisable, and knowing what users consider a "capable" process requires more investigation. The measurement studies were criticised by some partners as not reflecting their local perception of quality.

CASE 2: LOUGHBOROUGH UNIVERSITY BEST PRACTICE BENCHMARKING (1995)

This British Library-funded research project has been described fully elsewhere (Garrod and Kinnell, 1997) and was driven by a perceived need to define what was required to establish benchmarking as a practical management tool for libraries within a general quality management framework. Three partners were involved (one academic library) to undertake action research and act as demonstrator projects. Inter-library loans and enquiry services were the functional processes involved, and CSFs and process mapping were used.

Conclusions drawn were that benchmarking could be a time-consuming process; and that selection of partners is

difficult and would require a critical mass of involved libraries before it became simpler. In addition, confidentiality concerns were expressed by some organisations involved. The need for a suitable methodology for HE libraries which fitted the culture was considered to be desirable, and the need for appropriate training of staff was highlighted.

CASE 3: SURREY INSTITUTE OF ART AND DESIGN (1997)

As we shall see in the ensuing examples benchmarking is becoming a technique which is increasingly driven by institutional top-down requirements. At Surrey Institute of Art and Design the Institute Directorate saw benchmarking as a possible tool for quality improvement and also as a means of improving market position, and Academic Services acted as the pilot department. The approach was functional and involved both library and computing elements of the service; the processes selected were information and document delivery, and IT help desk services. Partners (three academic, one non-library) were chosen partly on a competitive basis, but also on the basis of identifiable better practice, and the common approach of CSFs, process mapping, questionnaire and follow-up visits was used.

One strength of this exercise was the effort put into the metrics which resulted in clear identification of the performance gaps between the partners. This allowed development of an Action Plan which could have specific measurable targets.

The conclusions were that better practice and competitive gaps could be identified. Partnering reflected the experiences above in that selection was difficult, and the Head of Academic Services felt that a benchmarking club should be formed to provide prepared and willing partners. The metrics also again proved to be a source of difficulty. A great deal of effort had to be put into normalising the metrics, and existing published statistics were not helpful. Also the scope of the exercise provided a heavy burden of effort for participating organisations, again reflecting previous experiences. In addition a mechanism for change management to put into effect the lessons learnt needs to be in place before starting.

CASE 4: FOREIGN AND COMMONWEALTH OFFICE LIS (1998)

The thrust of this exercise was to improve IT support in the library. In this sense it was functional benchmarking, but strategic and managerial issues also clearly impinge on this aspect of library activity. Ten partners were involved, mainly government department or agency libraries, but one commercial and three academic libraries were also included to provide "outside industry" comparison. The methodology was a questionnaire which was then analysed and elaborated through discussion by a consultant, who prepared the final assessment.

The conclusions were again that best practice was identifiable, and a necessary strength of the exercise was the contextual data collected, as participants used a variety of processes, methods and management organisation to fulfil this particular function. In common with all three previous cases confidentiality issues provided a barrier to open publication of results. Metrics were again difficult to normalise, but this did not inhibit recognition of better practice.

CASE 5: CRANFIELD UNIVERSITY RMCS LIBRARY 'CONCEPTUAL REVIEW' (1998)

So far we have seen benchmarking initiatives in libraries being focused mainly on the operational process level and the managerial levels immediately above. Watson however suggests that benchmarking should play a role not just in improving processes but at the strategic planning level (Watson, 1993). Issues which benchmarking might address in the strategic area are: building core competencies; targeting specific shifts in strategy, for example entering new markets, developing new products or new lines of business; and creating an organisation more capable of learning.

This exercise was driven by a strategic challenge facing most academic libraries: what is the strategy of the library and learning resources generally in respect of an increasingly digital information future, and in the local situation how does this affect building requirements? This challenge encompasses precisely the kind of strategic issues identified by Watson within the specific context of HE learning resources and libraries.

The methodology chosen to meet this challenge was to undertake a strategic benchmarking exercise in order to develop a concept of the future library for the local situation. For this reason the exercise was referred to as a "conceptual review". Three processes were selected for benchmarking:

- provision of the physical environment for learning;
- provision of electronic library services;
- provision of new methods of teaching and learning technology.

The benchmarking was "functional" but all three strands were interrelated strategically. There was also a competitive element in that the terms of reference demanded "a position paper which assesses the RMCS Library against its competitors in Higher Education, taking into account the Post-Follett investment in HE Libraries".

Nine building and six electronic library partners were involved, with questionnaires elaborated with visits, and a Web survey of five Teaching and Learning Technology initiatives with some follow-ups was undertaken. In addition there was also an attempt to benchmark various published visions for the future of library services, learning

resources, and indeed HE itself, against local visions. The outcome was a paper which outlined the key choices and led to agreement on local strategy (Town, 1998).

In conclusion the exercise proved that benchmarking could be applied to strategic planning in the HE information services context in a way that Watson had suggested for the industrial context. Difficulties with metrics did not hinder the process in the same way as in the previous exercises, and the choice of partners was much simpler as there are obvious sources for discovering new buildings and electronic library developments.

"MEMBERSHIP" BENCHMARKING

The following two cases reflect a top-down drive towards benchmarking in UK academia. Leaders of some UK academic institutions are becoming interested in benchmarking through membership of groups of similar or like-minded institutions. This provides a set of obvious partners, and a "trickle down" effect is occurring which insists on or encourages the libraries in those institutions to engage in benchmarking.

CASE 1: COMMONWEALTH UNIVERSITY MANAGEMENT BENCHMARKING CLUB (1998)

This Club was formed in 1995 and now has eleven members of which five are in the UK. The purpose of the Club is to "measure and promote excellence in university management" (Wragg, 1998), and the basic concept is to share honestly and openly strengths and weaknesses in managerial performance so that all can learn and implement that learning locally. Confidentiality amongst members is an essential element. The benchmarking process is to select a limited number of topics to explore in a particular year, to collect submissions from members, to have some formal assessment of these using agreed metrics plus a follow-up workshop to elaborate on good practice. In the third year of operation (1998) library and information services was one of the selected topics.

CASE 2: 94 GROUP LIBRARIES (1998)

Universities in the UK have been realigning themselves since the expansion of 1992 into various groupings to try to define both their market position and differentiation from others. One of these is the 94 Group, composed of eleven Universities plus three Colleges of London University. The Libraries of these institutions met with a view to considering potential co-operative ventures and decided to embark on joint benchmarking. So far aspects under comparative consideration have included:

- categories of expenditure per FTE;
- staff profiles;
- periodical subscriptions by subject with Research Assessment Eexercise grading and research volume.

As described (Paterson, 1998) the method has involved the collection of metrics from the member libraries by a volunteer institution for collation and feedback.

GENERAL CONCLUSIONS FROM THE CASES

The above cases demonstrate that benchmarking in libraries is possible, and that it is likely to be a desirable and effective tool for those libraries wishing to improve. Following from this is the need for a quality and change management framework in the library for following through and applying what is learnt. The methodology of benchmarking does not appear to be problematic; in all cases initiators were able to define and carry out a method which proved to be similar to other independent exercises. However, measures and measurement were almost invariably problematic, as was identification of best practice in libraries and consequently choice of partners. This problem is lessened because of the general willingness of libraries approached to engage with benchmarking; there is no lack of potential partners. Ethics and confidentiality are a barrier to publication. Benchmarking is a tool which requires considerable time and effort, and it has been suggested that training is needed, although that is not strongly supported by these cases. A significant trend appears to be that strategic-level and group approaches to benchmarking are growing.

THE SCONUL PILOTS PROJECT: BACKGROUND

SCONUL recognised the emergence of library benchmarking at least as early as 1996, and in 1997 the Advisory Committee on Performance Indicators (ACPI) sponsored a Seminar at Cranfield University to create a position statement and action plan. The position statement accepted that benchmarking was a potentially useful technique for academic libraries to improve performance, and that a commitment should be made to encouraging its use. The action plan would deliver this by engaging a group of interested universities in pilot exercises from which a standard approach could be defined and disseminated. I was appointed Co-ordinator of the Pilots project.

For benchmarking to become a standard technique in academic libraries the following were considered necessary:

- a larger number of practitioners to have practical experience;
- a larger knowledge base;
- a standard methodology;
- examples of standard metrics;
- a resource for facilitating future exercises;
- a manual;
- a collection of data and previous experience;
- a method for developing appropriate skills.

To achieve this seven pilots were proposed, and six became active:

A1 Advice Desks (North)

A2 Advice Desks (South)

B1 Library Skills (North)

B2 Library Skills (South)

C Counter Services

E Library Environment.

The participants were asked to follow Oakland's 15-point plan for benchmarking (Oakland, 1993). Stage Two (identification of partners) was defined by the volunteers for each pilot. The following findings are based largely on reports received at a general meeting of the Pilots held at the University of Derby in November 1998, and on final reports submitted by some of the pilots.

PILOT A1: ADVICE DESKS (NORTH)

This pilot is presenting in a session at this Conference (p. 81) so my comments will be brief. The group of institutions involved (originally four but expanded to five) were mainly "new" Universities. The group appeared to find little problem with the methodology, and employed a wide range of data collection methods, including query forms, "smiley face" cards, "mystery shopper", exit interviews and a behavioural study. Enthusiasm in the group for benchmarking is high, and it is intended to undertake a further exercise.

Conclusions were very positive and included the need for transparency with results, good project management, and staff training. Short bursts of testing were found to be preferable in a busy service context. The exercise confirmed previous opinions about service quality and also about location, and provided ammunition for supporting change where needed. Although the partners were similar the exercise identified variation in service levels and quality. Participants valued the opportunity for reflection on service quality which benchmarking provides but statistical collection does not.

PILOT A2: ADVICE DESKS (SOUTH)

This pilot was composed of three very different institutions, but again had little problem with methodology. Benchmarking focused on the four areas of quality, timeliness, manner of delivery, and environment. Another range of data collection methods was used: a self-assessment form for each institution; a user questionnaire; a logging form; and structured interviews with both librarian and user after an enquiry. The self-assessment form sought an organisational profile, some contextual and statistical information, and an assessment of strengths and weaknesses.

Conclusions were again positive. An agenda for improvement was identified in each institution and the exercise also led to conclusions about activities which supported the main function, such as signing and guiding and documentation. A view was expressed that pragmatism rather than theory was important for a successful exercise. The pilot found substantial staff development and training benefits from the exercise, whilst recognising that prior training and skills are needed. A lead partner for an exercise was deemed advisable, and the need for mechanisms for delivering and supporting identified improvements was reinforced.

PILOT B1: LIBRARY SKILLS (NORTH)

This pilot comprised two "old" universities but, despite the institutions involved being similar, the organisation of the libraries provided a contrast which affected the chosen process significantly. One provided its training through subject librarians; the other through a functional team which covers Training and Documentation amongst other things. This led to different benefits for each partner being realised through the exercise.

In conclusion both participants found the exercise a good opportunity for deep thought about the service; and the honesty on both sides was felt to be impressive. The measures were the most difficult part, repeating previous experience. The effort in this pilot on cost metrics will probably result in the most profound local changes. The realisation of the comparative costs of staff teaching against independent learning packages will certainly change practice in one of the institutions.

PILOT B2: LIBRARY SKILLS (SOUTH)

The two partners in this pilot were both specialised libraries, and the result was a decision to concentrate on benchmarking information skills training for MBA-type students. The CSFs approach was abandoned in favour of a pedagogic framework using a Process Review and a Peer Review for comparison.

During the process of benchmarking it was recognised that the very high degree of integration of the library staff at one institution with the course, and the highly developed theoretical basis of this involvement, was a best practice model. General conclusions were positive but the pilot demonstrated the difficulty of benchmarking involving only one individual in each institution.

PILOT C: COUNTER SERVICES

This pilot involved three partners in diverse institutions but within the London area. The exercise considered the core counter activities of loans, enquiries, queue management, and customer service. The pilot was very thorough and highly productive, identifying about one hundred benchmarks and 52 action points of which more than half were complete by the beginning of 1999.

The conclusions were generally positive, and a transferable methodology was delivered. Because of differences in

institution and clientele a best practice model was difficult to identify and implement. The exchange of experience was felt to be very valuable. Issues of concern included the cost effectiveness of benchmarking in this way. Improvements could have been delivered with less time and effort, but this may be a result of identifying too many benchmarks. It was hard to measure some of the more intangible elements of the quality of a counter service.

PILOT E: LIBRARY ENVIRONMENT

This pilot also expanded during the process due to staff movement. The participants were very diverse both institutionally and geographically, so much work was done through e-mail. This did not seem to hamper the exercise unduly. Library environment was defined and "physical space" and "atmosphere and ambiance" were compared using 49 benchmarks. Areas covered by other pilots were excluded at the outset. There was a conscious attempt to include not only the tangible physical space aspects of the environment but also the more intangible "soft" environment experienced by users. The "virtual" environment was excluded. The methodologies chosen were customer surveys, library questionnaires, and visits by library staff to assess libraries other than their own.

As in the other pilots the participants had found the exercise very stimulating in the opportunity it provided to think deeply about their chosen area. Library environment is highly subjective, and this made measurement difficult. Conclusions included the need for institutional backing for benchmarking, the need for some more research theory input to give the process more academic rigour, and the need to provide more training in methodology, including for those in library schools.

GENERAL CONCLUSIONS FROM THE PILOTS

Standard benchmarking methodologies can be used successfully in the sector. Problems arise mainly in the related areas of measurement and identifying best practice, but the pilots have produced a wide range of standard measures which can be incorporated in the manual for the benefit of others. All pilots have seen the recommended methodology through to its final phases of implementing improvement and review. Benchmarking can be time-consuming and therefore expensive, but the full-scale type involving visits and deeper interaction with partners seems to be the most fulfilling and successful, and the staff development dimension should not be forgotten. Library and information services have proved ready and willing partners for those wishing to undertake benchmarking and, in this academic sector experience, there have been few ethical or confidentiality problems arising.

BENCHMARKING AUDIT

In the light of this existing corpus of experience what audit can we make of academic library benchmarking? There is no doubt that benchmarking is applicable in and to libraries. It can be a powerful tool for analysis and improvement, but it certainly requires time, effort and commitment. Despite this it is becoming apparent that the bigger but focused exercises are better in terms of both results and the satisfaction of involvement.

From a performance measurement perspective the most common finding is that existing measures and data collection methods are rarely helpful. Whilst benchmarking might primarily be seen as a technique for comparison and improvement, the insight it has provided into measuring aspects of information services hitherto not assessed by other methods has been very significant. The failure of quantitative approaches to illuminate the quality of a service was recognised in the first benchmarking exercise. In the SCONUL exercise many pilot members wanted to address the more intangible, personal and subjective elements of providing a service. These are critically important to library users, and library managers should be able to measure performance effectively in these areas. This suggests a requirement for new metrics and data collection methods, or at least the transfer of data collection methods which had not previously been employed into the academic information services context. The pilots appear to have been successful in developing some new approaches to this problem. This is not to deny that some areas of quantitative measurement also required development, and this is particularly true of analysing costs of services. Benchmarking has provided some impetus here to a relatively dormant area of library performance measurement.

FUTURE LIBRARY POSSIBILITIES

It is also worth considering the future possibilities and challenges which the take-up of benchmarking suggests for the academic library community. The first of these is the creation of benchmarking consortia or "clubs". Some of these effectively exist already in the "membership" cases described above. Zairi and Leonard (Zairi and Leonard, 1994) list a number of Japanese industrial models which provide suggestions for broader activities within this type of framework. Academic library benchmarking is taking place on at least three continents, and it is therefore now worth considering international exercises. There is still the local challenge of retaining and sharing information from previous exercises, and national clearing houses with some responsibility for collecting material and sharing it with due regard for confidentiality agreements would be a development which might help overcome some of the issues which currently constrain the technique. Staff training for benchmarking and a specific library methodology need to be provided; in the UK the latter need will be met through the manual which is the final deliverable of the SCONUL pilots project. A standard package covering the planning stages of benchmarking has been developed and was successfully tested at a M25

Libraries Staff Development Group seminar in May 1999. Electronic communication provides an opportunity for undertaking benchmarking more simply. Only one of the benchmarking cases above involved benchmarking outside the industry, and in this case it was applied to a non-library process. Benchmarking involving partners from outside the HE community or from different industries might demonstrate that the technique had achieved a full understanding and maturity within the profession.

CONCLUSION

Benchmarking may have been born out of strife and seem like theft, but in libraries it may find its best expression in a broader communion.

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Library performance measures: government perspectives

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This paper reports the results of a survey of the extent world-wide of Government interest in library performance measures. It concludes that in most countries there is still little interest, but that there is a global trend to more interest, in a few countries with "teeth"– real rewards and punishments for good or bad performance. The characteristics associated with different Government attitudes are then discussed.

THE STIMULUS

A paper at the last Performance Measurement Conference in 1997 (Winkworth, 1998) reflected on why work on library performance measures generally receives so little recognition outside the originating context. It considered in particular why stakeholders such as management in parent organisations and Government funders were still relying on crude expenditure measures as alleged measures of quality or performance.

In the succeeding two years this has changed, in at least a few countries, where Government departments have set real performance measures for libraries. In some cases these are even applied "with teeth". By "teeth" I mean that there are real rewards or penalties attached to good or bad performance as measured. The penalties might be financial, managerial, or even the renewal or withdrawal of the right to continue in business. So, for example, in the United Kingdom a bad report on any school from Government inspectors will result initially in a "requirement to improve" within a fixed period and, if not successfully improved at re-inspection, then school closure. The same process is in principle applicable to public libraries, where the final sanction might be removal of responsibility for running the service from the current authority. This contrasts with the usually very slow take-up of performance measures outside a development environment. Why has it happened? Would a comparative international approach be beneficial to understanding?

The benefits of a comparative international approach might be: to tell us whether this UK experience is replicated; to give us a broader basis of understanding; to see if there any general patterns of evolution; to discern any current trends; and to identify what the future may hold for those countries currently unaffected.

To put more formally the research questions which this paper will try to answer:

- is there a trend to more Government interest in library performance measures?
- in what context: where, when and why?
- what performance measures interest Government?
- what are the implications for library practitioners? Is Government interest a good thing?

METHODS FOR COLLECTING EVIDENCE

Our key assumption in collecting evidence was that Government interest is reflected in the library literature and in the personal knowledge of experts. Our sources included: the papers from the two previous Northumbria Performance Measurement Conferences, review articles, our own literature review, and an appeal via the <lis-perf-measures@mailbase.ac.uk> mail list. We hope to add to our data in the course of this Conference through feedback on this paper and the content of other papers.

We accumulated two large binders of papers which we summarised descriptively, country by country. We then reviewed the summaries to identify themes, and decided to focus on two specific library sectors – public and academic libraries. The resulting summaries were still somewhat indigestible, so – in the tradition of old-fashioned social science – we formulated a simple scale of judgements about the level of Government interest, against which our country summaries for public and academic libraries could be calibrated.

DEFINITIONS

At this point we need to define more clearly what we mean by "Government interest". Firstly, we need to recognise that "Government" may not always mean national government. Different countries have very different governmental structures and may locate responsibility for libraries at one or more different levels between national and local government. We have included national or regional government bodies, including Government-sponsored independent agencies. We have also counted partial coverage within a country as a positive result. We have excluded interest by academic research agencies and professional bodies, unless operating an explicit Government agenda.

We have defined "performance measure" quite broadly as any kind of statistical or quality norm which allows comparison or benchmarking. So this can include systematic subjective judgements by informed parties. We have excluded reporting of simple descriptive statistics (eg. number of libraries; number of books).

RESULTS OF THE SURVEY

We acquired data from or about 34 countries. The extent of completeness varies from a single e-mail response to a

substantial literature. Sometimes a substantial literature is more difficult to interpret, because it may be difficult to separate aspiration from reality. The literature may also provide an incomplete description of the whole of real-world activity. In categorising the results we applied the following scale separately to public library and academic library fields.

Figure 1 Definitions for Scale Points

0 No Government-related activity

1 Relevant moves outside Government

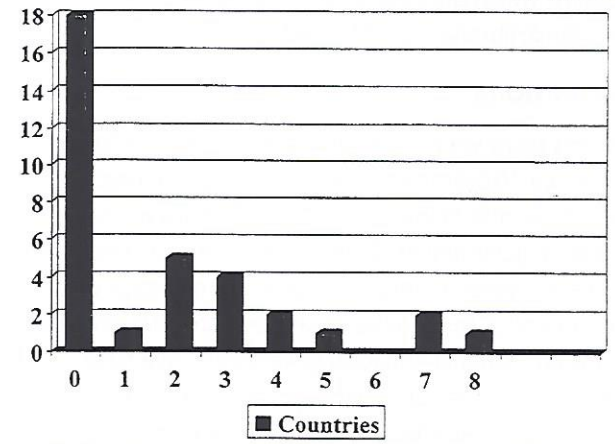
2 Government moves towards performance measurement

3 Government-backed performance measures

4 Government-backed performance measures "with teeth"

The maximum score for a country is 8, indicating Government interest in performance measures "with teeth" in both public and academic library fields. The minimum country score is 0, indicating no sign of Government interest in either field. The summary results of the distribution of countries are shown in Figure 2.

Figure 2 Summary of Country Scores (Public and University Combined)



Figures 3 to 6 provide the detail of which countries we have classified in each category, recording results separately for public and academic library fields where there are positive scores.

Perhaps unsurprisingly, the majority of countries have no activity. But there is a number of countries with significant developments, and papers and conversations at this Conference have already indicated some further progress.

So much for the headline results. Equally interesting is what lies behind these results: the what, why and how, the descriptive detail.

Figure 3 No Government Activity (Score 0)

Bangladesh
Estonia
France
Greece
Hong Kong
Iceland
India
Ireland
Lithuania
Luxembourg
Malawi
Malaysia
Mexico
Nigeria
Peru
South Africa
Spain
Switzerland
Austria (Public)
Belgium (Univ)
Italy (Public)
New Zealand (Univ)
Portugal (Univ)
Sri Lanka (Univ)
Sweden (Public)

Figure 4 Moves in One Sector to Persuade Government (Score 1 for Each Country Sector)

Canada (Public and Univ)
Netherlands (Public and Univ)
Norway (Public and Univ)
New Zealand (Public)

Figure 5 Government Moves (Score 2 for Each Country Sector)

Denmark (Public and Univ)
Germany (Public and Univ)
Austria (Univ)
Finland (Univ)
Italy (Univ)

Figure 6 Government Performance Measures

"Recommended" (score 3 for each country sector)

Australia (Univ)
Belgium (Public)
Finland (Public)
Portugal (Public)
Sri Lanka (Public)
Sweden (Univ)
United States (Univ)

"With teeth" (score 4 for each country sector)

United Kingdom (Public and Univ)
Australia (Public)
United States (Public)

Country sectors may score a "0" and have no Government activity despite efforts by individual libraries or librarians. In these cases the efforts most often relate to input standards (Nigeria, Bangladesh). But they are sometimes broader (South Africa, Estonia) and sometimes involve professional groups (New Zealand universities). Very often this work is accompanied by use of reference to international standards or comparison with other countries. The "0" group of countries is very varied: from some, as you might expect, which have very underdeveloped libraries to dynamic, well-resourced services (Hong Kong). In these countries there are mostly no national library statistics. Perhaps the key unifying feature is a general lack of performance measurement culture within Government generally?

In country sectors rated "1", where there are moves to persuade Government to take an interest, it is common to find library professional bodies seeking recognition for standards and performance measures, via organised sector-wide efforts. Characteristics of the "1" group of countries tend to include: well resourced libraries; the existence of broader quality assurance or performance review programmes (eg. local authority services generally; higher education); and some official library statistics (but in Canada reinstatement is being campaigned for after cessation of publication by the national statistical office).

Common features of countries rated "2" (Government moves) were evidence of Government interest in the developing role of libraries, Government figures speaking positively about professional efforts, and encouragement by Government of "self-regulation". These countries are characterised by performance measurement development projects set up by Government, Government guidance on performance measurement and sometimes a legal requirement for provision of public library services - but usually framed vaguely or feebly interpreted. Another feature is development of the electronic role of libraries. In Denmark, for example, there are quality assessment initiatives in higher education and minimum requirements for public libraries laid down by law. In Germany there is an initiative by German university librarians, and some Government-sponsored research.

Group "3" comprises country sectors where there are Government-sponsored library performance measures. The Government publishes standards and there are more specific legal requirements set for library services. Some characteristics of this group of countries include a strong customer orientation, a widespread culture of accountability of Government, use or discussion of outsourcing, privatisation and performance contracts, and many years compilation of comparative library statistics. Examples in public libraries include Public Library Acts requiring performance measurement (Flemish Belgium, Finland) and detailed Government performance standards (Sri Lanka, parts of US). In university libraries one finds university quality assurance systems (Australia, Sweden, UK) which impact on the university library, because the quality and appropriateness of library services are assessed as part of overall quality of courses.

Category "4", "performance measures with teeth", is characterised by performance measurement being part of a broader planning and review process, by sanctions against poor performance (eg. funding or licence to operate tied to meeting performance standards), and by publication of results in a popular form designed for lay persons to understand. The country sectors in this group have an effective Government monitoring process and a general culture of performance measurement and accountability, of which library performance measurement forms a natural part. In a large, federal country such as the United States the picture will vary across different jurisdictions, but our definition was that some areas have a "toothsome" regime. Nationally there have been many years of professional body standards and performance measurement research. The "National Performance Review" sponsored by the Vice-President emphasises accountability to taxpayers. Given the Federal nature of Government in the US, this campaign has little direct impact but it reinforces and is indicative of a culture. In some states and districts there is a process linking budgets to performance.

The United Kingdom seems to be the country which is furthest down the performance measurement road. There is a strong Government culture of pursuit of quality in public services and public measurement of performance against averages or standards. This culture has survived the change of Government in 1997, and even been reinforced subsequently. Beginning from a "Charter Mark" scheme in which any public service could voluntarily apply to be tested against some broad quality standards and, if successful, be awarded a "Charter Mark" of excellence, Government has moved on to compulsory publication of standards and local performance against them right across the public sector. Under the Blair Government, even Central Government's own departments have been required to set and publish their objectives and service standards – on the World Wide Web, naturally! The Government publishes annual league tables, school by school, of examination results in public examinations. Schools are regularly inspected and awarded a public grading. "Failing" schools must improve within a year or risk takeover or closure. There is a strong determination to have simple performance measures, regardless of technical scruples about the quality of data and conformance between the measures and the characteristics they are assumed to measure.

Turning to libraries, there have been professional efforts to provide statistics and service standards for libraries for many years, preceding Government interest. In England there is a legal requirement going back 35 years for the

provision of "comprehensive and efficient" public library services. But for many years "comprehensive and efficient" remained undefined and Governments were reluctant to take action when services manifestly fell below acceptable standards. However, public libraries, as part of local council services, have for some five years been required to publish their performance against national averages on a small number of standard input and output measures set by a Government body called the Audit Commission – for example Books issued per head of population and Net expenditure per head. In the last two years there has been introduced a mandatory process requiring each library authority to submit annually to Central Government a strategic plan, a review of performance, and objectives for the future. Government has also investigated and pressured a few local authorities who appeared to be planning to cut back library services unreasonably.

In the UK university world, Government has gradually imposed on reluctant universities a regime of tight monitoring of several kinds – financial, managerial, social and academic. The Government grants, on which most UK universities overwhelmingly depend, are tied to meeting specific requirements of various kinds. So core research funding is allocated on a competitive basis, just like individual research grants. 2002 will see the third national "Research Assessment Exercise", a massive data collection and review process in which some 70 panels of experts review detailed evidence, including individual publications records, of the volume and quality of research outputs of every research-active academic in every institution. The outcome is a grading on a seven-point scale, from five-star international research downwards, of activity for each research subject group in each institution. For the next four years core funding is allocated differentially to institutions according to the quality grade and number of researchers – with no funding at all for "low quality" subject groups. Here is performance measurement with very sharp teeth!

Funds for teaching are less competitive but a similar approach of systematic judgements of quality based on voluminous evidence has been adopted by the Government funding agency for higher education in assessing the quality of courses and teaching. The evidence collected differs and the process includes a visit by a panel of assessors every five years or so to each institution to check on and grade the quality of teaching provision. In this case the gradings are currently expressed as a scale of 1 to 4 (unsatisfactory to excellent) for each of six aspects of subject provision in each institution. Libraries are covered within the "Learning resources" aspect, which also covers teaching facilities. The gradings and summary reports are published. Unsatisfactory grades will result in revisiting and, if performance is unimproved, withdrawal of authority to run the courses. Both teaching and research grades tend also to become incorporated in newspaper "University League Tables", after further processing.

It is interesting that the approach to libraries does not start from traditional library statistics, albeit national statistics of libraries have been compiled for many years. But there have been moves in recent years to establish a small number of "Library management statistics" about university and college libraries. It will only be a matter of time before the Government assessors make use of these ready-made tools.

So where does this leave us? Clearly there are some caveats about the whole process. We can draw only provisional conclusions. But we plan to use this Conference and later opportunities to verify and update our conclusions. A weakness of the method relates to patchy coverage of the general trends which underlie actions on libraries. Please advise us of misjudgements in the summary analysis. But we believe it is still reasonable to attempt to answer our four research questions.

CONCLUSIONS

First, is there a trend towards more Government interest in library performance measurement? Undoubtedly, yes – from a low base but now increasing in a number of countries. The trend might be summarised crudely as follows:

- 1970s: only descriptive national statistics in some countries
- 1980s: some Government development projects to produce library performance measures
- 1990s: first examples of Government determining library performance measures and using them.

Second, in respect of context, the broader national context seems to be the dominant feature. Government interest in library performance measures usually reflects the development of a general culture of accountability of public services and encouragement of effective planning processes. Generally librarians have anticipated the trend and adopted the approach that it is better to devise the indicators yourself – and participate in Government work – than to have something very crude thrust upon you, as has happened in UK schools.

Third, the performance measures used tend to be a mixture of inputs and outputs, expressed as ratios, and (sometimes) quality judgements. The open incorporation of judgements – rather than using quantitative data as a surrogate – is an interesting feature of the university world.

Fourth, there are two contrasting answers to the question "Is Government interest a good thing?" No, it will make life much more difficult. Yes, it reflects higher profile and serious consideration of resourcing, and can contribute to

genuinely better use of resources in services. On balance I would go for "yes", but performance measurement can be a very painful process if really sharp teeth, expressed as fierce sanctions and penalties, are applied.

For those countries not yet enjoying this feature of life, there may still be interest in these results from the point of view of anticipating when (if) it is going to happen to you. The signs to watch out for are these:

- customer society (Stage 1)
- Government initiatives to encourage self-assessment (2)
- positive Government interest in libraries (3)
- other public services get the treatment (4).

At this point there is now no escape! Help to do it yourself or be rolled over.

Please contact Pat Gannon-Leary or Ian Winkworth with updates, queries and suggestions.

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SEMINAR PAPERS

Academic Libraries

From research to practice

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In order to identify a set of performance indicators suitable for libraries in NSW TAFE, I matched user-oriented performance indicators from the frameworks for Australian TAFE Libraries, *Focus on learning,* with those listed in seven performance measurement manuals. I attributed high, medium or low value to the performance indicators according to their incidence in the manuals. The Library Policy Advisory Committee of NSW TAFE (LPAC) reviewed my ranked list and subsequently added new statistics on customer assistance to the statewide data collection.

I held interviews with library managers from LPAC to discover how these new, and other, performance indicators were used as management tools. My study found that the managers did use performance indicators to evaluate planning and quality assurance strategies, and to demonstrate accountability.

BACKGROUND INFORMATION

Technical and Further Education (TAFE) in Australia provides a fairly uniform set of vocational (trade courses) and general education opportunities for mature-age and school-leaver student populations. The Australian National Training Agenda for TAFE in Australia sets national strategic directions for vocational and general educational service delivery, although each state in Australia is responsible for the separate delivery of vocational education and training.

In NSW TAFE there are 11 autonomous TAFE Institutes each responsible for delivery of service to their region; there are 107 college libraries serving the 129 colleges in NSW TAFE. The libraries in NSW TAFE have much in common. In general, the profile of student and staff cohorts is very similar. There is a shared, online library management system, which links all but two libraries; this is one of the important features of the NSW TAFE library network. Ordering and cataloguing of resources is centrally managed and operated through TAFE Library Collection Services (TLCS) which operates within the environment of the TAFE Library system. Materials are selected for purchase at the college level online, then staff, based in Sydney, order and catalogue the resources.

These two statewide systems, the NSW TAFE Library Systems and TLCS, tend to enforce standard processes and standardised nomenclature into the college libraries. All the same, there are significant individual differences and emphases in size and service delivery within each of the Institutes.

The library managers of the Institutes have a forum which meets quarterly to develop policy and planning strategies for the library network; the group is known as the Library Policy Advisory Committee (LPAC). LPAC has several working parties; one of these provides advice on statistics and performance measures. The mandate of this working party is to determine suitable statistics, which will provide the basis for the development of performance indicators.

The publication of *Focus on learning (FoL)* (1995) which superseded the *(Draft) Australian TAFE library guidelines* (Campbell and Booker, 1993), helps librarians to benchmark levels of their current service and assists in the planning of services within the context of increasing flexible delivery of programs. Each framework has a set of linked performance indicators included.

During 1996 I undertook a literature review on performance measures suitable for TAFE NSW libraries. The literature review identifies that there had been little work in the area of performance measurement in vocational education and training libraries in Australia. Two major uses of performance measures were identified in the literature review:

1. Quality assurance and demonstrating how well the library is meeting its strategic objectives, ie. as part of the planning and quality assurance cycle, and
2. Accountability: the justification of the use of resources.

The appendix to the literature review (Table 1) listed the relevant user-oriented performance indicators in *FoL* and cross tabulated these against the seven library performance measurement manuals, mostly derived from the educational library sector. Where there is a high level of corroboration between the sources then that indicator was recommended a useful one for NSW TAFE libraries.

Some of the sources used in Table 1 are from the VET (Vocational Education and Training) literature: *FoL* (1995), McIntyre and Hardy *Guidelines for the operations of TAFE library resource centres in Victoria 1988-1992* (1988), Tobin de Leon Clarke's (1996) doctoral work, SFEU (Scottish Further Education Unit) (1995) and the LEARN network in South Australian TAFE (1996). Others are from related sources: Abbott (1994) comes from the general works on performance measurement, Van House (1990) with Poll and te Boekhorst (1996) coming from the academic sector.

The findings of this research were presented to the LPAC committee, which established a statistics review working party to advise on an updated set of input/output statistics which could be useful in developing performance indicators. Previous to this, there was no information being collected by NSW TAFE libraries on the role libraries

Table 1
A Suggested Set of Mainly User-oriented Performance Measures for TAFE Libraries in NSW
(Listed in Sections A, B, D and E from Focus on learning)

	FoL	LEARN	Van House	Clarke	Abbott	Poll & te Boek.	McIntyre & Hardy	SFEU
A. Service Effectiveness								
1. Market penetration Number of registered borrowers Total of the college population	Y		Y			Y #	Y	
2. Reference enquiries per registered user Total enquiries Registered users	Y		Y #	Y	Y #		Y	
3. Loans per registered user or total pop Loans per annum or Loans per annum Number of staff Total of college population	Y		Y #	Y	Y #		Y	Y
4. Loans per staff member or user group Loans per annum Loans to group Number of staff Number in spec groups	Y		Y #		Y #			Y
5. User success in locating information (titles, subject, author etc.) User surveys, interviews, focus groups	Y		Y		Y #	Y		Y
6. Effect of service upon learning outcomes User surveys, interviews, focus groups	Y							Y
7. (Overall) Satisfaction with service	Y		Y			Y		Y
8. Materials availability User surveys, interviews, focus groups (This indicator is applicable to Section B)	Y		Y #	Y #	Y #	Y	Y	Y
9. Use of the library Visits to the library Total college population							Y	
10. Correct answer fill rate						Y		
11. Current awareness/SDI Subscribers Potential subscribers					Y			
12. Subject collection use Loans in that collection Total number of items in the collection						Y		
13. Use of equipment: video, computers etc. Loans of equipment Total in-house use and loans of equipment				Y			Y	
14. Use of software: eg. videos, audio, CD-ROM etc Loans Total in house use and loans				Y				

Y = close match of these indicators # = closely related indicator

play in the flexible delivery of teaching and the consequent increase in independent learning. LPAC recommended that the additional statistics to be collected would include identifying the time taken for customer assistance in the form of reference enquiries, Internet use, CD-ROM and databases support and troubleshooting equipment. We wanted to capture the staff time used to support individual use of the Internet in the library. In most colleges the library is the primary location for independent student use of the Internet, CD-ROMs and other audiovisual and computer equipment available for students and teachers to use. There was a scale of time allocated for each assistance provided.

From this sample library managers could identify which customer service activities were taking the most time for library staff. Sample periods for data gathering were set up in the library. These customer assistance statistics were collected across NSW TAFE in 1998 for the first time. As a result of the collection of these statistics I was interested to see how the library manager used them. I wanted to find out if the evidence collected in the new collecting area of customer assistance had been used, given that the first collection year was complete. Table 2 (see p. 73) illustrates the extent of use by the library managers of the Customer Assistance statistics.

Following on from this I was curious to find out about

Table 1 (Cont.)
A Suggested Set of Mainly User-oriented Performance Measures for TAFE Libraries in NSW

B. Operational Efficiency	FoL	LEARN	Van House	Clarke	Abbott	Poll & te Boek.	McIntyre & Hardy	SFEU
1. Collection turnover rate Loans per annum Collection size	Y	Y	Y #	Y	Y #	Y	Y	Y
2. User education programs No. of learners in a specific program Total students	Y	Y #		Y #	Y #		Y	
3. Loans issued per library staff member Loans to users Number of library staff	Y		 #		Y #			Y
4. Number of library staff per user College population Number of library staff	Y	#						
5. Collection expenditure per user Collection budget College population	Y				#			
6. Number of resources available to users Collection size College population	Y		#					
7. Study accommodation per user Number of study spaces College population	Y		Y #	Y #	Y #		Y	
8. Interlibrary loans Average time to provide ILL from time of request to time of availability	Y	Y	Y #	Y	Y	Y	Y	Y
9. Expert checklist Collection in a subject area Compared against an expert checklist					Y			
10. Collection currency Number of items purchased in the last 2 yrs Total number of items in the collection		Y						Y
11. Materials availability (as per Section A.)	Y		Y #	Y	Y #	Y	Y	Y #

Y = close match of these indicators # = closely related indicator

how my colleagues in TAFE NSW used performance measurement. Did their actions parallel what the literature tells us about how we should use performance measurement? The findings did hold true, that is, library managers did use performance measurement to determine and monitor how well the library's:

1. quality assurance and strategic objectives are being met, ie. as part of the planning and quality assurance cycle;
2. resources are being used, ie. how accountable the library was for its resources. This element includes justification to management of the allocation of resources, within the framework of performance measurement being a highly politicised activity as identified by Cullen (Cullen, 1998);
3. promotion and marketing of library services to clients and management is added, but within the framework of elements one and two above;
4. performance is compared and benchmarked with other libraries.

During the interviews I was impressed by the library managers' responses which overwhelmingly endorsed performance measurement as a highly political activity. All library managers outlined the importance of demonstrating their accountability for resource management and commitment to quality assurance and the strategic objectives of the library and the organisation, through the use of performance indicators. These issues were expressed as political imperatives, not just something that one does because quality improvement or accountability to clients and senior management is a good thing.

Further, three managers expressed the view that comparing or benchmarking their libraries' performance with other libraries in the network was an important element in their use of performance indicators:

Table 1 (Cont.)
A Suggested Set of Mainly User-oriented Performance Measures for TAFE Libraries in NSW

D. Productivity These measures usually relate to the cost of services and link program inputs to the outcomes achieved	FoL	LEARN	Van House	Clarke	Abbott	Poll & te Boek.	McIntyre & Hardy	SFEU
1. Service costs per program as % of total library budget or per user etc. User education program Information services program Resource provision program Resource access Cost of program / Total budget	Y		Y #		Y #			
2. Service cost per head Total budget / College budget	Y							Y
3. Collection expenditure per user College budget / College population	Y				#			Y #
4. Entrepreneurial activities Income derived from user charges and entrepreneurial activities / Total income							Y	Y
5. Average cost per item to order Staff time plus materials cost / Number of items processed	Y				Y #			
Y = close match of these indicators # = closely related indicator								

E. Social Justice	FoL	LEARN	Van House	Clarke	Abbott	Poll & te Boek.	McIntyre & Hardy	SFEU
1. Remote users, information services No. of phone, fax, email uses / No. of in-house uses			Y					
2. Library hours Hours library is open / Appropriate teaching hours in the college		Y				Y		
3. Remote users' use of the library In-house use / Total in-house & remote library users				Y			Y	
Y = close match of these indicators # = closely related indicator								

"(I) keep them and refer to them and look at how the Institute is doing and benchmark against other Institutes . . . (and) . . . (I) use them actively and politically where there is some mileage."

"Our director has asked me on a number of occasions to benchmark with other libraries, so I would have to say that justification of resources does have an influence on my use of statistics."

"(I) use the statistics for leverage of an argument for resources with management." "(It) is important to have hard data to hand to fight for resources, (the) significance is greater now because of the tight resources."

One library manager typified the views of the other managers because she understood the critical nature of performance measurement as a key management activity by saying "My views have changed over the years since becoming a Library Manager, I (have become) . . . aware of the importance to justify the existence of the library (through performance measures)". In response to the question "What changed the way you collect and use performance indicators?" another library manager referred to the "Whole climate of economic rationalism and the introduction of Quality Assurance in TAFE, the need to justify and be accountable and to demonstrate the quality (of your services) and that you are achieving valid results".

Table 2
Use and Non-use of Customer Assistance Statistics

	Customer assistance	
Not used yet – glanced at the figures but . . .		**Yes and this is what I have done . . .**
4 out of 9 Library Managers (LMs)		5 out of 9 Library Managers (LMs)
These 4 LMs will use the information on an as needs basis... But 2 out of the 4 LMs indicated that they wanted to wait and compare with next year's statistics		Did ***not*** confirm anecdotal evidence of library activity levels. Further research to be undertaken. 2 out of 5 LMs developed a mini-survey of help desk use and the roster reorganised as a result 1 out of 5 anxious to benchmark against other Institutes Active monitoring of desk activities

Eight out of nine of the library managers directly linked justification and accountability to the position that "I use performance indicators on an 'as when and where needed' basis". This implies that it is important to collect statistical information on key strategic activities on an on-going basis, so that performance indicators can be developed appropriately when needed. The library managers were referring to reports and submissions that were developed in response to requests from, or prepared proactively for, senior management. Most often, performance measurement information was used for the justification of maintaining services and resources or recommendations for planned resource allocation changes or increases in resource usage.

I was intrigued to determine how the library managers viewed the use of performance measurement. Was the demonstration of quality assurance, and of meeting the strategic objectives of the library, most important? Was demonstrating that the library was managed in a manner which reflected high levels of accountability, of higher importance in the views of these library managers? What was the higher priority? In most cases, six out of nine, the library managers indicated that ***both*** justification of resources ***and*** quality assurance were equally important uses of performance measurement. Within these cases there were differing views of "why". Several of the managers suggested that the emphasis varied from time to time. For example, and hypothetically, "at the moment I need data to justify the increase of Internet access points but generally my view is that I use performance measurement as a means of ensuring we are meeting our strategic objectives and meeting our customer's needs".

Next, I was interested to find out if there were any particular influences on library managers' attitudes in their use of performance measures. The two external influences of (1) quality assurance and evaluating the efficacy of strategic planning, along with (2) justification for resources were the two factors slightly ahead of the other influences and motivations. These factors are illustrated in Table 3. (The Table includes QA to mean how well the library meets strategic objectives.)

To what extent do library managers use performance measurement as part of the tools of management? I was interested to see to what extent library managers initiated performance measurement strategies; was the implementation of performance measurement a decision of theirs, or was the influence more from senior college or Institute management, or from bodies external to TAFE NSW? Table 4 attempts to illustrate the level of proactivity of the library managers, using a scale of 1–10, with '10' being highly proactive (ie. a significant number of self-developed performance evaluation strategies used). Other

Table 3 Accountability Factors vs. Quality Assurance/Strategic Objectives

Number of Library Managers Accountability/justification of resources was of prime importance	Number of Library Managers Library Managers said both meeting QA and strategic objectives and justification/ accountability	Number of Library Managers Meeting QA and strategic objectives was of prime importance
5	6	4

Table 4 Attitudes, Interest and Implementation of Performance Measurement

	Highly Proactive ..... not P or R ..... Reactive									
	10	9	8	7	6	5	4	3	2	1
Number of Library Managers	Q^ Q	Q	J J	J	J	J+				

Q^ = Quality Assurance or "how well is the library meeting its strategic objectives"

J+ = Justification or accountability as the motive

factors influencing a higher value included the flow-on effect of subsequent research emanating from analysis of performance measurement activity, the level of sophistication of the strategies, the intensity and the level of the discussion at the interview, length of time and animation in discussion. The rating included elements which were measured on the level and number of implementations of evaluation from the library manager's own initiative.

At the other end of the scale a '1' indicated a reactive response by the library manager (completely imposed by the Institute or other external body) on the development and implementation of performance measurement strategies. It is interesting to note that all managers had undertaken student and or teacher satisfaction surveys or focus groups within the last years or planned to do so in the next 12 months. The library managers initiated quite a high proportion of major evaluation projects. Only one Institute had not initiated any of their own projects. This evidence indicates the self-motivation of these library managers to use performance evaluation in a proactive manner.

CONCLUSION

NSW TAFE Institute library managers use performance evaluation strategies as a key management tool. The activity of performance measurement is demonstrably a political one and the reasons why Institute library managers use performance evaluation is to ensure that the libraries they are responsible for are meeting the strategic objectives and quality assurance goals that have been established. Further, Institute library managers use performance measures to demonstrate and justify their use of resources in a climate of economic rationalism and accountability. Finally, Institute library managers talk about the vital nature of performance measures as a means of their knowing how effectively their library services are being delivered in a customer-focused environment.

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"It's LIS evaluation, Jim, but not as we know it": the implications of the ESEP Project

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The Evaluating the Student Experience Project (ESEP) is a joint project between Glasgow Caledonian University's Departments of Student Services (SSD), Learning and Educational Development (LED) and Library to examine the student experience at the University. Focus groups and interviews were used. The mechanisms were found to be broadly satisfactory but there are operational difficulties and feedback is often poor. Qualitative mechanisms are preferred to quantitative ones and the need to close the feedback loop was confirmed as a key issue. Performance issues which affect the Library but which are common to other Departments, eg. communication, were identified. The Project emphasised that evaluation should be a holistic rather than a department-specific exercise, which implies a partial decline in LIS evaluation as a separate exercise. A list of performance issues common to several university Departments is suggested which could be used for joint evaluation programmes.

Glasgow Caledonian University is a new university, founded in 1992 from two polytechnic-style institutions. It is on two sites, the much larger City campus with 12,652 students (91.17%) and Park Campus with 1,225 students (8.83%). It is divided into three faculties: Health (including social sciences), Business, and Science and Technology. All the Park students are in the Business faculty. In June 1997 the University's Research Committee awarded £15,000 jointly to the Student Services Department (SSD), the Department of Learning and Educational Development (LED) and the Library to evaluate the nature of the student experience at Glasgow Caledonian University, examine existing evaluation mechanisms and make recommendations.

AIMS AND OBJECTIVES

The overall aim of the project was to assess and enhance student feedback mechanisms at Glasgow Caledonian University.

The detailed objectives were:

1. to describe the existing mechanisms for evaluating the student experience at Glasgow Caledonian University;
2. to establish the views of students on the mechanisms at the University;
3. to establish the views of staff and significant others (stakeholders) on the effectiveness of the University mechanisms;
4. to look at good practice in other institutions;
5. to evaluate the mechanisms at Glasgow Caledonian University in the light of 1-4 above;
6. to propose new mechanisms where necessary.

METHODOLOGY

It would have been possible to establish the views of staff and students using quantitative methods. However, this study was intended to probe more deeply into the operation of these existing University feedback mechanisms so that the University would have fuller information on which to base any necessary changes. Qualitative methods are designed to understand an existing situation through direct interaction with the subjects being studied, to analyse their responses for meaning and to use this information to increase positive outcomes by way of intervention in the situation. The literature highlighted the utility of a qualitative study as a means of offering a broader and more open-ended approach to a problem than a quantitative approach. It was, therefore, chosen as an appropriate one for this project.

The main research strategy selected for this study was dialogue with students and staff, using one-to-one interviews and focus groups.

For the focus groups, a sample of students was derived from seven programmes identified for case studies in terms of their differences in the following categories:

- Type of programme
- Size
- Departmental autonomy in delivery of modules
- Placement availability as part of the programme
- Park or City campus
- Level of vocational aspect of degree
- Variety of student characteristics, such as age, part-time or full-time, those working in additional employment.

The programmes chosen were:

BA Business Studies, BA Social Sciences, BA Nursing Studies, Engineering, BA Retail Management, BSc Optometry and BSc Environment. A total of 83 students took part of whom 39 were female and 44 male; 78 were full-time students and 5 part-time. Interviews were conducted with a representative sample of staff and also

with staff from programmes in Business Studies and Environment.

GENERAL CONCLUSIONS

The data gathered from the Project suggest that the existing mechanisms for student input and feedback are adequate for the purpose of enabling students to present their views and to take part in meaningful discussion at all levels of decision making, from the module to the University Court. However, it became obvious in the course of the investigation that the necessary feedback loops were not always closed.

Positive points about the system were made in the focus groups and interviews, principally that:

- the Module Evaluation questionnaire is a valued opportunity for students to comment anonymously on their experiences of a module. For staff, it is a helpful method of identifying trends and problems;
- the Student Staff Consultative Group is a very effective means of interaction as regards both teaching and administration within a Department. The informal student-based group makes it easy for students to raise critical issues which can then often be dealt with speedily;
- the system of support by advisers and tutors is favoured as an informal means of communication between staff and students;
- student input to the Programme Board is useful and effective in the development of programmes.

The more negative findings which impinge directly on the Library are described below.

The qualitative methodology used in gathering this data has shown that students, as well as staff, appreciate the opportunity to contribute considered opinions on a topic of importance to them. It has upheld the view, expressed in the relevant literature, that focus groups and interviews can enhance the experience of the participants, since dialogue is perceived more positively than pre-structured questionnaires.

In general, the Project has been successful in carrying out its aim, which was to assess and enhance student feedback mechanisms at the University. It has highlighted the difficulties inherent in ensuring that all students are aware of the opportunities for contributing to the decision-making processes of the University. It suggests that the principal means of overcoming these difficulties would be to survey the existing methods of disseminating information about the remit of the various mechanisms and the role of student representatives. The mechanisms discussed are currently capable of supporting a circular process of consultation and feedback, but they lack an in-built requirement to close the feedback loop successfully. Consideration of the recommendations put forward within this report may lead to a more satisfactory system in the future.

THE LESSONS FOR LIS EVALUATION

The overall lesson is that qualitative methods are to be preferred over quantitative methods because the information collected can be acted upon more quickly and the process generates interest, commitment and indeed enjoyment among participants. It is also a form of instant feedback as participants learn about the issues involved by virtue of being there, something which was highlighted by some Library focus groups about Library communication with users in late 1998. Specifically there are two areas:

1. issues specific to Glasgow Caledonian University;
2. common performance issues which are relevant to more than one Department, subject area or institution.

1. Issues Specific to Glasgow Caledonian University

- Module Evaluation questionnaire

  Staff and students have different views of its value. To staff it is a management information tool while students see it an opportunity to comment on their learning. However, they receive no feedback from it. The response rates are poor, perhaps because of end of semester "form filling fatigue" although the failure to close the feedback loop may be another cause. Although the questionnaire is long, there is only one question on the Library (on access to core texts) and although this is useful to lecturers and the Library in providing copies of basic texts it has little other Library relevance. Despite its length the questionnaire has nothing on IT and study skills. Finally, it takes a long time to process the results which are so difficult to interpret that Subject Quality groups tend to rely on the Student Staff Consultative Groups for information.

- Programme Boards

  These were also found to have weaknesses which have Library relevance. Students were found to be unaware of the Boards' role. One focus group felt that students did not get enough induction into meeting procedures so that they often felt uncertain about issues being discussed and unqualified to respond. There is also a danger that student representatives will fail to represent fellow students' interests adequately either because of timidity on the one hand or obstreperousness on the other. Student representatives on the Programme Boards of part-time courses often have a special problem simply because they do not see their fellow students often enough to represent their concerns.

- Staff Student Consultative Groups

  These are useful to the Library because, although some students do not know about them or understand their purpose, responses are useful, meaningful and direct

and are an effective means of obtaining a holistic view of the student experience as regards both administrative (including Library) and teaching issues. Discussion allows early action but feedback can be poor as no minutes are circulated to the wider student community.

- Perceptions of the Students Association

Somewhat surprisingly this proved to be a major issue, both for the University and for the Library. The students interviewed knew very little about the Students Association, who the elected members were, or what they did. Participants described the election day as the only time they saw people involved in the Association and the elections were an invisible process in terms of, for example, how students got involved. This lack of communication between the Association and the student body led to students perceiving it as powerless, and not an obvious contact point if they needed support, guidance and advice.

Direct entry students and Park Campus students commented on a perceived lack of communication of their needs. Direct entry students experienced problems entering their programmes after first year, which was described as a harrowing experience. Park Campus students felt very isolated, saying that the Students Association ignored them. As the Library always negotiates with the Students Association on controversial changes to services eg. increasing fines, on the assumption that it truly represents students' views, this is a serious matter.

Furthermore, the Students Association represents few, if any, part-time students although some 30% of the University's students are part-timers. It also shows that a rigorous evaluation culture, maintained by the University, can be the equal or even excel a directly student-based service. The experience of the University of Central England (University . . ,1998) supports this view.

2. Common Performance Issues

Among the reasons which informed the Library's decision to participate in the ESEP Project was the experience of contact with other Departments such as Student Services which showed that performance issues identified by the Library are also present elsewhere. The Library has an on-going programme of evaluation consisting of an annual questionnaire satisfaction survey, supplemented by topic specific questionnaire surveys and focus groups. A five-year table of key performance issues measured on a five-point scale gives an idea of fluctuating levels of satisfaction on key issues and what these issues are.

The ESEP Project offered the opportunity to compare the Library's experience with others in the University. While some of these issues are exclusively Library ones, Staff, Electronic services, Environment, Opening hours and Overall satisfaction are not. In recent years, access to computers and IT skills training has figured more and more in respondents' comments. In mid-1999 the Marketing and Public Relations Department of Glasgow Caledonian University (Glasgow . . , 1999) published a survey on the needs of part-time students. The Library issues raised paralleled those above including the increasing importance attached to computer access and IT skills training. It also highlighted the lack of communication between the University's services (including the Library) and part-time students. Although the work of the Centre for Research into Quality at the University of Central England (University . . , 1998) is department and service specific, it does suggest general and wide-ranging performance themes including the following:

- Overall satisfaction
- Feedback and remedial action
- Communication of information
- Satisfaction with staff
- Access issues including opening hours
- Environment including noise and physical conditions of buildings
- Access to and reliability of computers and ancillary facilities

General Satisfaction Survey 1999

A five-year comparison of key issues *Comparisons with 1995, 1996, 1997 and 1998*

Issue	1995 mean	1996 mean	1997 mean	1998 mean	1999 mean
Staff	3.78	3.32	4.00	3.55	3.81
Electronic services	3.3	1.74	3.51	3.42	3.63
Photocopiers	3	2.49	3.35	3.07	3.67
Enquiry service	3.58	2.55	3.83	3.57	3.69
Study environment	3.23	3.14	3.53	3.63	3.57
Opening hours	3.84	3.98	3.96	3.86	3.86
Stock availability	2.74	2.5	3.2	2.77	2.78
OPAC ease of use	3.8	3.05	3.87	3.76	3.65
Overall satisfaction	3.62	3.51	3.87	3.65	3.80

- Computer services used – e-mail, Internet, word processing
- Changes to services over time
- Facilities for the disabled
- Relevance of students unions to the student experience
- Financial issues relating to students
- Development of student skills including IT skills.

Armed with these comparative perspectives it is possible to suggest performance indicators which are "Library" but can also be used by other Departments. These might include:

- Culture of constructive criticism – encourage a culture of constructive, participative criticism through programmes of evaluation which take account of user misconceptions;
- Holistic evaluation culture – there should be a holistic evaluation culture of independent learning which looks at the student experience as a whole rather than a specific part of it. There should be an emphasis on qualitative people-orientated methods, focus groups, staff student consultative groups etc.;
- Access – a culture which emphasises increasing access to services including length of service hours, staffing (including security) and University organisation to support long opening hours, cross-sectoral links including links with Further Education;
- Environment – including physical quality of buildings and campus, noise (mobile phones!), heating, seating levels;
- Communication and feedback (closing the feedback loop) – consistent publicity, paper newsletters, World Wide Web, e-mail, provision of accurate information, reporting on evaluation;
- Expectation management – use of learning contracts and charters;
- Core skills – IT, information-seeking skills, study skills, communication skills;
- Remote access to University databases – including IP addresses, licensing and cross-sectoral access to databases;
- Satisfaction with staff – as measured by survey and evaluation methods;
- Orientation – signing and guiding, maps and plans, TV monitors – particularly useful to those with irregular campus access;
- Staff training and development – Continuing Professional Development, appraisals, percentage of staff time spent on training;
- Facilities for the disabled – including access and provision of specialised services.

Additional Optional Issues

- Core text access – although traditionally seen as a library function, core text material, if considered to include lecture notes and internally produced packs, would become a teaching and learning issue which would include copyright and licensing costs;
- Financial issues relating to students – tends to affect the Library indirectly although of great importance. Fines and photocopying/printing costs are main Library issues.

LIS-SPECIFIC CONCLUSIONS

The foregoing implies at least the partial decline of evaluation of library and information services as a separate function when clearly there are several key performance issues which are not exclusive to libraries but which can, in theory at least, receive the attention of several different departments. However, this implies that organisational structures exist in British universities which could carry out these unified evaluation functions and effect changes to services as needed. These are however the exception, rather than the rule, and the library is likely, in the short term at least, to remain one of the more active components of the British university's evaluation culture.

However, the ESEP Project clearly supports the principle of centralised evaluation and feedback mechanisms. Armed with the list of performance indicators provided above, interdepartmental programmes of action could be devised. The comparison of the evaluation work of different departments allows triangulation to take place and can provide convincing evidence of the reliability or otherwise of methods of data collection and analysis.

One of the clearest messages of the Project is the crucial importance of feedback and the failure to provide this timeously or at all may be the reason for the phenomenon of "questionnaire fatigue". This points to strategies which several university departments could pursue co-operatively and clearly communication with students via centralised, rather than departmental strategies are the most important. For libraries a challenging conclusion is the importance attached to informal methods which are much easier for teaching departments to implement rather than central services which, of necessity, tend to rely on more formal methods. On the other hand it is likely that libraries greatly undervalue the importance of their enquiries desks and circulation counters as informal communication mechanisms. They do, after all, provide instant access to advice and information without the need to make an appointment.

In general terms though, the clearest message of the ESEP Project is that evaluation is a holistic experience which looks at the student experience as a whole rather than discrete parts of it. Only by adopting this approach can librarians develop a realistic view of the relative importance of the library in the student experience as a whole.

The importance of qualitative methodologies, especially focus groups, was also highlighted.

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Benchmarking advice desks

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During 1998, and as part of a national SCONUL initiative on benchmarking, four HE institutions carried out a successful and wide-ranging investigation into the potential and practical value of benchmarking various Advice Desk operations between each institution. There was a decision from the outset that the project would use benchmarking tools and techniques in the spirit of practical experimentation. It was felt this approach would be of value and would meet the needs of a range of libraries considering the use of benchmarking techniques for Advice Desk services and other operations. One positive outcome of the project has been the agreement amongst the participating universities to continue to use benchmarking with each other as a regular feature of their performance measurement.

There is a growing recognition in Library and Information Services (LIS) of the importance of quality management principles and practices which are helping to provide the means to allow increased accountability, essential now in the academic sector, while also assisting in improving and enhancing effective services (Lawes, 1993; Kinnell and Garrod, 1996). Benchmarking is a methodology by which progress can be actively demonstrated over a period. It can also be a catalyst for change particularly in key areas such as the "three Es": effectiveness, efficiency and economy (Gohlke, 1997).

Under the overall banner of the Standing Conference of National and University Libraries (SCONUL) Benchmarking project (Town, 1998), our four universities came together in a spirit of practical experimentation to explore the possibilities of benchmarking Advice Desk services. The project work, it should be emphasised, was deliberately experimental in that we tried and tested a range of tools and techniques. Like any methodology benchmarking can be time-consuming and require considerable commitment. Therefore one of the main purposes of this project was to help to identify "best techniques and tools" for others following on from our work. The fact that we produced some results and are committed to continuing this initiative in the future in new areas says something of the success of this venture for the four universities involved.

Before commencing in more detail on Tools and Techniques we need to say a few words about our overall framework. As part of a national project we used a common framework, which was the basic standard model from Oakland (Oakland, 1993). This essentially laid down a series of stages to follow. However, we do not intend to dwell on this part of our work but move swiftly to concentrating on the techniques we employed and our perceptions on their use.

TECHNIQUES AND TOOLS

During the course of the Project, the participating libraries experimented with a number of techniques, each of which had varying degrees of success. The techniques included: an Advice Desk Query form; a "Smiley Face" questionnaire; mystery shoppers; a behavioural study; exit interviews.

The Advice Desk Query Form

All participating libraries contributed to the development of, and trialled the Advice Desk Query form. The form categorised seven types of enquiry which all the Advice Desks expected to deal with. These ranged from "housekeeping" to "informational". Staff used "five bar gates" to record on the form the frequency and type of enquiry.

The form was used successfully by the libraries, who considered it to be fairly well designed. An added benefit was that, at a local level, the form also proved to be an effective source of management information which measured both the activity and the use made of the services delivered at the Desk.

The form is not however without its limitations:

- it is not appropriate for recording "multifaceted" types of enquiry;
- more experimentation with certain query categories is required;
- it is yet to be determined if the form can be used electronically and how it may be developed to record activity at specific times of the day;
- staff may neglect or forget to complete the form during particularly busy periods. Equally, staff could be over zealous and hand out survey forms for even the smallest of enquires.

"The Smiley Face" Questionnaire

"The Smiley Face" questionnaire was another tool which all the participating libraries experimented with. It was so called because the questionnaire used a series of graphical images (including a "smiley face") to grade responses

from users about their experience on using the Advice Desk Services. This brief questionnaire was handed to students by Advice Desk staff immediately after their enquiry had been dealt with.

Overall, the use of this tool was fairly well received by the participating libraries. On the positive side:

- the libraries all saw the value and necessity of surveying users at the "point of contact";
- the questionnaire benefited from a trial as the layout was modified and all libraries subsequently reported an improved qualitative response;
- a particularly useful development was the fact that the questionnaires were coded (to match them with the type of enquiry) and they were numbered (so that the response rate could be measured);
- the users appeared to like the questionnaire as it took little time to complete and it overcame problems associated with "questionnaire fatigue" which is sometimes a problem in an academic environment.

The limitations all related to the issuing of the questionnaire to the users. All the libraries unanimously felt that:

- there was a lack of clarity about *when* to issue the questionnaires. It did not, for example, seem to be appropriate if a simple directional enquiry had been answered;
- staff neglected to issue the questionnaire if they were busy, and they were reluctant to hand them out if the enquiry had been less than successful;
- not unsurprisingly, as a result of the above, all libraries received very positive feedback from users about the Advice Desk services.

It should be noted that these problems are not perceived to be insurmountable and a solution that has been discussed is that the questionnaire could perhaps be issued by non-Advice Desk staff (although it is acknowledged that this would add to the cost).

Mystery Shoppers

The "Mystery Shopper" technique was tested by two universities. Each university sent staff who posed as students to the other's Advice Desk. The experience was judged against criteria including waiting time (Tillotson, 1997) and the success of the enquiry.

The view of each library was that the exercise was a useful tool because: it enabled us to gain an overall impression of customer care and it provided objective and informed qualitative data because the assessment was conducted by our peers.

Nevertheless, the technique had a number of drawbacks:

- it was very time-consuming to arrange and conduct;
- it was limited in terms of its ability to test whether the Desk had provided the "correct" answer;
- recording the data was problematic for those involved;
- the success relies very much on a good relationship with the "partner" institution both in terms of clarifying and agreeing the criteria to be measured, and reporting back on potentially sensitive results.

It was ultimately felt that, whilst the "Mystery Shopper" technique might be used again in the future by the two universities, it was too novel and too impractical a technique to be adopted by all the participating libraries.

The Behavioural Study

A Behavioural Study was conducted at one university in which a member of staff (who does not work on the Advice Desk) unobtrusively observed the behaviour of the staff and the users and their interaction for four one-hour periods over two days. Data were recorded concerning, for example, the number of users who received assistance, and the number of times the phone remained unanswered.

Whilst this technique provided some interesting qualitative and quantitative data, and it generated some useful suggestions for minor improvements, it was unanimously discarded by the participating libraries for a number of reasons:

- it was perceived to be too time-consuming and expensive to conduct;
- the staff felt very self-conscious and their behaviour altered as a result of being observed;
- there was the potential for too much bias, particularly if using an "internal" observer;
- it was not felt that the technique could easily facilitate *comparison* between the participating libraries. It was therefore considered to be unsuitable for the benchmarking process.

In the future the participating universities would like to investigate video techniques particularly in terms of "people flows" at various times of the day/week.

Exit Interviews

One university also took the opportunity to experiment with Exit Interviews. These were conducted by library staff who, again, did not work on the Advice Desk. The interviews took place on two different days and at different times. They were short in duration and they focused on *why* students had used the Desk and how they perceived the operation and the responses they received.

The use of this technique yielded some very positive results:

- rather than being reticent and "eager to please", the users were very willing to be interviewed and their views

were very frank. They said for example that some staff would benefit from updated training on CD-ROMs. It is considered that one of the reasons for this reaction was the fact that users were approached on "neutral" territory outside the library environment and by a facilitator;

- whereas the results from the "Smiley Face" questionnaire had been viewed positively, a more realistic picture emerged from the interviews. Users complained about queues at the Advice Desk and they admitted that they did not always understand the information they had been given by the staff;
- users took the opportunity to air their views (perhaps because of the presence of a facilitator) about a variety of other library issues such as the inadequate bookstock, ineffective signing and fines.

It was acknowledged by the participating libraries that Exit Interviews are time-consuming and there is always the possibility of both interviewer and respondent bias. Nevertheless, the consensus of opinion was that the Exit Interview could potentially be very useful to the benchmarking process and one which could be utilised in the future.

ENVIRONMENTAL DATA

It has already been established by Barton and Blagden (Barton and Blagden, 1998) that environmental or "contextual" data are essential to facilitating the interpretation and comparison of management and statistical information.

During this study the environmental data included student numbers, number of sites, and numbers entering the Library and Advice Desk location. It was discovered that environmental data should be clarified in the early stages of a benchmarking project because:

- the operational context of all participating libraries is clearly defined;
- it ensures that "like is compared with like";
- it provides a vital framework for the correlation of any results.

MARKETING, TRAINING AND PROJECT MANAGEMENT

Benchmarking as a methodology will not work properly without the commitment and participation of library staff and users and a major section of this project concentrated on marketing and training.

Internal Marketing and Training

Benchmarking cannot be carried out without the implicit and/or explicit (preferably both!) support of managers as both time and resources are required. Fortunately benchmarking is a recognised quality improvement technique and it can be argued that such techniques are essential for LIS success. In fact in all participating universities, though to a greater or lesser degree in some instances, the project was included in action plans and management meetings and, most importantly, results were fed back to managers promptly for action and review.

All the above assists in promoting a sense of awareness and ownership of the project by staff on all levels. A very wide range of methods was used to publicise the project to staff: newsletters, bulletins, staff meetings. This is vital as it has the definite outcome of increasing the motivation to participate, leading to a high degree of accuracy and great interest in results. Interestingly, the variation in commitment to the project between universities did show clearly in some of the results obtained.

Training is also obviously good publicity but it was also essential to ensure consistency. All the universities who participated have a disparate set of staff with teams for evening and weekend working as well as a variety of sites. Training was delivered by a variety of means: paper instructions left at desks; e-mail for briefings and reminders (which was quite often not satisfactory); briefing meetings both for teams and as a one-to-one session (the most effective method used but difficult to organise). There was one method where good communication led to a dilemma. The use of mystery shoppers did cause some difficulties for some staff. In the end the technique was discussed as being in use by selected universities as part of this general communication process to staff.

External Marketing

The key point about the relevance of external marketing is that this benchmarking project is essentially an inward looking process. The project was not targeting those who did not use the service.

The four universities participating in the project were all clear that academic staff of their institutions should be involved as users of LIS services but not specifically targeted. The information distributed about the project emphasised the various research methods being employed and the range of methods being tried in a spirit of experimentation. For all the participating libraries the most important message was that we were actively striving towards more effective and better quality services.

With our other core set of users, students, some universities undertook publicity, other did not. There was no real "decision" as such for this distinction as it was mainly a result of practical and operational imperatives. It also made, on the surface, little or no difference to the results obtained although obviously publicity and the message that the library is striving to improve its quality is always valuable.

During the project students gave feedback on our Advice

Desk services and as a result discussion was provoked about other areas of LIS service. One clear message that came through was that students like to be asked, do not consider it a waste of time and are keen to participate.

Overcoming Resistance

During initial project discussions the issue of resistance to the methodology by LIS staff and users was considered to be a major problem. However, in practice this issue did not prove as difficult as expected at the outset.

A more important area of resistance came with senior management, particularly in the level of support resulting in more or less time and resources available. This variation did show clearly in the results obtained. However, sometimes less support also resulted in a freedom to continue without interference!

With LIS staff the key point is to emphasise the purpose and outcomes of the project, particularly the value of the results for planning.

Project Management

This project was part of a larger national project co-ordinated by SCONUL and like many such initiatives it was the local momentum which tended to dominate. One of the issues the project group was consistently grappling with was ensuring that local project work did not proceed in isolation but kept in touch with the overall project.

Local project management also meant ensuring all four universities kept on track with each other, and further kept on track between the *sites* of each university. This macro and micro organisation and co-ordination was vital to the project and it is to the credit of the internal communication and infrastructural systems of the participating universities that this worked effectively. The need to cascade information, training and publicity to the operational level is vital to success for the benchmarking methodology and it was relatively easy to see from outcomes where this had occurred effectively.

One of the issues which was established very early in the project as part of the basic standard model provided by Oakland were the critical success factors (CSFs). These were very important to communicate to staff and contributed considerably to the overall support for and understanding of the project and its purpose.

Critical Success Factors

The most important and most obvious factor was a clear mission for the service and a shared perception amongst LIS staff and LIS users of that mission. Only when this is established and transparent is there something against which to measure performance in the first instance. The subsequent most important success factor for this project on Advice Desks was satisfied customers. Here we identified that the most important balance was the impact of the service set against the immediate outputs or what that service could deliver in what timescale. This is a typical "quality" balance of:

"delightful" process (access, situation, siting) against "right" or required information.

From this one major CSF of satisfied customers flowed a series of related factors such as: reliable and consistent systems and processes; competent and committed staff; value for money; equality of service for all; promotion of the service to users; and documentation as back-up and supplementary information for the service.

One related factor which caused us considerable debate was that of the education of users. As educational institutions we have a commitment to ensuring our students leave with a sound education and good transferable skills. An Advice Desk therefore has to balance providing an "answer" for users against providing them with the skills and awareness to find that answer for themselves in the future.

Overall one clear message emerged from the management of this project which was the time factors involved in various techniques. Some techniques, such as mystery shoppers, required a large investment of time in preparation and delivery.

LEARNING PROCESSES – VALUE ADDED?

Some of the critical success factors established at the outset of the project were used to assess outcomes and evaluate achievements.

Clear Mission and Shared Objectives

Focusing on the core mission of the Advice Desk service was an important and interesting starting point for the basic reason that LIS staff rarely have an opportunity to "go back to basics" in the busy and pressured environment of the current academic library. Such a consideration sparked new ideas and improved communication between staff teams working on Advice Desks.

Satisfied Customers

It was found that there was little time to consider such issues as "delighting" the user with improved access or siting. One library involved in this project completely reorganised and re-sited the Advice Desk service as a direct result of this project. Collectively learning about benchmarking techniques involved both qualitative and quantitative measure to understand how LIS services deliver what is promised to users. Customer feedback can also be matched against LIS staff perceptions and highlight areas for improvement. Specific examples of these have included improving the guidance systems adjacent to the service area, relocating the Advice Desk to another part of the Learning Centre to specifically help users with electronic services, and improving workflow to more effectively handle telephone enquiries.

The issue of the "right" information was problematic and much discussed. Libraries are there to provide a service and information but *how* that service is provided and the level of support given is a difficult dilemma. There is no doubt that academic libraries do need to involve themselves in the core objectives of their institutions, and the provision of transferable information skills, particularly into the workplace, is very important. This leads on to a broader consideration of benchmarking generally. Given academic library commitment to supporting information skills development, it could be very difficult to benchmark Advice Desk services against public library services with a philosophy of directly finding a complete "answer" for their users.

Ethical Issues

There was a number of issues in relation to ethics when using a benchmarking methodology. For example a non-disclosure agreement is required between institutions regarding detailed "results".

Advice Desks are a key deliverable part of any LIS. They involve the highest degree of personal interaction with users than perhaps any other part of the service, because the process involves trust, understanding, listening skills etc. Therefore the extent to which service transactions are monitored to measure customer satisfaction has to be balanced against the need for staff anonymity. Staff must feel confident that the emphasis is on overall performance and not individual performance. To have attempted otherwise would have jeopardised the co-operation of all those involved, particularly with regard to techniques such as behavioural study or mystery shopper.

Reliable and Consistent Systems

Benchmarking provides services with the opportunity to map (and learn to map) process. This key mapping process provides a simple framework by which to thoroughly analyse processes which otherwise can grow by custom and practice rather than by design. In future collaborations it is intended to further refine this mapping process and introduce additional elements in relation to costing to provide interesting comparisons in terms of value for money.

Competent and Committed Staff

The project built trust between the participating LIS services. Each university developed functional expertise, internal credibility and communication skills. This developed the confidence to look beyond the remit of the initial benchmarking project to generate ideas for measuring and improving other areas of LIS provision.

NEW PERSPECTIVES FOR OLD

A key outcome for all the libraries involved was the simple issue of changing perspectives. The thorough processes that benchmarking demands mean that new ideas and new issues arise. Finally it has been established that benchmarking between four institutions is achievable and repeatable.

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The impact of system migration on users: assessing and addressing reactions to a new public access catalogue

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The online public access catalogue serves as the primary interface between users and a library's collection, and represents a major investment of a library's financial and intellectual resources. Though libraries are understandably placing emphasis on providing quality customer service, user success and satisfaction with the online catalogue is likewise critical. This paper presents a case study of the impact of system migration on users at the Library of the University of Illinois at Urbana-Champaign, specifically looking at user reactions to a new public access catalogue which was implemented in the fall of 1998. Many factors complicated the implementation, and users experienced confusion and dissatisfaction with the new system. Online suggestion boxes and a user survey were used to assess the nature of users' concerns and subsequently to shape the library's response.

INTRODUCTION

Concern with user satisfaction with services and personnel provides a healthy sign of a library's commitment to its clientele. Management techniques such as Total Quality Management have been adopted by libraries to place customer service at the center of their operations, and emphasis is placed on efficient procedures and courteous, well-trained staff. The online public access catalogue, however, remains the primary interface between users and a library's collection, and often serves as the only point of contact for remote or distance users. User satisfaction and success with the online catalogue is therefore a critical measure of the overall performance of a library.

The library catalogue has not been static, however, since the days of the card catalogue. Users are increasingly challenged to adapt to new releases and upgrades, and even to learn entirely new systems as libraries migrate to newer technology. Maturing technology, particularly client-server systems, the need for an integrated system, vendor problems, and the desire for enhanced functionality are the primary reasons a majority of libraries will undergo a major system migration sometime in the next few years (Hallmark and Garcia, 1992). The impact of these new systems is keenly felt by the library user, who may be pleased by powerful new features – or frustrated by an alien interface that complicates the search process.

This paper presents a case study of the impact of a system migration on library users at the University of Illinois at Urbana-Champaign. We look specifically at their reactions to the new online catalogue and discuss the library's response. Beginning with a brief literature review of online catalogue use studies and systems migration, we then describe our methodology for soliciting user reactions, analyze our findings, and conclude with a discussion of future directions in the development of the catalogue.

LITERATURE REVIEW

Not surprisingly, the online catalogue represents a fertile area for research. More than 1,500 articles focusing on online catalogues have been indexed in *Library literature* since 1985. A recent review article provides a good overview of research on OPAC use since 1990 (Large and Beheshti, 1997). The authors identify typical methodologies for data collection, including experiments, interviews and focus groups, questionnaires and surveys, observation and "think aloud", and transaction logs. They report on research findings, such as the relatively high failure rate of subject searches, and summarize the recommendations that emerge from these studies, eg. the need for improved interface design. In a provocative article on the failure of online catalogues, Christine Borgman asserts that they are *still* hard to use because the design does not incorporate sufficient understanding of searching behaviour (Borgman, 1996). She argues for the need to "lay to rest the card catalog design model for online catalogs" and concludes that there is little evidence that research on searching behaviour studies has influenced online catalogue design. In the final analysis, despite upgrades, new releases, and even the development of new systems, the literature corroborates what many librarians already know – online catalogues are neither intuitive nor easy to use.

The literature on systems migration is considerably less voluminous and generally comes from a management perspective. Topics include reasons for undertaking a migration, planning for migration, managing an integrated online system, migration as it relates to specific functions within the library, case studies of system migration in individual libraries, and surveys of libraries that have undergone a system migration. Recently published books provide technical and managerial advice (Agnew and Lambert, 1996 and Muirhead, 1998) but few studies focus on the aftermath of migration: the impact of a new system on users. The following section looks at the reactions of library users to a new online catalogue, focusing on their specific concerns and the library's response.

SYSTEM MIGRATION AT THE UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

As with many libraries, the online catalogue at the

University of Illinois at Urbana-Champaign needed a major overhaul. A homegrown system was based on WLN and LCS software, Illinet Online (or IO) linked to circulation records, but not to acquisitions or cataloguing. It wasn't Y2K or Z39.50 compliant, didn't offer users access to their borrowing information, and didn't offer the advantages of Web-based technology that users have come to expect.

For its time, however, the system had significant features that reflected both a commitment to resource sharing with other institutions in the State of Illinois and to user-initiated services. The University of Illinois is part of a consortium (Illinois Library Computer Systems Organization) and Illinet Online is a union catalogue with a database of more than 7 million bibliographic records and more than 21 million item records from 45 libraries within Illinois. Through the menu-driven interface, users had the ability to charge, recall, or renew their books online, as well as to automatically request inter-library loan of materials from any cooperating library if the home library didn't have a copy or if the book was in use. The system didn't require a password but readers used their Social Security Number (a ubiquitous 9-digit ID that everyone knows by heart) to perform borrower functions. Other useful features included the ability to restrict a search to journals and even to a specific volume number of a journal, and a mail option whereby charged materials could be sent to campus offices, among others. The menu-driven interface was rudimentary but straightforward, and options such as search other libraries, mail materials to campus offices, and print or e-mail records, were easy to find and use.

From the library's perspective, successful conversion of the bibliographic and borrower databases was of utmost importance, and for the most part this conversion proceeded with few insurmountable problems. The largest hindrance resulted from vendor delays in system development, which necessitated implementing the vendor's character-cell interface rather than the Web-based catalogue that we had planned to offer. The promise of a Web-based catalogue featured prominently in our publicity about the new system, however, so we decided to concurrently offer access to the Web version with the caveat that it was still under construction. Since the old system could not be maintained, it was retired as soon as the new system came up.

At the beginning of the fall semester in 1998 we rolled out the new system. Unfortunately, initial public reaction confirmed our fears: users were confused and frustrated by the new system, resulting in considerable user education and public relations concerns for the library, as well as a mandate to address the problems in future development of the catalogue.

ASSESSMENT OF USER REACTIONS

Anxious to understand and address user concerns, we took several approaches to collecting information on the nature of the problems users were experiencing. Public services staff made use of an in-house electronic mailing list to post questions and observations on using the catalogue. These messages were particularly useful for uncovering database conversion problems, sharing search strategies, uncovering system quirks, and identifying areas where further staff training was needed. We looked at the upsurge in transactions in the library's Telephone Center, which troubleshoots patrons' problems logging onto the system, with user IDs, renewals, etc. A jump in inter-library loan requests for titles that are actually available in our collection provided an indirect measure of users' difficulties in searching the catalogue.

Primarily, however, we did a qualitative analysis of what users themselves told us. We solicited their input through a "Suggestion Box" feature on the telnet interface and a "Comments" link on the library's Web site. A designated staff member from the Library Systems Office logged and responded to over 200 questions and comments. The library also conducted an online user survey in April of this year and we analyzed the section about the online catalogue, which amounted to over 400 user comments.

ANALYSIS OF USER REACTIONS

The quantitative section of the online user survey asked users to indicate their satisfaction with various aspects of the new online catalogue including overall access, searching, requesting materials, using the search results, and other features of the catalogue. Relatively few people were fully satisfied with the new online catalogue, an outcome that was not entirely surprising. Respondents did have the option to mark "no opinion" about certain features, and the number of replies that fell into this category was both significant and disturbing. From a "no opinion" response we inferred that users were unable to find or did not know about certain features (advanced search features, office delivery of materials, e-mail search results) that make our catalogue extremely useful. Since we could not confirm our suspicions, we turned to the open-ended responses for further analysis.

We were particularly interested, however, in what users chose to tell us in their comments. While many acknowledged the library's efforts and offered positive comments, particularly about the potential of the Web interface, a large number expressed dissatisfaction and frustration. In analyzing the responses from the survey and those received via the Suggestion Box and Comments link, we determined that their concerns fell into the following categories:

- **Perceived and actual loss of search functionality compared to the old system**

Though one of the guiding principles in implementing the new catalogue was not to lose any functionality, in fact

we did lose features, or they became harder to find. Many users regretted that the new system no longer provided the ability to search for a specific volume of a journal, a useful feature in a library that holds copies of varying runs, in multiple locations. Others perceived a loss of search functionality, such as the ability to do an author/title search or to limit a search to periodicals, which are actually available in the new system but not readily apparent.

• Problematic interface design

Few people were happy with the design of the character-cell interface. They had difficulty with terminology ("browse title", "output"); found navigating difficult (use of ctrl/N to move to the next screen); and found many processes, such as e-mailing citations to themselves or requesting that books be sent to campus offices, considerably more cumbersome than in the old system.

• Frustrating method of authentication

As mentioned earlier, the 9-digit Social Security number has traditionally been the default numerical identification for the majority of people in the U.S. Misuse of this number has created concern for privacy and security, however, and University policy now mandates that use of this number be phased out. Many users were unhappy with the 14-digit size of the new library ID (the length of which was dictated in part by consortial considerations), and the need to re-input the number for each borrower transaction. They were also confused about the PIN number that they are also required to submit.

• Perceived and actual loss of borrower services compared to the old system

As mentioned above, the original public access catalogue was designed to provide users with the ability to perform a number of borrower services, from user-initiated check out and renewal to inter-library loan and office delivery. Unfortunately, users have a difficult time finding and using these functions on the new system, and many assume they are no longer available. Also, the system still has problems with some borrower services, such as users' ability to renew materials borrowed from other libraries.

• Unmet expectations

An interesting by-product of users' experience with other online systems, particularly commercial databases, is increased expectations of what the library's online catalogue should deliver. Many users, for instance, want overdue notices to be automatically sent by e-mail, or the ability to sort the list of items they have checked out. Many preferred other interfaces they'd used (*Ovid* was mentioned a few times), or wanted one that's simpler to use (*Amazon.com* was given as a model!).

• Difficulty finding/using help or learning to use the catalogue

Closely related to problems with interface design, users complained that they had difficulty finding and using online help, and when they did, it wasn't very useful. The library staff wholeheartedly concurs that the vendor-supplied online help leaves much to be desired. Though we designed an online tutorial, provided an online FAQ (frequently asked questions), and offered workshops, comments from the survey told us that a significant portion of users remain unaware of these services.

• Technical access problems/difficulty logging in, printing, etc.

Remote users of the new system are responsible for securing the proper telnet client, configuring their printers, etc., and though online and phone assistance are available, novice users are easily put off by these steps. Moreover, the remote login screen (which lay outside the library's control) was poorly designed and added confusion to the login process.

• Conversion problems

Though users reported relatively few problems resulting from conversion of the database itself, ie. missing records, erroneous locations, etc., this low statistic is misleading. A conversion problem with serial locations continues, in fact, to cause unnecessary confusion, and hundreds of users were affected by invalid IDs when the system first came up. Other conversion problems such as the loss of access to individual titles in an analyzed set, are transparent to users until they can't find a title that *should* be in the collection.

REACTIONS TO THE WEB VERSION

As mentioned previously, we concurrently mounted an "under-construction" Web-based version of the catalogue. It was a difficult decision since we had concerns about generating more confusion and dissatisfaction. We felt an obligation, however, to give users an idea of what we're working towards. Reaction was mixed. While many users commented that they liked using the Web version (which requires considerably less navigation), they were frustrated by technical problems. The chief complaints were poor response time and confusing error messages ("no results" or "too many users" reported when, in fact, the system was down). Users also disliked using an interface without full functionality, ie. the ability to place requests or limit searches to the home institution rather than the statewide catalogue.

THE LIBRARY'S RESPONSE

Shortly after we mounted the new catalogue it became apparent that we had user education as well as public relations issues to address. These were tackled primarily through the establishment of a library-wide User Education Task Force that was charged with helping users to negotiate the new catalogue. Their efforts included developing paper and online handouts with step-by-step

instructions, offering workshops, and developing an online tutorial. The Task Force also held primary responsibility for public relations, for which they employed several strategies including mounting a "Books and Bytes" page (<http://www.library.uiuc.edu/draweb/usered/catalog.htm>) on the its Web site, sending e-mail messages to faculty explaining the reasons for the catalogue's limitations and pointing out how to get assistance, and drafting an open letter to the campus community (inserted in the campus newspaper). These communications explained reasons for the migration, acknowledged problems, and directed users to various avenues of assistance.

In order to address specific problems that users were experiencing, the Public Access Catalog Implementation Team analyzed the comments and questions received via the Suggestion Box and Comments link and posted additional information on the library's Web site prior to login <http://gateway.library.uiuc.edu/resource/dratelnet.asp>. They also mounted an online FAQ (<http://www.library.uiuc.edu/dra_faq/>) that responded to the most frequently reported problems reported by users. Other units within the library also assisted with transition to the new system. The Systems Office worked to facilitate remote access by simplifying the downloading process for the telnet client, and the Reference staff instituted "roving" in the online catalogue area to provide one-on-one assistance to users.

These initiatives, however, address the symptoms but not the problem. The bottom line is that we must improve the online catalogue's usability rather than devote resources to compensate for its limitations. Retiring the telnet version should resolve many of the problems users report with awkward navigation, confusing terminology, and technical difficulties (ie. necessity of downloading a compatible telnet client). How can we ensure, however, that the Web catalogue (when it is fully functional and reliable) avoids the other pitfalls that presently confound our users?

Unfortunately, some of the problems can't be resolved, at least not immediately. For example, there may be no global fix to some of the problems resulting from the database conversion, such as the missing analyzed titles. Similarly, the vendor may never develop features that were lost, such as the ability to search by specific journal volume number. And though authentication is unavoidable, users should be less frustrated if the system can balance security with convenience (ie. eliminate the need to re-enter the ID).

What we *can* do is try to design the Web interface so that users can easily see and understand their search options (eg. how to do an author/title search), perform borrower functions such as requesting or renewing with a minimum of assistance, and navigate intuitively. To this end, the library has committed resources to rigorous usability testing. We plan to undertake a systematic study of how users approach, search, and understand the online catalogue, ultimately incorporating this user feedback to design a better Web interface. Moreover, we want to explore how to effectively use Web technology to integrate online help at the point of use, and exploit the Web's potential for interactivity between users and the library staff. Interactive e-mail, chat spaces, and other conferencing technologies represent the type of dynamic help that we would like to pursue.

In conclusion, the system migration taught us the hard way how important our online catalogue is to users and how critical it is that the catalogue be easily accessible and straightforward to use. Moreover, users now expect more from a catalogue than just bibliographic information, a call number, and location. The challenge is considerable, but the catalogue represents a major investment of the library's financial and intellectual resources and must do justice to the collection and ultimately to library users.

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Implementing a library Management Information System: update and lessons from the Tri-University Group of Libraries experience

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This paper will update the work done at the University of Waterloo Library to develop a Management Information System (MIS) environment and the effort to extend the MIS concept to the other partners in the Tri-University Group (TUG) consortium. The efforts to introduce the concepts of "Culture of Assessment" and MIS will be reviewed, as well as the process developed for extending the MIS by identifying objectives, stakeholders, needs, tasks and creating a data dictionary. The paper will highlight experiences in developing a new reporting environment for the new integrated library system – with emphasis on system identification, integrating new off-the-shelf reporting software (COGNOS) and the process of moving to a mature reporting environment. It will conclude with a discussion on the possible reasons for the scarcity of MIS in libraries, highlighting the lessons learned from our experiences that may be transferable to other libraries wishing to establish a MIS.

MIS/DSS SYSTEMS

Management Information Systems (MIS) are computer-based tools designed to improve management decisions. They have been around in industry and business since the 1950s. Charles McClure (McClure, 1980) and other library professionals and educators (Lakos, *Select . .*) recognized the need for systematic application of MIS in libraries many years ago. **However, systematic application of some kind of MIS in the library environment has been and remains rare**.

The MIS's function is to provide library managers and staff with data, information, analysis and tools that enhance the effectiveness and the efficiency of library services and assist in the decision-making process. It is a supporting tool – a MIS does not replace managerial judgement. Its main objective is to improve the effectiveness of decisions. The MIS is an environment and a process, not just a piece of software.

The objectives are to assist staff with the daily decision-making process; to maintain better accountability and control of resources; to monitor budget allocations; to improve overall library effectiveness by focusing on outcomes; to generate internal and external reports; to improve long-term planning; and to facilitate performance measures activities.

THE MIS ENVIRONMENT

In order to be useful, a MIS must reflect the institutional structure, mirror the work processes of the organization and encompass the needs of the various organizational stakeholders from upper management to the lowest levels of the organization. Stakeholders' needs have to be balanced by availability of data and processes developed to capture data in such a way that they can be readily used and analyzed. The MIS also has to contain an environment for archiving and securing data to enable longitudinal analyses. Part of the MIS development is to design structures to capture, store, retrieve and deploy data and information.

The library should strive to innovate in the use of new technologies to enhance the usefulness of the MIS to the organization. Special attention should be given to the use of the Web as an integrating and enabling tool, especially for collaborative work, particularly important in a consortium environment. In the final analysis, the computer systems make the MIS possible. However, the success of a MIS is dependent on using information derived from it wisely.

THE UNIVERSITY OF WATERLOO MIS

About five years ago, the University of Waterloo Library, as part of its change to a more client-centered operation, undertook a number of initiatives to improve the way we do our work, with emphasis on client needs and outcomes. To kickstart this we developed mission statements for the library and for a number of functional units. The essence of the mission statements was to identify our core values.

Based on the values of the primacy of client needs, equitable access, assessment as the responsibility of all staff and continuous service improvement, the following actions were directly related to the establishment of a Management Information System which could be one of the central components of an assessment environment:

- **identification of the information needs of the client community**
- **relate client needs to available resources**
- **provide access to those resources**
- **facilitate the productive and proficient use of those resources.**

In order to move from discussion to implementation, I proposed to establish a professional position that would have responsibilities for co-ordinating many of the

assessment activities in the library and be a resource to staff for data and analysis. The proposal was developed into a co-ordinating position and I started my job in December 1994 (UW Library, *Co-ordinator . .*).

As we were in the process of replacing our library integrated system and we did not have the technical resources to write a MIS program from scratch, I concentrated on developing the concept of MIS for the library. I realised that what we needed was not just a piece of software, but an environment that would encourage assessment and planning across the organization and was integral to the values and goals established by the library.

On the qualitative side, we established a Community Needs Assessment Process Group, which consisted of up to eight staff members who are becoming resource persons for assessment and evaluation activities in the library. Each unit in the library is encouraged to make assessment part of the work cycle. We were able to finish and publish a large user survey, which was conducted during 1993-94 (*The Information . .*). Other activities of the group were: analysis of weekend service hours, survey of staff attitudes to the new library reorganization and a study of study space utilization (*The University . .*), where we used focus group interviews to determine student views about study space in the library.

At the University of Waterloo, MIS data were derived from the old automated GEAC system, manual counts from library service activities, financial and student data from the university and comparative data received from external sources. The data are stored mainly in Excel spreadsheet files. The files are organized for efficient retrieval, either by function or by the existing library structure. (See Figure 1)

All the files are linked and filtered in order to produce strategic information by department, function or period. The data are linked to a **"keystats"** file, which is organized by function, and data cumulate yearly. This file gives an instant strategic picture of qualitative change. At this time we have about ten years of longitudinal data. For security purposes there is an input area and a read-only public area. All staff have access to the public read-only data, which they can copy and analyze at their leisure.

Work done on the UW MIS continues, with special emphasis on integrating data derived from the new library system and by taking advantage of the new query and reporting tools.

EXTENDING THE MIS CONCEPT AND BUILDING THE TUG MIS ENVIRONMENT

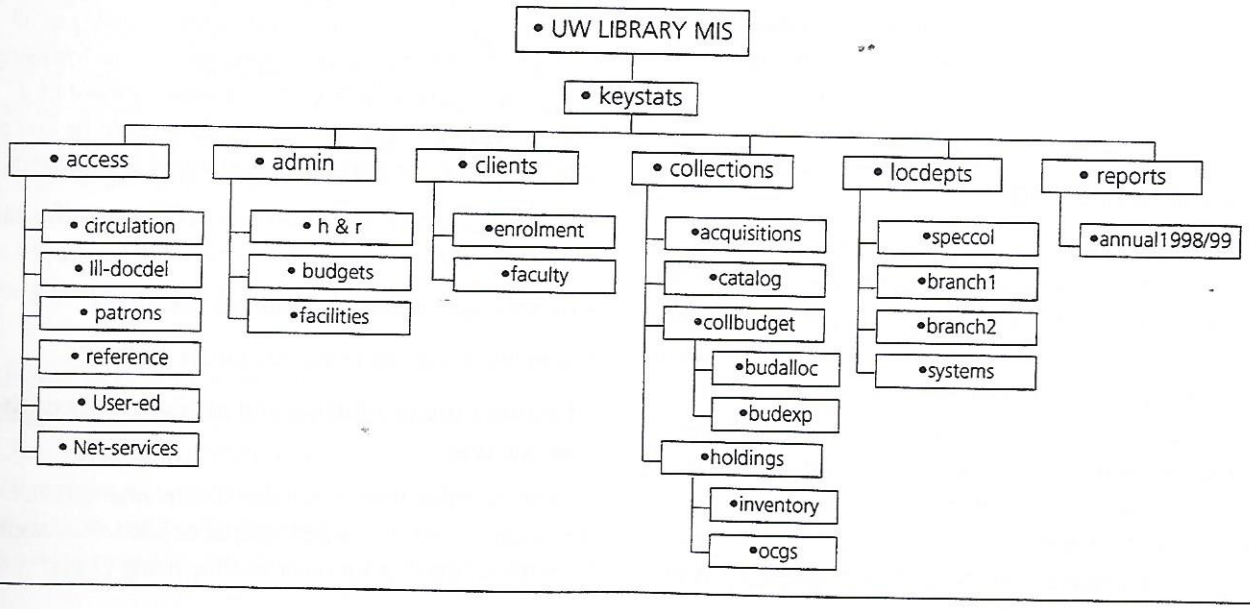
Concurrent with these developments, the library was moving very fast to implement a collaborative partnership with two neighbouring university libraries, the University of Guelph Library and Wilfrid Laurier University Library. The Tri-University Group of Libraries (TUG) was formed in January 1995 (*Integrated . .*) in order to make better use of common resources and in order to improve service to our users. The three universities have a primary user community of over 40,000 and 1,800 faculty. The libraries have a combined staff of approximately 400 FTE, a budget of over CAN$25 million and a library collection of over six million volumes.

The initial TUG Agreement called for a "seamlessly integrated program of library collections and services". The three major areas of collaboration were to be:

- Information Resources and Services
- Joint Storage Facility
- Integrated Library System.

The driving force or the enabling engine for the TUG collaboration is the new shared integrated library system (TRELLIS), which went on-line in April 1998. An overview of TUG activities and lessons was discussed in a number of presentations, among them a detailed presentation at

Figure 1 UW University Library – MIS Environment



the Living the Future II Conference (Ridley et al, 1998).

There is a number of goals for the TUG Management Information Service environment:

- the establishment of common, efficient and effective methodologies to collect, organize, deploy and analyze data and information for each library and as a consortium;
- to create comparable and historical data sets where possible in order to enable longitudinal analysis;
- to establish an effective structure to manage the TUG MIS. This means clarification of job responsibilities, setting up communication channels and work processes that support the TUG MIS;
- to establish structures for qualitative performance measurement work – surveys, focus groups, etc.;
- to enable more efficient generation of internal and external statistical reports. There was little standardization in data reports for the three institutions;
- to advance the integration of MIS data and information into the decision-making process of each library and to TUG as a collaborative entity;
- to develop and deploy the new off-the-shelf COGNOS Business Intelligence (IT) Tools and their outputs (Impromptu reports and PowerPlay cubes);
- to create links for each library to other campus information sources that the libraries need – Human Resources, Finance, Registrar Services and Institutional Planning Systems;
- to strive to create a common networked work area for TUG;
- to establish a usable Web presence on the TUG Intranet;
- to set up a reviewing mechanism for the TUG MIS.

To extend the UW MIS concept to the rest of the TUG Libraries the following steps had to be in place:

- consensus about the desirability of a TUG MIS;
- agreement on outcomes: a need for good data and information on equitable resource allocation among the member libraries and comparative management information for the chief librarians;
- education of library staff emphasising user needs and service quality;
- the need for continuous assessment work utilizing the MIS;
- general agreement on process, structures for report development and deployment, staff assignments and responsibilities and a schedule of work on the MIS;
- implementation;
- review.

Each library was going to create a small group to be co-ordinated by me in my role as Co-ordinator of MIS at Waterloo in order to learn about existing management data environments at each library. In order to develop a more effective data collection and reporting process, we mounted educational sessions to raise the awareness level of staff about these issues and worked with key staff to analyze current data-gathering environment and report procedures.

Structures and processes for data management and other assessment work are dependent mainly on organizational and professional cultures and attitudes. I developed a paper on the subject of "Culture of Assessment" (Lakos, 1998) for the Living the Future II Conference that took place in April 1998 in Tucson, Arizona. Based on this paper, some presentations were given at each TUG University designed to educate staff about "culture of assessment" and the MIS environment, with emphasis on the values of "user needs" and "quality services".

At the end of April 1998, the new integrated system (Endeavor-Voyager) that the TUG Libraries purchased together went on-line. The system works from one common server located at the University of Waterloo. The libraries consolidated all their catalog records into one database, and clients had instant access to all TUG materials. TUG also purchased together a remote storage facility. New processes for timely inter-university book and article delivery were instituted.

With the new live integrated library system, the MIS Environment is entering a new phase. In general there are three interconnected MIS areas – the model is illustrated in Figure 2.

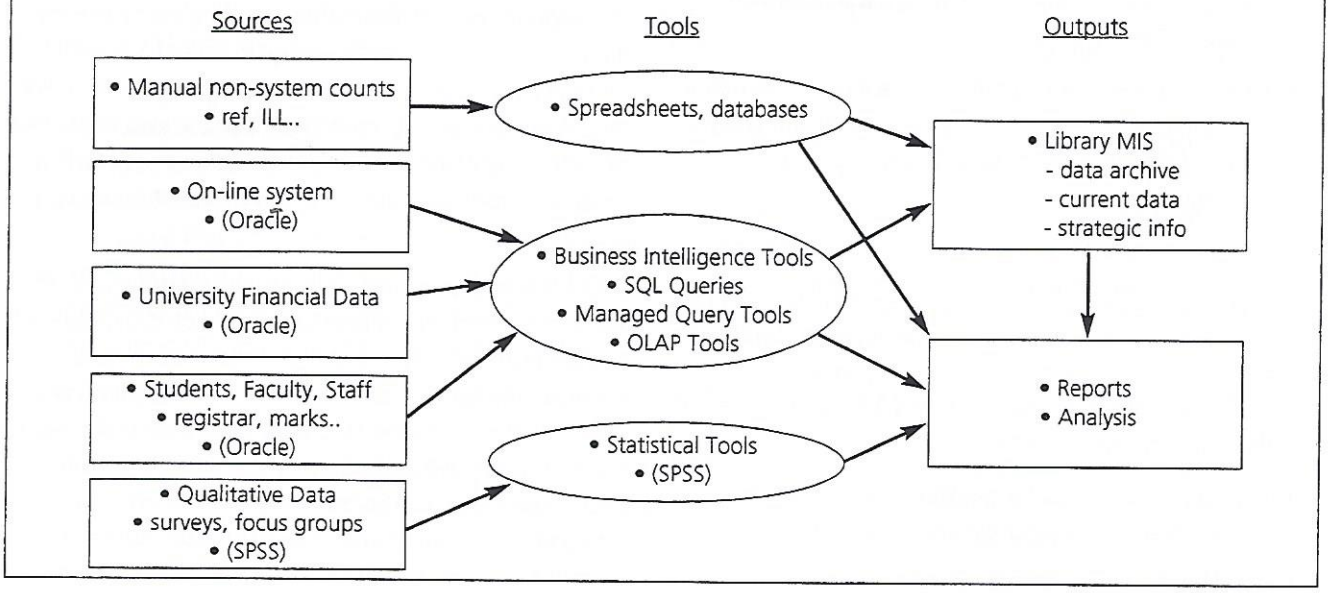
TUG MIS: FOUR DATA SOURCES

1. Library Systems-Based Data – the Voyager Integrated Library Database includes all acquisitions, cataloguing, circulation, OPAC and reporting modules. The Voyager system went live in April 1998 with one consolidated database for all three TUG Libraries. This is an ORACLE database. The built-in reporting module is based on the Microsoft Access on the client side. This module is capable of executing the canned acquisitions and circulation reports and notices, which come with Voyager.

In order to be able to extract meaningful information from the Voyager database, we were going to use the suite of Business Intelligence (BI) software products from COGNOS such as Impromptu, PowerPlay and Scenario. However, these COGNOS products have to be adapted to the consortium needs.

A TUG Reports group was established in order to ensure that the reporting requirements of TUG and all its components would be ready by the time TUG Voyager went live. A list of day-one-must-have reports was

Figure 2 MIS Information Environment



compiled with input from the various functional groups. A detailed list of needed reports was organized by function and priority order. The TUG Reports group tested the canned reports and is actively working on customizing them for local needs. The group is also working on building a catalog, based on the Voyager database entity relational diagram, for the COGNOS Impromptu and PowerPlay modules as a basis for creating all the reporting needs of TUG. For this, functional groups were interviewed and a list of reports was compiled in a scheduled priority order. Work on the reports is on-going. At the same time, select systems staff were trained in the new COGNOS Suite of Business Intelligence (BI) software. New system-based reports are being developed using the COGNOS Impromptu report writer and the COGNOS PowerPlay – On-line Analytical Processing (OLAP) software.

2. Library Manually Generated Data – reference, ILL, turnstile counts, and other activities and indicators that are not part of integrated system named TRELLIS. These are maintained on Excel or Access files.

3. University Generated Data – on students, faculty and staff; financial data; human resources data.

4. External Data – from sources such as Ontario Council of University Libraries (OCUL), Canadian Association of Research Libraries (CARL), Association of Research Libraries (ARL), and other external agencies. These are mainly spreadsheet files.

TUG MIS TOOLS: NEW QUERY AND REPORTING ENVIRONMENT

With the advent of the client server integrated systems in the library, as well as with the development of other campus information systems based on the Oracle database engine, the Universities acquired site licenses to the COGNOS Suite of Business Intelligence (BI) software. The advantage of the new tools is in their capabilities to directly read the data in the various databases, without changing any of the data.

We now have data in Excel spreadsheets, Access databases, Oracle databases, SPSS files. The query tools can read data from all these formats. There are three general types of tools we can use:

- **Standard SQL Queries** – can uncover shallow data – easily formatted and accesses data that do not need any translation mechanism. However, writing SQL queries usually needs trained information systems (IS) personnel.
- **Managed Query Tools** – needs a server-side Entity Relations Diagram to create the client-side catalog to data. Well-constructed catalog allows clients to create their own queries using a graphical interface. An easier more client-oriented interface to data can be designed. Possibilities for better archiving of data and reports may be possible. It is possible to create reports from a number of distinct databases, so that we may be able to ask new questions and receive previously unavailable information. Making the managed queries available in a Web environment opens up more direct availability of management information to the client desktop. The management query tool of choice at TUG is COGNOS (COGNOS . .) Impromptu (COGNOS Impromptu . .), which does Web Reports and Web Query.
- **On-line Analytical Processing (OLAP) Tools** – these tools are designed for summary data manipulation. These tools are well designed for longitudinal trend analysis. They access various databases. Data can be visualized in 2D or 3D charts. It allows the client to drill down into the database – to slice and dice – ie. to view the data from a number of different perspectives and levels of detail. The OLAP of choice at TUG is COGNOS PowerPlay (COGNOS PowerPlay . .). The OLAP produces data cubes that can be updated easily, deployed on a

daily basis. It can be run in Windows or the Web and from inside an Excel spreadsheet.

TUG MIS: Outputs

Essentially, campus-wide and in the TUG Group, data warehouses or data marts are being created. Outputs are dependent on good inputs and effective use of new MIS tools. By using the capabilities of the new Business Intelligence tools we are building stronger management decision environments for the future. Business Intelligence solutions can highlight database design weaknesses or data integrity problems (Lattig, 1999), something we are already seeing in our new Impromptu reports and Power Play cubes. The challenge for TUG is to harness the capabilities of these extremely powerful query tools in order to create a more efficient MIS and, by implication, to increase the efficiency of management decisions in each library and at the cooperative TUG level.

CREATING THE MIS ENVIRONMENT AT THE UNIVERSITY OF GUELPH

Work on the Guelph Library MIS has had a slow start. I am spending one or two workdays per week at the University of Guelph Library, interviewing the stakeholders, building the data structures needed to create manual data inputs, and creating a data dictionary which will be the basis for the TUG data dictionary. A set of agreed key tasks and processes has been developed with the support of the Chief Librarian, Michael Ridley. Implementation is based on these guidelines. We feel that this is a fairly good process for the establishment of a MIS environment, one that can be readily adapted in any library.

Key MIS Data: the Model Developed at the University of Guelph

The following data needs were identified:

- **Stakeholders' Needs (quantitative and qualitative data and information)** – detailed data and information needed for day-to-day operations, as well as detailed transactional data and qualitative information;
- **Key Statistics (to be used for executive and comparative TUG information)** – filtered data and information, used mainly by senior management for strategic purposes, cumulated on a monthly or yearly basis;
- **External Survey Data (ARL, CARL, OCUL, etc.)** – each university library is mandated to report statistical information to a number of external agencies. These are the basic, essential data that are being used by university libraries for comparative analysis and benchmarking. The University of Waterloo has longitudinal data derived from all these Associations.

The data needs are determined during the identification phase. There are both quantitative and qualitative data requirements. There are different levels of details needed, depending on the needs of the stakeholders. A data dictionary of measurement indicators will clarify needs.

Outcomes to date are the creation of secure data input procedures and staff read-only data areas on a local Guelph server. We reviewed most manual data needs, set up data input processes and gradually are gaining acceptance for the systematic use of information. On the innovation side, time-consuming reporting of inter-consortium journal articles delivery information is resulting in the development of a MS Access-based management system which will make the service more efficient and effective, by simplifying staff work, speeding up delivery to customers and completely automating reports for TUG.

KEY IMPLEMENTATION PROCESS

1. Identify tasks, data and needs
2. Collect and aggregate data
3. Make data and information available.

1. Identification Phase

- Identify stakeholders – staff, units who need information
  - identify functional, process-based and structural units
  - identify individuals in each area.
- Interview stakeholders – estimate of at least two weeks – ten work days
  - schedule meetings where data needs are identified
  - identify report owners/sponsors
  - identify source data
  - identify output format and files
  - identify support staff if needed (for additional manual data input for example).
- Validate needs – identify inputs – create data dictionary
  - go over data dictionary with sponsors
  - revise data dictionary, file locations, etc.

2. Collect and Aggregate Data

- How to collect data – sources of data
  - most data will be derived from TRELLIS Reports
  - identify the TUG Reports output locations
  - manual data will be identified and collected into the UGMIS structure.
- Who will collect
  - TRELLIS data will be co-ordinated with the TUG Reports developers
  - identify who receives reports in each unit.

3. Make Information Available

- How – identify output tools and formats (Access, Excel, Impromptu, PowerPlay) – add Web access.

- Where – location of TRELLIS reports, MIS data files and MIS reports.
- For whom – identify who will receive data and information.

Examples of Data Sources (this details the Sources column in Figure 2)

University Departments – populate this list with real names –

- financial data – Finance Department
- student enrolment – Registrar or Institutional Analysis
- faculty data – Institutional Analysis
- staff salaries and human resources – Human Resources Department
- budgets, cost of living data – Institutional Analysis.

On-line System – TRELLIS (Canned Reports, COGNOS Reports)

- update list of TRELLIS reports.

Non-System Counts – (manual or different system)

- reference activities – Reference Department
- ILL Transactions – ILL Unit
- document delivery – ILL Unit and TRELLIS
- turnstile counts – Circulation Department
- other manual counts.

Qualitative Data Sources – (Surveys, Focus Groups, Process Analysis)

A data dictionary based on identified elements is finalized and made available, organized by stakeholder needs.

ACTION PLANS AND POSSIBLE TIMELINES

(See Table 1)

In the interview stage, it is advisable to proceed with a list of issues and questions:

- How will the data be used? For what purpose?
- What data do you need? What level of detail is needed? What kind of summary information is needed?
- Who will need and use the data and information?
- When? What is the schedule of reports?
- How do you want to access the Information? (Web, Spreadsheet, Database?)
- Identify needs for comparable TUG, CARL, OCUL and other external data?
- What is the timeline for MIS implementation?

TUG MIS CONSOLIDATION CHALLENGE

A major task is to create usable reports, both simple and complex. The user should determine how reports and cubes look and they should be designed to stakeholders' specifications. This can be achieved through open communication between the MIS co-ordinator, the reports developer and the stakeholders. The usability of reports is of utmost importance. They have to correspond to the needs of the staff who need them, without undue work on their part. This is a challenge, since the integrated

Table 1 Action Plans and Possible Timelines

EVENT	WHO	DAYS	COMPLETION	NOTES
Determine MIS Responsibility	**Library Executives**		**Date**	
Complete Interviews	Co-ordinator MIS, Stakeholders	# of work days	Date	Partly done . . .
Create Data Dictionary	Co-ordinator MIS	same	Date	
Establish Data Structures	Co-ordinator MIS, Stakeholders			Mostly done
Determine Data Collection and Input Procedures	Co-ordinator MIS, Stakeholders, Systems Services	On-going	Date	Dependent on TRELLIS reports
Finalize Data Dictionary	Co-ordinator MIS, Stakeholders, Admin. Support, Systems	# of work days	Date	May be changed as needs change
Finalize Data Structures	Co-ordinator MIS, Systems Services	On-going	Date	Needs on-going management
Finalize Data Collection and Input Procedures	Co-ordinator MIS, Stakeholders, Library Managers	# of work days	Date	On-going
Training and Access	Co-ordinator MIS, Admin. Support, Systems Services	On-going	Date	Together with systems
Maintenance and Evaluation	Co-ordinator MIS, Admin. Support, Systems	On-going	On-going	On-going maintenance + year end evaluation

systems data are complex and the outcomes have to be readily understood.

A challenge underlying what we hope to accomplish is the deployment of reports and cubes to the stakeholders' desktops. This entails the development of a well-designed structure for maintaining and managing data. A viable schema for this can be found at the University of Waterloo MIS (see Figure 1).

My hope is to create a network environment for TUG where staff from the three universities can work on the same document or at least will be in a network environment accessible from each library. This particular endeavor is proving to be difficult to implement for a number of valid systems-based reasons. A possible solution, which may not solve all the collaboration issues, is the creation of a TUG Staff Web. We are experimenting with the creation of a TUG MIS prototype on the staff web that is structured (see Figure 3) to contain each of the individual TUG library MISs, a common area for key comparative TUG data and external reports, as well as a depository area for Basic Impromptu Reports and PowerPlay cubes.

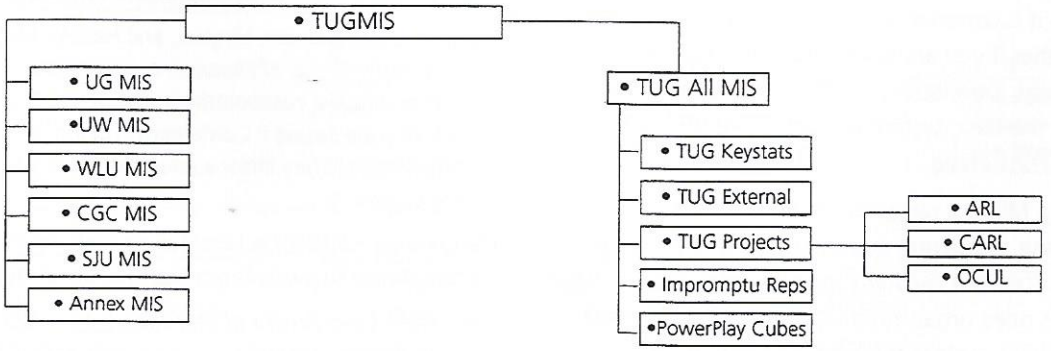
An unexpected way to implement this was our realization that MS Internet Explorer 5.0 can load any MS Word, Excel, Access or PowerPoint file whole on the browser window, without these files being converted into HTML. One can actually work on these files in the browser window, and the browser forces one to save any edited change to one's hard drive. This capability is due to IE5.0's implementation of a new extension to HTTP that facilitates efficient, secure maintenance of remote Web servers named World Wide Web Distributed Authoring and Versioning (WEBDAV) (IETF . .). The limitation seems to be the need to have the actual applications for the files available on the workstation. However, this may enable the creation of a functioning TUG MIS with ready and secure access to work files.

We are exploring the use of Impromptu and PowerPlay on MS Excel and MS Access data to see if it is possible to deploy the COGNOS tools directly on the MS data. The goal is to decrease the number of formats and files we use in the MIS with the aim of moving more of our work to the COGNOS and the Web environment. We are working toward using Impromptu and PowerPlay through the TUG Intranet. An outcome we hope to achieve is to create a special Web environment for executive information for the use of the Chief Librarians. This may just become a part of the TUG MIS Intranet with special summary data designed for them.

GENERAL CONCLUSIONS AND LESSONS LEARNED

- **MIS is possible – but only with dedicated staff resources**. Nothing is created without investment in people, and a MIS will only be created and be effective if it has staff positions allocated to it.
- **Executive Support** – lacking a supportive professional culture, the MIS needs executive support. This support has to be continuous and apparent, both to the MIS personnel and to the rest of the library staff. The MIS needs long-term commitment of senior management to advance the programs and structures of assessment and MIS. Without perceived and communicated commitment from the executive level, the development and management of the MIS will be difficult or may fail.
- **Education** – library staff are not readily aware of the concepts of Management Information Systems. The concepts of MIS are not part of the professional culture of librarians. Although the importance of evaluation, accountability, assessments are acknowledged, most library staff do not see these as part of their work activities. When undertaking work on a MIS, it is important that staff get educated about these concepts. It is important to demonstrate that this activity will have eventual pay-off not only in terms of better decision making, more consensus and better service quality, but also in terms of immediate benefits at the work place. This may be demonstrated in more equitable decision making, common goal development, change implementation, staff incentives, etc.
- **Openness, Turf Battles, Trust** – a MIS environment is very difficult to develop and succeed in an environment of distrust. Trust can develop only in an environment where divergent positions can be articulated and differences discussed calmly. An open and risk-free institutional environment will foster better communication and enhance the success of common

Figure 3 TUG – MIS Environment



values for the achievement of quality outcomes. An environment which is free of distrust will work more efficiently and ultimately more effectively. Division heads and other middle managers have to work hard on collaboration, on listening skills and on creating a trusting work environment.

- **Collaboration between system staff and other stakeholders** – it is important for all to understand that stakeholders determine their MIS needs. This is especially important for systems department personnel who are the enablers. They are the developers of applications and they serve internal customers. Both sides have to communicate better and to develop good working relationships in order to get the best out of the new MIS tools.
- **Information Flow** – balance between centralizing vs. decentralizing information. For a MIS to be effective, data and information have to be gathered from all corners of an organization and outside it. And any MIS system needs to be centralized in order to adhere to quality and reliability standards. The challenge is to enable viable information links and to make sure that the appropriate information flows to those who need it in the form that they can use.
- **Skill sets – continuous training on new tools** – skills are in constant flux and change. We need to allow time and money for continuous training of staff in the use and application of new tools.
- **Flexibility – Innovation encouraged** – working on assessment and MIS, one needs a certain level of flexibility in order to test new ways of doing things. Innovation should be encouraged and celebrated.
- **Involve staff at each step** – it is clear to me that most staff are very interested in new and creative work. Making staff part of the discussions, showing appreciation for their input and ideas is a morale boost.
- **Planning and Service Standards** – strategic planning or other planning activities and documents help staff to focus on needs and objectives. Service standards that focus on quality service have also the effect of focusing staff on customer needs. The need to sustain planning activities and service standards will necessitate some type of management system implementation.
- **When possible start with a mature integrated system** – it is common sense that it is easier to put a MIS together if you are operating in a stable systems environment. Developing a MIS environment while changing the basic system is much more problematic and time-consuming.

I think that a MIS is a necessity for libraries with a large customer base. Delivering quality service in a period of scarce resources and constant technological change means that libraries need organizational cultures that support lifelong learning, system thinking, innovation and community building. In order to manage more effectively in this constantly shifting and changing environment, a MIS is a necessary support. MIS is not about systems alone. It is about creating interdependent information links for staff in order to create a more effective organization. The ultimate goal is the development of positive organizational behaviors. It is the empowerment of people to use information for productive decisions, to enhance learning and to add value. An effective library organization will deliver more quality services per staff. What we are striving to create are linked and interdependent knowledge communities (Botkin, 1999).

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Performance evaluation and its impact on information services in Science and Technology Information Center (SCITIC)

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This paper demonstrates the approach of the evaluation of information services in SCITIC and its impact on the development and improvement of the services. The methods of providing the services and the users' feedback are presented. SCITIC has used benchmarking in database searching and the Kaizen method in document supply to improve both services. The paper also presents a brief overview of the Science and Technology Information Center. Some figures are illustrated.

INTRODUCTION

This paper aims to give the perspective of the evaluation process, which has had an effect on improving the services as a result of the users' feedback in SCITIC. The paper presents methods of performance evaluation in databases search and document supply services and their impact on improving both services. The improvement achieved in the services is discussed. The principal goal of SCITIC is always the user's satisfaction. So it is important to have an evaluation form, which reflects the user perceptions about the service, and what she/he needs. The paper demonstrates the experience of SCITIC's evaluation of information services in practice.

WHAT IS SCITIC?

The Science and Technology Information Center (SCITIC) is a non-profit organization, affiliated to the Academy of Scientific Research and Technology (ASRT) Cairo, Egypt. SCITIC's main objective is to offer information services to the scientific communities. It tries to achieve every objective by many means through its different departments as shown in Figures 1 and 2.

These objectives are:

- to develop national databases in different fields of science and technology and update them regularly. These databases include complete bibliographic data (citations and abstracts);
- to offer information services to users. These services are:

searching national and international databases using CDs, Internet and online; SDI; document supply services from

Figure 1 SCITIC's Approach to Achieving an Objective

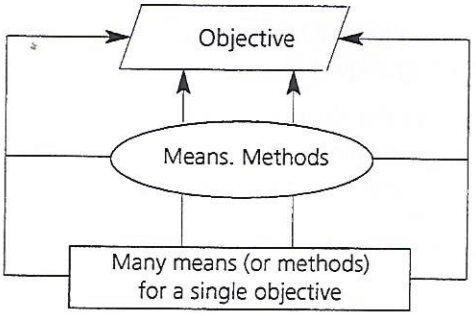


Figure 2 SCITIC Departmental Structure

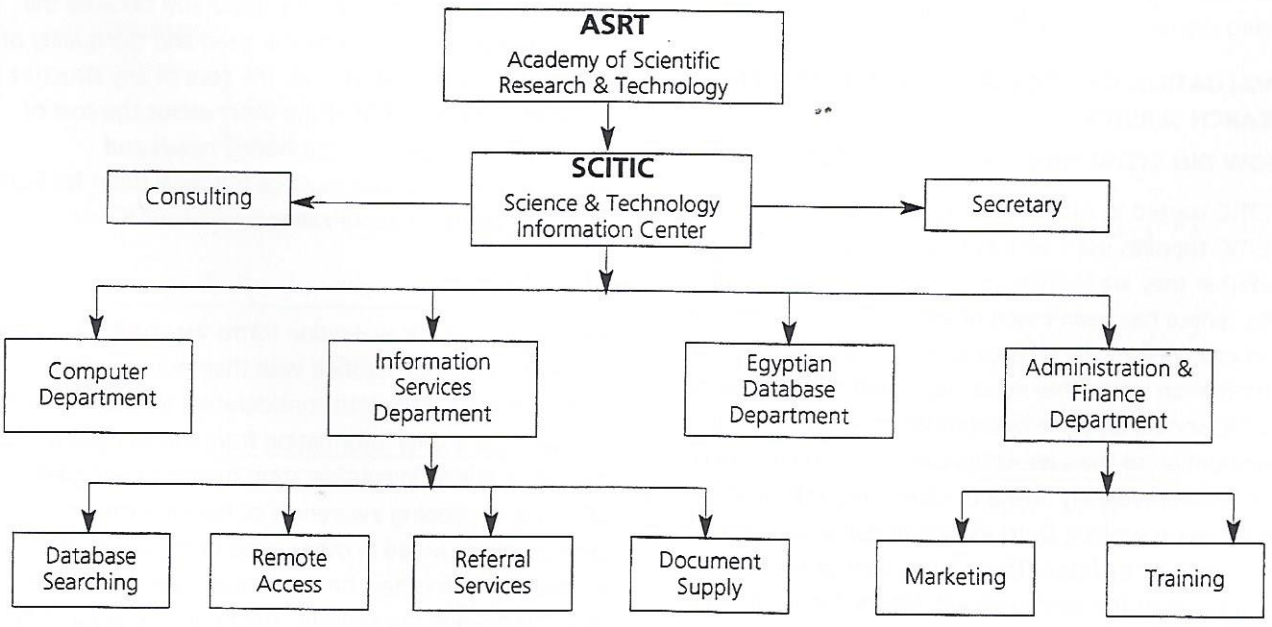


Figure 3 SCITIC Services

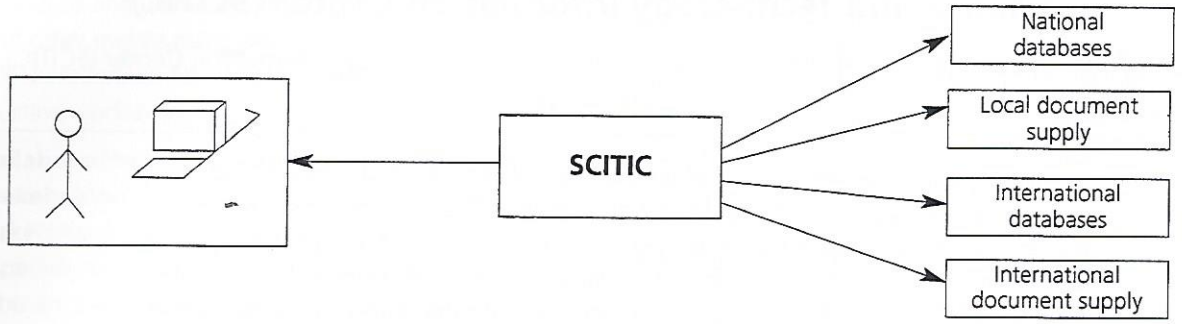
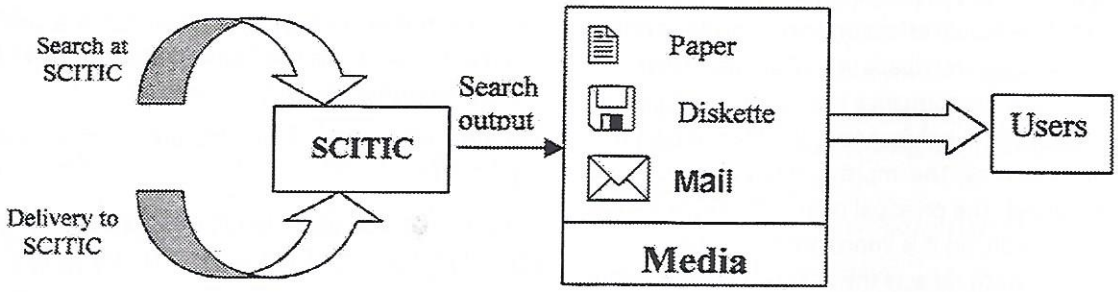


Figure 4 Type of Users' Requests and Outputs Media



national and international resources; referral services; remote access (Figure 3).

In addition to the above mentioned services, there are consulting and training programs. SCITIC has tried to tailor information services to the needs and interests of users.

PERFORMANCE EVALUATION IN SCITIC AND ITS IMPACT

What drives SCITIC to start evaluating its services is to improve the services in order to satisfy the needs of its users. Before starting the evaluation process we answered the main important questions: who are our users? what is being evaluated? and why?

EVALUATION OF INTERNATIONAL DATABASES SEARCH SERVICE:

HOW DID SCITIC PROVIDE THE SERVICE?

SCITIC started to offer databases search services in 1980. SCITIC supplies users with databases search results whether they are local/national or international databases. The service has been based on-job (in SCITIC). The users can subscribe to the services or they can request information when they need. Searching for information in SCITIC should be done by information specialists and the intervention of the user. Users can receive their search outputs immediately online or sometimes offline according to database subject. Outputs can be delivered printed, on a diskette, or by fax; or they can be sent to the required address upon the user's request. Figure 4 illustrates the type of user requests and media for receiving outputs.

Outputs quality depends on keywords, database and search strategy that should be sufficient to retrieve relevant search results. Until a short time ago, we evaluated service in terms of quantities of search and timeliness. Lately we took into consideration the evaluation of service quality. A user evaluation form is attached to each search output (Figure 5).

WHY DO WE EVALUATE?

In 1997 monthly staff reports had indicated that numbers of search requests began to decrease as a result of decrease of numbers of users. User interviews and the result of evaluation forms were important because the user is the only one to judge the need and the quality of information. As is well known, the core of any structure is the user and the cost of losing users versus the cost of keeping them. However, the wants, needs and expectations of the user must be the focal point for SCITIC or any information organization.

RESULTS

From analyzing the evaluation forms we conclude that some users are not satisfied with their outputs, others with timeliness. Take into consideration that some users evaluate the quality information from the viewpoint of solving problems in consideration to reach their goals. SCITIC is developing awareness of how information services are provided in other areas in the world. We investigate how others have achieved user satisfaction in order to develop our services. We think globally and do it

Figure 5 SCITIC User Evaluation Form

Academy of Scientific & Technology
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National Research Centre's Build. Tel : 3371746 Fax : 3616978
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SCITIC

أكاديمية البحث العلمى والتكنولوجيا
مركز معلومات العلم والتكنولوجيا
شارع التحرير – الدقى –القاهرة–مصر
مبنى المركز القومى للبحوث
ت: 3371746 فاكس : 3616978

USER SERVICE EVALUATION FORM

SEARCH NUMBER : رقم البحث :

SEARCH SUBJECT : موضوع البحث :

SEARCH DATE : تاريخ البحث :

1- Did the search output contain information relevant to your search problem or query?
☐ Yes ☐ No

1- هل اشتملت نتائج البحث على معلومات متعلقة بموضوع البحث أو الاستفسار ؟
☐ نعم ☐ لا

2- Did the search output help directly or indirectly to solve your search problem?
☐ Yes ☐ No

2- هل ساعدت نتائج البحث مباشرة او غير مباشرة على حل مشكلة بحثك ؟
☐ نعم ☐ لا

3- What percentage of the search output was relevant to your problem or query? ..... %

3- ما هى النسبة المئوية لارتباط نتيجة البحث بمشكلتك أو استفسارك ؟..... %

4- was the response time to your query satisfactory?
☐ Yes ☐ No

4- هل فترة لرد على استفسارك مرضية؟
☐ نعم ☐ لا

5- was the volume of information your received :
1-Large
2-Satisfactory
3-Small

5- هل حجم المعلومات التى وصلتك :
1-كبيرة
2-مرضية
3-قليلة

6- Other Comments or any suggestions

6- أى ملاحظات أو اقتراحات أخرى

Date : / / تحريرا فى / /

Table 1 Comparison Elements (1)

Comparison elements	SCITIC	Organization A Non-governmental
Do information sources update?	90 %	99 %
Do the sources work according to the user's need?	90%	98%
User satisfaction	89%	97%
Turnout time request	88%	99%
System facility	90%	99%
Physical facility (place)	80 %	99%
Promote right people (staff)	95%	97%
Does the service lead to another?	94%	97%

locally. We decided to compare our service with a competitor, so we used benchmarking.

BENCHMARKING

SCITIC has not yet become involved directly in benchmarking, which is not popular for many in Egypt. As all of us know, benchmarking is commonly called best practice. Benchmarking is a manner of continuous improvement, which is considered a distinctive approach of total quality. The philosophy of continuous improvement entails that anything and everything done in the work must be continuously assessed through two questions: is this necessary? and if so, can we do it better? The first step in a benchmarking process is to have a willingness and commitment to criticize your activities and local authority. There is also a need to convince staff that there are better ways of doing things. In libraries and information centers the accent should be on user satisfaction and quality improvement for front-line staff.

At the beginning we didn't know how one service compared with another, and also it is difficult to find an organization to compare with. This is not only because we didn't find similar organizations but also because the organizations refused benchmarking. Finally we found one that agreed to compare with us. It is offering almost the same services. We started by comparing statistics percentages according to some elements. Comparative data were collected to determine how well SCITIC measured up against the other which is achieving user satisfaction (Table 1).

ANALYSIS OF RESULT

From Table 1 it can be seen that we share several success factors with the other, successful, organization although there are some differences. The differences showed in the following:

- long time taken in receiving outputs due to using online search via DLG or STN system, since we receive outputs offline to reduce cost;
- lack of databases on CD;
- insufficiency of equipment and low configuration of some of them, which was the cause of slowness and delay;
- marketing is not active;
- insufficient staff. Figure 6 shows the percentage rate.

HOW COULD WE USE THE RESULTS TO IMPROVE THE SERVICE?

IMPACT OF EVALUATION

From these results, staff become great communicators, aggressive problem solvers, and know what they are doing to improve the service and to satisfy users. So we set a plan that was concentrated on the user's needs and action oriented. The steps of the plan include doing, checking and acting. Doing means implementing the plan. Checking means monitoring the quality and keeping the unit in touch with and focused on the user. Acting means using feedback to improve service and re-plan if needed.

ACTION TAKEN

- purchase databases on CDs in subjects which users always require;
- homepage on Web site as market plan (in process);
- using remote access service(Figure 7);
- more PCs with high configuration;
- increasing staff (Figure 8).

Figure 6 Staff Categories (1)

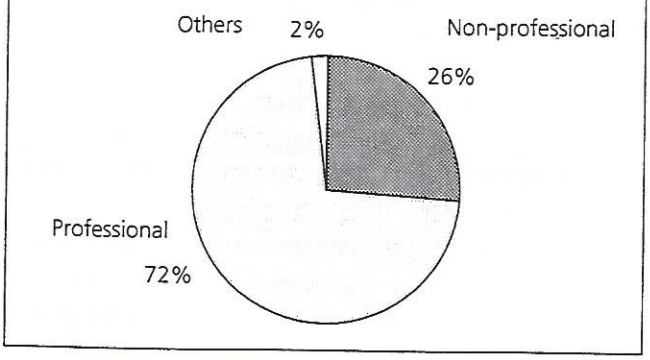


Figure 7 Remote Access

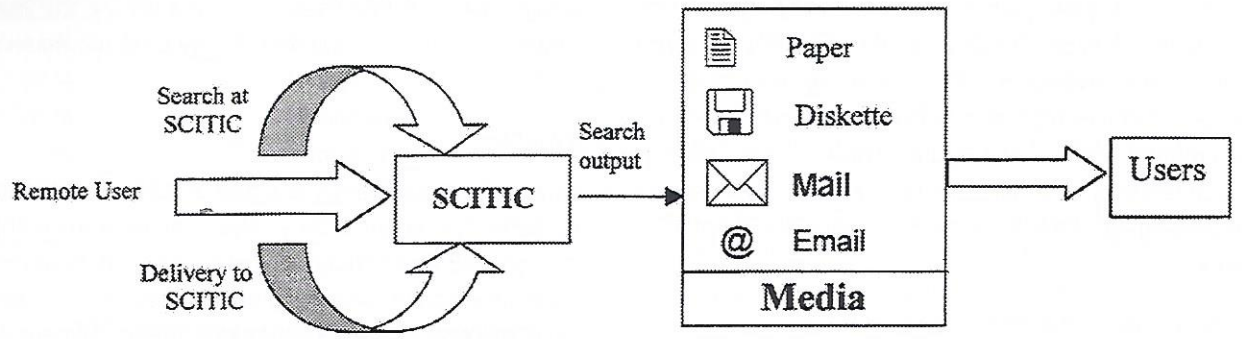
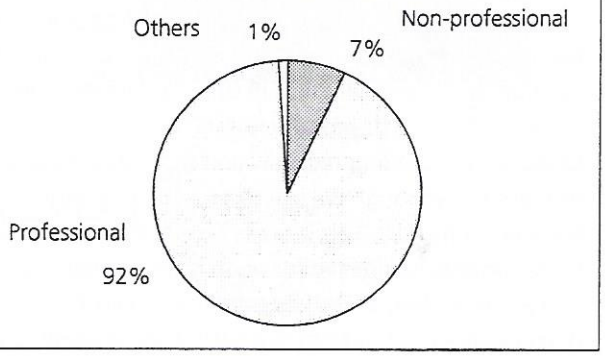


Figure 8 Staff Categories (2)



In addition, we translate users' needs to departmental language; if our users say they need this, how can we go about providing it?

At the end of 1998 we re-evaluated the service by the previous comparison elements, as shown in Table 2.

IMPACT OF THE PERFORMANCE RE-EVALUATION ON THE SERVICE

It is clear that both SCITIC and the competitor are near to each other according to:

- user satisfaction;
- turnaround time for requesting;
- improving overall SCITIC effectiveness by supplying service immediately and using remote access system;
- updating the system that accelerates searching.

Physical facility (place) at present is difficult to take action on but it may be possible in the future.

THE CHANGE BIDS FAIR TO SUCCEED

FUTURE PERSPECTIVES TO IMPROVE THE SERVICE

As the world moves towards the 21st century we have planned to succeed in achieving our objectives, success versus satisfaction. SCITIC's mission will be:

- style of rendering services that make users feel that SCITIC is something special;
- ability to empower people; fostering employee participation in the service quality process will be everybody's business;
- seeking technological methods of providing information services;
- staff training for new technology.

In general, measuring user satisfaction requires measuring the growth of the user base and repeat users. Evaluating results means setting goals (re-evaluating) that embrace continuous improvement.

DOCUMENT SUPPLY

SCITIC has offered document supply as a part of integrated services since 1983. SCITIC's role is to supply users with copies of required original documents. We use BLDSC requests for photocopy services so interlending has

Table 2 Comparison Elements (2)

Comparison elements	SCITIC	Organization A Non-governmental
Do information sources update?	99 %	99 %
Do the sources work according to the user's need?	97%	98%
User satisfaction	97%	98%
Turnout time request	96%	99%
System facility	98%	99%
Physical facility (place)	88%	99%
Promote right people (staff)	96%	97%
Does the service lead to another?	97%	97%

never been an option. Neither do we lend to any libraries in Egypt nor outside it. At the beginning of the service we used postal requests, which were many times delayed or lost by mail. Besides, it had taken time in filling the forms (source, title, address etc) .The time for receiving the documents takes from two to five weeks and sometimes two months. Table 3 and Figure 9 show the time taken for postal requests. A similar time can be taken if we have to do chasing. We have followed this system for about 15 years.

EVALUATION PROCESS

In1997 we had begun to collect and analyze previous statistics and reports besides interviewing users and consulting with staff to assess and to improve the service.

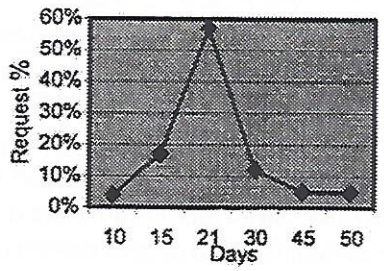
EVALUATION RESULT

From this assessing we knew that our users are not fully satisfied with this service. Also, some users are in need of this service but they do not ask for it due to the length of time in receiving their documents. As a result of this, the numbers of users and requested documents decrease, which means we lose users. Therefore we use the vision of others to develop our services. So we used the Kaizen method.

Table 3 Postal Requests Time

Requests %	Arrival period
4 %	10 days
17 %	15 days
57 %	21 days and more
12 %	30 days and more
5 %	45 days and more
5 %	must do chasing

Figure 9 Postal Requests Time



KAIZEN

As is well known, Kaizen is a Japanese concept. It means do better for certain activity. Also it means a small or good change, and /or continuous improvement. We use the Kaizen method in identifying our problem, then suggest ideas and choose the best solution, then implement it (Figure 10).

IMPACT

The problem of document supplies arose from the time taken from requesting the document to receiving it. The solution of this problem was in using automated requests via e-mail instead of postal requests, which reduces the time taken in sending requests and facilitates the process of requests, although we still receive the requested documents by mail. This process accelerated the delivery of documents, besides ensuring that the quality of service remains the same, and reduces time of receiving documents – it takes from five days to three weeks. Also, the chasing, if needed, becomes easier. Table 4 and Figure 11 show the automated requests time.

Although it was a small change, it had good results and has had a major impact on service.

IMPACT OF IMPROVEMENT

We began the automated service in 1998. At the end of 1998 the number of requests and users was increasing due to the short time of receiving documents. Document supply has been very simply managed with providing a simple electronic form.

Kaizen is a selection of a better means, or a small change in the current method for achieving an objective. It is a corrective action, which makes something better. Kaizen as a method of work improvement has been successful in industrial organizations and also in our Center.

Figure 10 Kaizen System

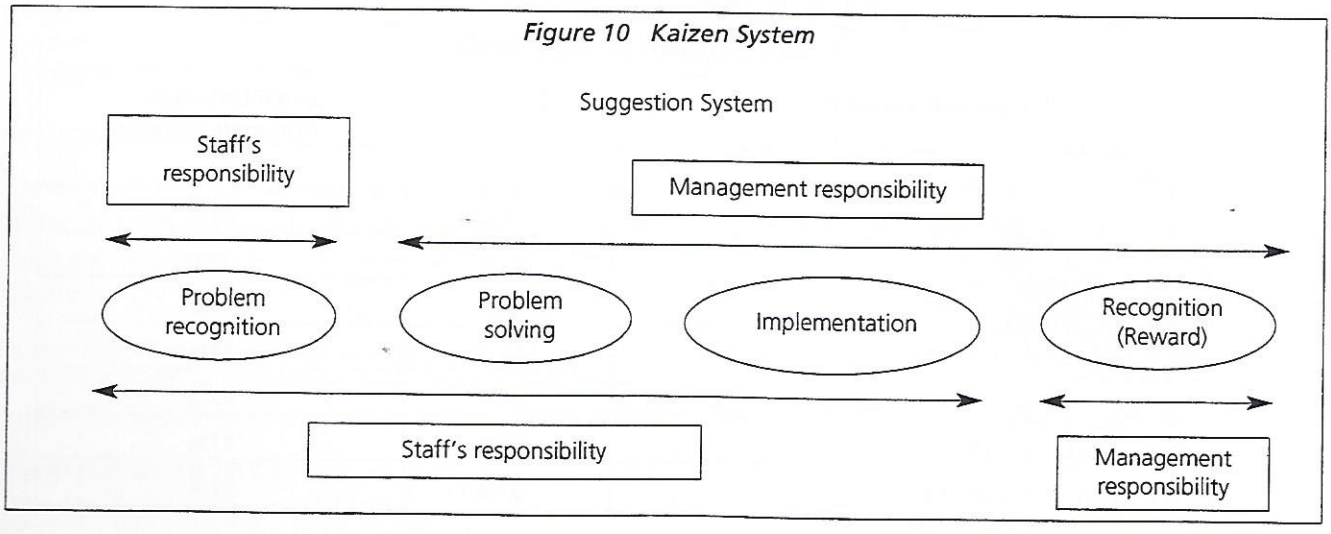
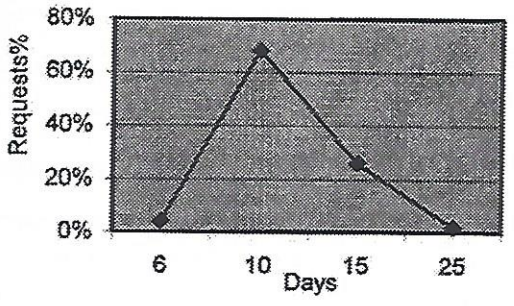


Table 4 Automated Requests Time

Requests %	Arrival period
4 %	6 days
68 %	10 days
26 %	15 days and more
2 %	Must do chasing

Figure 11 Automated Requests Time



THE FUTURE OF THIS SERVICE

Very soon under the Kaizen system we will receive documents via e-mail, as users want. One to two days delivery should be the norm for document supply service. These are just some of what we shall be attempting to explore in the near future.

CONCLUSION

The goal of this paper is to present the SCITIC's experience of evaluation impact on information services. Evaluation has a positive result, even if small, in improving services, and that happened in SCITIC. Information organizations and libraries must implement measurement of their services for improving them annually. Benchmarking has a good effect in databases search. It is a powerful tool in the quest for continuous improvement and it will become part of a problem-solving toolkit for all managers. Kaizen is a small change and has good results in document supply service.

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Benchmarking the information system <http:/faculty.babson.edu/gordon/papers/f94BENCH.HTM>

Note

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This paper presents my personal experience as head of Information Services in SCITIC. I would like to thank my daughter Yasmin and my staff in Information Services, in particular Osama and Ahmed, for their help in preparing figures.

Performance indicators: an Australian dual sector perspective

Doreen Parker, University Librarian, Victoria University of Technology, Australia

In Australia an increasing number of universities are becoming dual sector with both Higher Education and TAFE programs. The results of a survey of Australian university libraries concerning performance measure for services to TAFE, an examination of the national TAFE and university library statistics in relation to joint sector libraries, and an analysis of Victoria University use of the CAUL Client Satisfaction performance measures into Higher Education and TAFE are reported. It is concluded that there is a need for institutional and national action in the collection of data about user behavior, in the collection of statistics and in the use of performance measures in order to ensure the performance management of library services to both the Higher Education and TAFE sectors in dual sector institutions.

BACKGROUND

A number of Australian tertiary institutions can be described as dual sector. In Victoria dual sector universities deliver 40% of Technical and Further Education (TAFE) courses.

In 1997 the Higher Education Council commissioned a review of cross-sectoral collaboration between educational, training and research institutions. This report noted that there is a number of drivers of cross-sectoral collaboration with a mix of anticipated benefits including efficiency gains, income generation and competitive positioning, educational and learning effectiveness and enhanced professional development. It was suggested that there is a need to create measures and to put in place arrangements to monitor whether these benefits are being achieved (Sommerlad et al, 1998).

Dual sector Higher Education and TAFE universities need to address issues such as the differences in teaching methods between TAFE and Higher Education including differences in terminology in describing awards and differences in assessment; cultural differences including differences in how organizations perceive themselves; the integration of administrative systems and procedures such as student record systems; different industrial awards; how learning support is provided and its effect on the curriculum; and discipline differences across the sectors.

A considerable amount of work has been done in examining exit and entry points for students in TAFE and Higher Education but there has been little research on the interface between Higher Education and TAFE.

The Victoria University of Technology's Centre for Educational Development and Support has been funded by the National Council for Vocational Education and Research to investigate what structures and mechanisms of service provision are most effective for cross-sectoral service provision, what criteria can be used to identify effective cross-sectoral practice, and what policy changes would improve the efficiency and effectiveness of dual sector provision.

In a recent conference address it was noted that "Although governments clearly support cross-sectoral collaboration and seamlessness there is considerable tension between their policies and existing funding mechanism. That the TAFE and Higher Education sectors are funded differently through different separate bodies, each with distinct reporting requirements, presents a significant barrier to most forms of collaboration" (Leahy and Moodie, 1999).

In its Higher Education profile submission to government for the 2000–2002 triennium, Victoria University argues that "Currently dual sector institutions expend considerable resources making arbitrary allocations of student load, staff, financial and capital resources between TAFE and Higher Education. This effort is expended to meet the reporting requirements of the two individual sectors. The arbitrary allocations are made to artificially take apart the very reasons dual sector institutes were formed in the first place – seamless education, shared infrastructure in administration, libraries, cafeterias, classrooms and more. Given that the reporting requirements of both sectors are so similar, Victoria University believes that integrated dual sector reporting is a real possibility, and one that would bring considerable gains in efficiency" (Victoria University, 1999).

UNIVERSITY LIBRARY STATISTICS AND PERFORMANCE MEASURES

The Council of Australian University Librarians (CAUL) has developed performance measurement tools for Australian libraries. These include a library/clientele congruence (or satisfaction) indicator.

CAUL compiles annual statistics of university libraries, which include some comparative data; however, care needs to be taken in interpreting statistics, as they do not always separate TAFE and Higher Education data.

TAFE LIBRARY STATISTICS AND PERFORMANCE MEASURES

TAFE library statistics are collected in each state; however,

the available data are limited by the ability of the few dual sector universities to report TAFE data separately as well as by the state basis of data collection.

The National Working Group on TAFE Library Services, which comprises nominees of each of the states, has had the issue of national performance indicators under consideration for some time, including the possibility of developing a performance indicator to measure participation in information skills training. At this stage the Group is concentrating on the issue of uniform national statistics, but the possibility of applying for a grant to discuss performance indicators has been discussed recently.

VICTORIA UNIVERSITY OF TECHNOLOGY

The Victoria University of Technology was founded in 1992 by the amalgamation of two former colleges of advanced education, one of them with a TAFE as well as a Higher Education component; the university had six campuses in the Western suburbs and Central Business District of Melbourne and approximately 50,000 equivalent full time students. In 1998 the university merged with the Western Metropolitan Institute of TAFE, increasing its TAFE component to 50% of its student body and increasing its campuses to 14, 12 of which have libraries.

The Victoria University Library has separate funding streams for Higher Education and TAFE and supports separate teaching and research programs for the two sectors, but the library service is fully integrated through its 12 campus libraries.

The CAUL Client Satisfaction Mail Survey has been modified for use by Victoria University to indicate whether students and staff are in the Higher Education or TAFE division of the university. This has some value as a performance measure but the validity of the responses for consideration of TAFE and Higher Education performance measurement issues requires further work.

SURVEY OF AUSTRALIAN UNIVERSITY LIBRARY SERVICES TO TAFE

In a review of the literature on joint university-TAFE libraries in 1998, Lynne Benton observed that there was a growing number of joint use libraries but that ". . . they are rarely discussed, although they have the potential to threaten traditional values and methods, are disruptive to current practice, operate within parameters which are difficult to define, and whether they succeed or fail will disappoint some and please others" (Benton, 1998).

In June 1999 a survey was conducted by Victoria University Library of Australian university libraries to establish the extent to which they are providing services to TAFE and how performance measures are being addressed.

In 15 of the 37 universities the respondents indicated that the university has a TAFE component, eight as a partnership or cooperative arrangement between the university and TAFE and seven as an integrated part of the university.

In 14 of the 15 universities with a TAFE component, a library service is provided. In 13 of the 14, the library service is provided by the university library; in one case the library service to TAFE is provided separately but with some degree of cooperation or collaboration with the university library.

In ten universities the library service is provided from a library which is intended for use by both Higher Education and TAFE students. One university has a separate library for TAFE. In three universities some campuses have libraries intended for both TAFE and Higher Education at some campuses and libraries solely for TAFE at other campuses; this is the result of recent amalgamations of TAFE institutes with universities and could change if TAFE and Higher Education courses become more integrated across campuses.

Libraries were asked what services they provided which were designed specifically to meet the needs of TAFE students. Information skills training or user education was cited by all 14 university libraries with TAFE services, faculty/school liaison by 13 and selection of resources by 11. Lending services and electronic services were less likely to be specifically designed for TAFE clients.

Half of the libraries with TAFE services maintained statistics in a combined TAFE and Higher Education format for their own library whilst two maintained statistics in a separate TAFE format within the university. Three maintained TAFE statistics in the CAUL format for universities and five maintained TAFE statistics in a TAFE state format. Some libraries maintained statistics both in their own local format and in the national or state format.

Ten of the 14 libraries with TAFE services reported the use of performance indicators for TAFE. Ten reported the use of performance indicators which are the same as for Higher Education. Two libraries reported that separate performance indicators are used for TAFE as a result of recent mergers. The overall impression is that, where services are provided to TAFE as a result of mergers, the long-term plan is to use the same performance measures used by the Higher Education area of the university.

The use of a common set of performance measures across the university library is important, but it is also important to consider whether the data are available for this to be done accurately and their impact on national TAFE and university data collection and reporting.

It is also important to consider whether there are differences in the client needs and hence services provided to TAFE and Higher Education which also need to be

measured either for internal or external performance management purposes.

VICTORIAN TAFE STATISTICS AND UNIVERSITY REPORTING

The collection of TAFE library statistics for the State of Victoria by the Victorian Association of TAFE Institute Librarians (VATIL) illustrates the difficulties experienced by libraries serving both Higher Education and TAFE in reporting accurate data that could be used in performance measurement.

Statistics for services to TAFE are currently reported to VATIL by a total of 19 TAFE institutions, which includes three university libraries, including the Victoria University of Technology.

An examination of the VATIL statistical summary for 1997 illustrates the difficulty of recording accurate TAFE data. The statistical return was not fully completed by the universities with dual sector libraries in the areas of space, seating, staffing, exit counts, inter-library loans, collection purchases and holdings, collection age, expenditure, reciprocal borrowers and community borrowers.

Some of these data could be reported if more detail were kept at the data collection stage, whilst others cannot be easily separated. Inter-library loans could be recorded separately for TAFE and Higher Education, as are loans, based on the record of the requester. However, where libraries are truly joint use it is not possible to easily separate much of the other data

Libraries reporting joint use library data have to decide whether to report the facilities and resources of the total library or whether to report nothing because the data cannot be separated. For example, a library may choose to report all library materials added to the joint use library, to report only these items purchased from TAFE funds, or to report only those items requested by TAFE division staff and students or ordered to support TAFE courses.

It is important that there is a clarity of approach in reporting this data as VATIL statistics are publicly available and can be used by library and institutional managers and by funding bodies to make comparisons about the relative levels of resources and performance of the libraries involved.

CAUL STATISTICS AND RANKINGS AND TAFE

The statistics collected by the Council of Australian University Librarians for Australian and New Zealand university libraries are complicated by the joint TAFE and Higher Education library issue.

CAUL has attempted to address the issue of TAFE data by suggesting that libraries exclude them where possible and, where not possible, to footnote their existence in the return. However, this has not entirely solved the problem. In the joint sector institution and library it is often not possible to separate the data, and in any case in universities such as Victoria University TAFE is as much part of the university as is Higher Education.

It is necessary then to clarify whether the CAUL statistics are reporting university activity or only Higher Education activity. Given the separate funding source for Higher Education, data obtained centrally on student numbers reflect Higher Education, but libraries' own returns will obtain at least some TAFE data.

Collecting and reporting data for use in the performance management of dual TAFE and Higher Education sector libraries would be facilitated by common reporting of TAFE and Higher Education data. A common reporting form for TAFE statistics at the national level is currently under development; meanwhile statistics are collected at the state level.

In Victoria, VATIL reviewed its statistical collection form during 1998 and it is now closer to the CAUL statistical collection form than before, but substantial differences remain.

The majority of data elements are collected by both CAUL and TAFE but there are differences in the way the data are reported and TAFE includes some data not included by CAUL.

The only data element that is recorded in the same way by CAUL and VATIL is inter-library loans, probably because VATIL introduced this as a new item in 1998 and based it on CAUL's format. CAUL counts reserve collection loans separately from other loans, but VATIL does not. VATIL reports space, seating and opening hours for each campus library but CAUL does not. TAFE counts electronic resources as a separate form of library materials but CAUL does not. TAFE's expenditure's categories include electronic resources and equipment which CAUL's do not. CAUL has a category of staffing of "other professionals" which VATIL does not.

VATIL is collecting data on the number of reference enquiries handled and the number of user education sessions run but CAUL does not. These data are also useful for Higher Education libraries and it appears likely that CAUL is not collecting them because of the difficulty of obtaining accurate counts.

These differences in collecting could be removed without too much difficulty if it were considered useful to do this; however, there are other differences based on the way the TAFE and Higher Education sectors are managed and organized which are more difficult to make uniform. For example, Higher Education staff are paid on a Higher Education Worker Award which is used to record a breakdown of staffing in the CAUL statistics; the ability of joint sector TAFE libraries to provide this breakdown will depend on whether their staff are all working under the

Higher Education Award, or whether some staff are employed under the TAFE award.

The counting of the institutional population is different between Higher Education and TAFE. Higher Education counts equivalent full-time student units (EFTSU) whereas TAFE counts standard contact hours (SCH). A conversion factor to covert the SCH to EFTSU is often applied to facilitate internal and external statistical collection but the widespread acceptability of this has not been determined.

CAUL statistics are used for comparative purposes and include rankings of libraries including seats per 100 population, library staff per 100 population, non-serial volumes, serial titles and serials expenditure purchased per population member. The rankings are based on the population of the university and include staffing, seating and library materials purchases, all of which may be affected by TAFE data and the way in which they have been counted.

COMPARISON OF TAFE AND HIGHER EDUCATION CLIENT SATISFACTION

An analysis of the 1998 Victoria University Client Satisfaction Survey was carried out to determine where significant differences occurred in the response of TAFE and Higher Education students.

The survey results suggest that Higher Education students are more demanding library users than TAFE students. They are more likely to use another campus or another university library and to use the library frequently

The survey indicates that a significant number of TAFE staff never use the library and that TAFE staff and students are less likely to use the library remotely.

There are significant differences in the way Higher Education and TAFE clients use the library. All use it to similar degrees for support of coursework but TAFE staff and students are more likely to use it for leisure. TAFE staff use the library for staff development and current awareness but use it less than Higher Education for support of teaching and for research or higher degree work.

TAFE staff are less likely than Higher Education staff to be searching for a specific item, consulting the reference/ information desk, requesting an inter-library loan, booking audiovisual equipment, browsing in the collection or looking at new books or using the photocopier. TAFE staff are more likely than Higher Education staff to browse in the audiovisual collection, use the personal computer laboratories or stand-alone computers, use the library as a place to study, use the library as a place to relax or look at a special display or exhibition.

TAFE students are less likely than Higher Education students to consult printed indexes, use closed reserve/ short loan, request an inter-campus loan or request an inter-library loan. TAFE students are more likely than Higher Education students to use the personal computers or to use the library as a place to relax.

TAFE staff and students are more satisfied with the library facilities than Higher Education staff and students, with the exception of the inter-library loan service and catalogue where TAFE students are less satisfied, and with electronic services where TAFE staff are less satisfied.

TAFE staff and students appear more satisfied than Higher Education staff and students with the professional and interpersonal skills of library staff with the exception of students and inter-library loan staff and TAFE staff and library photocopy and periodicals staff.

The number of TAFE student respondents was low so that the results need to be treated with caution; steps are being taken to increase the TAFE student response rate in 1999.

The response rate may have been poor because short course students and sessional staff were included. It may also have been poor because of the use of a complex form, rather than an alternative method such as telephone interviewing or focus groups which may be more suited to some clients.

CONCLUSIONS AND AREAS REQUIRING FURTHER INVESTIGATION

The comparative analysis of TAFE and Higher Education responses suggest that there are many similarities between TAFE and Higher Education but that there may also be areas unique to each sector which may require specific targeted measurement tools.

Further work needs to be done to confirm the Higher Education and TAFE differences suggested by the analysis of the library's 1998 Client Survey. The 1998 survey was done immediately following the merger of the university with WMIT and many services were different in the former WMIT campuses which were all TAFE, and in the pre-merger university campuses which served both Higher Education and TAFE.

The Victoria University plans to repeat the client survey this year and to repeat the analysis of the responses into TAFE and Higher Education. During the past year the post-merger library's services have been developed and offered across all campuses, and some movement has occurred in the way in which courses are offered by the Higher Education and TAFE divisions across the campuses. It will be interesting to see, for example, whether the introduction of upgraded remote and electronic services across all campuses results in continuing different responses from TAFE relative to Higher Education, or whether there continue to be significant differences in use, possibly as a result of different approaches to teaching.

It would also be useful to carry out a similar comparison in other joint use Higher Education/TAFE libraries or to compare Victoria University Library's results with those of libraries designed only to service TAFE. That is, does the provision of integrated services result in improved service to clients or do clients get a better service when it is tailored to their own sector? And are there in fact differences in library needs? The increased emphasis on research, on diploma level courses and on flexible delivery in TAFE could result in many TAFE staff and students requiring access to the same services as Higher Education staff and students.

Further work needs to be done in addressing the inconsistencies in national TAFE and university statistical reporting and in developing a supplementary set of statistics for TAFE, if this is required.

In developing performance measures and benchmarks, the issue of TAFE within university libraries needs to be considered.

These developments need to take place within a framework of uniform national university-wide action on common reporting and measurement systems and national research on educational and organizational issues.

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Performance measurement as a methodology for assessing team and individual performance: the University of Arizona Library experience

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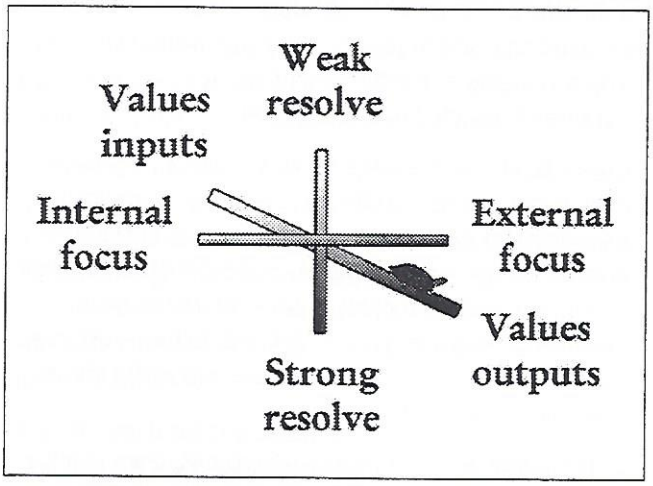
The University of Arizona Library restructured in 1992/93 from a hierarchical, internally focused organization to a team-based, customer-focused, learning organization. New organizational systems were designed that supported staff working in this new structure. Reflecting on Rowena Cullen's Focus/Value/Purpose Matrix, this paper describes how the Library's resolve has positioned it to be able to justify its central role in the educational process and details the development and pilot implementation of the Performance Effectiveness Measurement System.

BACKGROUND: THE UNIVERSITY OF ARIZONA RESTRUCTURING AND THE CULLEN MATRIX

In 1991, the Dean of Libraries at the University of Arizona, Carla Stoffle, appointed a Steering Committee to investigate how the Library should be organized to be effective in the future – given the current and future environmental factors. The self-study resulted in the Library's choice to restructure to a team-based, customer-focused, quality, learning organization.

At the 2nd Northumbria Conference, Rowena Cullen presented a new model of organizational effectiveness that she called the "*Focus/Value/Purpose Matrix*" (below).



The matrix demonstrates the "complex and multi-dimensional nature of organizational effectiveness" and the role of "*choice* (as) fundamental to performance measurement." Ms. Cullen concluded that there are "three critical factors influencing the positive outcome of performance measures in libraries": understanding performance measurement as a political activity, as a complex evaluative activity, and as one that demands appropriate incentive (Cullen, 1998).

When reflecting on the University of Arizona's restructuring process in the light of Ms. Cullen's model, we found that, between 1992 and 1997, the Library had chosen to position itself in the directions of external focus, valuing outputs and strong resolve.

Evidence of External Focus included the following: The restructuring had resulted in the creation of nine customer-focused teams. We had utilized the Hoshin model of strategic planning (focusing on customers' needs and selecting the critical few strategies that would result in breakthrough progress). We had moved toward "data-based" decision making by empowered teams. We had begun to experiment with methodologies for identifying needs and measuring satisfaction with services.

Evidence of Valuing Outcomes included: the inclusion of "results" reporting in the framework of our Team Reports structure; identification of multi-year performance measures for our 3-5 Year Strategic Plan and a growing dissatisfaction with the time investment/internal benefit ratio for contributing input measurements to the Association of Research Libraries.

Evidence of Organizational Resolve was also easy to identify. We had decided to radically restructure the entire organization, creating new teams, reassignment of every staff member and reallocation of resources to critical front line services. We had undertaken lengthy process improvement studies that improved service quality *and* reduced costs. It was in these latter efforts that we began to learn the basics of measurement – using quality tools, statistical process control, and assessing outcomes for customers.

DRIVERS FOR PERFORMANCE MEASUREMENT

What was lacking in our organization until 1997 was the deliberate and explicit measurement of team performance and the measurement of individual effectiveness. Although teams set objectives and reported progress on these projects, no standards for regular services and work efforts had been established. We had ceased individual performance appraisal when we restructured in 1992, knowing that we had created an environment in which the old system of supervisor/supervisee evaluation was not congruent with the team structure we had implemented. The University administration, which had granted us a reprieve in this area, was now calling for the creation of an acceptable system of performance appraisal. In addition the Arizona Board of Regents, our governing

agency, was now requiring the University to institute performance measurement.

At the same time, staff working in the Library had begun to identify the lack of clear performance expectations as a barrier to working effectively in this flat organizational structure. There was a growing need for rapid development of new skills and knowledge. This was clearly becoming a strong expectation, but there was not a defined system of support.

In July 1997, the Strategic Planning Action Plan Team identified the creation of a system of performance and learning measurement as a Strategic Project and appointed a team of seven (four librarians and three staff) to design and implement such a system. This "Performance Team", as it came to be known, was given funding to hire consultants and charged to complete this project by involving and training the Team and Work Team Leaders so that they could continue to effectively implement the system that was designed.

The Performance Team hired Chuck McClure to assist them with developing the system; they hired MetaWest Inc., a Tucson-based organization development consulting team to help design the curriculum, and Laurie Ingram, a Tucson-based Quality Consultant, to assist with learning the data gathering and analysis approaches that the teams were to utilize.

THE PROCESS FOR CREATING THE PERFORMANCE EFFECTIVENESS MANAGEMENT SYSTEM (PEMS)

Following is an outline of the process we used:

1. Administer the Library Staff Environment Questionnaire. This was a set of 18 questions derived from the Performance Team's own performance measures that aimed at assessing staff perceptions of current support for setting team and individual performance expectations, acquiring learning, and achieving results for customers.
2. Conduct a team simulation exercise demonstrating the need to understand customer requirements and to organize teamwork around meeting those specifications.
3. Form the Learning Networks – the collaborative learning groups of Team and Work Team leaders who assist in the development of the system and support each other's learning.
4. Develop the framework for team goal setting and performance measurement in conjunction with the team and work team leaders (see below).
5. Present the principles and philosophy of the Balanced Scorecard in an attempt to provide a full understanding of the inter-relationship of different measures and different stakeholder expectations.
6. Develop the individual performance system that integrated performance and learning goal setting, constructive peer feedback, and individual accountability for performance.
7. Develop and promulgate new policies and procedures and a new timetable for supporting the new organizational systems.
8. Monitor progress of the teams and provide learning support as needed throughout the "pilot" year – as Team and Work Team Leaders learned, practiced and applied the new procedures with their teams.
9. Redesign the Team Reports structure – emphasizing final results of team efforts, analyzing of data, and dialoguing about cross-team efforts and learning.
10. Re-administer the Library Staff Environment Questionnaire (January 1999) and compare results from the September 1997 administration.

ASSUMPTIONS UNDERLYING THE CREATION OF THE NEW PERFORMANCE EFFECTIVENESS MANAGEMENT SYSTEM (PEMS)

There were at least four basic assumptions that guided the design and implementation of the PEMSystem we created.

Assumption #1: Team members would be more productive, committed, and satisfied with their employment in a work environment where team and individual performance expectations, learning expectations, and measures of success were clearly and explicitly stated and achievement and learning were positively supported and recognized.

Cullen alludes to the need for clear internal, as well as external, incentives for the success of a performance measurement system. We assumed that as individuals involved in high-level, complex, professional service work, one of the greatest incentives for staff would be to understand how success was defined, to have customers appreciate success, and to have their successful efforts internally recognized.

Assumption #2: In a team environment, team members share accountability for the prioritization and results of their team's work for customers. Together they discover what customers value and require. The Team's Mission, Vision, and Current Situation Analysis, as well as the Library's 3-5 Year Strategic Vision and Plan, will define the team's priority work. Teams have a responsibility to continually assess their own competence and capability to meet customer standards and create products and services that their identified customers need.

These are basic assumptions associated with operating in a team environment as opposed to a hierarchical environment and are the foundation for our current structure.

Assumption #3: Feedback is key to understanding the current reality of the environment, assessing the need to

change or realign work efforts, identifying the need for improvement of quality, realizing the need to learn, and achieving breakthrough performance.

Feedback mechanisms were essential for teams to be "in touch" with customers' present and future expectations. It was also important for teams to receive feedback internally from other teams, the Library's Cabinet (the leadership group), and the Strategic Long Range Planning Team in order to continue difficult efforts, stay aligned, and communicate the need for training support or additional resources. Peer feedback would be essential in the team environment of shared accountability for supporting the completion of individual performance and learning goals.

Assumption #4: A Learning Organization needs to provide structure, time, financial support and resources for continuous learning to be achieved.

As we developed the PEMSystem we would rely on Team Learning, support of Personal Mastery, the creation of interdependent supportive systems and a shared vision as contributors to a successful system. The Team and Work Team Leaders would be involved in collaborative learning. The individual assessment system would assume that we need to invest heavily in the personal development of staff.

THE STRUCTURE: THE TEAM STRATEGIC FRAMEWORK

Each team was guided in the creation of a Team "strategic framework" within which it could clearly describe its own values, purpose, and focus. The framework consisted of:

Current Situation/Future Analysis – each team assesses what it knows about its customers, its processes, its outcomes, its suppliers, and the environment within which it is operating. This "assessment" is to be derived from data and information from customers as much as possible, and informs the framework the team creates for its work for the year.

Vision – each team is asked to envision what it would look like if it were totally successful with its customers. A "creative pull" vision is encouraged.

Mission – each team is asked to define clearly what activities it will perform, what services and products it will provide for what customers, and what boundaries they lay claim to that differentiates their work from that of other teams.

Customers – each team is asked to list and understand the relationship to its primary, secondary, tertiary customers and to identify who are its other stakeholders.

Mission Critical Areas – these are the activities that are critical for the team to perform if its customers are to be served and its mission is to be achieved. In sum, these "MCAs" should define the mission of the team.

Performance Measures – these are the tools used to measure performance and evaluate progress. They are quantitative or qualitative indicators of the degree to which activities, services and products are successful. Each team is asked to choose which are the most relevant measures they could use to assess success with customers and with stakeholders.

Measures include:

Output/Extent; Outcome; and Quality (Efficiency, Cycle Time, Accuracy, etc.)

Cost per unit; Cost per customer; Return on Investment; and Skills/Abilities and Applications of Learning.

Quality Standards – these are the specific, measurable, desired levels of performance or quality that customers would expect when receiving a service or product.

Data Gathering Methodologies – these are the intended methods for gathering data and information to know whether your quality standard is being met. Methods include measurement of the process (cycle time, accuracy, cost) and measurement of customers' satisfaction or rating.

Future Team Competencies – this is a brainstormed list of the skills and abilities that the team will need in the future to meet and exceed customer expectations.

Projects – these are the most important, organized actions that the team can take to meet Quality Standards. Completion of projects should improve the team's capability of meeting the Quality Standard.

Individual Performance Goals – these are actions that individuals will take to achieve a result for customers related to the Quality Standard. They will be S*M*A*R*T goals: Specific, Measurable, Attainable, Results-Oriented, and Timely.

Individual Learning Goals – these are the actions that individuals will take to learn new skills related to their performance goals or to the team's future work.

Peer Developmental Reviews – these take place at least three times per year scheduled according to the milestone dates in the goal statement; at least three peers, one from the home team and others chosen according to their ability to support and provide feedback. Peers participate as a group; the individual prepares a progress report and requests feedback re: successes and barriers; the individual documents feedback and develops plan for Next Steps; Team Leaders keep a file of this summary and monitor for performance problems.

THE OUTCOMES: WHERE WE ARE NOW

Teams have completed projects and individual goal reviews for 1998/99. The 1999/2000 Team Strategic Frameworks are in place and staff have developed performance goals for all the work they do that is critical for customers or for project team results. This has been accomplished with minimum support to the Team Leader Learning Networks.

Analysis of the comparative ratings on the *Library Staff Environment Questionnaire* is very promising. When asked to rate their reactions to factors affecting their performance effectiveness, support of learning, and job satisfaction, there were major increases in the number of positive responses (3.5 or above on a 7-point Likert scale) from September 1997 to January 1999.

In the overall Library comparisons, these positive ratings increased ranged from 10-39 percentage points on the following "outcome measures":

- improvement in team performance based on team member evaluation;
- better guidance in choosing work assignments, understanding work expectations and evaluating work performance;
- identifying, supporting, and meeting learning needs;
- acquiring the competencies and skills to do the work of the Library.

The positive ratings increased 13-44 percentage points on the following "quality measures":

- Team Leader and Work Team Leader self-assessment of skills and support from Learning Networks;
- Team member assessment of leaders' skills and performance in the implementation of the PEMSystem;
- staff satisfaction with working in their jobs, in the Library, and on their teams.

This comparison leads to a preliminary conclusion that the PEMSystem has served to create a better work environment for the staff of the Library and is, in itself, a positive incentive. An examination of Team's Final Reports clearly identifies progress in learning how to state performance measures, in how to assess what are "customer-relevant" Quality Standards, and in how to accomplish meaningful analysis of data and informative feedback – evidence that the complexity of evaluation is better understood.

In addition to the PEMSystem we have designed and implemented an "aligned" compensation system. Following assumptions that base pay, merit pay and bonus pay all contribute to achieving staff commitment and goal congruence we are developing the following components:

- base pay will recognize individual performance at the high end of faculty rank or personnel classification;
- bonus pay (a quarterly allocation of some merit funds) will be aligned with customer feedback and evaluations received on our Library Report Card survey instruments;
- career progression or merit increase to base pay will be based on demonstration of increasing staff competence and value to future library work. This includes a self- and peer-assessment based on demonstrating breadth, depth, leadership and application of new learning, and is decided upon by a Library-wide Peer Review Group.

CHALLENGES IN THE DESIGN PROCESS: COMPLEXITY, CONTINUOUS CHANGE AND THE LEARNING CURVE

There were numerous challenges in the Design Phase of the Performance Project:

New terminology and framework. For the University of Arizona Library this is a continuing issue as we look for the appropriate ways to describe our organizational processes and differentiate them from other hierarchical/ management approaches. The creation of glossaries, clear definitions, examples and utilizing the terms in all discussions helped to ease us over this hump.

Designing and implementing "just in time." Asking the Team and Work Team Leaders to learn each part of this process, train their teams, and produce results piecemeal fashion was difficult for all involved. Attempting to keep the "big picture", the entire framework, in mind helped but was challenging while working on the parts. Sticking to principles and values helped greatly.

Concern for the credibility of the new system. The University had requirements and we had guiding assumptions. Whether or not the final product would "meet expectations" was always a question. Our reliance on consultants helped enormously in this regard. They gave constructive feedback, confirmed right directions, and lent their own skills and knowledge to the design and implementation. Staff trust grew as each part of the system began to make sense.

Utilization of Learning Networks. This was a new experience for the Team and Work Team Leaders who had only informally involved themselves in each other's learning. Calling meetings, setting deadlines for deliverables, and conducting the Community Sessions in Learning Networks helped. This is proving a difficult model to sustain.

CHALLENGES IN THE IMPLEMENTATION: CONTINUOUS CULTURE CHANGE

Implementing the new PEMSystem was no easy task for those involved. Although much groundwork had been laid for ascribing to the principles of a customer-focused, data-based, learning organization, the integration of an explicit system of team and individual performance measurement within one year challenged us all. Although we had learned to question our mental models, to care about customer needs and to begin to talk in terms of results, grafting a disciplined system onto our structure proved to be yet another in a continuous string of culture changes.

The PEMSystem requires much more formal and informal relationships with customers since they are the basis of the setting of the Quality Standards. Last year we did some interviewing and some focus groups. This year we must increase efforts and test our new methods of "quick and clean" (Chuck McClure's phrase) assessment. Some staff still cling to the understandable desire to design work-time and choose priorities around the skills and competencies

they have already developed. True focus on customers means we must learn what *they* need us to know, learn it and apply that learning – rapidly.

Meaningful quantitative measurement and new qualitative measures also proved challenging. Learning what questions to ask, what data to gather, how to compile and present data, and what analytical tools are most relevant have become the "stuff" of learning goals – for teams and individuals. Great progress has been made. Teams report out using Control Charts, Excel Spreadsheets and pre-and post-project customer survey results. We ask each other questions of validity and reliability and we ask each other for trend analysis. There is a commitment to learning and a demonstration of results.

Between 1992 and 1997 we had developed a culture of trust and non-inquiry related to individual performance. We relied on the excitement of new empowerment, on expected peer pressure, and on open questioning at Team Report sessions for accountability to develop. Adopting the new PEMSystem for Individual Goal Setting and Peer Developmental Review definitely increased the pressure to be open and honest about one's accomplishments *and problems.* Many staff welcomed the opportunity to spend time reflecting on progress in their multi-faceted job responsibilities and finally sharing that with their team-mates. Many found the self-evaluation a prompt to meet agreed upon deadlines. Many found the constructive feedback to be helpful in changing directions, gathering new ideas, and identifying needs for learning new skills. Some still find it threatening, difficult to participate honestly, and time-consuming.

SUMMARY

By fully implementing the PEMSystem, the University of Arizona Library is continuing its journey toward the "southeast" quadrant of Rowena Cullen's "Values/ Focus/Purpose Matrix." As we travel, we recognize performance measurement as a political and evaluative activity critical to our future. We believe we must demonstrate our effectiveness in meeting the changing needs of our customers to be accepted as central to the higher education enterprise. We recognize the need to respond to external demands *and* to reward staff performance. Our PEMSystem is a promising tool for achieving these results.

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The University of Queensland Library: a case study in building a culture of continuous improvement

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Over the last several years the University of Queensland Library has implemented a successful Quality Management Program that has become part of the culture of the Library. Quality is seen as a core value and all staff in all sections and branches are involved in ongoing quality initiatives.

The program has been implemented in incremental stages as part of the Library's strategic management processes. The Library's mission statement was first revised. Goals and directions for the Library were determined and the organisation structured to devolve responsibility for initiatives to all sections and branches of the Library. Priority areas were determined consultatively and taskforces to address the priorities opened to all staff. Each taskforce undertook a range of internal and external benchmarking activities. Performance measurement moved from simple collection of statistics to include qualitative measures such as client satisfaction. Results obtained are used to improve services and inform future initiatives. This paper outlines the stages in building the culture.

1. INTRODUCTION

The University of Queensland is a leader among Australian universities, recognised internationally as a premier research institution. It is the largest and oldest university in the state of Queensland. Its teaching, learning and research activities are underpinned by state-of-the-art computing and library services and its teaching, learning and research activities have attracted numerous awards. In 1998 the University of Queensland was declared 1998 Good Universities Guide's Australian University of the Year. It received the maximum five-star rating for positive graduate outcomes, prestige, student demand, research performance, gender balance and staff qualifications.

The University of Queensland Library is one of the largest academic libraries in Australia and the largest in Queensland. It houses over 2 million volumes, in addition to a large collection of microforms, multimedia, digital files and primary resources. Over 20 service points deliver services up to 84 hours per week across 14 branch libraries on three major campuses. Service delivery through the branch libraries is supported by centralised processing and administrative services for the whole system. Personnel are recruited centrally and library materials are ordered and processed centrally. Economies of scale are achieved through the centralised management of such services as photocopying.

Policies are developed for the Library as a whole, by participation of as many as possible. The Library uses its World Wide Web Home Page to integrate service delivery <http://www.library.uq.edu.au/>. The Innopac library computer system, marketed by Innovative Interfaces Inc., is used to provide collection management services and access for all clients. The effectiveness of the Library in service delivery is strongly influenced by the effectiveness of its implementation of information technology. The Library provides over 750 personal computers across the system, with 550 of these available for public use. Over 250 databases are networked, over 3,000 e-journals are available, and online services can be used by all eligible users who register for such services with the University's Information Technology Service.

The Library's customers include approximately 29,000 students, with a large percentage of postgraduates and over 4,500 academics and general staff. Customers also come from groups with which the University has formal links, such as Cooperative Research Centres, staff of the major teaching hospitals as well as the wider community.

The University of Queensland is a publicly funded institution, as are most universities in Australia. In the last several years reductions in government funding have begun to bite. In the last three years the University of Queensland Library has received only small increases in funding. The Library is expected to cover any salary increases occasioned by enterprise bargaining. At the same time, increases in the prices of library materials have been higher than the Consumer Price Index and the Library, with its considerable purchasing of overseas materials, is exposed to the continuing devaluation of the Australian dollar. While information is moving to electronic forms, there is no indication that these will be any cheaper, rather a further 10% at least seems to be associated with access to electronic versions. The Library must also continue to maintain for some time traditional print collections as well as acquiring new electronically networked databases. The cost of providing appropriate access to material via new technology is also significant in the purchase of additional software and hardware. In this climate it is necessary for the Library to review critically all resource allocations and to ensure services are provided as efficiently and effectively as possible.

In September 1993 the current University Librarian took over from the previous incumbent who had occupied the

position for 27 years. Her appointment was at a time of changes in the Higher Education sector with regard to funding and increased emphasis on new technologies and flexible learning and teaching. Upon her appointment the University Librarian instigated both operational and cultural changes throughout the library system which, while well respected and competently administered, had lost its innovative edge. There was a reorganisation of senior management positions and reporting arrangements, committee structures, and to some extent branch library structures to focus on service delivery. The customer became the focus.

Amongst a raft of new programs, a formal quality management program (QMP) extended the routine collection of quantitative statistics that the Library had been doing for many years. Over the years since its inception the QMP has become part of the culture of the Library. Quality, as defined by the customer, is now appreciated by Library staff as one of the Library's core values.

2. THE QUALITY MANAGEMENT PROGRAM

A formal QMP is an important management tool for contemporary academic and research libraries. A well-structured QMP provides information on whether or not services perform as expected and contributes to improved delivery of services and the efficient and effective use of resources. It is essential in the current climate of reducing funds to ensure the efficiency of all services.

For such a program to be successfully implemented the organisation must have a clearly defined mission and goals. There must be an awareness of how services are currently offered as well as a planning system to implement improvements. The organisation must know where it is and have a plan to get from where it is to where it wants to be.

In 1995, against the background of the University's Strategic Plan, the Library developed the mission statement *We link people with information* to guide its activities and directions. It developed a five-year Strategic Plan, revised for 2000-2004. In 1999, this has been against the backdrop of a changed approach to strategic planning within the University. Each faculty has an Operational Plan, as does the Administration, Information Technology Service and Library, which contains annual priorities as well as conforming to a standard framework. As part of its planning processes the Library has therefore identified priority areas for each of the last six years.

The priority areas are a cornerstone of the Library's formal QMP. The other cornerstones are benchmarking initiatives and performance measurement. Together they provide a comprehensive QMP that is integrated into the standard operating procedures of the Library and that reaches all levels of staff.

2.1 Priority Areas

Each year the priority areas for the new year are determined at the end of the previous year during an Annual Review in which as many staff as possible participate. The areas are refined by further work of small teams. At the Review an "appreciative inquiry process" (discover, dream, design, deliver) is used to consider the progress achieved by the Library during the last year and to position the Library for the future. User needs for integration into service and information access goals are identified and taskforces formed to address issues and prepare possible implementation strategies.

Membership of the taskforces is open to all, irrespective of branch/section affiliations or employment categories. All staff who wish to participate in the activities may do so and the only constraining factor is that membership of taskforces is not permitted to become so large as to be ineffective. The "7 Up" group is central to the taskforce operation. This group consists of staff of Higher Education Worker level 7 and above, approximately 16% of library staff, and includes all middle management and team leaders. Specific responsibilities for taskforce activities are allocated to members of "7 Up".

Throughout the next year the taskforces address the priority areas implementing new services and improving existing ones. TQM processes are now being implemented in key areas, for example document delivery.

2.2 Benchmarking

The University of Queensland Library has undertaken several benchmarking projects with the aim of achieving "best practice" and improved performance. As appropriate, services are (re)designed and developed to meet the bulk of needs identified and areas identified for improvement are integrated into the Library's priority areas.

In 1998 the Library undertook benchmarking exercises through the Commonwealth University Management Benchmarking Club managed by the Commonwealth Higher Education Management Service (CHEMS), as well as with its Australian Universitas 21 partners, the University of Melbourne and the University of New South Wales. The Universitas 21 group is a group of international universities working on a variety of cooperative activities. Benchmarking is ongoing and has expanded to include international partners. This year the Library is undertaking a benchmarking exercise in information skills with the University of Otago.

2.2.1 Commonwealth University Management Benchmarking Club

The University of Queensland is a member of the Commonwealth University Management Benchmarking Club. Each year the Benchmarking Club reviews different areas of member universities and in 1998 one of the areas selected was Library and Information Services. The Library

was surveyed about many activities in which it participates and then compared with libraries of other Commonwealth Universities by CHEMS. The Library scored the maximum rating in all categories, and was the only library in the group to do so.

The process was conducted throughout the year. In March the Library completed answers to a list of questions and submitted these to CHEMS. In September members of the Benchmarking Club met to discuss the areas reviewed and to determine statements of good practice and in October a draft statement of good practice, resulting from the September discussion, was received with a request for members to self rate themselves against the statements and to supply general comments.

The survey covered questions on Strategy, Policy, Planning and Management; Library Services; Access; Collections; Support and Training; and Human Resource Management. Descriptions were provided of:

- the visions, policies and plans that guide the application and implementation of learning and information resources within the university's overall mission;
- the fundamental elements of access, organisation, promotion, teaching, preservation and delivery of information and whether the institution is well served, in the context of a rapidly changing technological environment;
- the library's access policies;
- the processes that are in place to manage, maintain, and preserve the library collection;
- how the university ensures competence in technology-enabled teaching, research, and administration; and
- how the library's human resource management plan supports the library's directions in the context of the university mission.

The Library found several benefits from the exercise:

- the intellectual discipline of, and rigour imposed by, completing the questions caused the Library to reflect on our performance and to do some things differently;
- the documents produced for the exercise were used internally for other purposes;
- the exercise confirmed that the University of Queensland Library practices are generally good.

2.2.2 Universitas 21

The University of Queensland is a member institution of Universitas 21, an association of major, research intensive, international universities formed in 1997 with the objective of assisting the member institutions to become global universities.

The University of Queensland Library commenced benchmarking exercises with libraries of Australian members of Universitas 21 in late 1997 and these are ongoing. Specific exercises are agreed upon by the group, or in partnership and, unlike CHEMS benchmarking where communication is through a third party, the libraries communicate directly with each other and determine areas to benchmark.

In 1998 a range of activities was undertaken. Partners were profiled, Core Services were defined and their costs determined. *Materials Availability* surveys were conducted. Visits were made to some overseas partners and packets of introductory material were sent.

In 1999 Australian members have set up a Web site to display comparative data and a discussion list to encourage communication in various areas. Arrangements for staff exchanges on a semi-formal basis are being made. *Client Congruence* surveys are being completed and results compared.

To date results have provided useful information, with data gathered providing the basis for other undertakings. For example, much data on staff activities was gathered in 1998 and this is having application in the introduction of activity-based costing in 1999.

2.2.3 Other

In 1998 the University of Otago Library called for expressions of interest from Australian university libraries for participation in benchmarking exercises with them in 1999. The University of Queensland Library expressed interest and was selected as a partner in the area of information skills. The exercise is currently under way.

2.2.4 Informal Benchmarking

While the previous sections have described the formal benchmarking exercises recently undertaken by the Library, informal benchmarking is an ongoing activity. Pursuit of quality is part of the culture of the Library, part of standard operating procedures.

Comparisons are constantly being made with other university libraries, and with other innovative sites; for example in the area of customer service practices comparisons have been made with non-university service-based industries and retail organisations. Also, staff from all branches and sections attend conferences, read, monitor/scan Web pages and conduct research on specific topics. In particular, work has been conducted on shelving and improvements have been determined.

2.3 Performance Measures

The Library has been collecting statistical data for many years. However, it is only in the last few years that a planned program of collecting data describing the performance of the Library, along with its analysis with regard to evaluating performance against mission and goals, has been integrated into an encompassing QMP. Nowadays the Library utilises both quantitative and qualitative performance measures as a matter of course.

Original indicators may be developed, for example the Library has recently developed Shelving indicators; or external sources may be used as is or adapted and used. For example, the CAUL (Council of Australian University Librarians) *Materials Availability* indicator has been used without adaption.

With regard to process measures, many statistical details are kept and measures developed from these as required. Data are collected both as part of "regular" statistical processes and as required through surveys and snapshot pictures. For example, data on the number of items lent are collected continuously as part of standard operating procedures, whereas data regarding client attitudes are monitored through customer surveys, suggestion boxes and from focus groups on specific issues as required.

Where appropriate, comparisons are made between branches within the Library, with other university libraries and innovative sites. For example, in the area of customer service practices, comparisons have been made with non-university service-based industries and retail organisations.

Also used for comparison purposes are the CAUL library statistics that are collected and published annually (comparable to the ARL statistics in the United States) and the results of CAUL surveys.

Given the challenge of maintaining a quality service in a difficult financial environment, the Library considers that measures that provide information on the efficiency and effectiveness of services are particularly important. Indicators that aid in the identification of areas where savings can be made, or in the determination of service levels given variations in resources, are very important. Currently the Library is particularly interested in measures of shelving and interaction with computerised searching.

The Library has used the information gathered from performance indicators within various quality improvement initiatives. For example, it was under the ambit of Universitas 21 benchmarking that a *Materials Availability* indicator was used in 1998 and a *Client Congruence* indicator is being used in 1999.

3. A CULTURE OF CONTINUOUS IMPROVEMENT

One of the strengths of the QMP at the University of Queensland Library is that initiatives are fed back into the program as part of standard operating procedure and integrally inform subsequent practice. While component initiatives may be one-off exercises or be repeated only every so often, the overall program is ongoing.

Quality management initiatives are integrated into operating procedures at both planning and operational levels. At the planning level the integration is through the leadership of senior management, at the Annual Review through the "appreciative inquiry process" and determination of priority areas for address in the next year, and through the results of quality management initiatives/ benchmarking exercises being disseminated to all staff through library publications and regular information sessions. Staff are also encouraged to scan the environment for opportunities for improvement and for staff from all branches and sections to be able to attend conferences, read, monitor/scan Web pages and conduct research on specific topics.

Staff have:

- increased participation in strategic planning activities;
- more opportunities for involvement in cross-sectional initiatives and to work with colleagues from other sections of the Library; and
- increased awareness of comparative data.

The Library has:

- improved information on whether or not services are performing as expected;
- improved delivery of existing services and implementation of new services; and
- more efficient and effective use of resources.

Amongst other items over the last few years the quality management program has resulted in/aided:

- extension of the virtual library;
- improvement in customer service, particularly with regard to information skills programs and service at "non-service" points;
- refurbishment of library buildings and development of a new library (Ipswich);
- implementation of a new Library Management System which itself provides useful data for management of quality;
- development of the Library's Home Page as an interface to all library services;
- improved shelving practices;
- improved document delivery services;
- development of plans on flexible delivery and service options.

4. IMPLEMENTATION OF THE QMP

The implementation of the QMP is facilitated by employment of a Projects Coordinator who:

- coordinates library projects related to benchmarking and best practice;
- coordinates quality assurance projects, including the development of quality assurance policies and procedures, and the development of performance measures;
- maintains a database to facilitate the collection, analysis and reporting of Library performance data and provides

reports on Library performance to internal and external bodies as required.

However, the feature that most contributes to successful implementation of the program, particularly the priority area initiative, is the "7 Up" Group. "7 Up" is responsible for promoting and propelling the priority area quality initiatives throughout the Library and involving other staff members in initiatives. Through this group quality initiatives reach all sections of the Library.

5. FUTURE DIRECTIONS

The Library's QMP is ongoing. In 1999 taskforces continue to work on priority areas, and Universitas 21 benchmarking activities and performance measurement continue.

One of the areas currently under the priority area umbrella is implementation of an activity-based costing system. This will allow the allocation of overhead costs to cost pools and provide a more accurate measure of costs to management. This in turn will aid in prioritising future quality initiatives. The activity-based costing project is utilising data on staff activities determined in 1998 during Universitas 21 benchmarking exercises.

6. CONCLUSION

The University of Queensland Library has implemented a successful Quality Management Program over the last several years that has become part of the culture of the Library.

Quality, as defined by the customer, is seen as a core value and the process of quality improvement is ongoing. All staff in all sections and branches are involved in ongoing quality initiatives.

Over the last few years the Library has achieved many successful outcomes to which the quality management program has contributed. In 1998 the Library was joint winner in the Institutional category of the prestigious Australian Awards for University teaching for its *Cybrary* submission. The recent $9.8 million refurbishment of the largest branch of the Library was Highly Commended in the Interiors Category of the RAIA (Royal Australian Institute of Architects – Queensland Branch) Awards in 1999. The University Librarian was named joint winner of the 1999 ALIA (Australian Library and Information Association) Library Manager of the Year.

Usage of services is increasing. Customers are showing their approval through comments in suggestions boxes, both manual and electronic, in focus groups, and in the usage of services. In 1998 2.9 million people came through the Library, 1.5 million items were lent, 3.7 million items were shelved, 280,000 enquiries were answered, there were 4.6 million searches of the catalogue, 3 million searches of the database network, and almost 24,000 people attended information skills classes.

The University now considers the Library part of its marketing edge. The Library has been featured in University advertisements and was the cover story in a recent issue of *Graduate contact*, the magazine the University produces for its graduates. The Library is hosting increasing numbers of national and international visitors who come to discuss the provision of services and facilities.

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The voice of the process: process management and performance measurement of collection development activities in a new university library

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Describes and discusses the key findings of a project conducted at De Montfort University, UK, which studied collection management. The research consisted of a combination of qualitative interviews and quantitative analysis. Results indicated that processes within the organisation were subject to long delays and intense variability, and that staff were not fully aware of the scope, scale or nature of the problem. A review of the research findings suggests that this is fundamentally because of a misperception of the nature of the operation, a view which may be shared across libraries in general. Concludes that there should be a greater emphasis on the performance measurement of internal operations and processes.

INTRODUCTION

This is an account of explorations into collection management activities within our organisation[1]. They are relevant to the theme of this Conference, not only because they provide a case study of the practical application and importance of performance measurement, but also because a very effective methodology was used to uncover some surprising truths about the organisation. The findings of this research also pose some quite serious questions about the value and impact of performance measurement in library and information services.

ORGANISATIONAL ENVIRONMENT

Before going any further, let us provide an organisational context.

De Montfort University

De Montfort University (DMU) is a 1992 university, with nine main campuses across central eastern England and over 30,000 students. The university expanded rapidly in the 1990s, and then was confronted by internal difficulties including a poor technical infrastructure and increased administrative costs. The Department of Library Services underwent internal restructuring and many changes in management. The fundamental organisational units continue to be teams, either site-based or (in the largest library) subject and function-based.

This study was based in the largest DMU library, at the city campus in Leicester. Because of the size and scale of operations, it has the most specialisation in its staffing, and, until August 1999, technical services teams worked in another building.

Collection Development Activities at DMU

The university is a mainly teaching institution, and collection management is focused on providing material to support teaching. All courses are modular and semesterised, with assessment taking place during or at the end of 12-week semesters. Modules vary in size from 15 to 1,000 students.

Faculty budgets are devolved notionally with the subject teams negotiating with the faculties how resources are spent. Because of the intense competition for resources caused by module size, it is imperative that the library optimises access to its collections.

It follows that most acquisition is in response to what is supplied on reading lists rather than vice versa. This has been custom and practice since the early 1980s. Although there is a general requirement for each module to have a reading list, the length of that list can vary from between one or two books to several hundred items. This approach has created a number of difficulties, including:

- currency and accuracy of material listed;
- cost-effectiveness of an approach based on checking resources for hundreds of reading lists;
- front-loading of staff time engaged on bib-checking;
- unpredictability of resources;
- financial year not synchronised with stock orders, so many orders wait for the beginning of the new financial year – 1 August – when courses start in September;
- total number of reading lists received;
- seasonality of workload – reading lists are received in the vacation when fewer staff are available and they are covering additional work for the rest of the service.

There have been exploratory electronic short loan/ on-demand publishing projects, but they have not been sustained since the availability of appropriate material, related costs and administration have made them impractical. The main barrier is achieving critical mass: it is

[1] Our thanks to Kathryn Arnold, Head of Library Services, De Montfort University for her support in preparing this paper.

easy to provide electronic access to many periodicals, but books and chapters of books are not available.

DESCRIPTION OF THE STUDY

Research Question

The focus of the research was a perception that this library was not as efficient as it could be in the supply of known items from reading lists. We defined this activity as a single process, to which several teams contributed, rather than following some of the more traditional, functionally-based definitions of collection management (Webb, 1999; British Standards Institution, 1998; Poll and te Boekhorst, 1996).

Operations management, particularly method study, proposes that this kind of problem is amenable to measurement, analysis and improvement. But there are more fundamental questions here as well. Before the project began, there was a number of suggested solutions to this perceived inefficiency, but no real evidence to aid thorough analysis. We also wanted to explore organisational culture and beliefs since, unless a belief in performance measurement is shared across an organisation, it may not have sufficient impact (Bicheno, 1998).

Research Design

The purpose of the research was to explore the natural behaviour of a system, rather than conduct experiments. A holistic, systems approach was essential (Underwood, 1990; Harris, 1989). The project drew from naturally occurring data, interviews and an information-gathering exercise. A multi-method approach was adopted at the outset because it would provide internal cross-checking and monitoring during the research process. This was particularly important because one of the elements we wished to explore was how closely stakeholder perceptions matched quantitative data. Mintzberg (Mintzberg, 1979) confirmed this decision. He argues that description has raised doubts about much that was taken for granted and that rigour in the choice of methodology has led to theory dominating research.

In detail the stages were:

1. drawing up a process chart from different stakeholder perspectives;
2. analysing how long it took for books to be made available. This was defined as from the date when the reading list or book request was received to when that item went out on to the library shelves. A wide range of sources was used, including memos, order cards, process slips from database (which are annotated) and noting dates manually. This is very different from analysing information from the library system. The sample comprised just over 300 new books received by a subject team;
3. structured interviews with process owners – managers, information assistants, team leaders from subject teams and technical services;
4. wider information-gathering to look at performance measurement across the department.

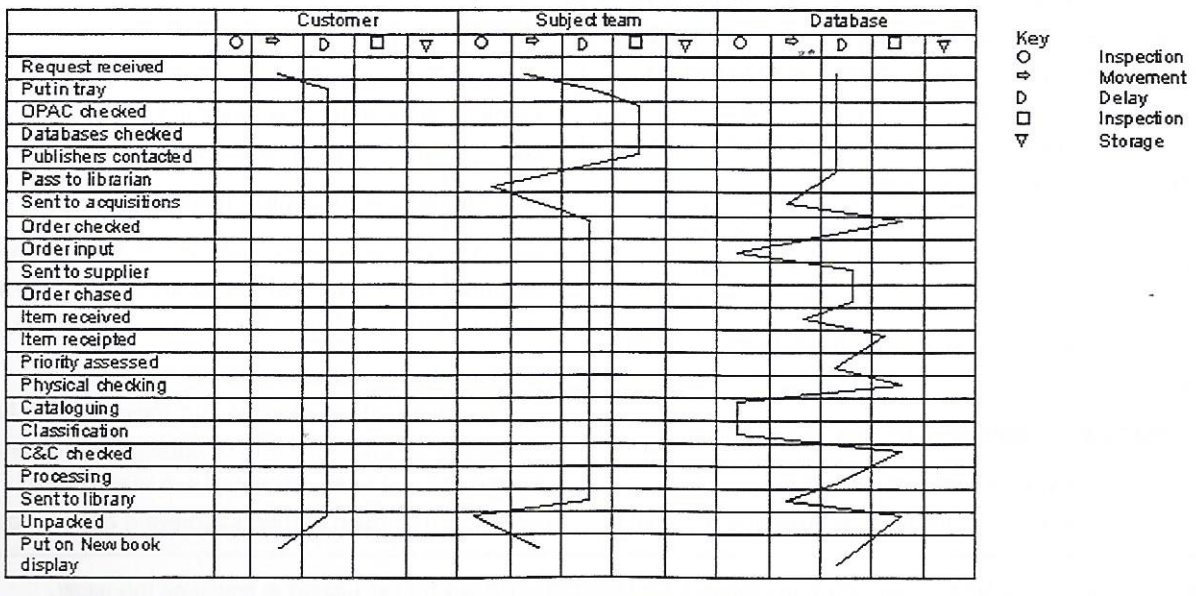
This was a very straightforward and simple method. Excel was powerful enough for the quantitative data analysis. It also soon became clear that the data themselves were so varied that many statistical tests would be meaningless, and only the most basic descriptive statistics could be used to make sense of the data set.

KEY FINDINGS

Process Design

Chart 1 illustrates findings from the first research stage. It demonstrates not only the different perceptions and experiences of three stakeholder groups, but also the

Chart 1 Flow Chart of Collection Management Processes



complexity of the process. The length of delay for the customer, and for the subject teams, becomes apparent. It also highlights the constraints in the delivery system, and how book availability is influenced by operational considerations. There are many inspection stages and relatively few operations adding value.

The next part of this discussion combines findings from stages 2, 3 and 4.

Statistics of Delay

Elapsed time using the artefacts described above was divided into key stages. These were defined as:

- **checking time** between receipt of the reading list or book request and approval by the subject librarian;
- time between **approval** and inputting on to the system;
- **order processing** to despatch;
- **supplier** delay;
- time in the **Database** team between receipt and availability on the shelves.

Chart 2 shows how long each stage took based on the mean calculated as a total and in each stage. These data demonstrate the average length of time at each process stage.

The longer mean times were library stages. This suggests that there is scope for improving the efficiency of operations, since managers have a high degree of control over the organisation of these processes. Such a statement needs to be viewed in light of the probable causes of delay, which will be discussed later.

But delay was not the only issue. Productivity improvements in operations management are gained from optimising use of resources, and reducing variation is an important element of this. Following Deming, there are two main kinds of variation – common cause, which is the natural variation inherent in any system, and special cause, which can be reduced by improving the process (summarised in Bicheno, 1998, p. 7). The intense variability of process time was clearly special cause variation (Chart 3).

The standard deviation was then calculated to demonstrate dispersion and thus the areas that had the greatest variation in process time around the mean, and the most special cause variation (Chart 4).

So what causes could be ascribed to this pattern of delay and variation? Analysis of all the data suggested the following:

- staffing shortages;

Chart 2 Mean Process Times by Activity

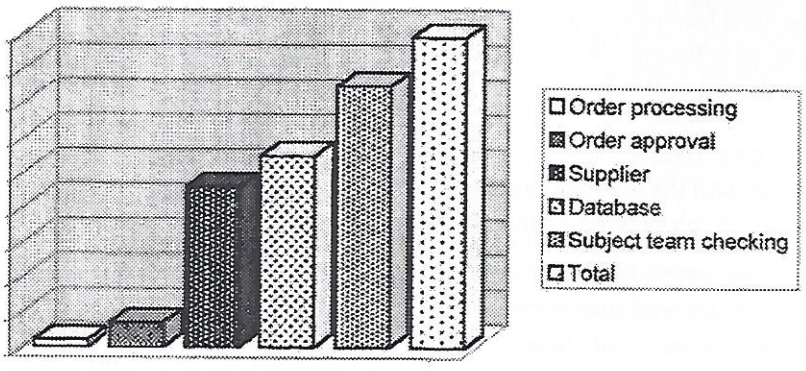


Chart 3 Variations in Process Time Showing High, Low and Mean

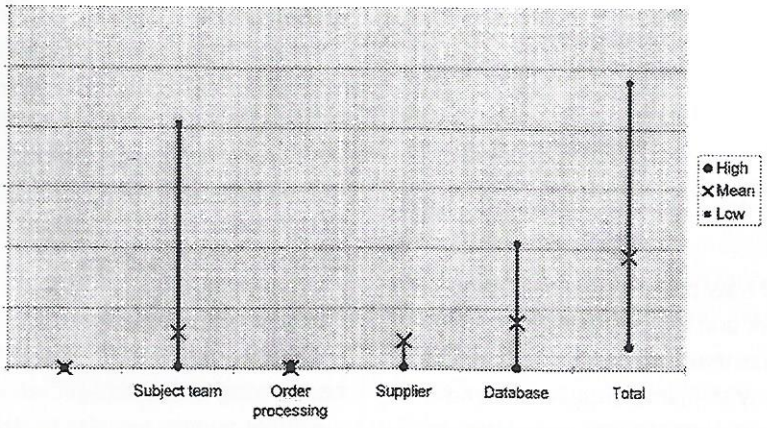
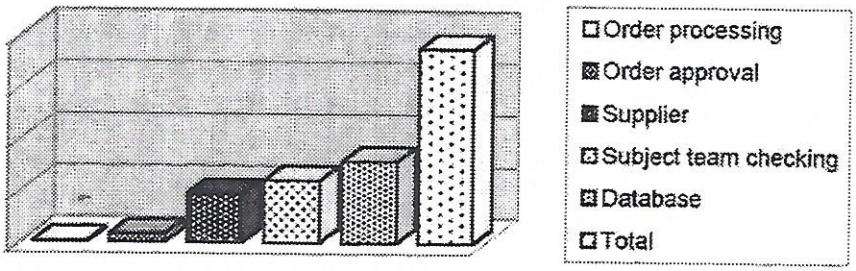


Chart 4 Variations in Process Time



- tension between this work and other duties – front-of-house and back office – exacerbated by peak demand for this kind of work coinciding with the vacations;
- increased seasonality brought about by semesterisation and modularity. This was confirmed by the other evidence;
- financial year not matching times of peak demand;
- length and nature of reading lists, which included requests for short loan offprints and out-of-print material;
- bottlenecks in cataloguing;
- too much checking: duplication of effort in the subject teams and in technical services, and too much checking of cataloguing and processing;
- supplier relationships – an in-house "bookshop" had been the main supplier until November 1998. A higher level of detail was supplied with order records than later became the case;
- publisher delays;
- operations being based around the automated system and its availability rather than process requirements;
- lack of active process management or performance measurement, which led to uncertain predictions of workflow, poor understanding between different sections, or even inaccurate understanding of the nature of the problem.

Although this was a study into delay and variation within a single process, the research method identified what can be summarised as two fundamentally different problems:

- variation in process time – caused by poor process design;
- bottlenecks and delays – caused by insufficient or inappropriate resources.

Perceptions

The interviews explored how process owners monitored and evaluated their work and the processes. One of the interesting outcomes was that the more senior staff interviewed offered many solutions, suggestions and analyses, but after the data analysis was completed, it became clear that many of these would not have much impact on reducing total elapsed time or variation. EDI was a case in point. It is an appealing technological solution, but cannot be a major priority given the small contribution this stage makes to total elapsed time. It might make a difference if the whole process were redesigned.

The public sector worker's "ideal conception" of service quality (Gaster, 1995) was a theme through all the interviews, and appeared when describing how things used to be, and in the frequent appearance of concepts like "reaching stability" and "reducing this backlog".

Huge amounts of data existed within the organisation, but they were collated almost exclusively for the purposes of SCONUL statistics. Performance measurement was used for external comparisons, not for measures of internal effectiveness. Nor was it embedded into organisational culture, yet this was a service which had been active in researching performance measurement.

Yet who had been responsible for this measurement and evaluation? For the most part, not the remaining staff who felt "numerically illiterate" (interview response), and measurement was seen as being complicated and unnecessary.

DISCUSSION AND REVIEW

Applying Process Management Concepts

Process management focuses on identifying service-critical processes and working to analyse, improve, control and manage them to improve the quality of products and services (Goldratt and Cox, 1984). Its defining feature is the way in which an organisation is viewed as a series of functional processes linked across the system, rather than existing departmental management structures. The findings from the data-gathering exercise across the organisation as a whole reinforced the research findings that there was scope to adopt a more proactive approach by process management.

Too often libraries define processes by function and organisational structure, rather than how things really happen and connect together. Considering only the customer perspective also misleads librarians. Wheeler

(1993) differentiates between the voice of the customer, which creates the specification for the service or operation, and the voice of the process, which enables improvement of the system. The voice of the process – the data relating to internal operations, quantitative and qualitative – gives a different solution from ones which either library managers or customers might have identified.

This suggests a dualism in how we evaluate and measure performance. Customer-driven measurement is important, but it may not be appropriate to all performance measurement. Process is not outcome, but it has its worth.

Impact of the Research Findings

So far the project has altered perceptions. Also there has been a number of changes; some happened during the lifetime of this project, others have been as a consequence. Already the department has:

- employed additional staff in areas under pressure;
- minimised the financial hiatus at the beginning of the financial year;
- started the process of empowering staff to evaluate and review processes and outputs;
- reviewed procedures for processing reading lists, and made cases for change to academic staff;
- adopted a commitment to continuous improvement.

The biggest challenge will be how to move forward and achieve process improvement across the organisation.

REVIEW

We suggested that this paper also posed some quite serious questions about the value and impact of performance measurement. They are as follows:

- For what purpose do we use performance measurement?

Certainly performance measurement has a strategic importance. But it is not only Chief Librarians (and all those other job titles) who need to be concerned. Performance measurement must be a basic tool in everyday work. Unless activities are measured and evaluated, a library cannot realistically assess its efficiency, effectiveness, relate mission to goals and targets, or identify where it fails. In organisations that are undergoing periods of rapid change, especially in the constrained higher education environment of the present, it is very easy to neglect internal measures and focus on external comparisons.

External comparisons can be used for political purposes – for making a case for additional resources. They give an element of stability in our organisation, making us aware of the world outside. They do not necessarily enable more effective management of organisations.

- What impact does performance measurement have on our work?

Consider how library and information service budgets are spent. Within the total, how much is invested on direct customer service, and how much on operations and processes? And, speaking frankly, how much of the budgets for staffing and resources are spent on supporting print rather than electronic information?

Senior managers analyse input and outcomes, but do they measure processes? But what if (following Gaster), measuring performance in a quality management framework enables us to reconcile our ideal conceptions to operational realities, and manage the present more effectively?

If so many managers are "numerically illiterate", how effective can they be in any analysis of statistical data? Our project found that most people keep quite a lot of statistics. They just need to know how to use them: to interpret their meaning and be empowered to address issues.

Fundamentally, however, managers need to look at the whole organisation, or at the least the whole of a process, before they can make effective evaluations.

- How accurate is our professional judgement without measurement?

Librarians are skilled at applying our knowledge of information to analysing resources, but do they use enough information in analysing our services and operations? If librarians compare their work to that of other middle managers, they probably rely on less data, and more intuition.

- How often do we measure or worry about the wrong things?

Librarians need to empathise with user needs and priorities, but must not set these as the only objective. Internal processes can and do influence customer service, and are amenable to analysis and improvement. It was suggested to us that quite a lot of the time managers measure and count things to disguise their lack of knowledge, and that much of what is called performance measurement is no more than looking at statistics. If anyone relies solely on our "professional judgement" on how the service operates, he/she can also get misled – as with the adoption of EDI mentioned above.

- How clearly do we understand the operations of the organisations that we manage?

Within the library literature, with a number of very notable exceptions, the effective management and measurement of library processes has been ignored. Does the profession spend too much time looking forward to a digital future?

Practitioners probably do have a clear picture, but they work in such complex and hierarchical organisations that the people who understand the big picture – the whole

process – are divorced from the detail. Quality management can integrate this understanding much more closely.

CONCLUSION

In conclusion, we are very distrustful of performance measurement purely for external comparisons (aside from the reliability of many of those figures – we know how SCONUL figures are collected!). Performance measurement is contingent upon an organisation's mission, goals and targets. Although a library and information service is a professional organisation, with its own separate professional culture, its funding and management ultimately comes from its parent organisation. Each university we have worked for has a different culture, with completely different goals, targets, and mission. The same goals and measures are not necessarily applicable to the success of a service.

Too often librarians are locked up in our own professional occupational mindset. Performance measurement literature particularly tries to generalise, to set objective goals, measures and targets. But surely the point of performance measurement and of performance indicators is to make an organisation more effective within its stated aims.

Library managers neglect the contribution that our operations, our unglamorous activities, work often done by junior staff, make to user perceptions of the service, and get lost in arguments of general good and benefit. Perhaps a renewed interest in process might make more impact, especially if we let it speak for itself?

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Best practice in Australian university libraries: lessons from a national project

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"Best Practice for Australian University Libraries" is a federally funded project which has investigated current "best practice" activities within Australian academic libraries and made reference to relevant best practice activities at selected international sites. In this project, the term "best practice" encompasses the extent of the implementation of quality frameworks and the use of benchmarking and performance measurement as tools for the continuous improvement of products, processes and services. Staff competencies and training required for the effective application of these frameworks and tools were also investigated. Recommendations on the practical application of this knowledge in support of effective future best practice have been made. These recommendations include the conversion of information from the project into the basis for an ongoing source of reference for all university libraries.

INTRODUCTION

This paper summarises best practice activities in Australian university libraries now, and suggests ways in which these may develop in the near future. It is based on information from a recent project funded by the Australian commonwealth department with oversight of higher education.

BACKGROUND

To understand the reasons for this national project and to provide background to the information drawn together in it, it is useful to briefly look at some characteristics which shape the self perceptions of Australian university libraries, the perceptions individual institutions have of their Australian peers, and the perceptions of university libraries in relation to the wider world.

- **Distance**

Australian university librarians make particular efforts to overcome the considerable limitations of the "tyranny of distance" to represent their libraries at regular meetings. Taking a national approach to issues is seen as important.

- **Location**

Distant globally, Australian university libraries look particularly to the US and the UK for examples of innovation; but there is also a definite Australian tendency to do-it-yourself action.

- **Urban dominance**

Smaller, newer regional universities and their libraries have been nimble and focused on niche markets, often motivated to overcome relative disadvantage by exploiting the benefits of technology.

- **Multicultural mix**

With an ever more diverse institutional population, including substantial numbers of full fee-paying international students, maintaining true user focus is a complex process.

- **Youth**

There were six pre-war Australian universities. There are now 38. Some perceptions about hierarchies of age, size and research levels do exist but the divisions are not entrenched, and all libraries are open to the adoption of good practice.

INVESTIGATION

Australian academic libraries are actively involved in the implementation of quality frameworks and are utilising quality management tools such as benchmarking and performance measurement. These activities are not necessarily well known or communicated outside the originating institution. Time factors are ever more critical and there is a certain perception that some things may not be worth the effort. There are obvious benefits in a greater sharing of experience and ideas, particularly for smaller, regional and often less generously funded institutions.

The Council of Australian University Librarians (CAUL) has been concerned to facilitate access by Australian university libraries to information to assist them with the implementation of best practice initiatives. This Evaluations and Investigations Program (EIP) project is one of the few such projects to examine library issues in Australian higher education over the past decade.

DESCRIPTION

A number of key issues were addressed, including the investigation of:

- development and use of academic library performance indicators, including the continuing applicability of the three current CAUL-developed performance indicators;
- importance of, and methodologies for, library benchmarking;
- identification of library activities appropriate for benchmarking;
- applicability of quality management frameworks to academic library management;
- applicability and usefulness of staff competency frameworks and training in relation to best practice.

TERMINOLOGY

An early project challenge was achieving consensus on terminology. To date, there appear to be no universally accepted definitions for best practice, benchmarking and performance measurement. The literature supports the difficulty of finding agreement on terms, stresses the importance of using endorsed definitions and discusses the discomfort around the use of the terminology in many university libraries, particularly when first encountered or initiated. Libraries found terminology far less of an issue as use made the words part of the culture.

RESEARCH METHODOLOGY

Through a combination of surveys, site visits to prospective "interesting" sites and through contacts and an extensive review of Australian and international literature on the topic, the project team was able to investigate and evaluate the current situation of university libraries.

Literature Review

The references included in the report (Wilson et al, in press) and as background material in a proposed handbook were gathered from databases, the Internet, contacts with colleagues, local and international visits, discussion lists and other sources.

In view of the potentially large volume of material, it was decided the emphasis would be on providing insight into the *current* level and type of activity within academic and research libraries and information services. Sources which provided insights into relatively recent work were candidates for the review section and, if particularly significant, for the substantial annotated useful sources listing. Most material, with the exception of some key resources, was published within the last five years. Sources for the investigation of more historical material were identified for the dedicated.

Surveys

Three surveys were developed and distributed to all Australian (38) and New Zealand (6) university libraries and the major Australian non academic research libraries (State Libraries, National Library of Australia, and CSIRO, the scientific research libraries network). These aimed to identify best practice activities, past, present and planned.

Site Visits

Site visits by members of the project team were undertaken to those libraries identified as exemplars of interesting initiatives. These allowed further exploration and clarification of issues raised in the survey findings and enabled the documentation of best practice activities within these libraries. This information may be transferable to other sites or appropriate for inclusion in the proposed handbook for busy practitioners.

As part of an unrelated institutional initiative, a member of the project team had undertaken visits to a number of international library and university sites in 1998. From this exercise information was fed into this project and provided data which mirrored and complemented the Australian investigations. Brief international case studies were included in the report since the use of standard questionnaires for international comparisons was not feasible in this situation.

FINDINGS

Literature Review

Generally, there is a relative dearth of material published on local library experiences despite evidence of considerable activity from the project investigations. Relevant Australian library conference papers form a very small subset of current professional publications. Anecdotal evidence suggests that Australian librarians look to the business-oriented quality bodies within Australia, such as the Australian Quality Council, for keeping up to date with the literature and to the international library literature. A number of libraries appeared to have "read the book" from ISO and IFLA, and recent work on electronic sources, but there was little evidence of reference to other areas of the international literature.

Benchmarking

Benchmarking is now regarded as a useful and appropriate tool for improving products, processes and services despite past perceptions of it as a tool for business/industry/profit-oriented organisations. Almost half of Australian university libraries reported involvement in benchmarking exercises over the past few years.

The strong tradition of informal cooperative surveying and aggregation of data as demonstrated through instruments such as the CAUL surveys may have contributed to this acceptance. Most university librarians have access to round robin surveys on topics of widespread interest. These supplement the Australian equivalent of the Association of Research Libraries (ARL) statistics now approaching their 50th year. These provide time series covering the standard quantitative indicators used in the past as "benchmarks". Access to these is available through the CAUL Web site.

A range of benchmarking methodologies has been used, choice depending on institutional goals and objectives, size and structure and the type of process identified for benchmarking.

Examples of in-depth benchmarking of processes include:

- inter-library loans/document delivery;
- cataloguing;
- shelving;
- acquisition and processing of recommended texts;
- monograph purchase and processing;
- research support.

Examples of using common survey instruments to extract comparable data with the aim of process improvement include:

- services and collections;
- materials availability;
- costing core processes;
- client satisfaction;
- staff satisfaction;
- multidimensional profiling;
- information skills;
- management.

Areas which have been benchmarked with organisations other than libraries include:

- managing improvement and change within a quality framework;
- personnel services;
- enquiry services;
- client satisfaction.

Australian university libraries are very open to approaching distant benchmarking partners. Partners within close regional groupings, whilst convenient, are perhaps seen as providing less challenge.

First steps in international partnering have been taken through membership of and participation in the Association of Commonwealth Universities Commonwealth Higher Education Management Service (CHEMS) Benchmarking Club and in Universitas 21 by a small number of the larger libraries. International benchmarking presents particular challenges. The CHEMS approach is also currently being used in "collaborative" dialogue with the McKinnon Walker/IDP project to develop national sets of outcome benchmarks in areas of university management including library and information services.

Informal benchmarking activities included such areas as:

- original cataloguing;
- acquisitions;
- innovations in reference services;
- information literacy and reference services;
- space utilisation;
- investigations of less usual services such as library-based centres for researchers.

Formal benchmarking for some was regarded as informal benchmarking by others.

Focus by large commercial organisations on broad industry metrics rather than more detailed process benchmarking is not as evident amongst Australian commercial organisations. The wider Australian benchmarking scene is dominated by the Australian Quality Council (AQC). Some university libraries are becoming more involved with AQC activities such as the AQC benchmarking networks, use of the Quality Awards for Business Excellence framework and the alignment of benchmarking information analysis with this framework. The framework is broadly similar to the European and Baldrige counterparts. AQC benchmarking networks go to considerable expense to provide for detailed examination of the nominated processes. Network participants are involved in data gathering and analysis and comprehensive site visits. Some small commercial companies offering data analysis and questionnaire design services also use the Business Excellence framework, so that benchmarking between libraries and between libraries and commercial organisations is becoming easier with the sharing of a common approach.

Australian universities appear to be less conscious of protecting the integrity of their institutions and retaining competitive advantage than in the US where less formal exchanges of views, cooperation on new initiatives or joint lobbying for a greater good are preferred to benchmarking.

The British pattern of dominance of benchmarking and other initiatives by newer universities keen for a competitive advantage is not generally the case in Australia. The European pattern of using regional links to open up possibilities for more cooperative activities between academic and other libraries is also not typical in Australia. Australian benchmarking partners are usually a mixture of newer and older institutions, with many partnerships including libraries as far apart as it is possible to be on the Australian continent.

Cultural, political and historical barriers are not issues within Australia but are issues of great relevance in dealing with the international benchmarking that new alliances are bringing. As a sovereign nation with a

tendency to national uniformity, Australia still has much to learn in the global context. Australian libraries in the Universitas 21 grouping and those involved in recent CHEMS library benchmarking are becoming more conscious of cultural and political sensitivities.

Performance Measurement

Performance measurement is universally practised as part of the management process in Australian university libraries. A wide range of performance indicators is being used including the three published CAUL indicators, in order of frequency of use:

- materials availability;
- client satisfaction;
- document delivery.

Few libraries use all three indicators. A substantial minority use the materials availability indicator regularly and slightly fewer the client satisfaction indicator.

Some libraries have adapted and adopted a range of approaches tailored to need, including Van House, Hernon and Altman and Parasuraman-based instruments.

The improvement of CAUL indicators and national preferences for further development were investigated. The CAUL-supported CAVAL (CRIG) Working Party on Performance Measures for Reference Services, has recently published a final report (CAVAL . . , 1999) recommending 12 indicators in three broad dimensional groupings. The model is called ASK (attributes, support, knowledge). Some libraries expressed interest in trialling a range of these recommended PIs.

Much effort has also been expended on the development of in-house indicators and the modification/adaptation of other externally published indicators. The over-riding motivation appears to be to develop indicators which relate closely to strategic plans and key result areas. Australia has been slower in the development of performance indicators for the electronic library despite some interesting speculative work in individual institutions. Some libraries mentioned following the work of McClure, Lopata and Brophy. There was no evidence of awareness of other EU-sponsored projects.

The highest-rated responses to priority indicator development were:

- electronic services, their availability/quality;
- user satisfaction;
- document delivery.

The Australasian Universitas 21 members are aligning the use of performance indicators and evaluative surveys amongst members. Surveys are also being aligned more closely with the Australian Quality Awards framework so that results can feed into benchmarking the wider business community.

Quality/Best Practice

There is a definite trend towards increased application of quality frameworks. The influence of the Commonwealth government-sponsored Quality Audits in 1993-1995 has already been documented in an article by Vicki Williamson and Andy Exon (Williamson and Exon, 1996). At that time the first TQM/TQS, Best Practice projects were being implemented in libraries. Although less than 50% of the respondents to the current surveys have a fully implemented framework, the majority indicated their intention to investigate, implement or further develop frameworks over the next year.

Two university libraries and one university have been awarded national recognition by the Australian Quality Council through the Quality Awards. This recognition has provided leadership for others.

Local influences such as the:

- exposure to ISO accreditation activities elsewhere on campus;
- convergence of library and IT functions;
- integration of TAFE (technical and further education) activities already involved with well developed quality frameworks;
- continued support of dedicated central university quality officers or units;

all played a part in encouraging use of quality principles.

Motivating factors for implementation include:

- improving client focus;
- empowering staff to be part of process improvement;
- demonstrating effective resource use.

Formal frameworks currently in use include:

- Australian Quality Awards;
- Balanced Score Card;
- ISO 9000;
- TQM;
- TQS.

There were also local adaptations based on some of the above, the Scottish Quality Management System and various frameworks for vocational education and training. ISO accreditation is particularly associated with electronic services and IT activities.

There is European and UK interest in adapting the European Business Excellence Model framework for quality management purposes, and British universities have also had the choice in recent years of a range of government-endorsed quality frameworks such as the Charter Mark. Apart from some short-lived curiosity about Investors in People, it is the use of the AQA framework which interests

Australian academic libraries most. About one quarter of (mainly) larger Australian university libraries have, or intend to implement aspects of the AQA framework. Interest has grown from the first use in this framework over five years ago in one library. Australia is thus well in the forefront of a more recent international trend towards interest in adaptations of national quality award frameworks.

Staff Competencies

Whilst many Australian libraries have embraced quality improvement initiatives with enthusiasm, the training and competencies required for staff to work effectively with the tools and techniques have not always been addressed to the same degree. Libraries with ongoing training programs which address quality management techniques and related skills are rare; yet the presence of integrated in-house staff development programs appears to be one prerequisite for a really effective framework implementation in a large institution. Some respondents acknowledged that a lack of appropriate training at the appropriate time contributed to the less than satisfactory aspects of their implementation.

It is recognised that a significant investment of resources is required for successful staff development. Training support is more likely to be in place where the institution has dedicated staff with some specific responsibility for quality, staff development and training. Access to training tended to be more formal if the programs were university initiatives and if training was conducted by an external facilitator or, more rarely, by a university training unit. Less appropriate training included the one off, "sheep dip" approach which could be counterproductive.

Some training had been sourced from the US from training companies supplying this type of training to US industry or to the TQM/CQI training programs implemented in some US universities. AQC training programs for quality professionals and awareness and skills training for other staff were also used. The AQC has also developed nationally endorsed quality management competencies which form part of the government approved National Training Agenda.

RECOMMENDATIONS

Project results and recommendations will go to the November 1999 CAUL meeting in Auckland. The full EIP report should be published in 2000 as part of an ongoing series by the government publishing service for the Department of Education, Training and Youth Affairs.

Suggestions for the future include:

- making more effective use of membership of national and international organisations to leverage the expertise within those organisations and broaden library perspectives;
- making more effective use of the potential provided by the existing CAUL AARL statistics Web site;
- making the data accessible and updated so that the current state of the art remains easy to assess. A full template for the proposed handbook/ sourcebook has been developed;
- incorporating into national strategic initiatives priority areas for further indicator development;
- rationalising the availability of formal training in best practice areas and identifying sources of informal information and support by experienced staff;
- implementing mechanisms to encourage staff to take every opportunity to link Australian efforts into international developments and to maintain awareness of these.

Further developments should emerge early in 2000 after CAUL has considered the information.

CONCLUSION

The investigations:

- provided a fairly detailed national picture of the range and depth of performance indicator development and use, and of opinion on priorities for the future;
- provided a fairly detailed national picture of currently available methodologies for library benchmarking and their use;
- analysed the effectiveness of the current CAUL performance indicators and recommended their amendment and extension;
- demonstrated the applicability of quality management frameworks to academic library management;
- identified "best practice" exemplars in each area;
- identified areas needing priority attention, such as electronic library services, information literacy, reference and research services.

Information drawn together for the report should assist in identifying models and techniques which may be used to initiate or improve programs appropriate to individual missions and organisational culture.

Australia is far away and down under but, if interest and activity are an indication, it is a country which can make a contribution to the development of best practice in university libraries.

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SEMINAR PAPERS

The Electronic Library

The GAELS information audit

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The GAELS (Glasgow Allied Electronically with Strathclyde) project is an initiative by the Universities of Glasgow and Strathclyde to investigate the feasibility of providing collaborative information services in support of research, and to develop a joint computer-aided learning package in advanced information skills for research students and staff. The paper describes the methodology used and reports on progress so far, using examples relating to the provision and use of journal articles. It concludes with comments on the application of the methodology in practice.

1. INTRODUCTION

GAELS (Glasgow Allied ELectronically with Strathclyde) is a collaborative project based at the Universities of Glasgow and Strathclyde and funded under the Scottish Higher Education Funding Council's Strategic Change Initiative. The project has two main aims:

- an investigation into the feasibility of providing collaborative information services in support of research across the two universities;
- the development of a joint computer-aided learning package in advanced information skills for research students and staff.

In the first instance the project will focus on the needs of the engineering faculties at Glasgow and Strathclyde, but in the longer term it is anticipated that collaborative services and training will be extended to all faculties and perhaps to other universities within the region.

This paper describes the methodology used to determine the feasibility of collaborative information services, and reports on the progress made so far using examples relating to the provision and use of journal articles.

2. THE INFORMATION AUDIT METHODOLOGY

Within the concept of collaborative information services, specific areas of investigation include the provision of improved reciprocal access to collections at Glasgow and Strathclyde, the integrated provision and presentation of electronic resources and services, the development of enhanced document delivery services from local holdings and via inter-library loan, and the development of collaborative electronic enquiry and reference services.

This broad remit requires a methodology which can provide strategic direction and lend coherence to a wide-ranging service review, whilst at the same time being flexible enough to accommodate detailed evaluation of individual service elements. The information audit methodology proposed by Buchanan and Gibb was found to meet these requirements (Buchanan and Gibb, 1998).

Buchanan and Gibb suggest that the role of the information audit is:

- to provide a method for identifying, evaluating and managing an organisation's information resources in order to fully exploit the strategic potential of information;
- to provide integrated strategic direction and guidelines for the future management of information resources.

In their review of existing information audit methods, they conclude that no single method fulfils this role. Instead, they propose a universal methodology which aims to provide a comprehensive integrated strategic approach to the information audit and thus to facilitate the development of a revised strategy. They set out a five stage audit framework:

- promote
- identify
- analyse
- account
- synthesise.

Within this framework, a wide range of evaluation and assessment techniques can be employed; in fact, Buchanan and Gibb suggest that the success of their approach is critically dependent on the identification of appropriate management tools and techniques.

3. PROGRESS AND INTERIM RESULTS

3.1 Promote

The first stage of the method is to promote the information audit to stakeholders. The purpose of this stage is twofold:

- to ensure ownership of the project among stakeholders and to encourage co-operation and participation;
- to gain an initial impression of stakeholders' perceptions of the role and value of information, which will inform the planning of the next stage of the investigation.

The GAELS information audit has been actively promoted to all stakeholder groups, including institutional managers, library managers and staff, Deans of the Faculties of Engineering, Heads of Department and engineering

research staff. The response to this process has on the whole been positive. There is strong institutional support for increasing collaboration between the two universities and considerable commitment to GAELS among library managers and senior academic staff, many of whom facilitated, or even participated in, the promotion of the project to operational library staff and researchers.

From these initial discussions, it is clear that access to information, together with the skills to make effective use of that information, is perceived as a key factor in maintaining research quality. The university libraries are a valued source of information, but they are by no means the only source, neither are they above criticism. However, it is recognised that increasing demands are being placed on limited resources and that collaboration may help to ease the situation.

3.2 Identify

The second stage of the method is described as a six-step process. The first four steps identify and define the mission, environment, structure and culture of the organisation, whilst the last two steps identify the information flows and information resources within the organisation.

Some modification of the method was required before it could be applied to GAELS. The project is concerned with one function of a much larger organisation, so the first four steps have been scaled down to reflect the limited scope of the audit. Furthermore, the project is concerned primarily with the flow of information from the university libraries to the end-user, and with a well-defined range of information resources. Consequently, the last two steps have been scaled up to reflect the very focused nature of the project and the user-centred service environment in which it is taking place.

So, in place of the six-step process proposed by Buchanan and Gibb, a three-step process has been adopted, covering:

- the organisational context at university, library and faculty level, including mission, structure, culture and environment;
- the provision and use of existing information resources and services in support of engineering research at Glasgow and Strathclyde;
- the information needs, expectations and preferences of engineering researchers at the two institutions.

The process has involved the use of a wide range of data collection techniques. The investigation of the organisational context has been carried out primarily through desk research and interviews with senior staff, with tools such as PEST analysis and Mintzberg's method proving useful in organising the resulting data (Minzberg, 1988). The evaluation of existing services involved the collation of qualitative data from automated systems, from previous studies and from the literature, while the assessment of user needs involved the collection of qualitative data through focus groups and observation.

3.3 Analyse

The third stage is to analyse the data that have been gathered. Again a modified version of Buchanan and Gibb's method has been adopted, to reflect the modifications made in the previous stage. This gives a three-step process of analysis, covering:

- the key issues arising from the organisational context;
- a detailed evaluation of existing services in support of engineering research;
- the development of proposals for a revised service.

Organisational Context

There is a number of issues arising from the analysis of the organisational context which have a direct bearing on the development of proposals for a revised service. Some are essentially strategic in nature, for example the need for revised financial and operational management structures which can accommodate a collaborative access-based information environment. Others, such as the concept of ownership in relation to shared holdings and collaborative services, also have a cultural aspect. These issues have been brought to the attention of senior managers so that they can begin to be addressed ahead of any implementation of the project's recommendations.

Some environmental issues cannot be addressed at a local level, for example the licensing of electronic information to reflect links between universities and with industry, and these necessarily limit proposals for a revised service.

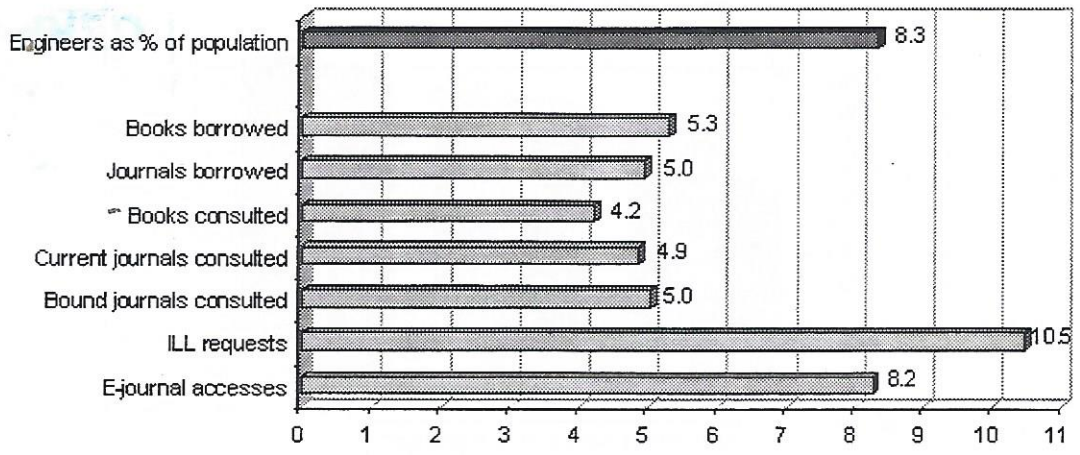
Evaluation of Existing Services

For the purposes of this paper, the evaluation of existing services and the assessment of user needs is too extensive to describe in full. Instead, a series of illustrative examples relating to the provision and use of journal articles is presented.

The results of a library use survey conducted at Glasgow in 1997/98 suggest that engineers are less likely to make use of traditional library services than other user groups, and more likely to make use of access-based and electronic services (see Figure 1). Levels of borrowing and in-library consultation of hard copy books and journals among engineers is low in comparison to those among other user groups, whilst the level of use of document delivery is fairly high. Taking into account their relatively limited availability in engineering at the time of the survey, the level of use of electronic journals is also high.

The pattern of use of bibliographic databases by engineers at Glasgow supports this finding (see Figure 2). Inspec was previously available on stand-alone CD-ROM in the library,

Figure 1 Percentage of Staff Library Use Attributable to Engineers



whilst Compendex was available over the network, and the very low levels of use of Inspec were attributed to its relative inaccessibility rather than its more specialised coverage. This was confirmed when Inspec was networked in 1998/99 and its usage increased sevenfold.

This quantitative evidence is further supported by qualitative evidence gathered through interviews and focus groups. It is clear that the current model of information provision no longer meets the needs, expectations and preferences of engineering researchers. Journal articles and conference papers continue to be a key element in the information needs of this user group, but increasingly the preference is for access to and delivery of article-level information at the desktop, rather than ownership and consultation of the hard copy.

These findings might suggest that the local holdings are in some way inadequate. However, a comparison of the combined holdings of engineering journals at Glasgow and Strathclyde with the combined holdings at other metropolitan groupings of universities highlights the strength and significance of the local holdings in this subject area. For example, a comparison with the London and Manchester Document Access (LAMDA) group of libraries (several of which serve large engineering departments) reveals that almost one fifth of the local holdings are not duplicated within LAMDA (see Figure 3).

There is a sense in which the strength and significance of the combined holdings is undermined by the extent of the duplication between Glasgow and Strathclyde. An earlier study suggested that the holdings of the two libraries overlap by up to one third, but a re-evaluation of the data shows that the degree of overlap in engineering is much higher than in the collection as a whole (see Figure 4). In fact, more than three quarters of engineering titles held at Glasgow are also to be found in the stronger engineering collection at Strathclyde, and the cost of these duplicated titles is almost £70,000.

This evidence suggests that a model of journal article provision, based on local journal holdings supplemented by article supply via inter-library loan, is unsustainable in the current economic climate and does not represent best value across the two institutions. It is likely that the strength of the local holdings will gradually be eroded as high inflation and static material budgets reduce current subscriptions to a common core.

Alternative models would inevitably place greater

Figure 2 Use of Bibliographic Databases by Engineers

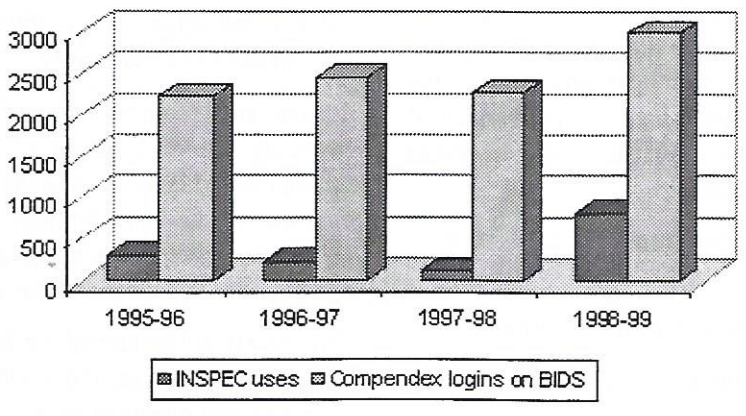


Figure 3 Engineering Titles not held within LAMDA

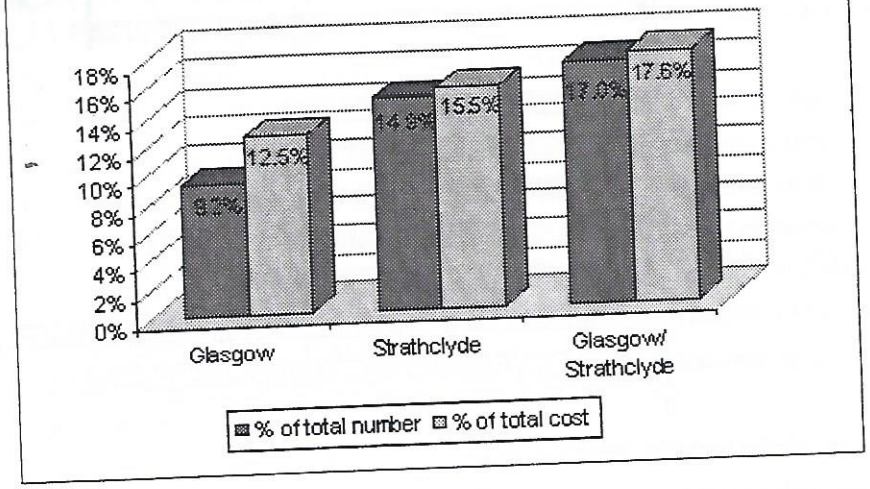
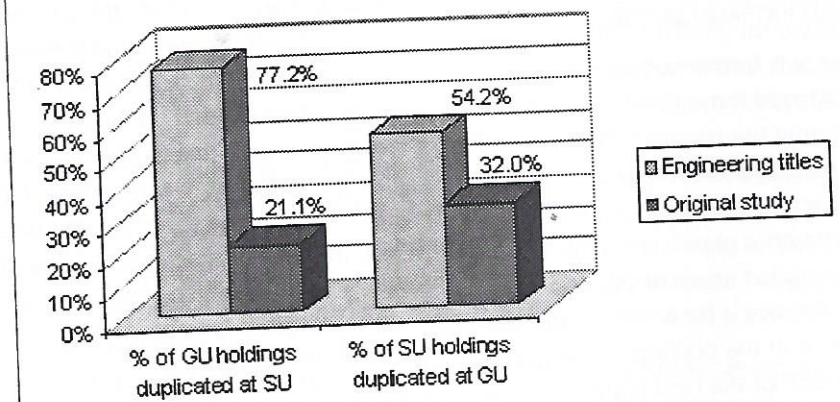


Figure 4 Overlap between Journal Holdings at Glasgow and Strathclyde



emphasis on access and would require greater use of electronic modes of information discovery and delivery. In this context, it is encouraging that engineering researchers at Glasgow and Strathclyde are on the whole receptive to this approach, although concerns have been expressed on issues such as budget management and training.

Proposals for a revised service

Proposals for a revised information service in support of engineering research are now being prepared using techniques drawn from soft systems analysis. These techniques enable us to organise and interpret the complex results of the evaluation outlined above, to assess the strategic fit between the existing model of information provision and the needs, expectations and preferences of users, and to determine how the existing model might be revised to achieve an improved fit.

The proposals are as yet in draft form, but are likely to include:

- improved reciprocal access and delivery mechanisms;
- use of commercial document delivery and current awareness services;
- the development of a Web interface tailored to the needs of researchers;
- rationalisation of holdings and reallocation of duplicated resources.

3.4 Account

The penultimate stage of the method is to evaluate the revised service model in terms of cost and value, with activity-based costing being the recommended approach . Again, at the detailed level, Buchanan and Gibb's methodology is overly complex for the purposes of GAELS and does not adequately address the service-based, user-centred nature of the project.

Consequently some revision of the method has been necessary. In addition to value for money, quality of service (performance, sustainability, fit with user needs, etc.) will be a key consideration, as will the practical and political feasibility of the proposals in the context of operational constraints and the wider institution.

This process will be carried out by means of a series of demonstrator services. These will enable costs to be measured and quality of service assessed in a controlled

environment, and will test the feasibility of the proposals under real operational conditions.

3.5 Synthesise

Finally, the results and recommendations of the audit will be reported to project stakeholders and synthesised to provide strategic direction and guidelines for the development and future management of collaborative information services. The audit methodology is designed to ensure that proposals for a revised service can readily be integrated with existing systems and services at both a strategic and an operational level. However, the collaborative nature of the GAELS project will undoubtedly present a particular challenge in this respect.

The impact of the synthesis process is likely to be wide-ranging, with direct consequences for areas as diverse as collection development policy, library Web policy and the role of the subject librarian, and possible implications for information strategy at both library and university level.

4. CONCLUDING REMARKS

Hopefully, this paper has demonstrated how the information audit, and in particular the universal audit methodology proposed by Buchanan and Gibb, can be used as a framework for service evaluation and review within the academic library sector to ensure an integrated strategic approach.

The framework is robust and flexible enough to lend coherence and direction to a wide-ranging service review and is readily applicable to the university library sector. However, the tools and techniques recommended within the framework are less readily applicable, particularly where the service under review forms part of a larger organisation.

Although some of the tools and techniques may be unfamiliar to many practitioners in the sector, most have been applied to libraries and information services and there is a growing body of literature and practical experience to support their use. Nevertheless, the amount of effort and commitment required to prepare and carry out an audit should not be underestimated.

The framework provides a consistent methodological approach to the complexities of service review, addressing not just the evaluation process but also preparation and implementation. The identification of organisational barriers to implementation at a relatively early stage in the review is particularly beneficial.

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The EQUINOX project and the development of performance indicators for the electronic library

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This paper considers the need for performance measures and indicators for electronic library services which could then be used in conjunction with indicators for traditional library services to provide information for library management. The paper addresses this topic with reference to the EQUINOX Project, a European Commission Telematics for Libraries project, which aims to develop such a set of indicators together with an integrated quality management and performance measurement software tool for use in the increasingly common hybrid library environment.

INTRODUCTION

EQUINOX is a two-year project running from November 1998 to November 2000. It is part funded by the European Commission through the Fourth Framework of the Telematics for Libraries Programme. The Project addresses the Call Topic "development and testing of tools for management of library services in an electronic environment", being concerned with the provision of tools for the management of collections of electronic materials. The Project Consortium consists of the seven partners listed below:

Co-ordinator:

CERLIM, Manchester Metropolitan University, United Kingdom

Library partners:

Dublin City University, Ireland

Universitäts- und Landesbibliothek, Münster, Germany

Universitat Oberta de Catalunya, Spain

Stockholm University Library, Sweden

Technical partners:

National Microelectronics Applications Centre Ltd, Ireland

Fretwell Downing Informatics Ltd, United Kingdom.

The aim of the EQUINOX project is to address the needs of all libraries to develop and utilise performance measures for the new networked electronic environment, alongside traditional measures, and to operate these within a framework of quality management. The Project aim will be achieved through a number of objectives, which are:

1. to develop an integrated software tool which will assist librarians to manage the increasingly hybrid library in an effective and efficient manner;
2. to develop a standard set of performance indicators and to move towards international agreement on the set;
3. to identify datasets for data input streams to EQUINOX;
4. to provide software which will encourage all library managers to introduce an appropriate level of quality management, without the constraints of ISO 9000;
5. to validate and test the pre-production prototype system in a number of libraries;
6. to undertake large-scale demonstration trials in libraries across Europe;
7. to undertake dissemination of the approach and model across Europe.

The EQUINOX project <http://equinox.dcu.ie/> takes place against a background of intense activity to design, implement and exploit electronic library services, and also rapidly growing interest in the use of management tools, especially those which enable library managers to examine the performance of their services and the value for money they represent. The Project builds on the results of four completed European Commission Telematics for Libraries projects in the area of decision support systems development. The projects were DECIMAL, DECIDE, EQLIPSE and MINSTREL, and details of these projects can be accessed through the CAMILE Web site <http://www.staff.dmu.ac.uk/~camile/>. CAMILE was a European Commission Concerted Action designed to encourage the co-ordinated dissemination of the results of the four projects throughout the European library community via a Web site, discussion list and series of workshops.

PERFORMANCE INDICATORS FOR THE ELECTRONIC LIBRARY

Many libraries are now "hybrid", that is they provide a mix of traditional paper-based services and also new electronic services. Existing sets of performance measures and indicators, for example ISO 11620 (ISO, 1998), PROLIB-PI (Ward et al, 1995) and the IFLA Handbook (Poll et al, 1996), tend to include measures mainly for traditional library services. There is therefore a pressing need for a set of performance indicators that cover the new electronic services that are becoming an increasingly important part of many libraries' collections. Used alongside the performance indicators for traditional services the new set

will enable library managers to gather information on all their library's services.

An initial set of performance indicators for electronic services was developed during the first stage of the EQUINOX project. The traditional performance indicator set used in the EQLIPSE project (Brophy et al, 1997), which was primarily based on ISO 11620, was analysed to identify similar or equivalent indicators for electronic services. Recent published work in this field was also studied with the *MIEL Report* (Brophy and Wynne, 1997) and *Assessing the networked environment* (McClure and Lopata, 1996) proving to be particularly useful as they suggest some possible performance indicators for the electronic environment. Using this information and following discussions between the Project partners the initial set was devised.

The set of performance indicators for electronic services will be developed over the two years of the Project. This will ensure that the set remains relevant as changes occur in this rapidly developing field. The set will also be disseminated widely, through publications, workshops, the EQUINOX Web site <http://equinox.dcu.ie/ > and discussions with others working in this area. It is hoped that the result will be a set of performance indicators that have international agreement and also address the needs of practitioners.

The performance indicator set for electronic library services, as it stands at this stage of the Project (month ten), is given below. The set is also available on the Project Web site. The methodologies for the data collection are currently being tested and will be made available on the Web site once they have been verified.

1. Percentage of target population reached by electronic library services

(This indicator is a sub-set of ISO 11620 B.2.1.1)

Datasets:

A. Number of persons who have used electronic library services during a specified time period.

B. Total number of persons in target population.

2. Number of log-ins to electronic library services per capita per month

Datasets:

A. Number of log-ins to electronic library services per month.

B. Total number of persons in target population.

3. Number of remote log-ins to electronic library services per capita per month

Datasets:

A. Number of remote log-ins to electronic library services per month.

B. Total number of persons in target population.

4. Number of electronic documents delivered per capita per month

Datasets:

A. Number of documents delivered by each electronic library service per month.

B. Total number of persons in the target population.

5. Cost per log-in per electronic library service

Datasets:

A. Subscription cost of each electronic library service.

B. Number of log-ins to each electronic library service.

6. Cost per electronic document delivered per electronic library service

Datasets:

A. Cost of each electronic library service.

B. Number of documents delivered by each electronic library service.

7. Reference enquiries submitted electronically per capita per month

Datasets:

A. Number of reference enquiries submitted electronically per month.

B. Total number of persons in the target population.

8. Library computer workstation use rate

(This indicator is a sub-set of ISO 11620 B.2.9.2: Facilities use rate.)

Datasets:

A. Number of library computer workstations in use.

B. Total number of library computer workstations provided.

9. Number of library computer workstations per capita

Datasets:

A. Number of library computer workstations.

B. Total number of persons in the target population.

10. Library computer workstation hours used per capita per month

Datasets:

A. Number of hours the library is open per month.

B. No. of library computer workstations available.

C. Number of library computer workstations in use.

D. Total number of library computer workstations provided.

E. Total number of persons in the target population.

11. Rejected log-ins as a percentage of total log-ins

Datasets:

A. Number of rejected log-ins to electronic library services by members of the target population.

B. Number of attempted log-ins to electronic library services by members of the target population.

12. Automated systems availability

(This indicator is ISO 11620 B.2.9.4.)

Datasets:

A. Total number of hours of scheduled uptime.

B. Total number of hours of unscheduled downtime or performance below a specified standard.

13. Mean waiting time for access to library computer workstations

Datasets:

A. Total waiting time for access to a sample of library computer workstations at specified times.

B. Total number of users observed.

14. IT expenditure as a percentage of total library expenditure

Datasets:

A. Total library expenditure excluding staff costs.

B. Total library IT expenditure.

THE EQUINOX SOFTWARE

The EQUINOX project will develop a software tool to assist library managers with the collection, storage, manipulation and exploitation of management information. The software will be an integrated Quality Management System (QMS) and Performance Measurement System (PMS) software application tool for traditional and electronic library services. The software is currently under development with the prototype ready for testing in September 1999. After initial testing the prototype will be sent out to the Project library partners, who will each test it themselves and also send it to a number of test site libraries in their country. This will generate feedback from a wide variety of libraries to ensure that the software will be user friendly and adaptable to different library requirements.

The PMS will be ISO 11620 compliant for traditional library services and will include the performance indicator set developed during the EQLIPSE project (Brophy et al, 1997). The PMS will also include the performance indicator set developed during the EQUINOX project for electronic library services. It will be possible for user libraries to add local indicators to either set, thus ensuring that the PMS is not too restrictive or unresponsive to local needs. Also where possible the PMS will have interfaces between constituent service applications to facilitate the quantitative data collection required for the indicators. Qualitative data for each indicator could be collected by user survey and the software will facilitate the storage of textual information with links to related performance indicators.

The key user requirements for the PMS are considered to be:

- core performance indicators and constituent datasets pre-installed
- flexibility in all facets of the system
- the ability to select relevant indicators
- the ability to add new indicators
- the ability to drill down to a greater level of detail
- the automatic extraction of data when possible
- time series analysis
- help functions embedded into the system
- user friendliness.

The QMS application will be built on quality management principles, but tailored to the specific situation of libraries the vast majority of which, as found during the EQLIPSE project (Brophy et al 1997), do not wish to implement the full ISO 9000 standard with its requirements for externally audited compliance to the full standard. The QMS will provide assistance to managers operating in non-ISO 9000 quality management frameworks by providing software which encourages the introduction of an appropriate level of quality management, without the constraints of ISO 9000. Other quality management frameworks were investigated and the European Foundation for Quality Management Business Excellence Model <http://www.efqm.org/> was felt to provide a more appropriate framework for libraries.

The EQUINOX QMS will provide a structure within which the library manager can operate. The key features of the structure will be:

- a clear statement of the mission and scope of the service offered
- leading to clear statements of the service levels which are offered for every major service
- linked to performance indicators for each of these services
- and presentations of the changes in customer satisfaction over time
- together with similar measures of staff satisfaction
- and measures of the external impacts of the

organisation, both through benchmarking and through direct surveys of stakeholders' views.

CONCLUSION

The development of performance indicators for electronic library services is a new area in the field of library performance measurement. When addressing this new area a number of factors needs to be taken into account. The rapid developments in technology mean that any indicators may soon become obsolete and any set will need to be constantly updated to remain relevant. The newness of the technology also means that there is as yet little agreed terminology and definitions of terms. This question of definitions should ideally be agreed at an international level to maximise the applicability of performance indicator sets irrespective of their country of origin. Different libraries are at very different levels of implementation of electronic services, and it is at present difficult to produce one core set that is appropriate for all types of libraries. The EQUINOX project is attempting to address all these issues, and it is hoped that by the end of the Project significant progress will have been made towards international agreement on a set of performance indicators for electronic library services. Through the development of the EQUINOX software the Project will also have produced a tool for quality management and performance measurement that will assist managers working in a hybrid library environment.

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The use of constructivist inquiry in measuring the value and impact of electronic information resources

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This paper is based on a PhD study into the impact of access to electronic information resources on learning opportunities for young people. The paper will discuss the methodology used to produce findings grounded in the research data. By examining the concepts of a constructivist methodology it will highlight the iterative nature of the research. This will be followed by a description of how individual, in-depth case studies which provide rich pictures of information behaviour in a particular context can be transferred to other contexts and used by practitioners to inform their own situation. Although this paper concentrates on issues relating to the methodology, practical examples taken from the PhD study will be used to illustrate the research process in this context.

INTRODUCTION: THE ROLE OF INFORMATION IN THE PROVISION OF LEARNING OPPORTUNITIES

This research aimed to answer the question: "does access to electronic information resources have a role in breaking down barriers to learning encountered by young people? If so, then how, why, and under what circumstances, to provide a clear understanding of the use of these resources." (Pickard, 1998, p. 1) This, in turn, would suggest a guide to good practice in the management and provision of these learning resources at a local level, and to inform practice at a global level. The first stage of this research was to establish the role of information in the provision of learning opportunities to the young people at the heart of the study.

> "Children in schools frequently engage in information seeking tasks either for personal interest or as part of some instructional activity. It is a process that usually involves such activities as locating, selecting, organizing, interpreting, synthesizing, and communicating relevant information. In most instances, an assumed and implicit purpose of the information seeking is that some form of learning will occur. But it is not necessarily the case." (Oliver and Oliver, 1997, p. 519)

Individuals all have their own, unique innate skeletal framework upon which all future learning builds; it is at the level of information input that the external environment can begin to impact, positively or negatively, upon that framework (Bedford, 1993). The process of actively relating new information to previously retained information and building new cognitive structures is termed *knowledge construction* (Prawat, 1992). Practitioners and researchers differ greatly in their opinion of the effect of information presentation on learning; there is the belief that "media are mere vehicles that deliver instruction but do not influence student achievement any more than a truck that delivers our groceries causes changes in our nutrition" (Clarke, 1989, p. 445). However, research has indicated that learning and cognitive development are intricately linked to opportunities to process and interact with relevant information and the medium used to deliver this information may well have an impact on these opportunities (Borgman et al, 1995; Hiltz, 1993; Kozma, 1991; and Yang, 1997). "Learning is an active, constructive, cumulative, and goal-orientated process" (Shuell, 1990, p. 532). In order for this process to take place the learner must be provided with high quality, accessible, and relevant information. Learning is a combination of several, inseparable aspects: the outcome (what is learned), the process (how it is learned), the situation (where it is learned), and the internal characteristics of the learner (genetic and historical influences) (Schmeck, 1988). Learning opportunities then have "to do with the manner in which we arrange the environment such that the child can reach higher or more abstract ground from which to reflect" (Bruner, 1985, p. 24). This is Bruner's description of the Vygotskian theory of the *zone of proximal development*, the distance between actual development and the level of potential development determined by collaboration with external factors (Vygotsky, 1978). Information is one of those external factors, as is the provision and management of the resources used to deliver that information. Information needs to be both intellectually and physically accessible to the learner if the quality and quantity of learning opportunities are to be maximized. This research aimed to identify the impact of electronic information resources in increasing these opportunities and the value of such resources in the learning environment. Any approach to managing electronic resources should take into account the value and impact of these resources on learning opportunities and how the nature of provision can influence and impact on this relationship.

A CONSTRUCTIVIST INQUIRY

In order to measure the value and impact of a service research needs to be carried out over time and in depth; snapshot data cannot provide the level of detail necessary for this type of "how" and "why" question (Yin, 1989). This research was concerned with "multiple, holistic,

competing, and often conflictual realities" (Lincoln, 1990, p. 73). Constructivist case studies based on qualitative data were used to provide rich pictures of individuals and their interaction with processes, social relationships and organisational frameworks. This research aimed to inform policy making and contribute to locally situated, and global, knowledge. In order to achieve these aims a constructivist approach, focusing on 16, in-depth, holistic case studies (Yin, 1984), was used to produce "rich pictures". Each case was situated in the "bounded system" (Smith, 1979) of one of four school sites used in the study and all were embedded in the macro-environment of national policies. These are holistic cases because the focus was on the individual young people; to call them embedded would have implied that each school was studied in equal detail to each individual participant (Yin, 1989). This was not the design of the research, the school acted only as the bounded system for the participant. As well as individual rich pictures, cross-case analysis of all 16 case studies identified issues that were generic across the research study, such as motivation, purpose, peer interaction and application of information.

The Sample

In order to locate a relatively small sample of great diversity, four schools were identified as contrasting sites. The four secondary schools were selected to provide maximum variation of the bounded system: a grant maintained school, an inner-city school, a rural school and a school in a suburban town. The 16 cases were then identified using the participant from a previous "dry-run" as the initial case; she was not included in the final 16 in order to reduce any bias, she did however highlight the first criteria for the next sample. Gender, access to electronic information (in school, at home and in the community), educational level, social location and family background were some of the issues raised which then became the criteria used during all subsequent selections of the final sample. Each participant was unique in one or more of these factors. The aim of using maximum variation was based on the principle that any shared themes which emerge become all the more significant for having come from a small, heterogeneous sample (Patton, 1987). This allowed the research to focus, quite deliberately, on unique cases, which could provide valuable insight into specific instances (Simons, 1996). "Snowball sampling" was used "to locate subsequent participants or settings very different from the first" (Maykut and Morehouse, 1994, p. 57).

Designing the Inquiry

The emergent design of a constructivist inquiry does not allow for a detailed plan before the research begins; "the research design must therefore be 'played by ear'; it must unfold, cascade, roll, emerge" (Lincoln and Guba, 1985, p. 203). However, a model was developed to guide and focus the study whilst not inhibiting the iterative nature of the research. One of the methods of data collection in this study was the use of preformatted diaries for participants to record their information behaviour. Within one month of the fieldwork it was beginning to become apparent that it was not a successful way of obtaining detailed data from the young people in the study. It was necessary to have some account of behaviour at times when the researcher could not be present but diaries clearly were not going to provide for this. The participants themselves then began to influence the method of data collection: at the request of the researcher they decided on the best method from their point of view. They knew that some form of detailed record of their use of electronic resources was needed and they selected a method of recording this that worked well for them. One participant created a database using Microsoft Access and described each search in great detail, others kept a Microsoft Word document that they moved in and out of whilst carrying out searches on electronic resources, and still more created detailed handwritten diaries in blank notebooks. All 16 provided detailed accounts at the end of the study. Using devices of their own creation added to their sense of ownership of the study and encouraged a remarkably high level of involvement.

A second example of emergent design was the location of the observations; initially it was thought too intrusive for the researcher to carry out observations in the homes of the participants, and this was not a part of the original design. Some weeks into the study the researcher was being invited into the homes of some of the participants as well as public library visits and, on one occasion, to a night class attended by one participant. This approach to the design of data collection ensured that all possible avenues were explored and minimised the risk of "losing" data due to inappropriate tools. Data collection finally consisted of: various types of participant diaries, fully transcribed in-depth interviews, multi-site observations, document analysis, discussions with other interested parties and the researcher's log.

These data were then analysed using a qualitative data analysis software package: QSR NUD.IST. Although the individual cases relied heavily on researcher interpretation, the cross-case analysis relied most heavily on the software package to identify cross-case themes. The findings of the research appear as individual, holistic case studies described in the boundedness of their own school and placed in the context of national policies. These findings have relevance at the local level in which they were created and were used to inform local practice. They also have implications for more global application.

APPLYING CONSTRUCTIVIST CASE STUDIES TO GLOBAL CONTEXTS

This research has produced rich pictures in specific locations under specific conditions. Can these then lead to wider claims concerning processes, social relationships and

organisational features (Deem, 1998)? The question being: how then does the researcher demonstrate successfully that a relativist, subjective, constructivist inquiry should be believed, and more importantly trusted and applied? Or put another way: "How can we be sure that an 'earthy', 'undeniable', 'serendipitous' finding is not, in fact, *wrong*?" (Miles, 1979, p. 590).

If traditional criteria of rigor cannot, and indeed, should not be applied to constructivism, then how do we demonstrate that the research is trustworthy? A "discussion of validity signals a retreat to that pre-existing vocabulary originally designed to lend precision to one arena of dialogue and too casually assumed to be adequate for another" (Wolcott, 1990). We must then rely on criteria devised to establish the *trustworthiness* of the research.

One example of such an "earthy" and "undeniable" finding was that teaching staff appeared to have a very casual attitude towards the ease of use of Internet and CD-ROM resources. This tends to be based more on their lack of experience of the resources than on actual knowledge. This resulted in information skills training in these areas having a very low profile in the learning environment. It also gave students high expectations of what they should be able to access and the ease with which it could be accessed. An "undeniable" result of this was that students assumed that responsibility for failure must inevitably be theirs. This had considerable impact on their confidence levels as each search failure was assimilated to previous knowledge of other episodes of search failure. Once failure became a *typical* episode students frequently predefined the outcome before any attempt to conduct a search.

The *credibility* of this finding was established over one year in the field; the participants became very familiar with the researcher and a strong rapport was built. During the year the researcher met participants regularly throughout term time and during school holidays; e-mails were exchanged on a weekly basis in many cases and diaries were examined at six points during the fieldwork and then collected for full analysis at the end of one year. Triangulation of the six methods used to study participants and their contexts, along with confirmation from a variety of sources, has established the credibility of this finding. One example of this was Bill, a participant who had a high level of physical access to electronic resources and was a frequent user of the technology. In our first in-depth interview Bill said that searching the Internet was "easy" and "quick"; subsequent observations which persisted over the entire year revealed that he frequently spent over an hour on one search without retrieving any relevant information. Entries in his diary show that he regularly referred to himself as "stupid" after failing to locate information on the Internet and Encarta. He assumed he should *know* how to find what he was looking for.

Discussions with teachers confirmed that they also assumed locating information on the Internet was "quick" and "easy". However, it also revealed that they had little or no experience of the medium upon which to base this assumption. After the finding had been interpreted it was related back to Bill, and to the other participants, to confirm that it was indeed an accurate account of what had been demonstrated in the data. Bill agreed with the interpretation and asked how, if he was not to blame for the failure, could he improve his research skills? A member check of this type is used "to check with the actors who are the subject of my focus how they interpret my interpretations. But, at the same time, to not marginalize my own voice" (Dervin, 1997, p. 31). In this study all participants were encouraged to review their own case studies and contribute to discussions on cross-case themes.

There is then the question of how subjective this finding was, how can researcher bias be limited when we accept that "each researcher is embedded in prejudices, values and specific cognitive frameworks"? (Lazar, 1998, p. l7). From the constructivist standpoint the answer to this question is, quite honestly, we cannot. The alternative is to ensure that the results, accepted as the subjective knowledge of the researcher, can be traced back to the raw data of the research, that they are not merely a product of the "observer's worldview, disciplinary assumptions, theoretical proclivities and research interests" (Charmaz, 1995, p. 32). This finding can be traced back to the raw data by the use of the audit trail. "The point at issue seems to be more whether the data jumped or were pushed – emerging versus forcing" (Melia, 1997, p. 33). The audit trail confirms that the data has led the researcher to this finding. All files, from original field notes and full interview transcriptions, through the analysis files within QSR NUD.IST to the final case studies are available and traceable.

A "case study is the study of the particularity and complexity of a single case, coming to understand its activity within important circumstances" (Stake, 1995, p. xi). Individual, in-depth case studies can inform policy and practice by providing detailed descriptions of processes, social relations and organisational features which can then be transferred to other settings based on the *fittingness* of those findings to the new context (Erlandson et al, 1993). Fittingness is defined as the degree of congruence between sending and receiving contexts where context A is the sender. That is, in the context witnessed and described by the research study, context B is the receiver, that is, any context to which the reader of the research is attempting to apply the finding (Lincoln and Guba, 1985). One case study cannot establish new theory, just as one experiment cannot establish new theory. What it can do is to provide rich pictures of individual cases, incorporating all of the elements of that study which may be present on

a global level (Hamel et al, 1993). In constructivist inquiry, the goal is to allow for *transferability* of the findings rather than wholesale generalisation of those findings. There are elements of this study that will apply at a national or global level; the rapid increase in availability of electronic resources to young people is not exclusive to these cases. The huge task of managing the provision and use of these resources is not exclusive to the practitioners in these cases, and the skills needed by both practitioners and users to maximise the potential learning opportunities offered by these resources is not exclusive to these cases. All have local, national and global implications; the richness of the case study and the generic nature of many of the issues combine to provide for transferable and applicable research. The fact that such enormous assumptions are made relating to the use of these resources has, in these cases, led to considerable misuse in terms of the efficiency of the resource. Any practitioner attempting to make use of this finding need only examine their own context to establish if indeed it does apply to them.

CONCLUSION

This paper has described some elements of a constructivist inquiry and tried to establish the use of this approach in measuring the value and impact of a service.

What it can do is to allow policy makers and those who apply those policies to see the consequences of that policy implementation, both intentional and unintentional (Deem, 1998). It is not only the findings of the constructivist inquiry which can be transferred to other settings; the approach itself can inform practice. Recent trends in social research call for locally based research focusing on specific events in specific surroundings which can inform local practice (Holland et al, 1995; Weiner, 1994). Practitioners are in an ideal situation to carry out in-depth constructivist inquiries within their own institutions, focusing on their own issues and processes. Measuring the value and impact of a service is an area of research that is wholly suited to constructivist inquiry, allowing practitioners and researchers to study cases in great depth and detail, gaining insight that would be impossible using a quantitative methodology.

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SEMINAR PAPERS

National Libraries

The British Library's staff attitude survey

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The use of staff attitude and opinion surveys is growing. All kinds of organisations now use them, recognising that employees play an important role in creating competitive advantage and that it is therefore necessary to understand how they feel about the organisation and what is stopping them from delivering their best performance.

This paper discusses the British Library's staff attitude survey, sent annually to all 2,500 members of staff. The survey monitors perceptions of working life in the British Library and whether the culture is changing in line with Library aims. The author outlines how the survey is carried out and the resources required. She considers how the survey has been received by staff, what actions have resulted, and how it benefits the Library.

BACKGROUND

The British Library was created in 1973 as the national library of the United Kingdom. It has a collection of more than 150 million items representing every age of written civilisation, every area of human thought and every written language and its holdings take many forms: books, serials, manuscripts, newspapers, maps, music, philatelic material and sound recordings.

In recent years the Library has made some major achievements. It has coped with expanding collection use. It has embraced the digital age with a range of initiatives that include providing free Internet access to the OPAC. It has successfully moved nearly all London operations into the new St Pancras building. Change is a constant fact of life and this will continue into the next millennium as we, in common with all other libraries and information services, constantly seek to rise to the challenges posed by growing user expectations, increasingly rapid technological development, the demands of the 24-hour global society and constant financial pressures.

To ensure that the British Library is able to meet these challenges, the Management Committee and Directors instigated a change programme in 1998 which aims, by 2001, to create a Library:

- focused on its users;
- showing high staff morale;
- with clear priorities and good leadership throughout;
- with funding for investment;
- operating through flexible teams which are adaptive and responsive to change.

The major part of the change programme is focused on the culture of the Library, currently showing some features typical of many old-style Civil Service organisations: solid rather than dynamic, with lots of rules and regulations, low staff turnover and a hierarchical style of management. The desired culture is one where people are encouraged to show more initiative, accept greater responsibility for the services they provide and develop more understanding of users' needs; where there is greater emphasis on target-setting, coaching and staff development; and where team working is more important, internal barriers are broken down and internal communication is improved.

By the early part of 1999, work was under way on a number of initiatives aimed at developing this new culture. All those involved recognised the importance of measuring progress so that we would know whether these initiatives were successfully moving the Library towards its desired goals. The annual staff attitude survey was seen as the best way to measure this progress.

STAFF ATTITUDE SURVEYS

The use of staff attitude and opinion surveys is growing amongst all kinds and sizes of organisation. This is due to a number of factors: increasing acknowledgement of the role of employees in creating competitive advantage; growing interest in standards such as Investors in People and the UK Business Excellence Model, which require organisations to seek employee views; and the general trend towards measuring more aspects of organisational performance.

An organisation's ability to manage its human resources is strongly influenced by how well it understand the needs, motives and desires of the people it employs – what is important to them and what is stopping them from delivering their best performance. A staff survey gives the organisation a way of tapping into employee views, and of tracking trends on a year-by-year basis.

HOW THE BRITISH LIBRARY SURVEY IS CARRIED OUT

The British Library has been running an annual staff attitude survey since 1997. The first survey was undertaken as part of a development programme for the Library's senior managers, and was intended to identify leadership issues within the organisation. More or less the same survey was rerun in 1998. For 1999 the purpose and scope of the survey has been enlarged, with the new survey aiming to

> *"monitor staff perceptions of working life in the British Library and, over time, to measure how the culture is changing in line with the aims of BL2001 [the culture change programme]".*

The survey is carried out annually by means of a paper questionnaire issued to every member of staff. The questionnaire is completely anonymous, though staff are asked to answer a number of demographic questions indicating their directorate, grade, location and, for the first time this year, length of service. A pre-addressed return envelope is supplied to make sending in the questionnaire as easy and anonymous as possible.

A three-week period is allowed for return of the questionnaires, and the survey is advertised both in advance, and during the return period. This year for example, we will have:

- issued a message to all staff from the Chief Executive explaining why and how the survey instrument is being changed;
- published articles in the staff magazine describing the change process and some of the actions taken as a result of previous surveys;
- put reminders of the survey into the Office Notice, plus a contact point for anyone who has not received a questionnaire. These messages have been duplicated on e-mail.

THE QUESTIONNAIRE

The 1997 questionnaire consisted of a series of 50 statements set in a random order. Staff were asked to indicate whether they *Strongly Agreed, Somewhat Agreed, Somewhat Disagreed* or *Strongly Disagreed* with each statement. A *Not Applicable* choice was also available. The questionnaire has been radically changed for 1999 as the original presented a number of problems.

1. Able to measure culture change

To ensure that the new questionnaire will measure key trends, we identified a number of internal stakeholders, people with a special interest in monitoring particular changes within the organisation, and used their help in devising the questions to make sure they will yield actionable data.

2. Clear wording

Comments added to forms in previous years indicate that staff have not always been sure how to interpret some of the statements. In addition some of the statements posed two questions in one, eg. *"I know who the Library's users are and what they need"*.

In revising the questionnaire we have tried hard to weed out ambiguous wording. As part of the review process, drafts have been circulated to Library directors, Trade Union Side and internal stakeholders for comment, and staff focus groups have tested the questionnaire and provided feedback.

3. Structured order

The working group felt that the random order of the 50 statements that made up the original questionnaire was not helpful, and in some cases compounded the ambiguous wording by providing no context clues.

The new survey follows a much more structured approach, with the 77 question statements divided into eight categories:

- Your job
- Performance management
- Management style
- Perceptions of the organisation
- Service to users
- Communication
- Equal opportunities
- Your comments.

We believe that this approach will help to channel people's thoughts towards a particular area of their working experience, thus making it easier for them to complete the survey. It also makes the questionnaire look more eye-catching, which should have a positive influence on response rates.

4. Focused questions

Some of the statements in the old survey asked for a broad view of the organisation; these were difficult for many staff to answer and also made it difficult to identify areas for improvement. The new questions are much more focused so that action areas can be pinpointed. For example, the vague statement *"The managers I come into contact with have good people management skills"* has been replaced by a range of questions focusing people on their immediate line manager and including:

- *"My line manager and I communicate effectively with each other"*
- *"My line manager treats me with fairness and respect"*
- *"My line manager is interested in my views and ideas"*
- *"My line manager regularly gives me feedback on my performance"*.

5. Space for comments

Many staff were critical that the original questionnaire offered no space for comments. Although free text makes data more time-consuming to enter and analyse and therefore adds to survey costs, giving people the opportunity to add comments reinforces the message that the Library is interested in what they have to say. However, we have *limited* the amount of free text space available to encourage people to make their comments succinctly.

6. Broader picture of working life

The original questionnaire did not cover many areas of working life, and redesigning it has given us the opportunity to put this right. Looking at other organisations' questionnaires provided lots of ideas for areas that could be covered, and consultation with directors, Trade Union Side and staff has acted as a check that key areas have now been included. Thus, the new questionnaire asks for views on a whole range of issues that are of concern to staff including equal opportunities, harassment at work, physical working conditions, terms and benefits and job security.

ANALYSIS AND DISSEMINATION OF RESULTS

The British Library had no input into the analysis of the 1997 survey, but in 1998 the analysis was taken over by our internal Management Information section. Once the general reports have been disseminated, more detailed analyses are done at the request of individual directors, though the survey team reserves the right to refuse to carry out any analysis which compromises individual anonymity.

A summary of results is disseminated to staff via our Office Notice and staff magazine. Beyond that, some directors have chosen to produce further summaries for their own staff.

A number of improvements are planned for the analysis of the 1999 survey:

1. Investigation of key driver analysis

We will investigate the possibility of using key driver analysis to highlight the areas most in need of attention and allow actions to be targeted more effectively. However, we do not have the statistical expertise to do this level of analysis in-house, and would need to employ outside help.

2. Benchmarking

For the majority of statements in the new questionnaire, we have moved to a five-box rating scale. This is to enable us to benchmark our scores, using a benchmarking service provided by the consultants who have helped to draft the questionnaire. A number of benchmarking questions have been included for this purpose.

3. Presentation of the results

We plan to make more use of graphs in presenting the results of the 1999 survey, and possibly to develop some kind of standard format which can be customised to help directorates present their own key results to staff.

MAKING THE DECISION TO CHANGE THE QUESTIONNAIRE

The inadequacies of the survey instrument were recognised back in May 1999, but two key issues were highlighted by senior management when radical change was suggested.

1. Loss of continuity

Directors expressed a concern that changing the questionnaire would mean losing historical continuity of data. This is a major issue for any survey. Is it better to maintain the status quo but risk the survey becoming anachronistic, or to sacrifice direct numerical comparisons in order to keep up with organisational changes?

A number of arguments swung the British Library case in favour of early change. 1. We had only two years' worth of historical data; 2. recent directorate mergers had already compromised direct comparison with 1998 data; and 3. the existing questionnaire was unable to provide the required measure of culture change.

Having made radical changes this year, the Library needs to use substantially the same questionnaire for the next few years in order to establish historical trends, while recognising that the survey will continue to evolve to reflect organisational changes. This will be a delicate balancing act for the future.

2. Adverse reaction from staff

Directors expressed concern that staff might react adversely to an announcement that the survey would not take place in July 1999 as expected, interpreting the delay as management seeking to avoid potentially critical comments.

The working group promised that the survey would be delayed only until September and to ensure that staff were informed about the change process and the reasons behind it. To this end we issued a detailed Office Notice to all staff and put a shorter, chattier article in the staff newsletter explaining the issues, telling staff that both directors and Trade Union Side were being asked to identify areas where there should be a degree of continuity between the old and new surveys and asking anyone who was interested to attend one of four staff focus groups to pilot the new questionnaire.

HOW THE SURVEY HAS BEEN RECEIVED BY STAFF

I have already mentioned some of the criticisms levelled at the 1997/98 questionnaire. At the same time, in spite of these inadequacies, many staff have been pleased at the opportunity to let those in charge of the Library know their views. The main reason for cynicism is that people do not believe anything will change as a result of what they say.

1. Response rates

The response rate is a major test of how people view the survey. In 1997 the response rate was 50%, rising to 59% in 1998. In 1998 considerable efforts went into ensuring that all staff actually received their questionnaire,

particularly in London where distribution was known to be a problem.

For 1999 we are hoping that the new questionnaire design, with its improved visual layout and wider range of issues covered, will persuade more staff to send in their views. We are also planning a number of activities to try to improve the response rate further:

- print the questionnaire on green paper to make it visually distinct;
- distribute the questionnaire to named individuals, not in a batch to sections;
- provide pre-printed return envelopes;
- raise the profile of the survey with a series of communications;
- advertise the survey when questionnaires are sent out and during the return period;
- talk to the directors of areas where response rates were low in 1998 and ask them to encourage their staff to take part.

2. Confidentiality

Some staff do worry that they will be personally identified, even though the questionnaire does not ask them to give their name.

A clear statement of confidentiality is printed on the front of the questionnaire stating that questionnaires will be:

- opened and input by external bureau staff;
- stored in a locked cabinet;
- shredded once the survey has been completed.

It also states that no combination of demographics will be used that could potentially identify individuals.

WHAT ACTIONS HAVE RESULTED

There is no point in asking staff for their views if nothing is done with the results. All those involved with, and writing about, staff surveys agree that it is crucial that employees see the results being acted upon. If nothing is done, staff become increasingly cynical and unwilling to take part in future surveys.

On a corporate level, the results of the first British Library survey were used to inform the senior management development programme, and subsequently had an influence in the development of the BL2001 culture change programme.

Individual directorates have also taken independent action. Within the Bibliographic Services and Document Supply directorate for example, a series of focus groups was held after the 1997 survey to delve further into low-scoring areas. Staff from a range of sections and grades were involved and a lot of information was gathered, leading to the setting up of implementation groups to work on different issues. Subsequent actions have included the introduction of a formal briefing system in London, the production of a leaflet on how to move jobs within the Library, annual visits by the director to every work team (no mean achievement in a directorate employing over 900 staff on three sites) and a booklet for staff explaining the work of different sections.

RESOURCES REQUIRED

The resources required to run the survey fall into three areas: staff time, direct costs and equipment. In a normal year staff are required to communicate about the survey, organise and manage the production and distribution of the questionnaires, analyse the survey and produce and distribute the final reports. Direct costs include printing the questionnaire and return envelopes, and the cost of bureau staff to input the data. Suitable PC equipment is required for setting up the survey database and for the subsequent interrogation of the data.

This year the British Library has used extra staff time to undertake desk research and visits, work with consultants on revising the questionnaire, organise and take part in focus groups, liaise with stakeholders and set up the survey database and query options. Additional costs have included the use of consultancy help in drafting the questionnaire, and travel expenses.

BENEFITS TO THE LIBRARY

We now have a survey instrument which we believe will allow us to measure culture change successfully. A lot of effort has gone into ensuring that the 1999 questionnaire reflects the culture that the Library is seeking to achieve, and tracking trends on a year-by-year basis will show where progress is being made and where further action is still needed. The resources put into the survey demonstrate to staff that the Library is taking culture change seriously, is going about it in a systematic way and is keen for everyone to participate.

Staff are a key resource in any organisation, and it is important that they should feel that the organisation is interested in their views and, most important of all, that action will be taken as a result. Running an annual staff attitude survey is one way of demonstrating to staff that what they think does matter, even in an organisation as large as the British Library.

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SEMINAR PAPERS

Public Libraries

The value of public libraries and the impact of change: LOGOPLUS and beyond

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The paper seeks to demonstrate that qualitative data, often labelled anecdotal, can be used to mirror and demonstrate the change process impacting on individual public library users and staff, and should be included in the library and information service performance measures toolkit alongside the traditional and more familiar quantitative measures. It presents and uses the findings of the recently completed LOGOPLUS project, and then goes beyond LOGOPLUS to present and review the most recent experience from County Durham.

The paper suggests that the rapid change currently experienced in County Durham is the result of a combination of political and library sector decision making and decision taking and that, as a result, even greater changes face the sector, not least in establishing an effective and meaningful set of performance indicators and measures.

INTRODUCTION

The paper will review the change process which has impacted on local authority departments in recent years. It will use some of the findings of the recently completed LOGOPLUS project, and will then go beyond LOGOPLUS to review the most recent experience from County Durham. The paper will seek to demonstrate that qualitative data, often labelled anecdotal, can be used to mirror and demonstrate the change process impacting on individual public library users and staff, and should be included in the library and information service performance measures toolkit alongside the traditional and more familiar quantitative measures.

THE LOGOPLUS PROJECT

LOGOPLUS was a 14-month project funded by the British Library Research and Innovation Centre to investigate the impact of LOcal GOvernment re-organisation on Public Library Users and Staff (Parker et al, 1998, 1998, 1999).

Following the Local Government Review Commission for England's final recommendations, well established library authorities were broken up. The aim of this review was to create more responsive unitary authorities by removing one tier of bureaucracy and ostensibly bringing the Government closer to the community. Some counties, such as Cleveland, were completely disaggregrated into smaller units, whilst others, such as County Durham, retained a two-tier system. Overall, the new unitary authorities were smaller than the previous ones.

AIMS OF LOGOPLUS

The main aim of the project was to determine to what extent the move to unitary authorities delivered the promised seamless transition of services to public library users and staff. Nine local authorities participated in the project. Additional aims of the project were:

- to examine the services offered to the public by the large public library and information services to see if the new smaller authorities would suffer from lack of economies of scale;
- to see if small would perhaps become beautiful;
- to look at the effects on the public library users and staff of these changes.

FIELDWORK STEPS

The qualitative methodology developed for the project was presented in detail at the second Performance Measurement Conference in 1997 (Parker et al, 1998).

The project advisory group was made up of senior representatives from participating authorities who were involved at all stages of the project's design and execution, and with whom regular meetings were held. The fieldwork steps are summarised below in order to underpin the project findings and contextualise the work described from County Durham.

1. The project advisory group identified the central areas of change which impacted on all their authorities – these were loosely described as politics, integration, finance, co-operation, communication and staffing.
2. Interviews were carried out with public library staff at all levels in the participating authorities; the areas of change were characterised by the individuals interviewed. Staff were also asked for their perception of the impact of the changes on users.
3. Local changes were used as the basis for a questionnaire sent to a random sample of the general public in the participating authorities – questions sought to establish user expectations of the library service and the reality of the service they received.
4. Brief face-to-face interviews were carried out with public library users to extend and enrich the data obtained by questionnaire.

5. Gap analysis was undertaken to establish the impact of various aspects of change on users in the different authorities.
6. A shortened version of the fieldwork process was repeated nine months later to review the on-going impact of change and to determine new changes which may have occurred.
7. Additional meetings with the project advisory group took place to present and review the project conclusions.

SUCCESS FACTORS

Using the outcomes of the fieldwork, success factors in implementing Local Government Reorganisation were identified, enabling the research team to state that the transition through change is seamless, and that "small is beautiful if and when:

- councillors are committed to the provision of excellent services for their communities;
- councillors are enthusiastic about the new authority;
- there exists a strong sense of identity in the new authority;
- there is sufficient transitional finance;
- there are service managers who are effective leaders;
- there is effective communication;
- small authorities define their services in terms of their mission and their goals;
- there is multi-skilling, supported by appropriate training;
- there are flatter management structures in the smaller authorities which give staff more flexibility;
- there are supportive users".

These success factors can alert managers to issues which should be included in their strategies for implementing future changes in local government. The fieldwork for LOGOPLUS finished in July 1998. The library authority in County Durham has continued a dialogue with their general public on the impact of past changes and to seek their views on future change. They have used the same user-based approach as LOGOPLUS, where service assessment criteria are derived from user-generated data and used as the basis of future service design. The on-going aim of this approach is to ensure seamlessness from the user point of view through on-going changes taking place within the organisation.

THE VALUE OF PUBLIC LIBRARIES AND THE IMPACT OF CHANGE IN COUNTY DURHAM

In County Durham the Local Government Reorganisation resulted in a retention of 80% of the two-tier system in a single authority, Durham County, and the creation of a new unitary authority based on Darlington. The main reasons for this decision were that there was a far stronger sense of belonging and identity within County Durham than with other traditional counties, the existing County Council's services were already decentralised and spread through the towns and villages, and the structure saved money. The focus of the decision seemed to reflect the value-for-money framework required by the legislation.

The review process heralded the setting of a challenging change agenda in the strategic development and provision of local authority services. The main driver of this agenda is the social inclusion and community development strategy of central government which is itself driven by global changes in economies and in the way people work and communicate. This has resulted in a requirement on local authorities to provide greater access for citizens, not only to the services provided but also to the planning and decision-making processes that identify and address local needs and local priorities. For the public library and information service sector this presents an unparalleled opportunity to re-position and restate the strategic importance of the sector in realising the modernising objectives.

The Library and Information Commission stated in the report to Government, *Building the new library network*, that local libraries will be a key element in constructing ". . . the skills base necessary for economic prosperity in the global information society and will enable more of its citizens to function fully in the emerging electronic environment" (Library and Information Commission, 1998). This captures the essence of the innovation in the change and the perceived value of public libraries to the nation. The challenge is translating it into action at every level of local government including within the public library sector.

CORPORATE RESPONSES

Since the LOGOPLUS study there has been an on-going corporate discussion within County Durham directly addressing the strategic issues of modernising and of economic and community development, with the emphasis being on public access, consultation and partnerships. The Department of Arts, Libraries and Museums has made a significant contribution to these discussions and also to the development of action plans, and has taken a responsibility for leading and progressing some of the agreed actions. The opportunity has provided the Department with a vehicle to begin to redefine and restate the values and role of the public library and information service to the peoples and communities of County Durham and to the County Council.

Over the past year there has been a number of specific corporate actions that have involved the library and information service at the core of the strategic decision-

making process in addressing the change agenda. These actions include:

Public Information Policy – the Arts, Libraries and Museums Department is corporately responsible for establishing a public information policy and chairing the public information working group.

County Council Contact Points – this initiative goes to the heart of the local access issue and utilises 11 key libraries as local access points to all County Council departments enabling residents to make enquiries locally.

County Council Web site – the Department has a corporate responsibility to manage and develop the County Council Web site which it launched early in 1998.

Public Access to the Internet – in April 1999 all 43 service points were linked to the Internet and now provide free public access. In terms of information communications technology it begins to address the social inclusion issues which not only relate to new technology but also to access to information and lifelong learning opportunities.

Community Development – senior members from within the Department are seen as key players on the corporate working groups and address issues such as Best Value, Community Development, and Crime and Community Safety in the development of appropriate policies and strategies.

Other Activity – this includes the extension of the Open Learning provision to ten libraries in partnership with the local community colleges. There are currently over 1,000 adult open learners. There has also been investment into the development of the first super low floor mobile library in the country.

Community Consultation – one of the pieces of work that has been undertaken is the establishment of an annual programme of community surveys which are aimed at identifying the potential for improving the services provided and also the community use of the resources. The following are the results of the first year's survey work which covers the 12-month period following the LOGOPLUS fieldwork.

Community Consultation Survey

Four communities were chosen that represented the average-size small community and that were geographically spread. Within each community, postal surveys were sent to 300 adults equally split between users and non-users and male and female residents. Over 200 school children between the ages of 6 and 11 were also surveyed in their schools, again within each community.

Survey Results

The response rate to the adult survey was encouraging with a range of 32% to 47% return on the postal survey. Taking into account the 200 children completing the survey in each community, the consultation exercise has involved between 8% and 16% of the residents in the four communities. This level of involvement, and the comments made, has been taken as an indication of the willingness of residents to become involved in the development of local services, and it also shows the importance of service providers encouraging and supporting communities in that involvement. The results from the adult survey are presented in this paper.

Quantitative Results

Four of the important issues emerging from the survey are presented and illustrate the use of background quantitative data for community and service development.

1. *Physical well being.* The results show that one in six of the respondents consider that they have a disability. The staff perception at the local service point was of a negligible level of disability amongst users. The information provides opportunity to address service provision in terms of success, content and staff training in a more informed framework.
2. *Employment status.* The survey results indicate that retirement status covers a wider age range than may be the traditional perception. This highlights the importance of profiling the community and recognising trends at an early stage if service provision and delivery is to be relevant.
3. *Travel.* The majority of residents use cars to travel, and one in five use public transport. This suggests that expectations such as ease of access are as much a quality issue as customer care, product and building environment.
4. *Leisure time.* Of particular interest was the level of interest in local history. Since the survey was undertaken a local history group has been set up in one of the communities.

Qualitative Results

Four themes were addressed by the qualitative data: access issues, service likes and dislikes, barriers to use and service improvements. The responses were very similar in all four communities and provided an agenda for action that, when used with the quantitative information, reflect the kind of service development and provision identified in the corporate objectives referred to earlier.

1. Access

The improvements identified by the survey highlight the difference between the needs as expressed by the local communities and the level of resources available to meet those needs. The information does enable the Department to manage the resources in a way that addresses local priorities which were ranked as follows (Figure 1):

Figure 1 Local Priorities

	Community 1	Community 2	Community 3	Community 4
a	automatic doors	improved opening hours	improved opening hours	improved opening hours
b	free transport	broader choice of reading material	broader choice of reading material	broader choice of reading material
c	improved opening hours	publicity about services	improvement of building	improvement of building
d	improved signing - internal	improved stock - reference	improved car parking	pedestrian crossing
e	provision of seating	access to new technology	improved stock - reference	wheelchair access
f	better shelving	improved signing - external	access to new technology	improved stock - reference

2. Service Likes and Dislikes

Common responses were generated across the four communities. The following are in priority order and identify what the residents ***like*** about the service:

a) staff – welcoming, friendly and helpful

b) pleasant atmosphere

c) convenient location

d) wide selection of material.

Dislikes in priority order for all four communities were:

a) choice – limited selection of books

b) opening hours not convenient

c) building too small

d) lack of parking facilities.

3. Barriers to Use

These were the issues identified by the respondents that stopped or deterred them from using the service. It is obvious that there is a challenge to service providers to deliver the service in such a way that it promotes local access. In priority order the barriers were (Figure 2):

4. Service Improvements

All four communities were unanimous in their suggestions for improving the quality and content of the current provision, which were:

a) improved choice of bookstock

b) improved opening hours

c) introduction of new services and facilities, eg. public access terminals; audio/video services; magazines; photocopiers/fax facilities

d) information about services

e) no improvement required

f) improved reference/homework support services.

PROGRESS

There are two other practical elements of the actual survey methods that were a very important part of the action plan and gave to the communities concerned an indication of the commitment to improve both the service provision and community consultation.

Firstly, as the survey was being undertaken, a group of staff from a range of service points and disciplines visited

Figure 2 Barriers to Use

	Community 1	Community 2	Community 3	Community 4
a	lack of personal time	opening hours	opening hours	lack of personal time
b	poor health	lack of personal time time	lack of personal time time	opening hours
c	limited stock	lack of information on services	other interest	limited stock
d	other interest	limited stock	poor location	other interest
e	use other libraries	staff attitude	limited stock	use other libraries
f		poor health	library too small	poor location

the libraries concerned and, with the local librarian, drew up a list of things that could be undertaken without waiting for the results of the survey, including internal appearance, services offered and external appearance: action such as moving stock around, upgrading signing, redecorating children's areas.

Secondly, results were fed back into the community on a "this is what you said – this is what we have done" exhibition.

FUTURE CHANGE

The survey has succeeded in beginning to address some of the changes referred to earlier. However, the nature of change currently, within a local authority context, is that it is constant, it is demanding, it is businesslike, it requires vision and energy. Any of the following will impact on the public library and information service and challenge its value:

- Local Authorities – modernising agenda, political impact
- Regionalisation – potential structural implications
- Best Value – challenge, compete, compare, consult
- Cultural Consortia – new partners
- Sectoral Change – Museums, Libraries and Archives Council
- ICT and New Technology – lifelong learning
- Local Democracy – people power
- Community Development – social inclusion
- Audit Commission – inspection and performance measurement
- Further Local Government Reorganisation – has this one worked?

Within County Durham the value of the public library and information service is being redefined in terms of its contribution to the corporate objectives and the role it has in realising the modernising agenda. Clearly, as a direct service provider with a presence in most communities, the opportunities are there for the library service to re-state its value in a changing environment.

CONCLUSIONS

LOGOPLUS looked at the impact of change and began to probe the value of the public library as seen by its users. The more recent work in County Durham has extended and deepened the LOGOPLUS findings in the specific context of one of the participating authorities.

The work used largely *qualitative* research methods. One of its outcomes was the identification of a set of user-based quality criteria which formed the basis for the success factors needed to ensure a seamless transition through change, and that "small is beautiful" in providing public library services. The dilemma now emerging from this work is to use these success factors as service performance measures and to make the qualitative aspects of performance measurement meaningful at the corporate and individual levels.

The research team believes that the LOGOPLUS project and the ensuing work in County Durham has already made a contribution in respect of both increasing understanding of the impact of change at the level of the individual and the organisation, and to the development of a generic methodology for monitoring change which must incorporate qualitative and quantitative measures. Much exciting work lies ahead.

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Self-assessment and continuous improvement for public library services

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There is pressure across the whole public sector to demonstrate value for money, meet users' expectations, attain high standards and show that efficient management is in place. Library and information services in local authorities, in common with those in higher education institutions, colleges and schools, are therefore influenced by the imperative to quality management. Assessment of achievement has, nevertheless, been subjective with little evidence of external validation, and take-up of total quality techniques has been low in both public and academic libraries. The British Library Research and Innovation Centre therefore funded a two-year study to examine the potential of self-assessment techniques and to progress quality management implementation. Of three approaches considered, using an action research methodology, the European Foundation for Quality Management Business Excellence model appeared best to meet the needs of public library services and to be most suited to adaptation for use by other types of library and information services. A Library and Information Sector Improvement Model (LISIM) was developed, which offers a supportive framework, guidance and autonomy to library managers in approaching self assessment as part of quality management implementation.

CONTEXT

The past decade has seen a sea change in managing UK public sector library and information services, within a context which is common across all public services. External inspections and the emphasis on planning and audits, by both the Audit Commission and the Department for Culture, Media and Sport (DCMS), are an increasing factor in public sector management and have not lessened since the Labour government came into office. While the rhetoric has shifted from an emphasis on a market-led private sector philosophy, pressures continue to be felt in the following areas:

- demonstrating value for money;
- meeting users' expectations, both for the individual and the community;
- attaining higher standards of quality and professionalism;
- identifying appropriate evidence that efficient and effective management practices are in place.

Government Initiatives

These pressures have both originated in and contributed to the genesis of various central government initiatives. These have included Compulsory Competitive Tendering (CCT) and the market testing of public sector services, the Citizen's Charter (introduced by John Major) and now the Labour government's Best Value. This latter initiative was introduced as an alternative to CCT but has proved somewhat illusory in terms of specific guidelines. Hence, local authorities, in common with other public services, are needing to exploit tried and tested management tools and techniques which support best practice in benchmarking services, to guide them in proving the impact and worth of their services.

Many local authorities, government agencies and the National Health Service have therefore been amongst public sector services to adopt "total quality" and marketing-oriented approaches as a cornerstone of their management principles and practices (Kinnell and MacDougall, 1997). Higher education institutions and schools have also been faced with the need to develop quality management as a consequence of more stringent assessment procedures.

Various initiatives and approaches have been developed in the push for quality, for example standards specifications, service level agreements – and assessments/inspection. The Higher Education Funding Councils and the Office for Standards in Education now regularly inspect universities and schools to monitor teaching quality, and the research assessment exercise being undertaken every four/five years monitors university research performance. Library and information services in universities, colleges and schools, as well as those funded by local authorities are therefore also affected by quality management imperatives. Whilst this paper is concerned with public libraries, the context for all library services within the public sector is equally rigorous and the issues which are considered here have relevance for them, too.

Self-Assessment Models in the Public Sector

Despite the rhetoric of improved services, with increased emphasis on evidence-based management, the assessment of achievements has tended to be subjective. Unless an organisation was prepared to apply for awards and accolades such as Charter Mark or ISO 9000 there has been no external validation. The Malcolm Baldrige National Quality Award and the European Quality Award have been an attempt to increase the competitiveness of

the private sector (Easton, 1995). The emphasis in the public sector on aligning management with the best commercial practice has therefore been influential in encouraging managers also to provide external evidence for achievement. The process is that of answering the questions:

- what are we doing?
- why are we doing it?
- how will we get there?
- how will we know when we get there?

This is generally required in models of good practice and enables public sector organisations to discover what they have achieved in relation to what they – and their stakeholders – set out to achieve, as well as to identify the difference between "perception" and "fact" in relation to their results. In other words, the difference between what they *think* they have achieved and what they *know* they have achieved.

The European Foundation for Quality Management (EFQM) public sector guidelines and the ability (from 1995) of public sector organisations to apply for the European Quality Award have provided further incentives, in line with the Henderson Report proposals (Henderson, 1992). Work by the Cabinet Office which resulted in specific guidelines for central government agencies has also been influential in setting expectations for UK public sector managers.

PUBLIC LIBRARY SERVICES AND QUALITY MANAGEMENT

While organisations such as the Benefits Agency, National Health Service, the Post Office and the Inland Revenue have been using self-assessment techniques to determine and demonstrate success in achieving total quality, there has been a low level of take-up by library and information services. This is the case for both public libraries and academic libraries (Brockman, 1997). The reasons for this have been identified as:

- quality models are perceived to be commercially oriented;
- the language and concepts are not felt to embody public sector values;
- library and information services' professional and ethical issues need to be addressed.

Developing the Library and Information Sector Improvement Matrix and Model

Despite this poor record of implementing quality management, it has been recognised that there is a need to develop best practice in managing library and information services, in line with what is happening in both the commercial and public sectors. Libraries have needed to move forward in developing their management, especially the management of their planning processes, in line with the DCMS requirements for Annual Library Plans as part of a three-year strategic planning cycle.

In 1996, the British Library Research and Innovation Centre therefore funded a two-year study to examine the potential of self-assessment for public library services as a means of facilitating the take-up of quality management in the information sector. Earlier work at Loughborough and Sheffield Universities had shown that, whilst there was a need for quality management models to be implemented by public library managers, there was a lack of understanding by senior managements of the range of tools available to them and how these could be adapted to meet their needs (Milner et al, 1997).

From this work, three approaches were identified as having potential, which all shared several characteristics:

- they were applicable to the public sector;
- they stressed the importance of tackling human resource needs and customer satisfaction, both key issues for public libraries;
- they enabled library services to integrate any quality programmes already in place, initiatives such as:
  - Customer Satisfaction Surveys
  - Charter Mark
  - Investors in People
  - Quality Standards and Specifications.

The Models

Of the three self-assessment approaches to quality management selected for consideration the *EFQM Business Excellence Model* was highlighted at an early stage because it offered the most structured approach through its nine assessment criteria and 32 sub-criteria (Figure 1.1).

The Quality Framework (Fig 1.2) also offered a foundation for those who wanted to begin developing quality management in the public sector. It was argued (Stewart and Walsh, 1989) that public services operate within a context which requires special consideration, with emphasis needed on relationship building and service surroundings, as well as the core service to be delivered.

The Democratic Approach (Fig 1.3) offered a further understanding of quality management in the context of the modern welfare state, with an emphasis on the key ideological differences between the public and the private sectors. The main issue was identified as that of the public sector serving the interests of the community as a whole, as well as meeting the needs of individuals within the community.

The Research Project

Three local authorities were selected by the project team as case study demonstrator services, in order to test the

Figure 1.1 The European Quality Foundation Business Excellence Model (EFQM 1997)

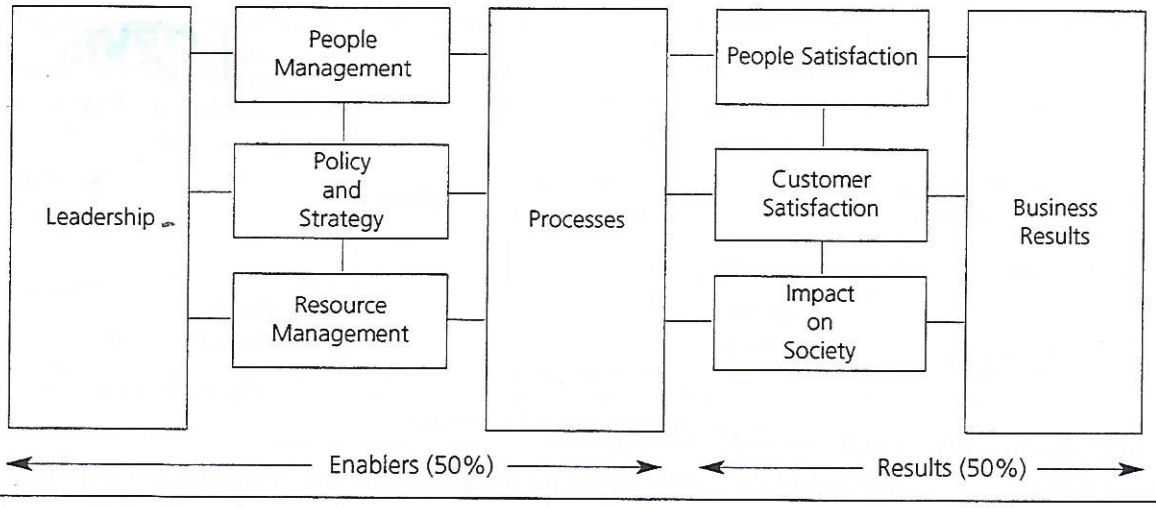


Figure 1.2 The Quality Framework (Stewart and Walsh, 1989)

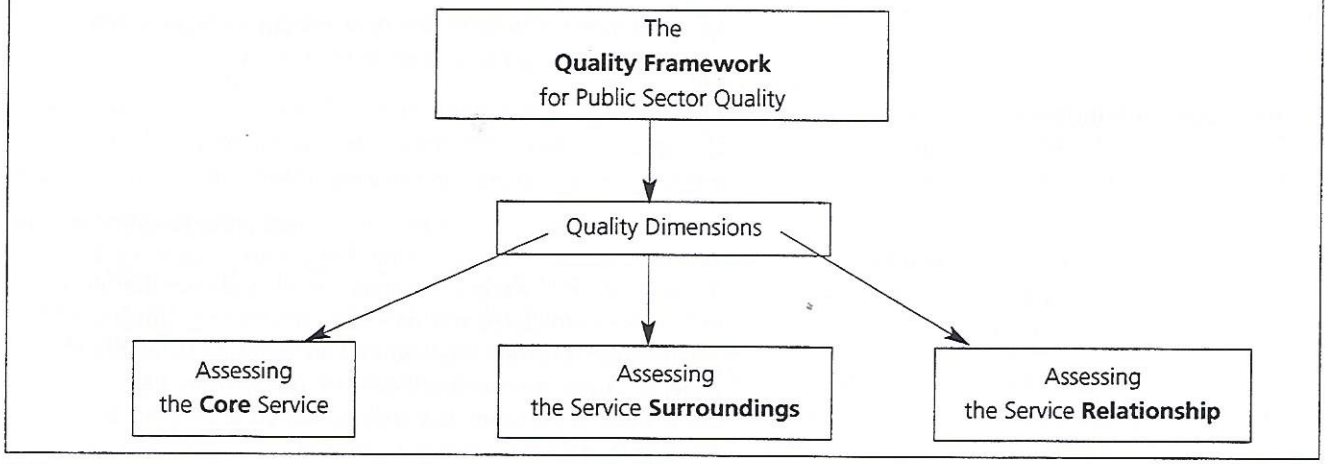
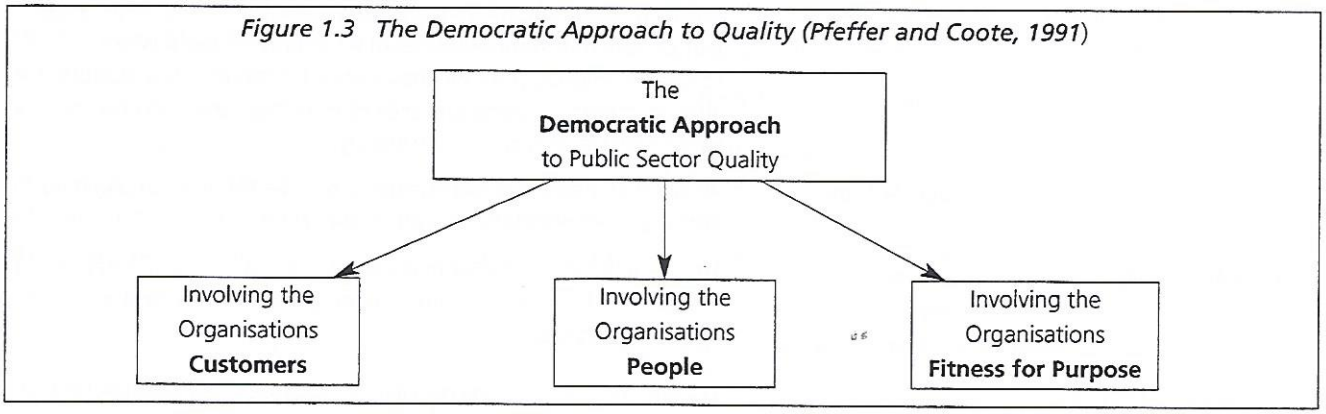


Figure 1.3 The Democratic Approach to Quality (Pfeffer and Coote, 1991)



applicability of each of the approaches. These were:

- a London Borough
- a Metropolitan County
- a Shire County.

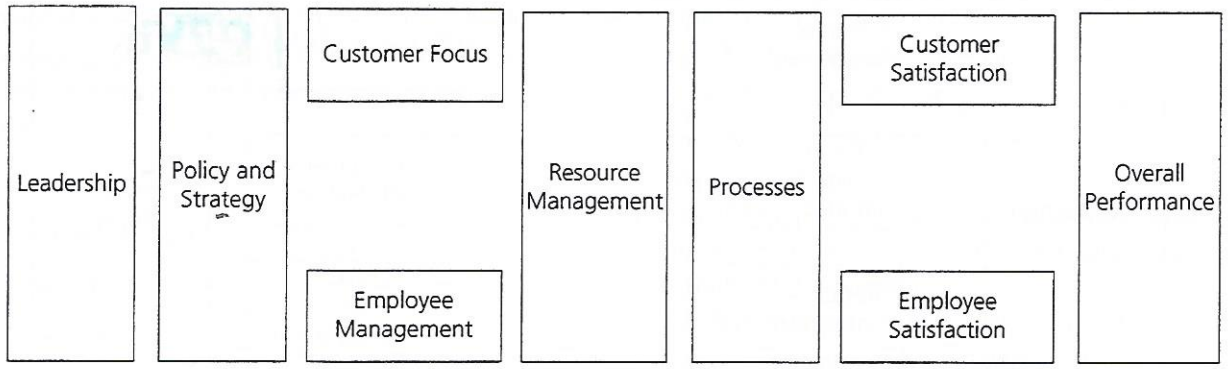
International contacts were also established with German and Swedish library authorities who tested some of the self-assessment tools and the draft self-assessment tool kit. A seminar was also run for international colleagues during the 1998 International Federation of Library and Information Associations and Institutions (IFLA) Conference in Amsterdam.

The project had two phases:

In Phase 1 a quality audit was undertaken in each of the local authority public library services. The planning, communication, review and assessment of quality initiatives were identified and assessed. Issues relating to customers, the management of people, stakeholder involvement and the planning and evaluation of service initiatives were then discussed in feedback sessions and a workshop was held. This provided further feedback and validation of the interim analysis.

In Phase 2 the quality model or models which the library services wished to use were identified through

Figure 2 Summary of the LISIM (Source: Demonstrator Service B)



Inherent Principles of the LISIM

General Principle:	Non-Prescriptive	Whilst the model presents criteria for assessment and offers examples of good practice, it does not prescribe the approach which the library service should undertake. It offers a broad spectrum of issues which might be considered; however, it is up to the library service in question to determine how relevant these are in the context of its own plans, policies and strategies.
Management Principles:	Consistency of Purpose	All plans, policies and strategies should be deployed in a structured and systematic way across the whole organisation and all its activities are co-ordinated and aligned to them.
	Continuous Improvement	Should be the focus of all work practices and procedures and should be embedded in the culture of the library service. Assessment measures should be aligned to goals, targets and objectives in order to facilitate a structured and systematic approach to continuous improvement. Excellent organisations are expected to provide evidence of year-on-year improvements in key results areas. Continuous improvement is also about using the review and assessment process to drive improvement.
	Benchmarking	Excellent organisations are expected to benchmark key result areas and be able to provide evidence of an improving trend when compared to good practice organisations. Excellent organisations are also expected to provide evidence of how they have used process benchmarking to drive improvements.
	Management by Fact	Relevant and accurate information should be the basis of planning and improvement decisions within the library service.
Human Factors:	Visible and Visionary Leadership	The commitment of senior management is vital to the success of self-assessment. They drive the planning and improvement activities of the organisation.
	Stakeholder Consideration	Meeting the needs and expectations of external stakeholders is inherent in the model. Instead of focusing inwards, the library service should be addressing the management of customer-facing services. The stakeholders of a library service are those people or organisations who have a stake in the service. "Stakeholders do more than simply use the library: they care about its success, they promote its activities, and they are lobbyists on its behalf" (Weingand, 1997, 58). These might include: staff, customers, councillors, council departments, funding councils, book suppliers, electronic information providers, library networks eg. EARL, JANET, SELPIG.
	Employee Development Involvement and Satisfaction	The delivery of quality library services is dependent upon motivated and committed employees. Therefore systems should be put in place to ensure that they are supported in their role.

collaborative working between the research team and senior managers. A process of detailed iteration was the principal method. At this stage the *core values* of the three approaches were introduced to the managers and they then identified those values which were a priority for their organisation. Their core values were:

- customer focus
- equity in service
- an open system
- public participation
- visible and visionary leadership
- employee development
- involvement and satisfaction
- continuous improvement
- management by fact
- partnership development
- consistency of purpose
- process management
- public responsibility
- stakeholder consideration.

A gap analysis of the fit of the demonstrator services against the models was then undertaken. This analysis formed the basis of the self-assessment model that was selected as the most appropriate to all the services. The model was then used by two of the demonstrator services (the third had organisational problems and was unable to complete the work) to undertake self-assessments. Finally, the model which emerged – The Library and Information Sector Improvement Model – was sent out for feedback and comments more widely in the LIS sector, in order to produce a toolkit and training pack that would achieve wide acceptance. A selection of academic and special librarians were asked to evaluate the model in terms of their organisations' quality management needs, as it was considered that the model had value for LIS in a range of contexts.

Issues that emerged were:

- defining quality in the public information sector (what does it mean?);
- defining the users of public sector information services (who are the customers?);
- providing adequate performance measures ("whose quality is it anyway?");
- ensuring long-term commitment when quick returns are required.

SELF-ASSESSMENT CRITERIA FOR LIBRARY AND INFORMATION SERVICES

The inherent management principles and core values of the Library and Information Sector Improvement Model (LISIM) are described first in this section and guidelines for understanding the criteria are provided (Figure 2).

The LISIM

The model was developed from iteration at various stages in the research process. LIS managers wanted the model to:

- offer a supportive framework or structure for understanding the often disparate management activities in library and information services;
- offer guidance on how LIS can improve their current management practices and achieve excellence, through a staged approach to continuous improvement;
- help to ensure that the LIS retain a high degree of autonomy in the way they approach self-assessment.

The Structure of the Criteria

Figure 3 shows that there is greater alignment with the EFQM Business Excellence model in most of the criteria than with either of the other two models examined as part of the research. However, customer focus and impact on

Figure 3 Links between the LISIM and the Three Assessment Approaches

LISIM Criteria	Business Excellence Model	The Quality Framework	The Democratic Approach
Leadership	4✓✓	✓	✓✓
Policy and Strategy	✓✓✓	✓✓	✓✓
Customer Focus	✓	✓✓✓	✓✓✓
Employee Management	✓✓✓	✓✓✓	✓✓
Resource Management	✓✓✓	✓✓	✓
Processes	✓✓✓	✓✓	✓✓
Customer Satisfaction	✓✓✓	✓✓	✓✓
Employee Satisfaction	✓✓✓	✓✓	✓✓
Impact on Society	✓	✓✓	✓✓
Overall Performance	✓✓✓	✓✓	✓✓

Key: ✓✓✓ strong overlap ✓✓ some overlap ✓ little overlap

society have been given greater emphasis in the model we developed for the library and information sector as this was felt to be lacking in the EFQM model. (This has been somewhat redressed now in the new EFQM Organisational Excellence model, which has been developed with the public sector in mind).

The criteria were derived from a detached analysis of the three approaches to quality management discussed above and it became clear that the EFQM Business Excellence Model had a great deal to offer the management and planning approaches of library and information services. Discussions showed also, though, that the criteria needed to be tailored and adapted to reflect the needs of public information and library service organisations, a requirement that the approaches outlined by Stewart and Walsh (1989) and Pfeffer and Coote (1991) could support. In particular, the demonstrator services were keen to develop criteria which would address their customer focus and identify mechanisms to evaluate their impact on society from the context of the LIS sector – for example, on literacy and educational attainment.

CONCLUSIONS: IMPLEMENTING SELF-ASSESSMENT IN THE LIS SECTOR

The key issue for public sector library and information services is not only implementing self-assessment – which can be achieved using the tailored LISIM model – but in sustaining self-assessment as part of mainstream planning activity. The following critical success factors for maintaining self-assessment, which the project has identified, are:

- regarding self-assessment not as a static or one-off project, but acknowledging the need for acting on the outcomes with improvement plans and cycles;
- aligning self-assessment with the planning structure of the library and information service: making it an integral part of the data gathering process;
- having marketing strategies in place to create an awareness of what the library can do thereby ensuring the support of key stakeholders for the process (Jones et al, 1998).

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Collecting detailed in-library usage data in the U.S. public libraries: the methodology, the results and the impact

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This paper reviews library performance measures in the United States. In-library use performance measures are often not collected by American libraries because of the difficulty of standardizing and counting such usage. This omission can be serious because research indicates that libraries serving lower-income and minority markets often have significant in-library usage but low material circulation, an easier-to collect performance measure often used for allocating library funding. This paper describes the methodology of a U.S. Department of Education-funded project coordinated by the principals of the GeoLib Program at Florida State University to standardize the collection of detailed in-library usage data through bar code scanning technology. The results demonstrate the need for library professionals to collect such data for optimizing library services to their users.

PERFORMANCE MEASUREMENT IN CONTEXT

Since the 1970s, the Public Library Association (PLA) has developed and promoted three planning processes:

1) A Planning Process for Public Libraries (Palmour et al, 1980)
2) the Public Library Development Program (PLDP), and
3) Planning For Results (Himmel and Wilson, 1998).

By the mid-1970s, Palmour et al's (1980) volume had earned the nickname "The Green Peril" due to its ambitious and labor-intensive mandate for community analysis. This process failed to catch on widely chiefly because it exhausted the energy and enthusiasm of planning participants before they actually got around to planning.

In the late 1980s, PLA sought to simplify the planning process and expedite its data imperatives with the Public Library Development Program (PLDP). It incorporated three sets of tools:

1) Planning and Role-Setting for Public Libraries (McClure et al, 1987)
2) Output Measures for Public Libraries (Van House et al, 1987)
3) Public Library Data Service Statistical Report (1998).

The tool by McClure et al (1987) encouraged libraries to abandon their efforts to be all things to all people, and instead to select and plan to perform well up to three of eight major roles. The tool written by Van House et al (1987) was a how-to manual for collecting comparable data on key service ratios, such as circulation per capita and reference completion rate.

Since 1988, the Public Library Data Service Statistical Report (1998) has provided annual library-by-library tabulations of key statistics (eg. staff in full-time equivalents, local income, total holdings) and "input" measures (eg. holdings per capita) as well as output measures (eg. per capita visits, circulation, and reference transactions). These data are contributed by virtually all U.S. public libraries serving populations of 100,000 and over and a sampling – including volunteers – of libraries serving smaller jurisdictions.

In the late 1990s, PLA refined and improved upon the PLDP approach with a new methodology developed by Himmel and Wilson (1998). Instead of eight roles (eg. Popular Materials Library, Formal Education Support Center, Preschoolers' Door to Learning), library planners are now encouraged to select from among 14 "service responses" (eg. Current Topics and Titles, Consumer Information, Local History and Genealogy). For each service response, their approach mandates collection of three types of statistics:

1) the total number of units of service provided (eg. total circulation for Current Topics and Titles, number of Consumer Information reference questions answered),
2) the number of unique individuals served (ie. how many different individuals borrowed materials rather than how many items were borrowed), and
3) outcomes as reported in user surveys.

In other words, their methodology mandates surveys of library users asking them what difference it made in their lives. Did they benefit from one of the library's service responses to their needs? One of the most conspicuous weaknesses of Himmel and Wilson's manual is that it offers practically no specific guidance about how to design or conduct such surveys.

Of the many output measures promoted by PLA since the 1980s, none has become more obsolete than in-library use of materials. The manual by Van House et al (1987) provides some guidance for conducting user surveys to collect user-specific data about in-library use of materials. But the more strongly recommended approach was simply

a reshelving count of materials removed from shelves, file cabinets, or other storage units by users and left on library tables, book trucks, and the like.

Today, the development of myriad electronic means of accessing data has made the reshelving strategy for counting in-library use obsolete. It is no longer relevant to restrict the concept of in-library use to physical materials. In most libraries these days, users may not need to borrow books or ask reference questions because they learn what they want to know from the Internet – from a page on the World Wide Web or an e-mail message – or from querying a CD-ROM database.

Indeed, counting Internet (particularly Web) usage via public libraries has been likened to chasing smoke with a butterfly net or trying to nail jelly to a wall. For example, Internet use via public libraries may be both incoming and outgoing. Many public libraries not only provide computers from which users may access the infinite resources on the World Wide Web, but also maintain their own servers, for which they develop and maintain their own unique databases. Also, Internet use via the library may occur both on-site and remotely. More and more libraries do not require that users physically visit library facilities to use the Internet, particularly commercial databases for which the library purchases licenses.

Trying to track Internet use in both directions and regardless of location also raises profound questions about the unit of measurement. Most library activities that are counted have fairly obvious units. For example, every item that is cataloged separately is usually counted separately when checked out. For the Internet, there is not yet a consensus on which of the countable units are most readily available and most meaningful. A similar excess of options exists for counting CD-ROM and other locally mounted databases.

While the issues around measuring electronic access to information have been persistent and frustrating ones, the effort required to address them is being made. Doubtless, some resolution of these issues – particularly the unit of measurement – will be forthcoming in the near future.

While technology's impact on measuring electronic information access has drawn widespread attention, few researchers have explored technology's promise as a tool that might enable other, more detailed types of in-library use measures that actually occur within the confines of a physical library's walls. Besides helping themselves to materials that must be later reshelved by staff, library users also serve themselves in reference collections, read periodicals, make photocopies, use study carrels and meeting rooms (for non-library meetings), and meet with others informally at the library. The conventional reshelving count method of measuring in-library use is unlikely to capture data on any of these uses without assistance from technology.

A REVIEW OF IN-LIBRARY USE AND BEHAVIOR RESEARCH

Reviewing the scant research about in-library use/behavior in public libraries is like trying to select a cellular phone company. Each one offers disparate and diverse options such as methodologies – is it table-top, colored dots, questionnaire, observation, or survey; users – did they browse, reference, copy or catalog; were they young, old, black, white, educated, employed, unemployed; or materials and services, are these fiction, non-fiction, print, non-print?

Studies of actual in-library use behavior in public libraries are few because of several reasons. First, it is often difficult to conduct because of a lack of a reliable and efficient methodology. Second, libraries traditionally rely on circulation statistics to portray library use. Thirdly, confidentiality regarding a person's actual use of the library is a long-held tradition by library professionals. Yet, despite these difficulties, most library professionals agree that present-day public library statistics are not crediting librarians with a vast amount of service provided to the public. And, of course, there are always those materials and services that can only be used within the library walls and therefore must be counted in-library if counted at all.

Just as McDonald's would not count only the hamburgers sold through the drive-in, and not count those consumed in the restaurant, neither can public librarians count only book circulation, and not the services and materials "consumed" in the library! It is simple and clear that much of the activity in the public library is simply not recorded in circulation or reference statistics.

While most in-library use/behavior research is conducted in single site in academic libraries (probably in an attempt to weed out high-priced unused journals and serials), some important in-library research has been conducted in public libraries. All of those research papers illustrate the need to develop in-library use/behavior data collection methodologies and employ them regularly and nationwide. Table 1 summarizes some important studies and their findings, conducted over the last three decades.

Several major conclusions can be derived from a review of these studies. First, when all library use is measured, in-library use of services and materials is the largest of all library uses. Second, knowing the popularity of certain library activities helps one design library facilities to better accommodate library behavior, such as wider aisles for browsing of leisure materials or larger tables and private rooms for homework and meeting friends. Thirdly, demographics of library users play a major role in materials selected and desired. Consequently, it is important to know what user group a library outlet serves. The current study for this paper was based on collecting more detailed in-library usage data for specific racial and ethnic library markets.

Table 1 In-library Use or Library Behaviour Research

Name/Date	Methodology	In-Library Uses	Type/Material	Other Findings
Bundy 1968	User interview Adult users	43% browsed 22% reference 19% catalog	Circulation and reference most frequent	30% study own materials, bring child, meet friends
Lange 1984	Telephone (random) survey (543) adults, 18+	79% browsed 71% ask Q 66% exhibits 61% research	57% of all use was in-library 38% circ	Fewer than 20% of behaviors tied to circ and ref Q
Watkins 1987	Questionnaire 64 responses Nonprint/Print Main facility	46% nonprint users used print in-library 56% browsed	Nonprint primarily video; print, books/ mags	Nonprint use because it is 'free', why not same for print?
Rubin 1986	Table-top Questionnaire Observation 6 libraries All ages users	68% used nonfiction males – nonfic females – fiction	54% of all use in-library and spent half hr or more, majority spent less	Questionnaire recommended Unemployed disproportionately large
Kim and Little 1987	Questionnaire 7 libraries 7600 responses	Top 3 in-library activities, check out books, browse, catalog	Over 50% of all use, in-library	Browsing explains reason for library use: recreational-browse the most vs. for hobbies, or work
Illinois State Library 1990	Survey 45 public libraries	School-age-YA: homework; Adults 30+: leisure and work	55% of adult women choose leisure reading, same % men – work related	Average library user 37 yr old woman who borrows 5.1 books
Koontz 1990	Survey 99 libraries	Reference and program attendance		In library markets 50%+ minority, in-library use higher
Koontz and Summers 1992	Survey 10 libraries	Reference and Program attendance		In library market over 50% minority, in-library use higher, inputs lower
Koontz, Jue, Lance 1999	Tabletop Observation 104 libraries	Library Assistance, Behavior, Reference	75% In-Library-Material = Circ. Fiction, Technology most common topics	27% Juveniles Using Computer vs. 12% Adults Computer Usage 2nd most common ref. question

At present, most public librarians do not have complete information about the current use of their own library. Circulation, reference questions and user registrations are the primary library statistics collected. However, there is a growing need for all public agencies, including libraries, to be more accountable for public dollars, necessitating a better and more accurate counting of all types of library use. To begin addressing this need, this research team began a nationwide in-library use study in 1996.

U.S. DEPARTMENT OF EDUCATION/FLORIDA STATE UNIVERSITY IN-LIBRARY USE STUDY

The United States Department of Education provided this paper's authors with a three-year grant beginning in September 1996 that allowed the development of a methodology to collect detailed in-library use data. Our study encompassed 47 public library systems with over 100 public library branch market areas. For the reasons discussed above, the researchers chose to collect this data within libraries that served a large percentage of racial or ethnic minorities or a low income area. The racial or ethnic minority populations included African-Americans, American Indians, Asian-Americans, and Hispanics.

Participating library branches were provided with portable data collectors (PDCs) with a built-in bar code scanner. This allowed the researchers to pre-define in-library use data collection categories and answers through bar codes.

Scanning the bar code answers with the PDC meant instant digital capture of the data. Participating libraries were asked to collect one sample week per quarter for the 1998 calendar year. The collected data were then uploaded to a standard desktop computer and sent to the researchers either through a diskette or via e-mail.

The three categories of in-library use collected by this study are in-library material usage, library assistance, and library user activities. For in-library material use, the librarians collected data on the format (eg. magazine, book), language, type of material (eg. juvenile, adult), and classification (eg. Dewey Decimal, Library of Congress) for each item used within the library but not checked out. For library assistance, the librarians recorded the age of the library user, the subject of the question, and the approximate time to answer the question for every instance of user assistance during the sampling period. For library user activities, the librarians recorded on an hourly basis the approximate library location, user activity, computer software being used (if applicable), and the age of all library users during the same sampling period each quarter.

There are several advantages to using a PDC to collect the data. First, the PDC was programmed to error-check the data being scanned. This PDC programming, in combination with pre-defined bar code answers and a 50-page instruction manual written by the researchers, helped to ensure data accuracy and consistency. Second, because the data were captured digitally at their source, it made data analysis and entry much easier for the researchers. Finally, use of the PDC allowed the in-library use data to be captured on a "per transaction basis." This allowed for a much finer level of detail for the collected data than is possible using the aggregated data collection methods that have been used in the past.

Before discussing the results, it is important to note the limitations of the data from our study. First, the data are not representative of all public libraries in the U.S., let alone internationally. We purposefully chose library outlets that served racial or ethnic minorities as well as those that may serve low income areas. Second, although the results can be cast in terms such as "public library outlets serving primarily Hispanics," in fact individuals of many races, ethnicity, and income level probably contributed to the collected in-library use data for all library outlets in our study. We did not attempt to identify actual users during this study. Finally, there is no attempt in this paper to take into account the existing library resources within the participating libraries. For instance, what would be the extent of computer usage in libraries if just the library outlets with computers were considered? A baseline survey of library resources for all participating library outlets was conducted by the researchers so answers to those types of question will be analyzed in a future paper.

STUDY RESULTS

Because all the data analyses are not completed at the time of this Conference, only the highlights and major trends of the study will be reported here. A complete and more detailed discussion of the results is available on the Internet at <http://www.geolib.org>.

Highlights and trends from the study include:

1) different user groups use the libraries differently. For instance, library outlets serving Asian-Americans were found to have a higher percentage of users sitting alone or just socializing than libraries serving other groups in this study. Genealogy research occurred primarily in libraries serving African-American populations in our study;

2) demographic differences in society are found in library users as well. For instance, the Hispanic populations using the public library tend to be younger than the other minority groups using the library. In the U.S., this trend is corroborated by the observation that the population growth rate of Hispanic youth is much higher than that for other racial or ethnic groups in our study;

3) computer usage is the highest user activity in public libraries for juveniles and young adults and represents approximately one-third of all in-library use among the libraries in our study;

4) Internet and e-mail represent the primary purposes for using the computer among all the user groups in this study;

5) library materials in the math and science subject area represent the non-fictional materials of highest in-library usage among juveniles but one of the lowest subject areas of in-library usage among adults.

These results clearly demonstrate the necessity of collecting and maintaining in-library use data at the lowest possible administrative level (ie. the library branch outlet level). Each library outlet serves a unique population with unique needs. The common practice of aggregating data to higher administrative levels (eg. the library system level) for library reporting masks the unique library needs and uses by smaller population groups through averaging of their uses into the much larger "average library user" pool.

DISCUSSION

Although our study, among many others, clearly demonstrates the need for collecting better in-library usage data as a critical type of library performance measure, it will not be easy to implement the collection of such data on a national or international scale. Issues of what to collect, how to collect it, and how to use the collected data vary from library to library, let alone from country to country. Consequently, any groundswell for

systematic collection of in-library use data is most likely to come from library systems that have visionary library directors and staff that can see the potential value of such data for improving library user services.

Our current attempts to keep the need for collection of in-library use data in the public spotlight encompass the following actions:

1) we have applied for a two-year extension to our existing U.S. Department of Education grant to include traditional public library outlets in our study using the same bar coding data collection methodology;

2) we have expanded our methodology into the international arena. Interest in our project and the adoption of the bar code methodology is being pursued by libraries in France, Germany, and Singapore. In addition, we have had special and academic research libraries in several countries express an interest in adapting our technology to their own special needs;

3) we will be making a presentation about our methodology and findings to the Federal-State Cooperative System in March 2000. This System is the primary organization responsible for developing and setting standardized public library data collection methodologies in the U.S.

The ultimate hope for our research is to promote the standardized collection of in-library usage statistics so that it becomes as common as the collection of material circulation data in order that public libraries can better meet the needs of the local community in which each library outlet resides.

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Evaluation of Total Quality Management impact on Portuguese Public Administration libraries: a research project (1998-1999)

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The aim of this presentation is to report on the results of a research project on the evaluation of TQM impact on Portuguese Public Administration libraries. The Ministry of Education and the Administrative Modernisation Secretariat sponsored this study, which was carried out from July 1998 to January 1999.

A questionnaire sent to public, specialised and academic libraries and in-depth interviews conducted with library managers of the most relevant Ministries and professional associations provided the main sources of information for this study. An analysis of the data gathered allowed the construction of prospective scenarios, which grouped libraries into four organisational strategic types: defensive, prospective, analytical and reactive. Organisational, societal, economical and technical barriers to TQM development are also examined.

Final recommendations to those in charge of the implementation and development of the Portuguese Quality Policy are presented.

1. INTRODUCTION

According to a report on the market for electronic information services in Portugal (Instituto Superior De Ciências do Trabalho e da Empresa, 1996), in 1994 the dominant culture of Portuguese Public Administration was, as opposed to the emergent *culture of information*, a *traditional culture of secrecy*. Difficult access to relevant information was its main feature. The same study suggested, therefore, that increasing the accessibility of Public Administration information resources by exploiting all opportunities the Information Society provides, should be a priority in any European information policy.

In this context, the Portuguese Government drew up a set of measures and initiatives aimed at four relevant sectors: Schools, Enterprises, Public Administration, and Archives and Libraries. One of the proposed actions for disseminating the concept of the Information Society among these sectors was the identification of technical, organisational, societal and economical barriers.

A study on public and private information services in Nordic countries[1], conducted from 1993 to 1994 (Johannson, 1995), showed that the most advanced services were connected with Quality Management policies, which were considered to be an essential element for introducing change in libraries. It also recommended the use, in a simplified version, of the European Foundation for Quality Management Model (EFQM), namely as a base for exploratory studies and comparative analysis. At the time, 10 to 15% of the libraries surveyed were involved in the implementation of ISO 9000 in their services. The number of libraries involved in this kind of process was expected to increase in the near future.

These findings, together with our own perception of Portuguese reality, especially in what concerns the administrative modernisation context, raise a question: what was the relationship between the *traditional culture of secrecy* that characterised Portuguese Public Administration Libraries and the present level of penetration of Total Quality Management (TQM) in this sector? Evaluating the impact of TQM on Portuguese Public Administration Libraries was, therefore, the leitmotiv of a research project sponsored by the Ministry of Education and the Administrative Modernisation Secretariat. It was carried out, from July 1998 to January 1999, by a project team of eight researchers[2].

The aim of this paper is to report on the results of the research project. A brief description of the evolution of Quality in Portuguese Public Administration and the discussion of several methodological aspects precede these. Some recommendations to those in charge of the implementation and development of the Portuguese Quality Policy are presented at the end.

2. QUALITY IN PORTUGUESE PUBLIC ADMINISTRATION

In order to have a clear understanding of the evaluation results on Quality Management impact on Public Administration libraries, there are some recent landmarks in the history of Quality in Portuguese Public Administration that need to be mentioned (Cardoso, 1999).

In 1986 – one year after Portugal became a member of the EEC, the Administrative Modernisation Secretariat (AMS) was created. This was the first step towards a new movement of administrative change that would be greatly influenced by the British model. The AMS longed for a

[1] 700 cities in Denmark, Finland, Norway and Sweden were surveyed. The response rate was 60%.
[2] F. Cardoso, F. Figueiredo, M. Ferreira, M. C. Callé, M. E. Evaristo, M. C. Reis, L. G. Pinto and P. Ochôa.

Public Administration, not powerful and bureaucratic, but centred on customers and capable of satisfying their needs and coping with new challenges. To improve the information and communication flow between citizens and Public Administration, some measures were taken: standards of customer services, complaints and suggestions system, direct phone lines, simplification of administrative procedures, etc.

In 1992, the AMS set a major goal: the implementation of a Quality System in public services, which, supported by some complementary measures, would lead to TQM. One year later, the *Quality Charter for Public Services* was launched, as an incentive to the creation of Sectional Quality Charters. The establishment of (measurable) *Standards of Public Service*, the creation of the national *Quality Council* and the *Surveys of Quality* that were carried out are some other important initiatives taken by the AMS.

In 1994, this organisation launched the *Quality in Public Services Prizes* in order to stimulate the development of Quality Programmes. Every year, after evaluating the Reports sent by candidates and selecting and carefully auditing the finalists, the Quality Prize is awarded to five of the public services that got through to the final. In 1998, the AMS introduced into the contest regulations the evaluation criteria established by the European Foundation for Quality Management – EFQM. In the same year, as a means to divulge the five winners' names and, simultaneously, to stimulate an exchange of experiences and ideas, the AMS organised the *1st Benchmarking of Quality in Public Services*. It should be mentioned that the Department of Library and Information Services of the Ministry of Education was among the five 1998 *Quality in Public Services Prizes* winners. This was the first Portuguese library and information service to win a Quality Prize.

In April and May, two important governmental laws were published: the first one (Dec. Lei nº 135/99) establishes measures for administrative modernisation, namely in what concerns customer care, administrative communication, simplification of procedures, auditing clients and management information systems; the second law (Dec. Lei nº 166A/99) implements the National Quality System for Public Services, introducing the EFQM model as a certification standard.

3. METHODOLOGICAL ASPECTS

Information about libraries is collected each year by the State for its own administrative purpose, the production of official statistics being the only visible result of this effort. Research work on this area is, unfortunately, rare: a reading of the principal articles published shows a lack of interest in developing methodologies in order to study libraries performance/management. This sort of work must, though, be seen as a vital element in any of the state departments' planning tools. It actually shows the role played by Public Administration as a participant/non-participant in libraries development.

In a social environment marked by uncertainty and novelty, people's expectation of the future is a main determinant in the way they construct their attitudes and behaviours inside organisations. Consequently, organisational change effectiveness is largely dependent on how individuals value it, since it is based on that image of the future that each actor defines for himself/herself in the present.

Prospective Analysis (Godet, 1993) presents a powerful vision of the actors' strategies, which is indispensable to the construction of scenarios. In this research project on impact evaluation, we tried to find out which were the interaction (direct or indirect) effects of a leading actor – the Administrative Modernisation Secretariat or, in a wider sense, the *Governmental Departments* responsible for supporting and disseminating TQM – on the management results of another other type of actors: the *Public Administration Libraries*. In this context, particular attention was paid to the identification of those factors that help or make difficult the implementation of organisational change. *Professional Associations* were the third group of actors to be considered.

Using the prospective methodology, we tried to identify possible scenarios by relating them to the three social actors' strategies and considering the variables, the alliances and conflicts among them. Cross-impact analysis was the methodology used in this survey. It consists of studying the relational social impact of actors.

3.1 Data Collection

The methodologies used for collecting data were in-depth interviews and questionnaires. So, 24 library managers of the most relevant Ministries and professional associations were interviewed between September 9th and October 28th 1998. 489 questionnaires were also sent to Specialised Libraries (259), Public Libraries (110) and Academic Libraries (120). 168 answers were received, which represents a response rate of 34.4 %.

Research methods were oriented towards the cross of these data using both quantitative (questionnaires) and qualitative analysis (interviews) with the following key issues:

- concepts of TQM;
- methods for evaluating services quality;
- knowledge of ISO standards;
- methods for managing clients' satisfaction.

3.2 System Delimitation

The system studied is a bureaucratic one. It is formed by three types of libraries, each having different missions and goals:

- serving the community (Public libraries);
- serving students, teachers and researchers (Academic libraries);
- serving users in special areas of knowledge (Specialised libraries).

This is not an homogeneous system in what concerns its motivity, that is, the mobility of its dynamic factors. The system analysis was based on five types of variables with different levels of dependency and interaction (Godet, 1993):

- *Motive variables* – these variables have high motive power and low dependence. Although they are little dependent on all the other variables, they influence the system dynamics;
- *Results variables* – variables very dependent and with low motivity. They are largely conditioned by the system dynamics, but have little influence over it;
- *Key variables* – they are highly dependent and have great motive power. Since these variables are largely dependent on the set of variables, they have an influence upon the entire system and play, therefore, a leading role;
- *Excluded variables* – they are little dependent and have low motivity. Consequently, these variables are quite irrelevant to the system analysis;
- *Platoon variables* – these variables have a mean dependence and motivity. They are not excluded only because there is "no evidence" of their irrelevancy to the analysis.

Based on these variables, the data gathered were classified in the following way[3]:

- *Motive variables*
  - Information networks
  - Focus on users
  - Tasks flexibility
  - A new concept of libraries
- *Results variables*
  - Lack of staff
  - Insufficient financial resources
  - Negative experiences in the normalisation field
- *Key variables*
  - Benchmarking
  - Team work
  - Leaders' low sensitiveness to TQM
  - Weak co-operation between libraries
- *Excluded variables*
  - Globalisation
  - TQM cannot be hierarchically imposed
- *Platoon variables*
  - Salaries raise.

Using Miles' organisational typology (Miles, 1988) as an analytical tool, libraries were placed in four strategic groups:

- Defensive – these organisations use stable and predictable processes, paying little attention to environment opportunities;
- Analytical – they have an analytical posture towards the market, trying to find organisational performances that are flexible within processes stability;
- Prospective – these types of libraries are innovative. They try to develop new opportunities, by investing on resources and processes renewal;
- Reactive – they are incapable of responding to environmental change. These libraries have quite unchangeable processes and reactions always have to be imposed from the top.

3.3 Strategy of Actors

The three groups of actors identified were characterised in the following way:

- *Governmental Departments*

  Objective:

  To promote mentalities change

  Problems:

  - Leaders' low sensitiveness to TQM issues
  - Poor evaluation methods
  - Strong and traditional organisational culture
- *Libraries*

  Objective:

  To be an important partner in the Information Society

  Problems:

  - Lack of staff
  - Insufficient financial resources
  - Lack of training program
  - Lack of innovation
  - Low level of co-operation

[3] These are only the most significant aspects that were classified. For more detailed information on the matter, see Gestão da Qualidade: relatório de investigação nas bibliotecas da Administração Pública.

- Low level of organisational learning
- Low social role

• *Professional Associations*

Objective:

To promote professional development

Problems:

- Low level of participation
- Low level of interaction with Governmental structures
- Few research studies.

3.4 Analysis of Scenarios

The outlined scenarios were:

• *Scenario I:*

Governmental Department related to libraries will promote and disseminate TQM, working together with Professional Associations. This will represent the best solution, in order to motivate all actors, with less conflicts between them.

Scenario I I:

Some libraries will develop individual TQM experiences, publicising them in professional meetings or in the specialised press. This is not a consensual strategy, therefore its mobilisation effect would be weak.

Scenario III:

Professional Associations place TQM among their strategic goals. The impact of this strategy will be small and limited to their associates.

Scenario IV:

Libraries will remain traditional organisational structures, seen as "non-interesting" sectors within Public Administration. Unfortunately, this scenario seems to be the most consensual among the majority of libraries.

4. CONCLUSION AND RECOMMENDATIONS

The results of the interviews and questionnaires analysis clearly show that the establishment of Total Quality Management in Portuguese Public Administration libraries has been insignificant, partly due to lack of information, which is no different from what happens in the remainder Public Administration sectors.

On the other hand, by examining the barriers to TQM implementation that have been identified (Table I), we easily conclude that this form of management is still far from being recognised as an integral part of the system in which libraries are inserted.

It should be noted that the aspects mentioned above are far from covering all complex problems raised by the organisational analysis. Consequently, only those that are representative of common characteristics are named.

The majority of the libraries surveyed can be categorised as *reactive* and *defensive libraries*. Most of these libraries belong to the *Specialised Libraries* group. *Public Libraries*, on the other hand, have already adopted an *analytical library* posture. They are, therefore, the most dynamic group and the one that is nearest to the pathway to Quality. In general, *Academic Libraries* also fit in the *analytical library* category. Influenced by foreign experiences, there are, actually, some cases of great interest in TQM among this group.

One cannot really talk about Quality Management in what concerns Portuguese Public Administration Libraries; nevertheless, their perception of this management approach can be structured and examined in terms of perceived benefits and difficulties. In the following matrix (Table 2), these two main axes are correlated with TQM impact level.

Curiously, the survey showed that very few people saw the application of this kind of management to Public Administration as a benefit. That is why, in the matrix, this aspect is classed as low impact level. In the same way, benchmarking was practically ignored. In what concerns difficulties, the organisational culture was pointed out as the main obstacle to TQM application to Public Administration libraries.

The investigation revealed two driving forces:

Table 1 Diagnosis of Societal, Economical, Technical and Organisational Barriers

SOCIETAL BARRIERS	ECONOMIC BARRIERS
• Public Administration still sets a low value on the Information Society • Low value set on the librarian's role and skills	• Insufficient financial resources allocated for managing human and material resources
TECHNICAL BARRIERS	**ORGANISATIONAL BARRIERS**
• Insufficient information networks • Traditional services are still predominant, to the detriment of new technologies	• Lack of hierarchical support for the development of library services and products • Library managers have little decision power • Obsolete management techniques and tools • Insufficient carriers and skills management and low motivation

Table 2 Matrix of Total Quality Management Impact

IMPACT LEVEL	BENEFITS	DIFFICULTIES
High	• Libraries modernisation • Incentive Prizes • Establishment of a national library and information policy • Higher valuation on information professionals' carriers • Services accreditation and certification	• The organisational culture • Libraries low competitive edge • Limited co-operation between libraries • Few Quality Management models in Portugal • Resistance to change • Low valuation on libraries social performance
Low	• Information and knowledge based on TQM • TQM application to Public Administration • Benchmarking	• Results are not evaluated against performance indicators • Lack of strategic organisational development

a) in recent years, libraries were confronted with significant technological changes, which called for higher specialisation in processes, as well as in the development of information products. This tendency was not, though, accompanied by corresponding investment in professional training and human resource management;

b) the knowledge level of management forms and results evaluation is correlated with the existing models of work organisation. Libraries are not a strategic sector in Public Administration. They are still organisational structures with weak intervening capacity in the Information Society. Consequently, their performance, as well as their organisational differentiation and innovation processes management, are not yet considered priorities.

Though each library has its own organisational characteristics, it is possible to make a model of the organisational behaviour toward TQM, based on the factors identified as relevant by people involved in the survey (Figure 1).

In this context, we believe that only by going into partnerships will the development of TQM in Portuguese Public Administration libraries be possible. The potential advantages to be gained in terms of organisational success range from information and best practice exchanges to an increase in individual and team skills. Figure 2 presents a model of partnerships for TQM.

Nowadays, libraries are learning organisations, based on a knowledge structure. This is undoubtedly a competitive advantage, that, so far, has been neglected by those responsible for defining policies and strategies for the library and information sector in Portugal.

Figure 1 Model of Organisational Behaviour towards TQM

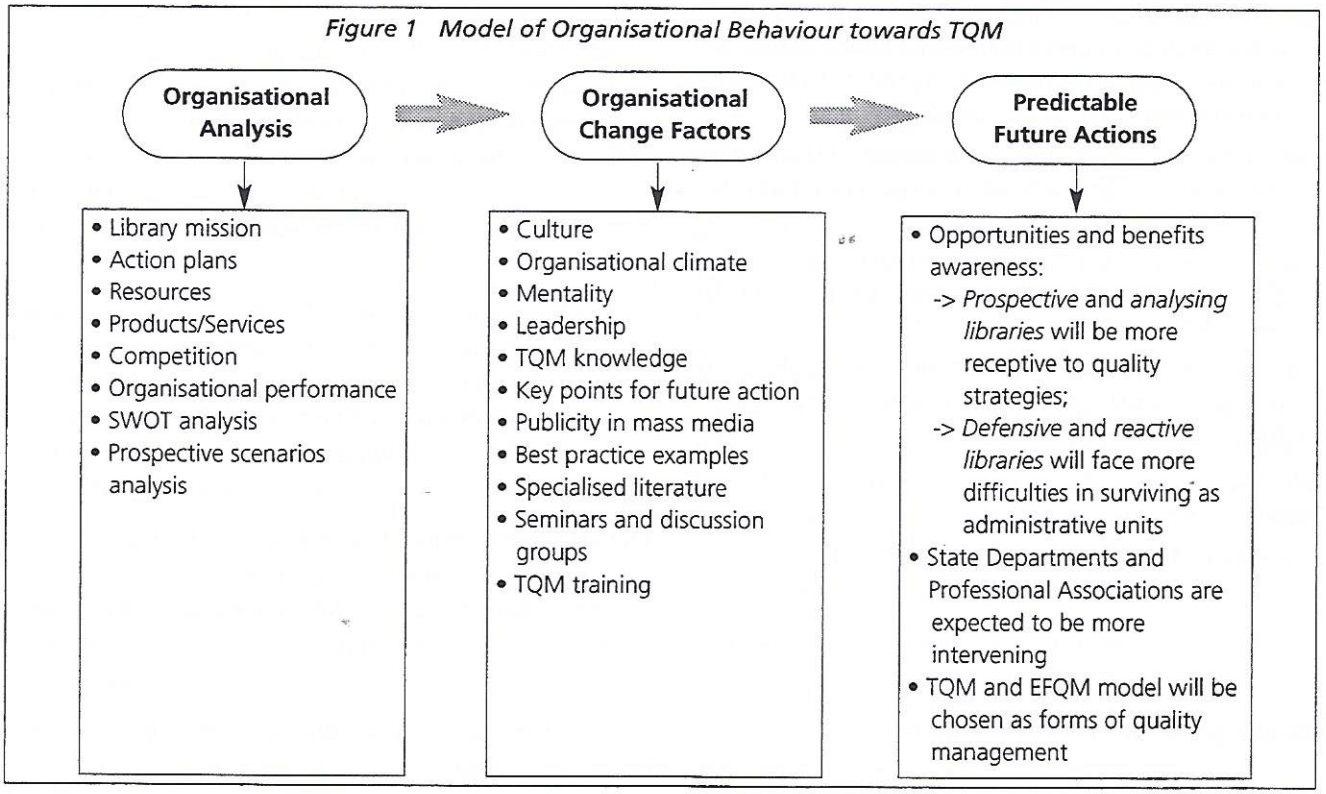
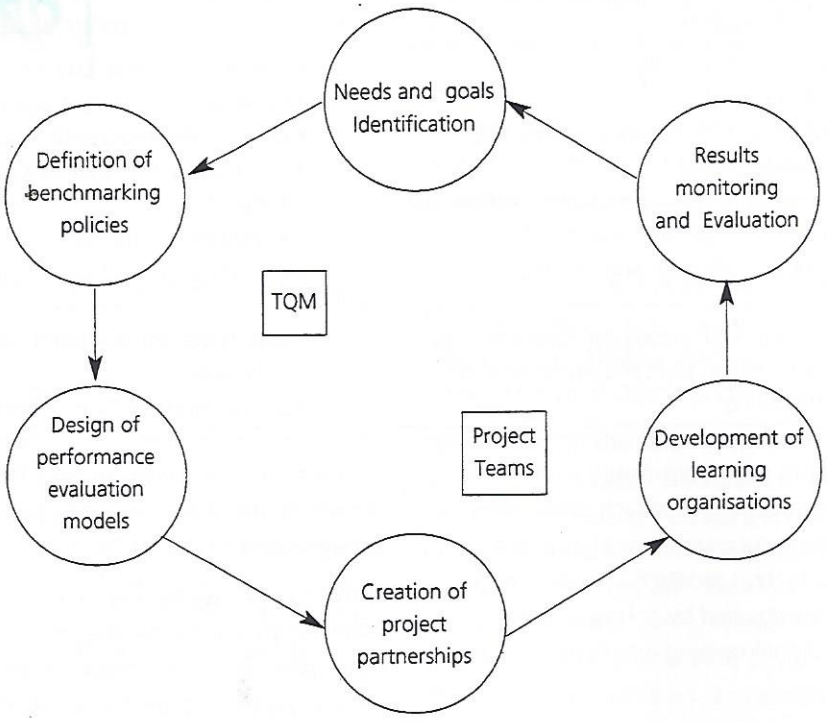


Figure 2 Model of Partnerships for TQM



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Nationwide implementation of performance measurement in Flanders

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Since 1998, performance measurement has been applied in all 320 public libraries in Flanders, Belgium. On the basis of Nick Moore's "Measuring the Performance of Public Libraries", a Flemish toolbox was developed and subsequently imposed on all public libraries by the Ministry of Culture. Local data are input electronically in a central database and calculations are done automatically so individual results are immediately available. The national results become available after the end of the year. Much time and effort was and still is spent on developing an acceptance strategy aimed at the public library community. The general implementation of PM is considered to be a major first step towards TQM in public libraries.

INTRODUCTION

Since the beginning of 1998, performance measurement (PM) has been applied in all 320 public libraries in Flanders, the Dutch-speaking Northern part of Belgium with 5.6 million inhabitants.

In some ways, this is a remarkable achievement. The fact that public libraries use PM techniques to monitor and assess their services is of course not extraordinary at all. Many libraries all over the world do so. But it may be an interesting story to learn about the way in which PM was introduced in Flanders.

It all started with Nick Moore's "Measuring the Performance of Public Libraries". This "draft manual" was published in 1989 and, shortly after, some libraries reported on its use at the IFLA Conferences in Stockholm and Paris. At these occasions, a number of Flemish librarians really got enthusiastic about PM, and one year later a library school student dedicated her thesis to PM. At the same time, we succeeded in persuading the administration of the Ministry of Culture to initiate and support the creation of a Flemish toolbox for measuring library performance. The Ministry sponsored and widely circulated a brochure on PM, that was based on the aforementioned library school thesis. It was the first step in introducing the concept of PM among the broader public library community.

One year later, in 1995, a PM Working Party was also installed by the Ministry, in which 15 librarians, on a voluntary basis, tested and assessed several versions of a Flemish Manual. The resulting manual was finally presented to all our colleagues during a one-day workshop in November 1997.

So 1998 was the first working year during which data had to be collected according to the new method. Although the forced introduction of PM in public libraries might appear as a top-bottom development, it was in fact the other way round.

And although the testing and the adaptation of Nick Moore's Manual required quite a lot of work, it seems that this was by far the easiest part of the process. Persuading our colleagues to give PM at least a fair chance, turned and still turns out to be much harder to achieve.

THE FLEMISH TOOLBOX

When looking at the figures that public libraries in Flanders had to submit to the Ministry until 1997, one notices that the focus was on resource input and hardly on output. And as far as input was concerned, only the numbers of acquisitions for the different stock categories were required, and no financial data.

On the basis of these figures, three coefficients (we would call them "measures" now) were calculated, interrelating total bookstock with loans and borrowers. These rates were used to assess the performance of an individual library. Acceptable rates were based on the national average rate, not on levels. For example, a loan rate of 20 loans/borrower was considered to be acceptable; a lower rate was an indication of weak performance.

The measures that have to be collected from now onwards cover both input and output. But "outcome", which is measured by user survey, is optional (see below). Nevertheless, what has to be measured now can form a solid basis for assessing both efficiency and effectiveness of services.

The Flemish Manual is a real/genuine adaptation of Nick Moore's draft manual. In doing so, Flanders followed his recommendation to modify his manual to suit local circumstances. However, there are differences.

- All input data are weighted not only for the number of inhabitants, but also for the actual number of users. As not all inhabitants are active users, the latter calculations offer a more realistic picture of the actual availability, the stock and the use made of it.
- Certain level 2 measures were considered to be too important to be treated as optional:
  - age structure in relation to the corresponding reading habits and the acquisitions policy;

- in order to get a clear picture of the stock (expenditure, availability, growth and use) a distinction is made between the following categories:
  - adults: F, NF, audio materials, visual materials, comics, reference works, journals and other documentary materials;
  - children: F, NF, audiovisual materials, comics.

- Some level 1 measures were shifted to level 2, mainly because of the workload: stock capacity and user surveys.

We "measure" along the following **timetable**: twice a year output is measured during the – in the meantime legendary – counting weeks: the first in May, which is considered to be a low period, due to good weather and close to examination periods at schools; the second in October, a peak period. Multiplied by 26, the figures provide a reasonable average of the use that is made over one year's time.

Input measures are collected at the end of the working year. We realise that this methodology implies a slight deviation with regard to the stock output measures but we consider this acceptable since it applies to all libraries altogether.

Librarians have to input their data in an electronic form that is available on BIBNET, the public libraries intranet, via a password-protected procedure. The calculation is done automatically so individual results are immediately available. Any update at any time results in updated measures.

The national results are processed within the same database and are available after the end of the year. Calculations are made for the following categories:

- type of library (central/local; full- or part-time)
- geographical area
- work-area size
- opening hours
- number of staff.

Individual librarians can compare their data and results with those of neighbouring libraries or with libraries of the same size or type or with a mix of categories.

THE IMPLEMENTATION PROCESS

Although we were very much aware that limiting the measuring to what is easily measurable could be a drawback, we decided nevertheless to keep things as simple as possible. We felt it important to take into account the **extra work and time** needed to collect all the data required, not only because otherwise the whole project would probably not have survived the testing stage but mainly because certain data remain quite difficult to collect, no matter whether the library is automated or not. That is why for instance activity attendance and information services were in the end excluded from the list, even though they are commonly regarded as important indicators.

The same goes for the user survey. Overall satisfaction with the service, and whether library users find what they are looking for are irrefutably vital and essential indicators of outcome. But conducting and processing a high-quality user survey is very demanding. According to our experience, the majority of library visitors seems not to be too keen on answering questionnaires. That is why the working group opted not to incorporate a user survey as a fixed part of the annual exercise. We thought it to be more appropriate, and even more "user-friendly" to ask our customers for their opinion every three years or so.

But relieving the burden of counting and measuring was not our only concern. We also had to ensure that the measures were collected uniformly and correctly in all libraries. Otherwise we would end up with uncomparable data and consequently useless information. Taking into account that no two public libraries are alike and adding the fact that librarians don't always agree on the meaning of certain notions or descriptions of measures, it turned out to be a huge job to achieve **common and unequivocal understanding** of all definitions and procedures. It is unnecessary to say that we devoted many meetings to discussing and putting together a list of clear definitions and sharply described procedures. We produced so many addenda to the main manual that now we have decided to put it on the Web for online adjustments.

Apart from testing and adapting a methodology and subsequently drafting a manual, the working group spent considerable effort in setting up an **acceptance strategy**, for we knew the feelings of anxiety, resistance and even hostility regarding PM. Generally, people don't like to be confronted with what is going wrong or running badly, especially when their neighbour is doing a better job. And even if people take an open view towards measuring their services, they too often do so in an intuitive, rather than in a methodical way.

Instead of creating a positive attitude towards PM, the first move in the acceptance strategy provoked the opposite. The widely circulated general brochure on PM that was meant to introduce the concept, raised more questions and mistrust due to its rather scientific approach and its premature implementation strategy. Therefore, the working group decided to change its tack and focus on practice rather than theory. At the time, its brief changed from "working group" to "steering group".

Along with the 100th anniversary of the invention of the film, an information campaign was designed around Woody Allen's *All you ever wanted to know about sex, but never dared to ask*. Rephrased, it sounded like "All

you wanted to know about your library, but never dared to ask". Subsequently we showed the audience a number of fake newspaper clippings, in which the library service was questioned and we invited them to reflect on the way they would try to tackle the situation or respond to the journalist's criticism. We made them feel that figures are not always good (or bad, it depends) for their professional self-esteem, but that once in a while they could be useful for other reasons, and that they don't have to justify their services only to journalists but also, and more than often, to politicians and customers.

The next steps were built on the same approach.

When the manual was presented in November 1997, the accompanying workshop focused on the expected results for the individual library, in order to make the exercise acceptable. This time we started with the questions we presumed any librarian asks for himself: what and for whom, how many and how much. But instead of answering these questions in an intuitive way, we offered them a method to measure and, subsequently, calculate, interpret and evaluate.

During 1998, the first year for which data had to be collected, members of the steering group guided five working parties during which librarians could fire their questions (this is not an understatement) and express their worries. Once again we took the opportunity to stress that essentially PM is (or better: should be) a familiar activity, which was only streamlined because of a general and uniform implementation.

When the results of the 1998 counting become available, we have the commitment of returning to the library community with a framework for discussion and interpretation.

Later on, the same effort will be made to guide librarians on the way of quality management (see below).

FROM PM TO TQM

What got PM going in Flanders?

Pretty much the same factors as everywhere else, we guess. To begin with, there was the need for comparable data. This was felt not only by the financing authorities but also by librarians themselves. That is not to say that there were no figures available. On the contrary, apart from the annual statistics required by the Flemish Ministry, most libraries tend to collect quite a load of data. But despite the range of information available, benchmarking remained impossible up till now due to the wide variation of local statistics. Moreover, most of the figures concentrate solely on the good news. They tend to neglect the more tricky matters as for instance the number of non-users, the amount of unused materials or the user's opinion.

What we see at this very moment is the totality of a professional group asking exactly the same questions, expressing the same doubts and discussing the same problems. PM in Flanders is not the hobbyhorse of a weird individual librarian, nor is it limited to larger organisations with time to spare. Every single public librarian, even those responsible for smaller units in remote areas, are compelled to measure their performance.

Comparing data over the years and between libraries and benchmarking will be the next steps. However tricky and difficult to do if one is not used to look over shoulders, one should give it a try simply because it might turn out to be of great help to identify, describe and analyse "best practice".

Nobody will deny that performance indicators provide vital information with regard to the development of a quality based policy and strategy for the Flemish public library community. Of course, quality can never be established top-down. By its nature it should be defined and achieved locally. But quality can very well be enabled top-down, for instance through a system of benchmarking (and appropriate funding). This is why it is so important to get all of the public libraries to measure their performance simultaneously and in exactly the same way. A central performance database containing all the results on input and output is a vital source of information and will support the local librarian in managing quality in his library.

But we have not yet reached the stage of quality management yet. We have only arrived at the starting line and we still have the whole runway in front of us. But at least we are ready for it: we created our own stepping-stone to reach the next phase. We are indeed well aware of the fact that there is still a lot of things to do. Measuring is in fact a simple business compared to the task of drawing conclusions from the results and improving quality, effectiveness and efficiency. In order to ensure the use of PM as a tool for quality management, we will have to:

- monitor how well the measures are performing in order to modify them whenever necessary in order to obtain other, more and better data;
- develop a user survey so we can learn about the users' opinions and measure their satisfaction;
- develop a PM support system as a framework to sustain the correct understanding and useful interpretation of the results;
- go looking for strings and valid combinations of data since the assessment of library practice cannot be based on a single measure;
- keep on listening to our colleagues' questions, remarks, comments and concerns to ensure co-operation and minimise anxiety;

- and last but not least we must keep on telling our colleagues that PM is there to help them become better professionals.

CONCLUSIONS: RESULTS AND EFFECTS

The most tangible result is that in Flanders we use one single methodology that is applied in all public libraries, without exception (but with varying levels of devotion).

We can now be fairly sure that, when it comes to measuring their performance, all 320 public libraries use the same method, including a fixed set of parameters. When we talk about stock, or user-friendly opening hours, we all have the same concept in mind.

This is of course an absolute necessity, when it comes to comparing data on a national level, and drawing conclusions from this. But at the same time, the same method can be applied by any library wishing to measure in more detail than is required by the Ministry. And although we have undoubtedly laid the ground for Quality Management in public libraries, we realise that there are still some blanks to fill in the QM process.

First of all, we have taken the pragmatic approach: building on existing ways of collecting data and shifting time-consuming activities such as stock capacity measures and user surveys from obligatory level 1 to optional level 2.

This approach is part of a strategy of acceptance regarding librarians. With a reference to the general theme of this conference "Impact and Value", we'd say we would rather reduce *the impact* of measuring and calculating on the reluctant librarian in order to avoid colleagues failing to recognise *the value* of PM because they simply consider it as another tedious administrative thing to do.

On the other hand, the working party did not endeavour to provide a framework for definition of goals, strategy development or quality assessment. Together with PM, they constitute the natural string of Quality Management: from goals to implementation, and assessing performance. We deliberately isolated PM from the QM process for the same reasons of acceptance. We hope that starting with PM will trigger off thinking on the related issues. We are quite confident that once the 1998 figures are processed and made available, this will provoke discussion and reflection and serve as a shock (therapy?) within the public library community. Of course, we have to encourage and guide this process and provide for a forum on which we can discuss goals and strategies for public libraries, both on the national and the local level.

If we don't succeed in doing so, PM as it is now will deteriorate into a mindless routine, without any effect on the organisation.

Nevertheless, policy makers are now using an instrument to build their strategies on, the same instrument that will enable any individual librarian in Flanders to manage quality in his library. That is, in a cyclical movement:

- define proper and realistic goals;
- interpret the results of PM;
- constantly improve the quality of the library services.

SEMINAR PAPERS

Techniques and Tools

Library editorial products: quality and users

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Some characteristics of LIS editorial products are analysed including the main actors of the editorial chain (authors, publishers, editors, readers, etc.) and the principal information channels (journal articles, conference proceedings, books). Some data are reported and suggestions are given to make all people involved in the editorial chain aware of the importance of relying on specific evaluation criteria for the assessment of editorial products. However, there is no formula or objective measure permitting to evaluate information quality as a whole. New technologies in the field of information management represent a continuous challenge, but the main principles guiding the editorial process, based on a general consensus, seem to remain unchanged over time. Some possible indicators for the evaluation of editorial products are outlined.

INTRODUCTION

In every field of science today information supply is much higher than information demand and therefore it is very hard for everybody to cope with the increasing number of available publications and data. The difficulty arises in finding out the most reliable, innovative and appropriate information according to one's own needs.

Nowadays we are generally accustomed to the "starring system", rating the quality of products or services which we use in our daily activities: we go to the cinema to see a three-stars picture, we book a four-crowns hotel, we reserve a first-class train, etc. We have now so completely assimilated this value system that it is absolutely natural for us all to rely on the assigned values.

Also in librarianship and information science (LIS) today we are generally aware of the importance of collecting reliable data to measure the effectiveness and value of the different activities carried out in our daily professional work. The assessment of library services and performance has been discussed for some years and some evaluation schemes have been drawn up. The assessment of library editorial products (journals, books, reports, etc.), however, seems to be still scarcely present in library and information science literature.

OBJECTIVE OF THE STUDY

The objective of this paper is to point out some possible evaluation strategies for library editorial products. Such assessment implies a number of difficulties since it is not easy to evaluate users' satisfaction and even more to assess how and how long a journal or book may contribute to the training and up-dating of their users to improve daily professional performance.

For this purpose, some characteristics of the editorial chain will be examined as well as some characteristics of LIS journals to permit us to make some suggestions for a possible assessment of editorial products.

As a general rule, we must consider that any organisation (profit or non-profit) should be sure that it is making the best use of its resources and this can be done only if it is able to measure its performance and assess the results achieved.

Commercial organisations measure their performance in financial terms. They must measure not only their costs but their customers' satisfaction and must carefully consider what is happening to their competitors. Non-profit organisations also have to behave in this way in so much as they are responsible to their funders and users for managing their resources in the best way (Moore, 1994).

In most developed countries publishing is an area of work in which the presence of commercial publishers and scientific and professional associations is very strong. They work in the same area but they have different aims even if they are not so clear-cut: quicker financial returns for commercial sectors; advancement of knowledge, development of research fields, education of future professionals, etc. for non-profit bodies.

WHAT TO MEASURE

In general, it is much easier to measure the "formal data" of a publication (pages per article or chapter, types of publications, number of authors per paper, etc.) or to evaluate, according to established standards, the different stages of the editorial process, from manuscript acceptance to the realisation of the final product.

Data on the circulation of the editorial products are also a relevant measure, although not self-sufficient to prove the users' satisfaction, since it is directly influenced by library acquisition policies and marketing strategies. Other basic evaluation parameters should be considered in order to carry out an efficient quality assessment of the editorial product, including citation analysis which reflects its real use and impact.

THE EDITORIAL CHAIN

The editorial process involves the co-operation of different professional figures. The process is complex and it may be

briefly outlined in the following scheme showing the main actors of the editorial chain:

- authors as producers of information;
- publishers as managers of the information chain;
- editors as organisers and tailors of information;
- readers as users (and future producers) of information.

Authors – They must deliver papers which are at a certain level of scholarly accuracy and credibility. They are generally pressurised to publish and the academic promotion system seems to encourage spurious publications. In this way, publication no longer represents a way of communicating new ideas, but a means to enhance one's own status and to pile up credits for promotion and grants. The "publish or perish syndrome" produces fragmented and duplicated works that drive the authors to look for the quantity rather than the quality of publications (Hamilton, 1990).

Publishers – As managers in the information chain, they have a great number of functions which go from the search of authors and editors to the marketing of the editorial products. In recent months, a certain number of publishers (facing the problem of electronic publishing on the Internet) have been trying to directly contact their customers to understand their information needs and attitudes in order to identify new channels of distribution for their products. Surely, it is not so easy for them to share their customers' views because they do not know who they are since most of them operate through subscription agents or brokers who are reluctant to provide them with details of end-subscribers (Hajdukiewicz, 1999). A responsibility that publishers share with editors is to ensure that material published is of good quality.

Editors – As organisers of information, they are primarily concerned with the efficacy of the editorial process. Evaluation of the publication worthiness of manuscripts is traditionally based on a referee system, whose reliability should not be in doubt, and on the role of the editor who plays a more active and vigilant part in order to uphold the quality and reputation of the editorial products.

This value system underlying the selection of papers for publication was firmly established even if it is now subject to some considerable criticisms and intense debates (Satyanarayana, 1994).

The editors, as tailors of information, must create products that the community really needs, and must use those media and channels that will best carry the message to the recipients.

Readers – They have turned into users of the editorial products; it is necessary to find out what kind of products they are prepared to use and pay for. The identification of information needs is a complex process in so much as the same information is perceived by users differently according to their cultural background. The types of users also differ due to the nature of their activities and to the organisation where they are working, which directly affect the information products and services.

INFORMATION CHANNELS

In every field of science, information always proceeds in two directions since scientists receive and at the same time generate information. Any kind of scientific information is subject to communication, criticism and verification by the professional community to become scientific knowledge.

The features and layout of LIS literature are, in general, the same as in any other field.

We shall briefly examine the main characteristics of the following information channels: journal articles, conference proceedings, and monographs, not considering, for the moment, report literature that is nonetheless a widespread channel of information diffusion.

Journals represent the main forum for debates and an essential component in the organisation of science; that is why this discussion will deal more deeply about journal articles.

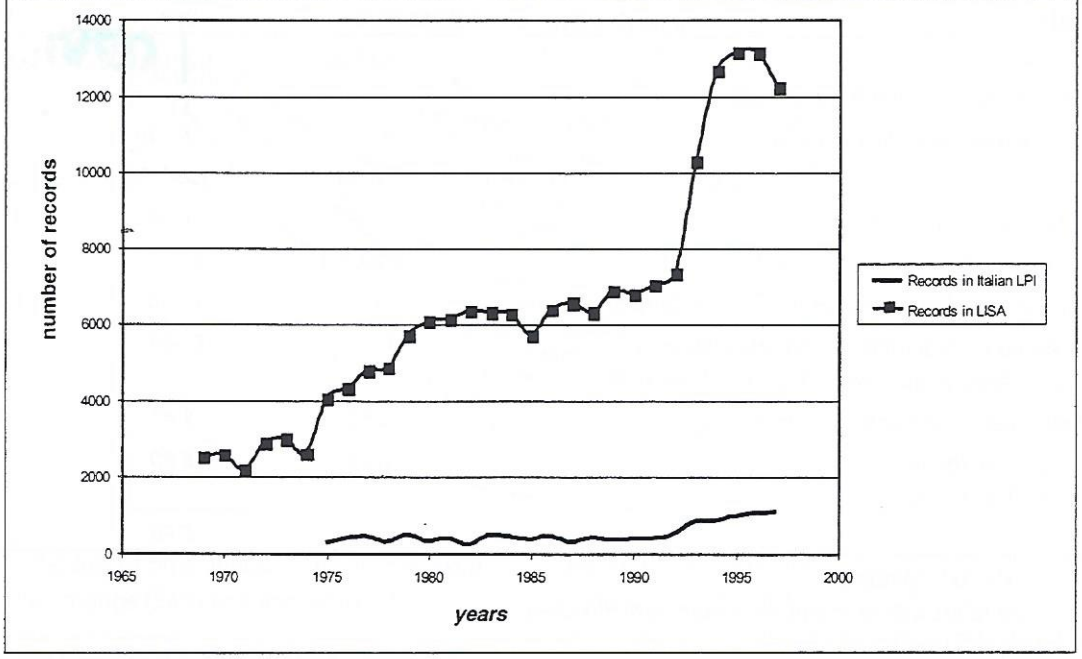
It is not very easy to have a clear idea of the general amount of LIS journals since it is generally difficult to compare data taken from different sources both in terms of subject coverage (often overlapping) and years/countries of production.

Data taken from Ulrich's International Periodical Directory (Ulrich's . . , 1999) report, in the "Search index", 5,316 titles under the subject heading "Library and information sciences". Surprisingly, in the "Browse index" of the same disc, we have only 2,764 terms under the same subject, while for "Library and information sciences – abstracting, bibliographies and statistics" and "Library and information sciences – computer applications" the number of items is equal, as shown in Table 1. This is explained by the fact that the term "Library and information sciences" is related to other "see also" subject headings, ie.: "Bibliographies" accounting for 2,176 entries; "Computers – information

Table 1 Ulrich's Data in the Search and Browse Indexes

Index entries	Search index	Browse index
Library and information sciences	5,316	2,764
Library and information sciences – abstracting, bibliographies, statistics	248	248
Library and information sciences – computer applications	144	144

Figure 1 Records included in LISA and in Italian LPI



science and information theory" accounting for 163 entries; and "Publishing and book trade" accounting for 1,419 items. We have tried to use different strategies in addition to Boolean operators to select the most appropriate records and avoid overlapping, but the results obtained were too divergent to be taken into serious consideration.

We have searched Ulrich's also to find out how many LIS periodicals had an ISSN. The result was that 3,905 (74.3%) periodicals out of 5,253 records indexed under "Library and information sciences" had an ISSN. Data from LISA Plus (Library . . , 1999) report 782 records with ISSN, while data from ISSN Compact give 1,116 records under the DDC class number starting with 02 . . . corresponding to "Library and information sciences". So, it is really very difficult to extract relevant data from different sources which are useful to retrieve specific bibliographic information but not for a general comparative survey on LIS products, which they were not conceived for.

To have an idea of the coverage of the secondary services we report some data taken from LISA Plus at the international level and compare them with the Italian professional literature database (Letteratura professionale italiana, 1977-1998) at a national level.

LISA Plus has a good international coverage (about 80 countries and over 38 languages) indexing 1,914 sources, with over 200,000 records (for the years 1969-1998), and an average of 6,400 records per year including mainly journal articles. The Italian professional literature, published since 1975, tries to cover what is published in Italy and abroad by Italian librarians and documentalists. The average number of records, from 1975 to 1988, amounts to 348 records per year. This figure grows in the next years (with an average of 726 records per year in the period 1989-1998). The increase is explained both as a consequence of the editors' decision to include also items taken from newsletters and by the increase in the number of books published in Italy from 1993 to 1998. We have compared trends of data included in the two files showing a general increase of items in both of them. The results are shown in Figure 1 (not including data for 1998 because at the moment many records are still to be added).

A brief reflection on the types of journal papers is required in order to better understand the evaluation process. In Unesco Guidelines for publication of scientific papers, first issued in 1968 (Unesco, 1968), three types of journal papers were identified: *full papers*, complete studies including all relevant theoretical or experimental data; *notes*, condensed articles; *communications*, reports describing first but fundamental research results aimed at rapid publication.

More recent studies (Line, 1999; Fisher 1999) still confirm this scheme and a general prevalence of research articles over the other types of publications included in a journal.

Besides journal articles, conference proceedings are a very widespread channel for information diffusion; they are generally considered as precursors of journal articles since they often include ideas and projects that may be later developed to be published in the journal literature. After analysing a number of conference proceedings in LIS we can state that, in most cases, conference papers reflect the types of journal articles above described.

Finally, books (monographs, handbooks, treatises, encyclopaedias, etc.) are considered as containers of packed or repacked information for special user groups whose needs are well identified such as, for example, students.

Table 2 Cover Prices of some Relevant LIS Periodicals in the Years 1985, 1994 and 1999

Journal title	1985	1994	1999
*Bollettino AIB** *(1961-1991: Bollettino d'informazioni AIB)*	*Lit 40,000*	*Lit 100,000*	*Lit 130,000*
Bulletin of the Medical Library Association	*$ 75*	*$ 136*	*$ 136*
*IFLA Journal**	*DM 98*	*DM 178*	*DM 298*
*Journal of Documentation***	*£ 78*	*£ 98*	*£ 172*
Journal of Information Science	*$ 80,75*	*$ 175*	*$ 265*
Journal of the American Society of Information Science	*$ 95*	*$ 456*	*$ 1149*
Library Collections, Acquisitions & Technical Services (1977-1998: Library Acquisitions: Practice & Theory)	*$ 130*	*$ 140*	*$ 206*
*Library Resources & Technical Services***	*$ 30*	*$ 45*	*$ 55*
Online & CD-Rom Review (1977-1992: Online Review)	*£ 49*	*£ 80*	*£ 100*
*Program***	*£ 67*	*£ 98*	*£ 145*

* *free to association members*
** *reduced rate to association members or corporate members*

PRICES OF EDITORIAL PRODUCTS

Recent studies (Revelli, 1999) show that price indices for journals and monographs have been constantly increasing for many years. In general, prices for journals have increased much more than prices for monographs.

We have carried out a survey to analyse the mean price rates for books published by editors in different countries in the period 1984-1998. The price increase proved to be so fluctuating for each editor that a deep analysis is required to understand the reasons for such price variations over time.

In 1999 there was a 10-15% increase for all subscriptions of scientific journals. This caused a cancellation of subscriptions involving also library journals.

Table 2 contains prices of some relevant LIS journals for the years 1985, 1994 and 1999. We have reported the cover price, not including postal charges, possibly in the currency of the country of publication of the journal. A relevant price increase is evident for all periodicals.

The general and widespread growth of editorial products is evidence of an enhanced maturity of the profession. The situation, of course, is very different from country to country where the development of libraries and information services is slower and where library professionals have not reached a satisfactory status and reputation.

A differentiation should be also considered between editorial products conceived for the national audience and those addressed to an international public. The first are more deeply influenced by national realities (historical background, economic condition, political situation, cultural context, existence or absence of professional associations, professional education and training programmes, etc.). Editorial products for an international audience should satisfy users' needs throughout the world; of course they are affected by the activities carried on both at home and abroad.

Among these two types of products (the national and the international) there are those national products which have international relevance for topics therein discussed and analysed, such as for example some national leading professional journals that are important sources of worldwide information.

We should reflect also on the acceptance criteria followed by the editors in selecting material for publication; in general, acceptance is based on the interest and impact on the readers of the topics covered by a journal, monographic serial or other publications. In a recent survey (Mury and Walters, 1997), the acceptance rate is reported for 88 journals; the rate goes from 10% (*Third world librarian*) to 100% (*SLA Social science division bulletin*) with an average of 63.2%. Most of the journals with a low acceptance rate are refereed.

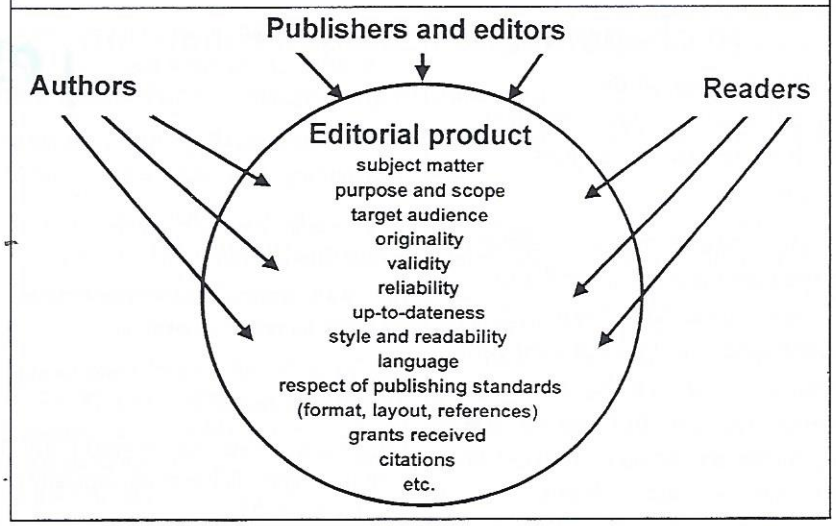
POSSIBLE EVALUATION STRATEGIES

As far as evaluation is concerned, we must consider that it is always very difficult to determine the intrinsic value, validity and reliability of any information source, that is to assess the quality of information.

We believe that there is no formula or objective measure permitting to evaluate information quality as a whole. In practice, a general evaluation criterion is based on the consensus of a given professional group as to what is information of higher quality, what is redundant, up-dated or superseded and what is junk or, even worse, what is inaccurate, wrong or false information.

The consensus is built by applying evaluation criteria and tests as yardsticks against which the quality of information is judged. One of the most powerful tests in such a

Figure 2 Features of an Editorial Product



consensus is the test of time although, over time, even consensus may change (Saracevic and Wood, 1981).

THE EDITORIAL PRODUCT AND THE MAIN ACTORS OF THE EDITORIAL CHAIN: POSSIBLE INDICATORS

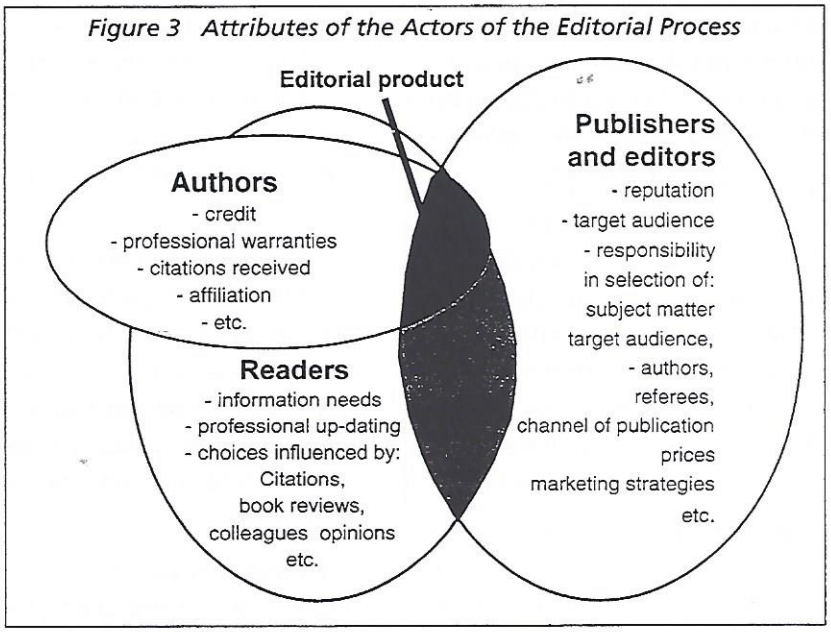
The scheme reported in Figure 2 shows the main features of an editorial product which can be associated with the actors of the editorial chain and produce useful suggestions to reflect upon quality and use of the editorial products. We have subject matter, purpose and scope, target audience, originality, validity, reliability, up-to-dateness, style and readability, language, respect of publishing standards (format, layout, references), grants received, citations, etc.

Let us consider, as an example, the subject matter of a publication that is the first and the most obvious of its attributes: it is relevant for all those involved in the publication but has different objectives according to the different points of view. For the authors, the subject matter is the objective of their work; they will not change it but they must select the most appropriate channel and adjust it to the required standards. For publishers and editors, subject matter is associated with the scope of their publication channels, market requirements, editorial policies of the selected channel, etc. For readers, the subject matter of an editorial product is directly dependent on their information needs.

Similar reflections may be easily expressed for the other evaluation parameters considered in the above simplified scheme. In any case, we believe that a careful consideration of the above indicators will help all the persons involved in the editorial process to improve the quality of their products and permit the best exploitation of the original information.

Furthermore, we have sketched out (Figure 3) some specific attributes of the different actors of the editorial process. For authors, we must consider their credit, their professional warranties, the citations their works received, their affiliation, etc. As regards publishers and editors, we should consider their reputation at national and/or international level, the target audience, and the responsibility they have in the selection of: subject matter

Figure 3 Attributes of the Actors of the Editorial Process



of the editorial product, authors, referees, channel of publication, prices of the editorial products, marketing strategies, etc. As regards readers, one should consider their information needs, the necessity for their professional up-dating and the factors influencing their choices such as citations, book reviews, colleagues' opinions and suggestions, etc.

Of course, many other factors may be included, besides what is associated with the editorial product itself and with the main actors of the editorial chain. These factors depend on specific situations and may be associated with knowledge advancements, technical progress, market demands, etc. But we believe that the attributes we have presented in the above schemes should be considered as basic parameters to assess the value of an editorial product. Therefore, as shown in Figure 3, the editorial product may be represented as the complex sum of all the attributes associated with the actors of the editorial chain, besides having its own attributes.

CONCLUSIONS

We have tried to analyse some characteristics of LIS editorial products and to offer some suggestions to make all people involved in the editorial chain aware of the importance of relying on given evaluation criteria. It is not easy to establish quality indicators for editorial products since, as we already said, there is no formula or objective measure permitting the evaluation of information quality as a whole. The final assessment of an editorial product may be considered as the sum of established criteria referring both to the product itself and to all the actors of the editorial chain plus variable criteria that change in time since they are associated with specific situations.

We are facing a continuous challenge from new technologies in the field of information management, but we are convinced that the basic principles guiding the editorial process remain unchanged.

As a final remark, we believe that our considerations might be useful to reflect upon the role that we all play in the editorial chain as authors, editors and readers of published information and do hope that the co-operation and experience of all information professionals may help to produce useful tools to improve the quality of LIS editorial products.

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Evaluating public and academic libraries for better management: the French approach and methodology

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French decision-makers are in daily need of relevant information to use in library management. To assist in the decision-making process, the Système d'Information et Interface (SII) research team is conducting an experimental project of new Decision Support Systems (DSS) within the French library environment. Three types of French libraries are experimenting under the SII project, an unrestricted information environment where information accumulated daily is changing from electronic to a more controlled and organised environment. This paper addresses the main results of the *Evaluating for Better Management* project and describes the methodologies chosen to select standardised performance indicators from three viewpoints: effectiveness, efficiency and relevance. It outlines the main features of a common evaluation model adaptable within the French library context.

INTRODUCTION

Public and academic library managers are seeking powerful and yet simple tools to strengthen services and activities control and to recognise how valuable they are to their population target. French librarians are aware of the value of evaluation and its advantages. However, their mobilisation is still less prominent than the Anglo-Saxon library expertise, owing to differences in their status and their organisations. Mainly, two pitfalls have significantly affected the improvement of the evaluation activities in France. First, the management policy depends on the political and the administrative environment of the authority to which the library belongs. Second, evaluation practice relies on the willingness of the manager to implement practices and focuses on action more than impact.

THE PITFALLS OF EVALUATION AND MANAGEMENT PRACTICE IN FRENCH LIBRARIES

Although French librarians have become more and more sensitive, the evaluation approach is still largely empirical (Giappiconi and Girard-Billon, 1998). Besides, performance measurement indicators and the use of the tools are not standardised, as time and resources devoted to the evaluation practice depend on the management policy followed by each library and the expectations of local authorities.

The diversity of the target population and materials is another factor, explaining the differentiation of the evaluation practices in France: while academic libraries are visited by a homogeneous public (made up of students and researchers) and cover generally well-known research fields, public libraries deal with citizens whose levels and needs are heterogeneous, and therefore difficult to control.

The following is some information regarding possible evaluation pitfalls between public and academic libraries.

Most French public libraries do not have clear and formal mission statements and objectives yet. This is due to the lack of dialogue between the local authorities and the library regarding priorities choices.

Despite the importance of statistics, collected yearly by public libraries in France under the support of the Ministère de la Culture, Direction de Livre et de la Lecture, the publication of these statistics is not current enough to support management decisions (Ward, S. et al, 1995). As a result, the definition of the library services and the collection of statistics lack precision and planning.

Contrary to this situation, academic librarians collect valuable data yearly on the basis of a selected set of performance indicators. The survey identifies the user community as suggested by the Ministère Supérieur de la Recherche-Direction de l'Information Scientifique et Technique (ENSSIB, 1999). So, the evaluation culture in this case seems to achieve a professional level as the performance indicators are clearly identified. In fact, these indicators are organised according to a specific set of categories such as the collection description, the acquisition policy, the conservation, the information resources and the quality of services. The grouping of results of indicators and measures enable librarians to evaluate their management.

Concerning budget management, academic libraries have gained a certain autonomy with regard to the central administrations, contrary to public libraries which are completely centralised by the local administrations. Because the academic French libraries occupy an important place in the university organisation chart, these are fully accountable to the university administration for management policy, although for instance they negotiate yearly for new grants.

Staff management is self-governed by the academic library itself, while the public library is kept under the local administration control. This centralisation may complicate

evaluation practice, since public libraries are strongly influenced by the local administration culture and its changing policy.

However, the notion of "public management" that takes into account public interest, contributes to modify qualitatively the social impact of some public libraries in France (Giappiconi and Carbone, 1997). These libraries show more consideration to recent social impact studies. Inspiration is taken from the results of these studies to improve their contribution to the citizen's knowledge development, reduced unemployed and continuing adult training (Kupiec, 1994).

These advantages either in the management of public libraries or in the evaluation process of an academic one, allow us to go on the assumption that sharing potentialities and needs between these two types of libraries leads to more efficient services, activities and resources impact, especially since evaluation practice in both types of libraries in France deals with actions and resources more than impact and performance.

THE FEASIBILITY OF A JOINT EVALUATION PROJECT IN FRANCE

Three particular themes support a joint evaluation project, going beyond in this way the constraints and the differentiation already quoted in this paper. The first theme concerns the evaluation exercise in French libraries, which still lacks studies that deal with cost analysis and electronic library evaluation. In both cases, the evaluation tradition remains limited, because of the manuals' vocabularies heterogeneity (ISO, 1998), the prevalence of empirical practices, and the lack of a real guideline of performance measurement in the French language (Giappiconi and Girard-Billon, 1998).

The second theme deals with common worries and needs ascertained in the two French libraries types. On the one hand, considerable technological development makes user expectations more complicated. On the other hand, the financial resources of the French libraries are tighter. Therefore, all librarians need to:

- improve service quality while cutting down expenditures (Carbone, 1998);
- supervise the impact of management policies while carrying these out;
- satisfy the new authorities' expectations (local or central administration) as regard to quality and performance;
- etc.

The third theme concerns three missions that public and academic libraries have in common: training, information and culture.

Concerning the training mission, public and academic libraries in France serve users whose age is between 19 and 29 years old. According to the results of a recent investigation made by the public library of the Centre Georges Pompidou in France (Evans, 1998), 90% of its visitors had at least the general certificate of education in 1995 and 77% of them were students. Besides, the libraries play a great part in continuously updating human knowledge. While academic libraries purchase new items that deal with specific research fields, public libraries develop timely and topical collections.

So, it appears that public and academic libraries could exchange user training programmes. Two major activities must occur:

- understanding how to use the documentary research tools available in these libraries;
- learning how to navigate the Internet network and use its tools (Bertrand, 1998), etc.

For the information mission, both types of libraries are considered as public places where a collection of ideas and discoveries are available to users (Marie, 1999). Research indicates that users visit French libraries more frequently than before to search information about subjects that interest them greatly. This fact explains generally the growing development of the press reviews of French libraries (Lamy, 1992).

Moreover, the value of training that is getting beyond the library wall changes increasingly how we perceive the role of librarians who become information professionals (HERTIS, 1994). Thanks to their significant effort of filtering and validation, a high quality of electronic information resources is in each type of library, ensuring the availability of relevant and useful information.

On the whole, a meaningful collaboration between French libraries in this case can:

- improve the quality of electronic services and the findings of add value information;
- help to recognise the features and the behaviours of the remote users;
- identify the electronic services impact on these users by selecting relevant performance indicators for evaluation (Young, 1998);
- resolve the legal problems related to electronic document copyright;
- etc.

This collaboration should deal with another common role played by public and academic libraries (Taesch-Wahlen, 1996). It's about the cultural mission which may differ from one type of library to another: from the public library viewpoint, participation in the cultural development of citizens concerns information and training for leisure purposes. However, academic libraries contribute to develop the general knowledge of the student and the researcher by giving them the opportunity to be further

informed about other research fields instead of being limited by their specified study programme.

EVALUATING FOR BETTER MANAGEMENT: THE PARTNERS AND THE STAKES OF THE FRENCH PROJECT

The first important aid to improving the evaluation culture is the introduction of computer support systems in France, since the performance of the software systems used until now by French libraries to generate automatically spreadsheets and reports for decision making are not really satisfactory (ENSSIB, 1999).

Sharing expertise and skills between librarians and researchers on management and evaluation constitutes a second greatest aid to removing barriers between libraries in general, and establishing particularly evaluating models for better management. The SII research team located at École Nationale Supérieure en Sciences de l'Information et des Bibliothèques (ENSSIB), intends to promote these two aids. To this end, it has gathered different partners (librarians, experts and system suppliers) and has established an agreement about the project stakes and steps.

The Partners of the Project

Three libraries participate in our project which have facilities and and equipment that seem to be particularly innovative in France:

- the ENSSIB <http://www.enssib.fr> library acts as an information centre. It is frequented by students and researchers whose learning fields deal with documentation, library sciences and new technology. This library produces monthly statistical data about its electronic services which are accessible by the Internet. These data help librarians to calculate the remote penetration rate of the library (ENSSIB, 1999);
- the Bibliothèque Municipale de Fresnes <http://www.mairie-fresnes.fr/bibliotheque> is an example of an innovative public library. Newly inaugurated, the building of this library was designed with regard to a clear management policy based on the definition of the population target as well as the missions, the objectives and the goals of this library. Because the new library building is equipped with innovative information systems that automatically collect meaningful data for evaluation, the policy followed by the Fresnes library should be easily evaluated;
- the Service Commun de Documentation of Jean Moulin University <http://www-scd.univ-lyon3.fr/> at Lyon3 represents an academic library. It develops an automatic information system called "Siber3" by which librarians can control their acquisition policy regularly (Molliné, 1999).

These three libraries are willing to use new DSS to improve evaluation practices and consequently management. Hence, objectives are defined as well as evaluation requirements, before testing these systems.

Because these libraries are using different management software systems, we decided to involve the suppliers of the libraries' systems, in particular OPSYS and EVER. The role of these suppliers in this project is to evaluate whether the new DSS which we intend to experiment with are compatible with the automatic systems of the three participant libraries. As a result, any ergonomic difficulty and any connection problems that may occur should be resolved.

Steps and Methods

The three first steps in the project were:

1. the partners defined a common set of management and decision-making support requirements;
2. the SII research team synthesised the relevant performance measures and indicators emerging from the literature, which can be adapted within the French library context;
3. every library recently defined and formalised its goals and objectives in order to make the evaluation process easier.

However, each of these libraries used a different methodology according to its needs and management. Indeed, the ENSSIB library chose to select performance indicators by function and service under each mission. By using these indicators, the librarian can check if he reaches the expected objectives and impact or not. However, the Fresnes library identifies its missions and organises performance indicators into four categories under each mission: the impact, the perceived quality, the efficiency and the relevance.

The academic library of Jean Moulin Lyon3 applies the recommendation of the Ministère Supérieur de la Recherche-Direction de l'Institut Scientifique et Technique (Carbone, 1997).

The Project Purposes

The purposes of the project in the short term are to evaluate recent technology facilities and timeliness related to the evaluation tools. Hence, one or several evaluation models capable of being adapted to other public and academic libraries in France can be defined in the long run. This (or those) perceived model(s) should be flexible enough to enable comparison studies on evaluation and management. Besides, these models should have not only a technical capability, but also a usability capability.

Although our partners are familiar with the concepts of measurement and its techniques, they want to involve their staff in the evaluation process so that they will be familiar with the DSS and the performance indicators. This

is based upon a belief that improving management policy and achieving goals and objectives concern all the staff members. This criterion must be taken into account by the expected models that should additionally contain the following features:

- the capacity to evaluate the defined objectives with the devoted resources and the obtained results. The model(s) should automatically manage and update data collected by the library either internally or externally, in order to support the decision maker by giving alternative decisions;
- the option to generate attractive spreadsheets, schedules, reports and graphics at the librarian's request;
- the facility to inform librarians about the social impact of their developed activities and services. The model(s) must carry only meaningful results of library management and make them communicable to others with confidence;
- and finally, the capacity to analyse the performance of the library regarding its environment. Thus, market analysis training and some methods of benchmarking should be carried out by the model(s).

THE MAIN RESULTS OF THE FIRST STEPS

The features of the model(s) required by our partners are identified by reference to a number of research projects and international performance measurement manuals. These model features have different interpretations depending on two points of views.

From the Management Point of View

The IFLA guideline (Poll, 1995), the LISU toolbox (Ward, 1995), the ISO 11620 standard (ISO, 1995) and the matrixes of John Sumsion (Sumsion, 1998) represent good references because they help the participant librarians to find the appropriate indicators and measures for evaluation. This set of tools is an adjunct to the MIEL Report (Brophy and Wynne, 1997) that brings up other relevant indicators to evaluate electronic services offered by the three libraries.

Finally, three categories of indicators were selected by these libraries. The first category gathers those related to the effectiveness criterion, which compares objectives to results. The French group agreed to consider the *penetration rate*, as the most prominent indicator. It measures the number of users from the target population who use the library.

Efficiency was chosen by the group as a second criterion to compare the obtained results to the implemented resources. In this case, the partners of the French project use mostly the indicator *cost per user* to check if their realisation impact justifies their expenditures. In addition, the Fresnes library decided to use the *total cost per item catalogued* indicator.

Finally, to compare resources with objectives applied by the relevance criterion, the director of the Fresnes library finds the "conspectus" method very interesting especially for collection evaluation (Bushing et al, 1996).

This method proposes indicators that reflect the status of goals and activities levels related to collection development. These levels are distinguished as follows:

- CC = the Current Collection, or the growth rate, identifies its ability to meet the mission of the library;
- AC = the Acquisition Commitment represents "the current level of activity at which the collection is being developed" (Bushing et al, 1996);
- CG = the Collection Goal determines the target level of the collection planned by the library.

Further discussion will be held with the other partners soon to deal with the proposal of the Fresnes library. Through this method, the evaluation of the collection relevance is achieved by identifying the AC that represents the point of intersection between CC and CG.

Meanwhile, the research group selected the existing tools and the literature, because the given applications and the examples of effectiveness indicators seem to be numerous, whereas cost-effectiveness or efficiency indicators are very few. Besides, the value of statistical data is not specified yet. So, the group concludes that further analysis should improve the understanding of how quality management can be applied by librarians in order to achieve the expected impact. The group intends to add other relevance indicators that are not mentioned in the literature, to evaluate the rest of activities and services provided by libraries.

From the Technical Point of View

The emphasis of the assessment is experimental. Now that a set of relevant performance indicators has been collected, five European DSS newly designed are under the French group's consideration. These systems are supposed to manage automatically any standard performance indicator or measure. Their role is to allow libraries to implement a reliable evaluation process and to help these libraries in their daily management without making this process too heavy.

These systems are funded by the European Community Research programme: DECIDE (DECIsion Support MoDEls and a DSS for European Public and Academic Libraries), DECIMAL (DECIsion-MAking in Libraries), EQLIPSE (Evaluation and Quality in Library Performance System for Europe), MINSTREL (Management INformation Software Tool-REsearch in Libraries) and EQUINOX.

These DSS are promoted by the Concerted Action on Management Information for Libraries in Europe (CAMILE, <http:www.dmu.ac.uk/~camile/>).

The French project should oversee its validation impact on the evaluation process of the three participant libraries. In the final report, the working group should choose one or several European DSS that make the expected model's features realisable.

The first contacts made with the CAMILE partners allowed us to know the recent results of surveys conducted in these projects, concerning the European librarians' requirement in quality management, evaluation tools and hybrid library evaluation. At this stage of research, we have not tested DECIDE yet, which is the only commercialised CAMILE DSS, because of the administrative procedures and structures slowness.

However, the research group is greatly interested in other DSS developed elsewhere such as the Bibliostat Collect <http://www.bibliostat.com>. Most importantly, data related to in-library use and to library visits, which are often not counted by French libraries because of their complexity, will be provided thanks to the Geographic Information Software (GIS). This latter developed by the Geolib project <http://www.geolib.org/doepeop.htm> for collecting, storing and analysing spatial objects and phenomena, will provide the French partners with additional insights to permit them to analyse the libraries' market profiles and locations (Koontz, 1997).

CONCLUSIONS

Sharing the missions, the potentialities and the needs concerning management and evaluation between public and academic libraries is the most important factor for empowering evaluation culture and improving management in French libraries.

This factor is emphasised in the French project, where a set of goals and objectives is well defined, and a selection of performance indicators has been achieved according to effectiveness, relevance and efficiency criteria. A set of features concerning the evaluation models has also been identified by the French working group, making a promising start. The working group decided to broaden the project outlook concerning the experimentation of operational automatic information systems. Other tools and evaluation programmes can be involved in the project thanks to intensive collaboration with other projects. For example, the collaboration with the Geolib project partners that started four months ago should complement the French project. It should help, through GIS, the three participant libraries to evaluate in-library use and to analyse the market profile which is still excluded from the evaluation process in France.

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Scorecard models and their use in measuring performance: UK retail banks, a case study

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In the contemporary competitive economic climate, companies must harness information effectively to ensure optimum performance in the market. Increasingly, scorecard models are being used to translate a company's mission and strategy into a comprehensive set of performance measures, providing the framework for a strategic measurement and management system. Presented here are the results of a British Library Research and Innovation Centre-funded project which examined the use of scorecard models in the UK retail banking sector. All the banks surveyed used scorecard models of one type or another. However, this information retrieval and analysis process was undertaken by strategists rather than by information professionals, only two of whom were involved in such activity. Thus, if information professionals are not to be marginalised within their organisations, they must become involved in such processes.

INTRODUCTION

It is imperative that such a valuable resource as information is harnessed effectively by the business world, especially in the highly competitive economic environment of the late 1990s which Tyson (Tyson, 1998) views as indicative of a move from an information age to an intelligence age. In this new age, companies need to build both a knowledge base about their competitive environment, and a perpetual strategy process to keep it continually updated. Thus, a company's information advantage no longer lies simply in the ability to store and retrieve information, but in matching it to specific strategic processes. As Frappaolo (Frappaolo, 1998) suggests, corporations are measuring the value of their information assets by their ability to utilise such information to react to market demands more effectively than their competitors.

THE BALANCED SCORECARD

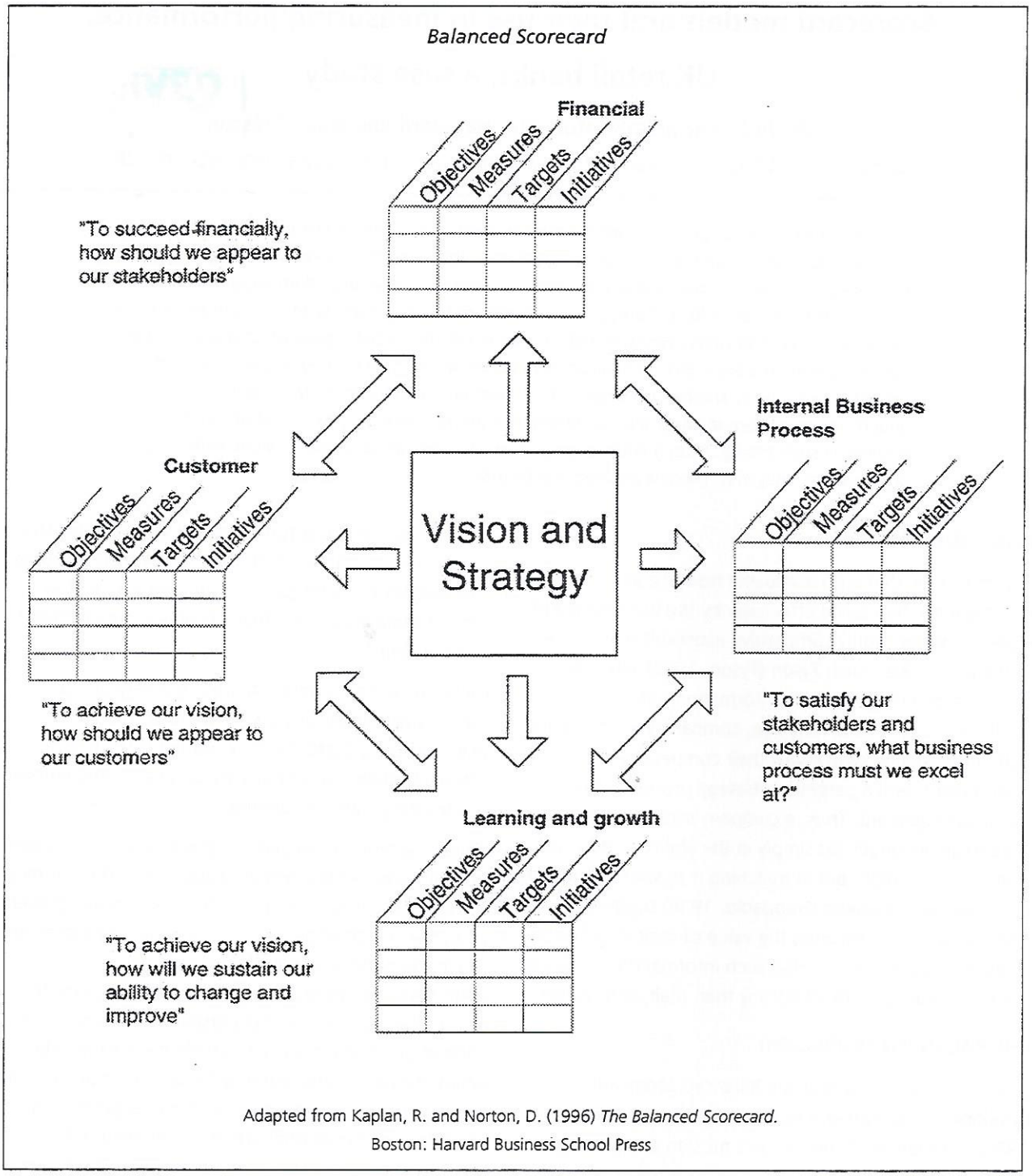
Scorecard models, such as the Balanced Scorecard developed by Kaplan and Norton (Kaplan and Norton, 1996), translate an organisation's mission and strategy into a comprehensive set of performance measures which provide the framework for a strategic measurement and management system. This performance measurement framework has two key objectives: converting strategy into specific goals for different sections of an organisation, and communicating that strategy to all parts of the organisation. This entails a re-consideration of the traditional corporate management style and a move away from reliance on purely financial measures as a basis for strategy development. In a sense, the scorecard attempts a genuine marketing orientation by ensuring a co-operative organisational framework which will ensure customer value. The emphasis on customer satisfaction should not be regarded as a woolly, academic statement. As McNerney (McNerney, 1996) points out, it arises out of hard economics:

> "Loyal customers, it turns out, are very valuable to an enterprise . . . (they) tend to patronise their favourite businesses more frequently over time and as they make more purchases, they become more profitable to the firm."

The scorecard considers and links four very different perspectives: financial (how do we look to our shareholders?), customer (how do our customers see us?), internal business (what must we excel at?), and innovation and learning (can we continue to create value?).

Whilst the term "balanced scorecard" seems to suggest that all these perspectives are equally important, it may be argued that customer satisfaction is of principal concern. Thus, the customer perspective measures the extent to which the organisation is meeting the demands of customers and indicates customer preferences for the future; the internal business perspective relates to the internal processes in place to satisfy these expectations, whilst innovation and learning focuses on improving the organisation's ability to meet customer expectations. This essentially customer orientation is consistent with the argument that successful strategy formulation is dependent on a customer based, bottom-up, flow of information (Broady-Preston and Hayward, 1998). As Cravens (Cravens, 1998) argues, by extending measurement beyond simply financial performance, the balanced scorecard provides a basis for examining the contribution of strategy design as opposed to its implementation. The information so generated by the scorecard then facilitates diagnosis of an appropriate strategy.

The scorecard works by specifying a limited number of goals and measures. For example, a financial goal might be to survive, and that would be measured by cash flow; a customer goal might be concerned with new products, which would be measured by the percentage of sales from new products. Many organisations already use these kinds



Adapted from Kaplan, R. and Norton, D. (1996) *The Balanced Scorecard.* Boston: Harvard Business School Press

of financial and non-financial measures as key information components in their strategic decision-making process. However, the contribution of the balanced scorecard is to ensure that these measures become an integral part of the information system for employees at all levels of the organisation. Thus, whilst the combination of financial and non-financial measures are derived from a top-down process driven by vision, they also provide bottom-up feedback to strategic decision makers.

MANAGEMENT PROCESSES

The scorecard may also be used to develop a strategic management system, by helping decision makers to evaluate implementation and to modify strategy. This involves four management processes, as follows:

- Translating the vision
- Communicating and linking
- Business planning
- Feedback and learning.

Translating the vision attempts consensus for the organisation's vision and strategy. Grandiose sounding mission statements often mean little to managers at the operational level, and should instead be expressed as an integrated set of objectives and measures which have meaning to the people who have to realise the vision (Kaplan and Norton, 1996).

Communicating and linking enables managers to communicate strategy to all levels of the organisation by

virtue of wide participation in the creation of a scorecard. This would seem to offer several advantages:

> "Information from a larger number of managers is incorporated into the internal objectives; the managers gain a better understanding of the company's long-term strategic goals; and such broad participation builds a stronger commitment to achieving those goals."
> (Kaplan and Norton, 1996, p. 80)

This process is further divided into three sub-phases: *Communication and education* plays an important part in bottom-up strategic input, in that the balanced scorecard is communicated upwards in the organisation to the corporate centre:

> "Such communication informs the executive and the board in specific terms that long-term strategies designed for competitive success are in place."
> (Kaplan and Norton, 1996, p. 80)

Setting goals ensures that the vision and objectives designed by the corporate centre have relevance to business units and individuals. To aid the process, the scorecard contains three levels of information: corporate objectives and targets, business unit targets and individual targets. The final sub-phase, *linking rewards to performance measures*, attempts to link compensation systems to balanced scorecard measures, so linking financial compensation to performance.

If, as Day (Day, 1994) suggests, the instigation of change is broadly a top-down process, then conceivably there may be difficulties with linking short-term initiatives, at the operational level, to strategic goals. Kaplan and Norton (Kaplan and Norton, 1996) argue that the basic problem is that many organisations have separate procedures and organisational units for strategic planning and for resource allocation and budgeting. This has implications for the *business planning* process in that it is senior managers who are largely involved in formulating strategic plans for the next three, five or ten years:

> "Meanwhile, a separate resource-allocation and budgeting process run by the finance staff sets financial targets . . . for the next fiscal year. The budget it produces consists almost entirely of financial numbers that generally bear little relation to the targets in the strategic plan." (Kaplan and Norton, 1996, p. 82)

The result is that longer-term strategic plans are often ignored as managers concentrate instead on the budget. The actual creation of a balanced scorecard forces companies to integrate strategic planning and budgeting processes, and ensures that budgets support strategy (Kaplan and Norton, 1996). Moreover, the scorecard should link action with strategy by identifying the drivers for strategy and then influencing managers to concentrate on improving processes most necessary for strategic success.

These first three processes play a vital role in implementing strategy but do not require a re-examination of the strategic process. The final management process, *feedback and learning*, identifies three ways in which the balanced scorecard aids strategic learning. Firstly, by linking the work of individuals to business unit objectives, and secondly, by supplying a strategic feedback system:

> "A strategic feedback system should be able to test, validate, and modify the hypothesis embedded in a business unit's strategy. By establishing short-term goals, or milestones, within the business planning process, executives are forecasting the relationship between changes in performance drivers and the associated changes in one or more specified goals."
> (Kaplan and Norton, 1996, p. 84)

Finally, the scorecard enables a strategic review as part of strategic learning. The relationship between performance drivers and objectives, highlighted by the scorecard, allows the corporate centre and business units to evaluate both the strategy and how well it is being executed:

> "The capacity for enabling organisational learning at the executive level – strategic learning – is what distinguishes the balanced scorecard . . . "
> (Kaplan and Norton, 1996, p. 85)

PURPOSE AND RELEVANCE OF SCORECARD MODELS

The aim of this model and others like it, such as the Business Excellence Model (British Quality Foundation, 1996), is to recognise strategically what underpins success and, in doing so, to bring together information which, whilst it might always have existed, has never been brought together in one place before. The Business Excellence Model provides a way of looking at all the factors which might contribute to an organisation's success ('A model . . ', 1997). These are grouped into "enablers" (leadership, policy and strategy, people management, resources and processes) and results (people satisfaction, customer satisfaction, impact on society and excellence in business results). As Brereton (Brereton, 1996) argues, as part of building business excellence, this kind of self-assessment can form a sound basis for strategic direction and for the prioritisation of future improvement plans and actions.

The relevance of these models to the strategic planning process is testified to by senior executives in industry:

> "We (Mobil Oil) are incorporating the methodology into our strategy and business-planning processes. We conduct on-going business performance reviews and strategic planning based on the balanced scorecard."
> (McCool, 1996, p. 168)

Similarly, the Chemical Bank of New York have found the

scorecard useful as a catalyst for MIS improvements:

> ". . . now we are devoting substantial energy and resources to enhancing our ability to manage strategic information." (Hegarty, 1996, p. 172)

RESEARCH PROJECT

This paper presents the results of a British Library Research and Innovation Centre-funded project (Broady-Preston and Hayward, 1999) which examined the use of scorecard models in the UK retail banking sector. Questionnaires and interviews were conducted with strategic and information managers in the top 20 retail banks to ascertain their usage of such models, and their relative roles and responsibilities in this performance measurement process. The response rates for the survey were, firstly, of the strategic managers, 70% returned the competed questionnaire, 50% of whom were subsequently interviewed. With regard to the information managers, 85% returned the completed questionnaire, 76% of whom were interviewed.

SCORECARD MODELS : PERCEPTIONS AND VIEWS OF THE STRATEGIC MANAGERS

The questionnaires sought information as to which performance measurement models were used by the organisations. Of those who responded, 43% used the balanced scorecard, 29% the business excellence model and 29% a scorecard specific to the organisation; some companies used both a scorecard and a business excellence model. 21% mentioned other paradigms such as value-based management, whilst 21% used none of these.

In many instances, scorecards and business excellence models either had been in place for only a year or so, or were in the process of being rolled out. The development of the scorecard approach stemmed largely from a recognition that companies needed to concentrate on aspects other than the financial in their strategic process, viz:

> "We've actually defined four core areas of performance which are allowing us to get a much more balanced perspective on the efficiency and effectiveness of what we actually do."

Managers believed that as balanced scorecards necessitated an understanding of key business drivers, they were thus being forced much closer to the business, and that this was providing them with a better understanding of overall business performance. The scorecard also enabled the business units to understand more clearly what it was they were supposed to deliver:

> "So it's bottom-up in the sense that they're clear about what they're supposed to be doing but the success of that is very dependent on how you follow that through."

One company, for example, stated that towards the end of the 1980s, it had felt the need to re-establish its corporate purpose. Ultimately, such purpose was defined as the creation of value for shareholders. Nonetheless, it was believed that there was little purpose in identifying such a mission statement, if there were no processes in place to make it happen, thereby underscoring the need for a balanced scorecard or similar model.

As with the scorecard, the business excellence model can be seen as a way of understanding the key factors critical to the success of a business, in a way acting as a self-assessment mechanism which is both questioning and challenging. In one bank this was seen as a two-dimensional process, involving, firstly, a leadership team and secondly, teams at an operational level. The second dimension involved a business excellence audit, based on the European Quality Model, which looked at seven specific areas within the organisation. Both of these dimensions were expected to feed into the decision-making process, as follows:

> "We're billing our strategy, internally, as transformational in that the old traditional branch hierarchy will start to disappear and we would see that as affecting how people actually address the customer and we're going to be billing business excellence as how we actually run and take decisions in the Bank as well."

A typical problem for managers operating at a strategic level, is that they become inundated with information which is difficult to apply. There was evidence to suggest that the scorecard was helping companies to confront information problems, thus:

> "It challenges us in terms of the business and in terms of our ability to manage data, and we're not good at that. We're not good at how we manage and communicate information. There's information that sits in marketing, there's information that sits in my area, and we're not good at the way we communicate that information . . ."

Another manager felt that one of the merits of the scorecard was that it had the ability both to provide focused information, and to flush out other pieces of information used in the organisation. However, this second factor had not yet reached its full potential:

> "We haven't got that up on a PC and we haven't drilled down far enough in order to get all the component elements. I do see that as a goal over time."

Whatever the merits of these kinds of models, one manager believed that successful companies would, in any case, have means of identifying key business drivers, and would have integrated these already into the strategic process:

> ". . . good, well run, successful businesses have an intuitive balanced scorecard which moves in cycles . . . [a company] might have 2 or 3 corporate objectives, things that they are measuring very intensely, and when one of them drops off the agenda another key issue might pop on . . . what I'm saying is that over time you don't overload the agenda, you don't overload the scorecard."

The key issue for a minority of the managers interviewed was the paradigm known as value-based management, which advocates that the key objective for all publicly traded companies is the maximisation of shareholder value. As one manager observed:

> "It was important for us that we had a performance measurement process that did really reflect the drivers of shareholder value. We actually had some internal strategic processes that were consistent with it, so it was very much a conscious effort."

As Barfield (Barfield, 1998) argues, Group strategy and planning functions are becoming an active substitute for external markets in assessing the value creation potential of business unit plans and strategies. This was confirmed by one manager at interview:

> "You must prove to yourself and the Group centre, that the option you are going for is based on the rejection of other viable options; you've looked at other options and rejected them."

Effective use of the value-based approach involves dramatic changes in the way an organisation deals with areas such as budgeting, goal setting, capital allocation and performance management. Of necessity, this requires a critical analysis of both the quantity and quality of existing financial information and by conducting a market assessment in financial terms, companies are able to identify a number of options:

> "When we look at competitive advantage we actually split that into, do we have an operating advantage ie. do we do things at a lower cost than average, do we have an offer advantage ie. do we get on average more income than the average competitor, and by putting it into that kind of framework you can start to understand the source of competitive advantage . . ."

The underlying principle of ensuring shareholder value was not perceived as detrimental to obtaining a greater customer focus. Maximising return to shareholders, and providing a good service to customers were regarded by managers as one and the same thing:

> "I really don't think there is an either/or choice at the end of the day. My reason for saying that is that in the short term you can bump up profits at the expense of customers, over the long term there is absolutely no way you can deliver value for shareholders with an inferior customer offer."

Clearly, the link between these different paradigms is that in large companies, with different organisational structures, it is often necessary to have a governing principle which ensures that everyone is pulling in the same direction. In terms of information flow, it not only aids the strategic direction or vision of the Board to be communicated effectively throughout the company, but enables operational performance to be constantly monitored.

SCORECARD MODELS: PERCEPTIONS AND VIEWS OF THE INFORMATION MANAGERS

A relationship between formalised information gathering and performance was identified by one manager:

> "Well I think performance information is absolutely essential . . . to some extent tactically and also strategically. Everybody, everyday, is looking for the information on what we're actually doing."

However, despite a clear association between formalised information and performance data, information managers were largely unaware of the existence of balanced scorecards or business excellence models in their organisations. Furthermore, only two of the information managers interviewed had any experience of using these models. One of these explained the process in her organisation:

> "It's done at a team level. I'm in the marketing leadership team so we run all our weekly meetings on a business excellence format and we have business excellence programmes running where we look at particular issues that we have, and we come up with the problem, how we are going to address it, action plans, and then measures of whether we've achieved that or not."

This lack of awareness concerning such models may be attributable to the fact that, as identified in the interviews with strategists, they are still in the early stages of roll-out in many organisations. Thus, although they assist the strategic process through the provision and analysis of performance related information, the value of scorecards has yet to be perceived amongst the information professionals.

CONCLUSIONS

All managers need to be genuinely involved with, and aware of, business activity and to appreciate the role information plays in such processes, and to be able to access and use appropriate information. Therefore, information needs to flow to and from all parts of the organisation in order to have an impact on strategy formulation and organisational performance. Blockages in such flows may be eased by the development of corporate intranets which should include, ideally, the type of performance-related information which is contained within a balanced scorecard.

Developments such as the increasing use of scorecard models require all strategists to be expert at information retrieval and analysis. Therefore, unless information professionals equip themselves with the requisite knowledge of such models, they may find themselves marginalised increasingly within their organisations.

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SERVQUAL: a client-based approach to developing performance indicators

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The Sterling C. Evans Libraries at Texas A&M University administered the SERVQUAL survey to university users in 1995, 1997 and 1999. SERVQUAL is a gap model for assessing service quality. Reliability, or internal consistency, of scores for all three years was evaluated by computing Cronbach's alpha coefficients, and construct validity was evaluated with a factor analysis. Specific issues of strategic interest for local library administrators are considered at the individual question level. Additionally, a specific analytical model, Six Sigma, is evaluated for its applicability for quantifying the gap. Future applications for the use of SERVQUAL in identifying best practices among research libraries are explored.

BACKGROUND

As the Academy of Marketing Science celebrated the tenth anniversary of SERVQUAL in 1998, Terry Grapentine, the symposium's organizer, opened the meeting by quoting Shakespeare's *Julius Caesar*: "There is a tide in the affairs of men, which, taken at the flood, leads onto fortune." He explained:

> "In the early 1980s, concerns about customer satisfaction and product quality became emerging tides in the affairs of industry and academia. And in the early 1980s, three academicians boarded their service quality boat and rode the tide. And what a ride they had. Their work not only spawned numerous articles, books, conference presentations, and consulting engagements, but also significantly affected how many organizations went about measuring service quality."
> (Grapentine, p. 4)

In their landmark papers, 'A conceptual model of service quality and its implications for future research' (1985), and 'SERVQUAL: a multiple-item scale for measuring customer perceptions of service quality' (1988), A. Parasuraman, Leonard Berry and Valarie Zeithaml proposed a Gap Model for assessing service quality. According to the authors, the key to optimizing service quality is to maximize the difference between two customer-derived measures, perceptions and expectations. The associated Gap equation, ($Q = P - E$), became an $e=mc^2$ analog for service marketing enthusiasts.

As service providers, the Gap Model was immediately and intuitively appealing to research librarians in North America. Librarians had struggled for some time to augment the tried and true production-oriented statistics represented in *ARL statistics* with service assessments (Andaleeb and Simmonds, 1998; Coleman et al, 1997; Nitecki, 1996a, 1996b, 1998; Stein, 1998). Over the past several years the Association of Research Libraries (ARL) has confronted the potential divergence between statistical measurement of expenditures for ranking purposes and the need for additional measures to assess outcomes. From an ARL retreat held in Tucson in January, 1999 emerged a dedicated effort to develop the data and measurement tools that could accurately describe today's research libraries (ARL New Measures: 2). A recent call by ARL's Board for new measures for determining library performance included user satisfaction as one of eight areas of focus for study. Although the use of SERVQUAL to assess service quality in library settings has been the subject of several studies, to date there has not been a report of comparisons of SERVQUAL results over multiple years in academic libraries. The General Libraries of Texas A&M University in College Station, Texas was a SERVQUAL pioneer in administering the survey in 1995 and has surveyed users subsequently each two years in 1997 and in 1999.

Our analysis of SERVQUAL considers both issues generalizable to academic libraries as a whole, and local, strategic issues of use in managerial decisions at the institution level, in our case, the General Libraries at Texas A&M University. General issues include:

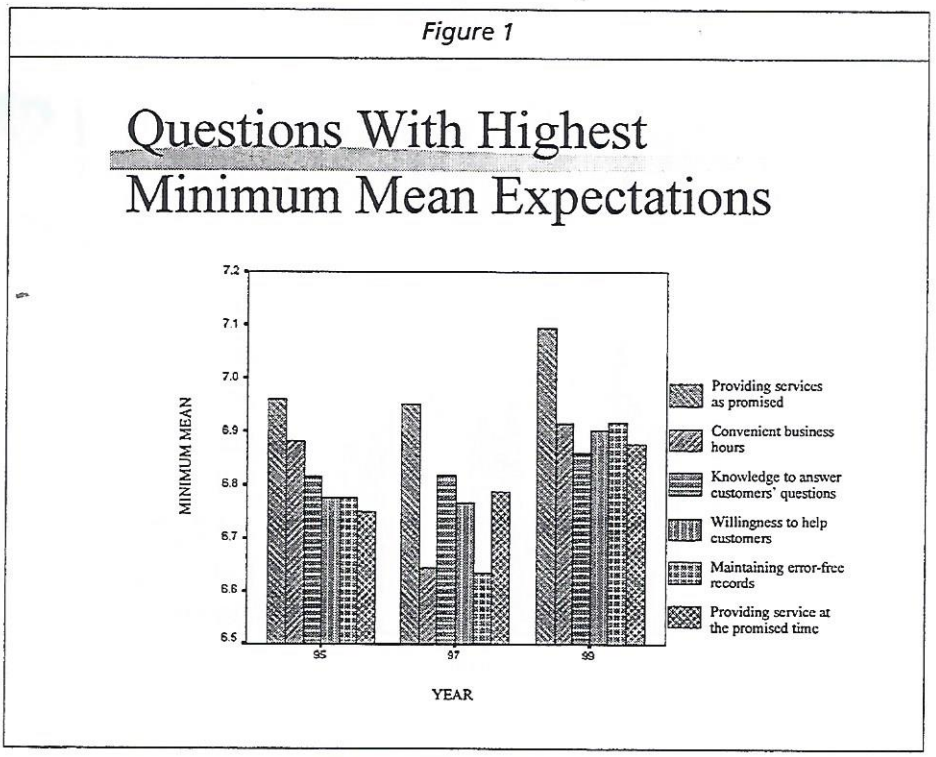
- Are SERVQUAL scores valid and reliable?
- Are there statistically significant differences between years and among user groups by year?

Specific issues of strategic interest for local library administrators are considered at the individual question level, particularly :

- What are the six most/least important questions for users?
- Are most/least important minimum, desired and perceived expectations the same from year to year?
- What obvious gaps exist in service quality, ie. differences between minimum and perceived expectations?

The SERVQUAL instrument used at Texas A&M consisted of 22 questions and a set of five questions that were used to assign weights, or relative importance, to the larger question set. Respondents answered each question, shown in Table 1, on three scales: **minimum, desired** and **perceived** ratings on a Likert-type scale of 1 (lowest) to 9

Figure 1



in order. These included *Question 20*, "Convenient business hours", *Question 13*, "Employees have knowledge to answer customers' questions", *Question 8*, "Willingness to help customers", *Question 9*, "Maintaining error-free customer and catalog records", and *Question 4*, "Providing service at the promised time".

The six questions receiving the ***lowest minimum means*** scores fell into the tangibles factor and were also consistent over the three survey administrations: *Question 17*, "Visually appealing facilities", *Question 6*, "Visually appealing materials associated with the service", and *Question 19*, "Employees who have a neat, professional appearance". It is noteworthy that overall means for minimum expectations have been gradually rising from 1995 to 1999. Users expect more of us over time.

Regarding ***desired service expectations***, *Question 13*, "Employees having the knowledge to answer customer questions" received the highest or second highest mean score all three years and *Question 11*, "Providing services as promised" came in a close second. *Question 8*, "Willingness to help customers" and *Question 20*, "Convenient business hours" were also consistently ranked in the highest six mean scores across years in a fashion parallel to ***minimum expectations***.

Three questions were included inconsistently in the top six **desired** across years: *Question 14*, "Readiness to respond to customers' questions", *Question 21*, "Modern equipment", and *Question 4*, "Providing service at the promised time". In that these questions were not included in users' highest ***minimum*** mean rankings, these may constitute the discriminant factors in respondents' views of minimum vs. desired expectations. Consistent with minimum responses were the three questions related to tangibles with the lowest desired mean scores.

Figure 3 shows those questions receiving the highest mean scores for perceived quality service by year.

Parasuraman, Berry and Zeithaml (1985, 1988, 1990, 1991, 1994) measure ***service adequacy*** as the difference between customers' minimum and perceived expectations, and ***service superiority*** as the difference between desired expectations and perceived expectations. ***Service quality*** is assessed by discerning where perception falls within a ***zone of tolerance***, ie. the range between minimum and desired scores.

Management's goal is to achieve perceived rankings as close to desired scores as possible on the service quality issues most important to users (questions with highest minimum means), while altogether avoiding perceived scores falling outside the zone of tolerance. As an example, Figure 4 indicates the zone of tolerance in the 1999 survey.

The question with the highest perceived mean score for all three years was *Question 20*, "Convenient business hours". This question was also consistently ranked among the top six minimum and desired expectations – good news for library managers at Texas A&M University. *Question 4*, "Providing services at the promised time", *Question 8*, "Willingness to help customers", and *Question 11*, "Providing services as promised" were also consistently included in the top six mean scores for minimum, desired and perceived expectations – more good news. In contrast, however, *Question 9*, "Maintaining error-free customer and catalog records" was listed in the top minimum means, but among the three lowest mean perception rankings over the three years – not good news for library management. In a similar manner there is an apparent gap between minimum, desired and perceived expectations for *Question*

Figure 2

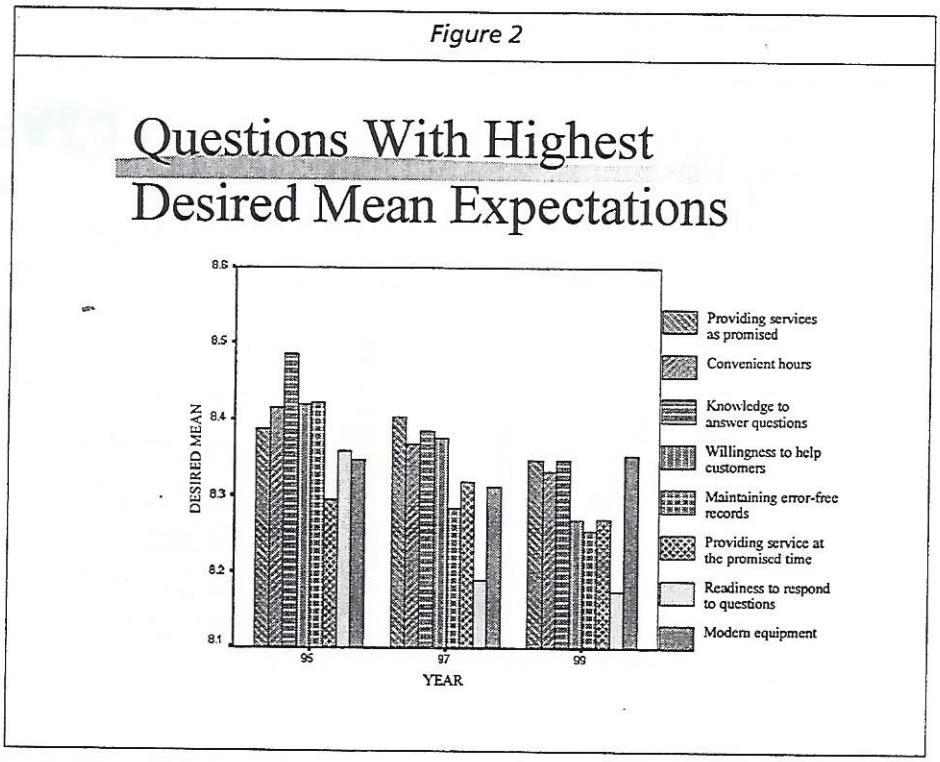
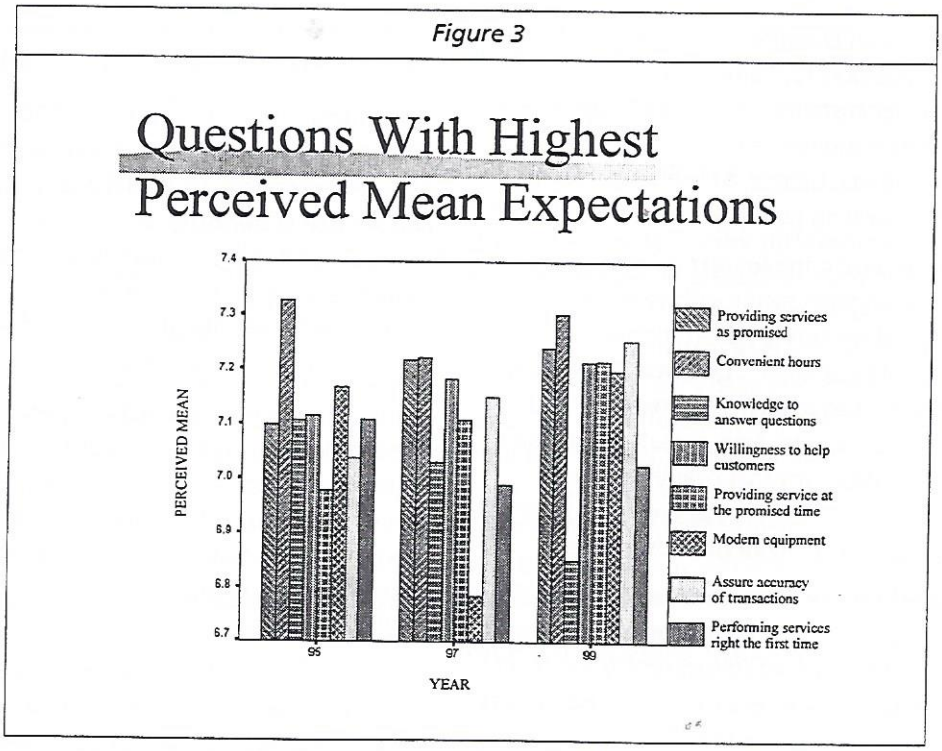


Figure 3



13, "Employees have knowledge to answer customers questions". While this question ranked highest or second highest in mean scores of the desired responses, perceived rankings have precipitously declined from third highest in 1995 to 13th in 1999.

Further insight into the nature of the two problem areas identified in *Question 9*, "Maintaining error-free customer and catalog records", and *Question 13*, "Employees have knowledge to answer customers' questions" is discernible by examining responses by user group to these questions. Figure 5 shows that faculty and graduate students are most concerned by the lack of reliability in record keeping.

While improvements have been made in the minds of undergraduate students in this area, earlier marginal improvements in 1997 have been lost in the view of faculty and graduate students in 1999. Figure 6 shows dramatically how perceptions of *Question 13*, "Employees have knowledge to answer customers' questions" have fallen precipitously in all but the staff user group in 1999.

QUANTIFYING THE GAP MODEL: SIX SIGMA

Typically, manufacturing firms take the lead in implementing quality programs to enhance productivity and to improve customer satisfaction. Now, service organizations, such as libraries, are beginning to understand what their manufacturing counterparts learned – that quality does not improve unless you

Figure 4

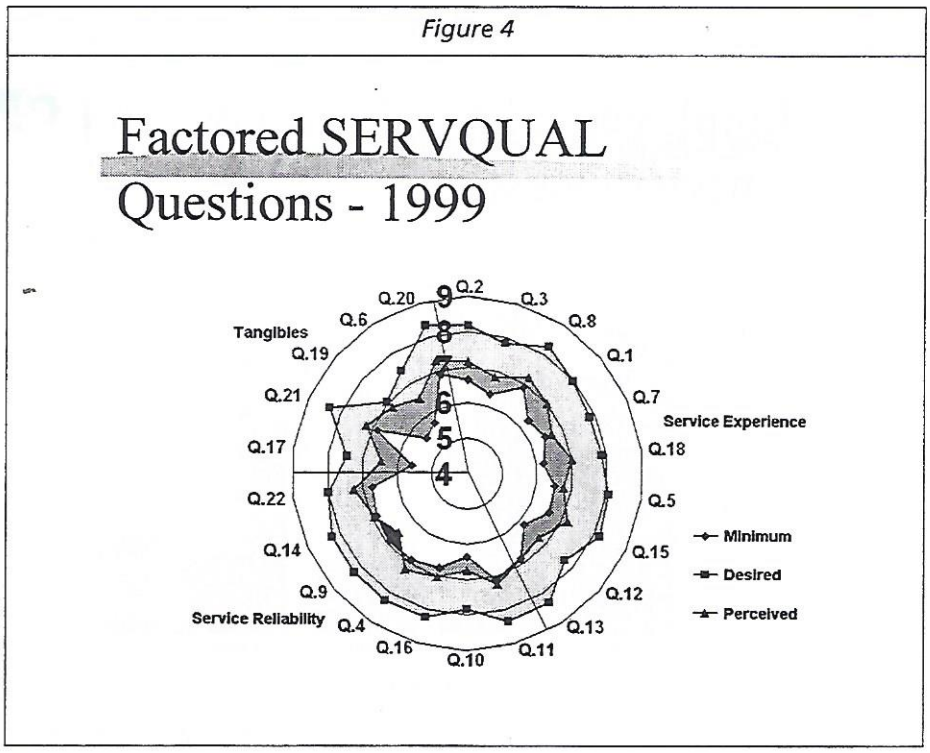
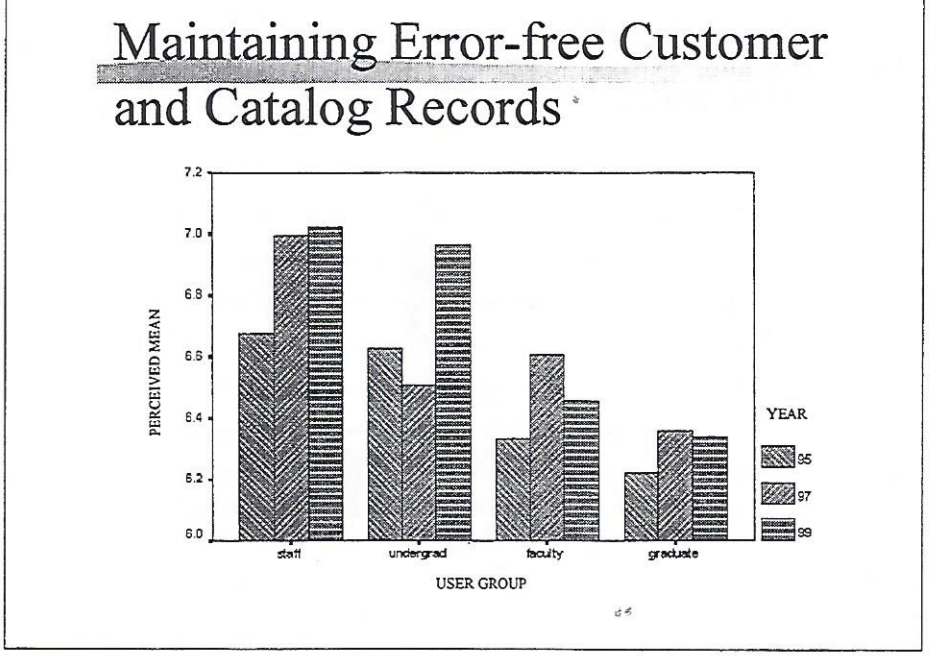


Figure 5



measure it. A successful program employed in manufacturing, *six sigma*, could also have application in the service sector using SERVQUAL data.

The Greek letter sigma is used as a symbol by statisticians to denote the standard deviation of a set of data. *Six sigma* is a disciplined, quantitative approach to analyzing the root causes of problems and solving them. It involves measuring, analyzing, improving and controlling a process such that tolerance limits are six standard deviations away from the process mean. A process rated at *six sigma* will produce fewer than 3.4 defects per million operations.

Phillip Crosby, in *Quality is free* (Crosby, 1979), introduced the concept of *zero defects*. During the 1980s, Motorola Corporation took the concept of *zero defects* a step further and institutionalized *six sigma* methodologies to improve production of pagers, cellular phones, and other products. Their success with *six sigma* techniques popularized it as a tool for product improvement in every facet of business. The purpose for practising *six sigma* techniques is to create a process for tracking annual improvements in customer satisfaction and to provide a common basis for benchmarking against best-in-class libraries. Also, "this measurement standard allows comparisons of similar and dissimilar processes and companies of various sizes and in various industries" (Fontenot et al, 1994, p. 73).

Figure 6

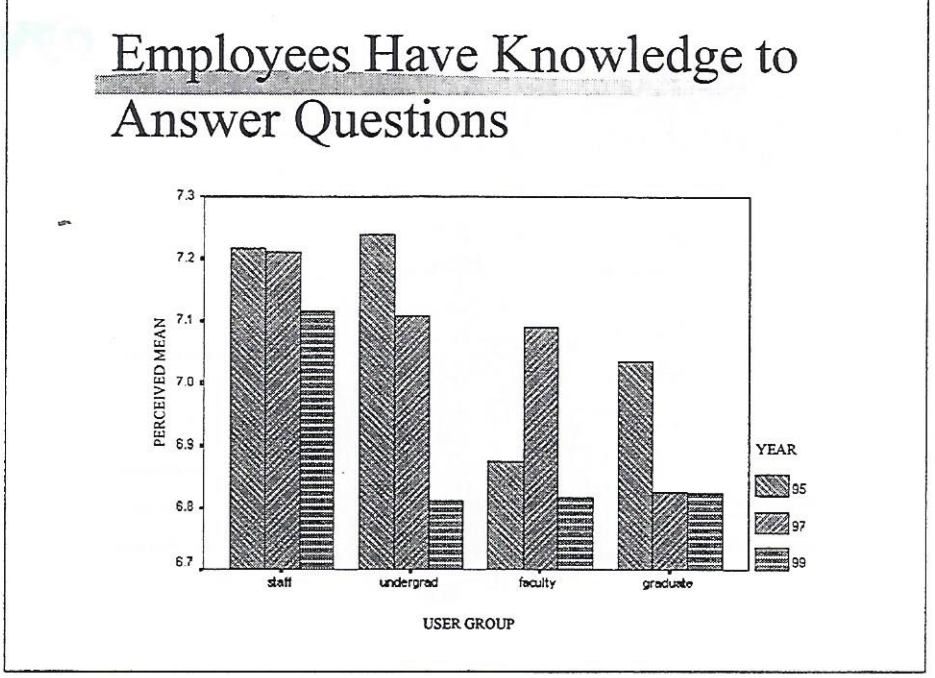
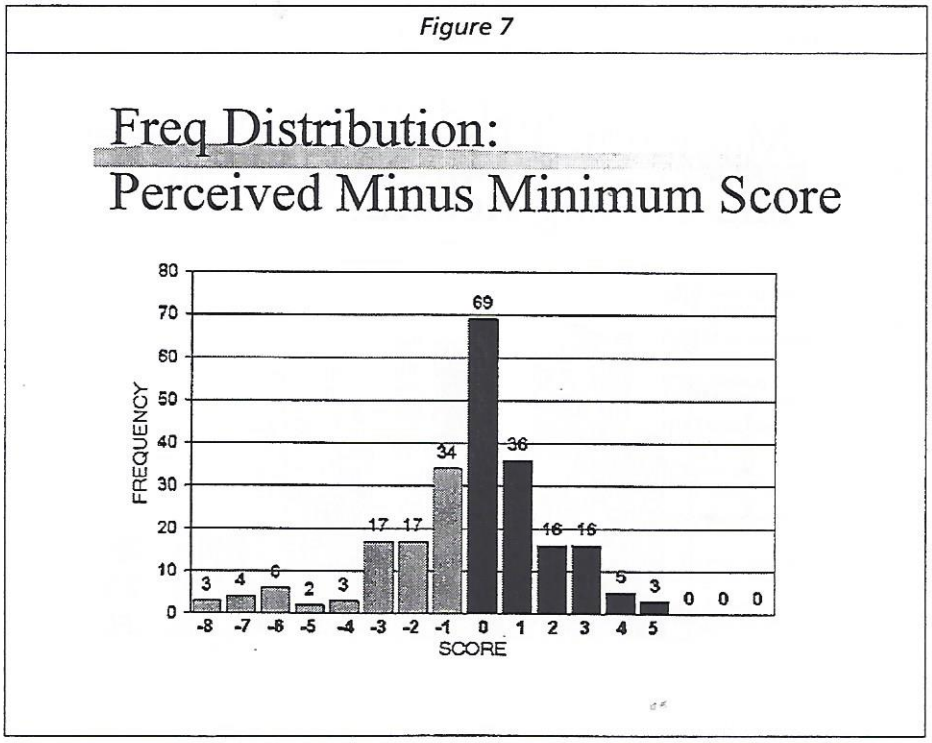


Figure 7



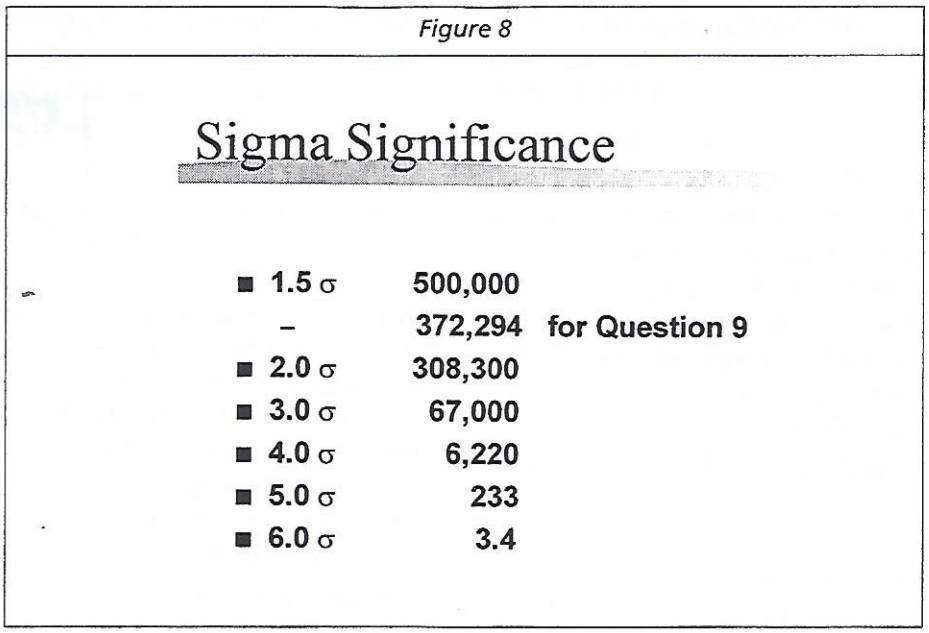
The radar graph derived from the SERVQUAL responses highlights the library's strengths and weaknesses with regards to customer satisfaction. In particular, Figure 4 shows that the average perceived score for *Question 9*, "Maintain error-free customer and catalog records", falls out of the zone of tolerance. When the perceived score is subtracted from the minimum score for each of the 231 survey respondents, the distribution is represented by the bar graph in Figure 7. The grey bars (negative scores) represent scores where perceived is less than the minimum level. The black bars represent perceived scores that are either equal to or greater than the minimum level.

In conducting a *six sigma* analysis, any performance rating of -1 or less represents a dissatisfied customer. The total number of dissatisfied customers for *Question 9* is 86. The proportion of dissatisfied customers converted to per million customers determines the appropriate sigma level assigned to *Question 9* as follows:

$$\frac{X}{1{,}000{,}000} = \frac{86}{231}$$

X = 372,294 defects per million, ie. dissatisfied customers per million. At 372,294 dissatisfied customers per million, Texas A&M is operating somewhere between a 1.5 and 2.0 sigma level for *Question 9* (see Figure 8). The higher the sigma level, the better the performance. Studies show

Figure 8



that manufacturers frequently perform at three or four sigma while service organizations are often at one or two sigma (Blakeslee, 1999).

Next steps include analyzing, improving and controlling those processes that prevent the library from maintaining error-free customer and catalog records. While it is important to decrease the number of dissatisfied customers, decisions on how to accomplish this cannot be made randomly. Customers' requirements are the motivating force behind decision and improvement strategies. SERVQUAL analysis with *six sigma* offers an alternative approach in monitoring service quality and it is based upon customer input. It provides a basis for benchmarking and can be used to track annual improvements in customer satisfaction.

CONCLUSION

Texas A&M has learned much from its multi-year experience with the SERVQUAL protocol. Our results indicate that SERVQUAL is reasonably reliable and valid when considered as an instrument defining quality under three rather than five factors. One of the central questions surrounding the use of the SERVQUAL protocol is whether it is useful for cross-institutional and time comparisons as well as of strategic utility and diagnostic utility for local management planning. In a recent e-mail message to Texas A&M researchers, one of the authors repeated his assessment that SERVQUAL is suitable for making across-library measurements of service quality and comparing results over time (Parasuraman, 1999b).

SERVQUAL seems to measure quality in libraries as a higher order concept holding some promise of universal application in academic libraries. Our first identified factor, **Affect of Library Service**, is a loose construction of SERVQUAL's responsiveness, empathy and assurance dimensions. Library users want to feel that their experience is positive, that they receive the information they need in a timely manner, delivered by competent and courteous professionals who engender trust and confidence in their interactions. The second factor, **Service Reliability** or "Competence", implies that users want correct information delivered in a seamless manner, supported by well-functioning technical infrastructures. Finally, **Tangibles** – the physical environment that defines a library – emerges as a consistent, though seemingly, less important, third factor.

From the Texas A&M perspective, there is no question that the SERVQUAL framework serves as a valuable strategic tool for institutional-level performance assessment. Our comparison of results by year and user group lends insight into general trends in the library at Texas A&M University which can be used strategically at the local level in management planning. We agree that SERVQUAL should not be considered as a quantitative tool suitable for ranking library performances; we agree with Nitecki on the lack of normative data (Nitecki, 1997). But we also embrace her earlier position that, if the instrument is adopted by a sufficient number of libraries, normative measures may indeed emerge and that it yet may be possible to compare quality services among libraries (Nitecki, 1996b).

Inasmuch as SERVQUAL is rooted in a definition of service quality as the difference between minimum or desired expectations and actual perceptions, significant gaps identified through the protocol are of significance to managers. It seems reasonable that one could compare libraries over time and across institutions, identifying those that consistently come close to meeting expectations of users for service. These exemplary institutions could then be further investigated to identify the best practices that yielded such service satisfaction on the part of their users. Other libraries could then emulate such practices. The next step might be to persuade some of our colleagues to undertake longitudinal studies with us in order to prepare

a multi-institutional dataset. Preliminary conversations have been held with three universities, and the possibilities of joint administration of SERVQUAL are being considered.

Additional improvements are also possible. First of all, the six sigma tool may provide a valuable new approach to presenting SERVQUAL data. Six sigma may be an approach by which SERVQUAL results can be quantified by dimension and by overall result, making it easier for libraries to identify best practices among cohorts. Secondly, we have learned that we are not measuring the right things. Repeatedly, our subjects have turned in their surveys with the observation that the SERVQUAL parameters do not speak in a comprehensive way to the spectrum of performance issues that should define a research library. In addition to the three dimensions that we feel SERVQUAL identifies, we should work to incorporate a fourth. **Resources** was recently identified by Andaleeb and Simmonds (1998) as one of the two most important factors constituting quality library service. In their construct, Resources is not merely volume count or number of subscriptions, but rather a measure of overall satisfaction with resource delivery, including inter-library loan and document delivery, as well as a mix of print vs. e-text. Adding Resources as a dimension would be in keeping with recent modifications of the SERVQUAL protocol suggested by its originators and noted by Nitecki (Nitecki, 1996a). Recognizing its limitations, SERVQUAL seems to us to be about the best tool at our disposal for surfacing best practices among research libraries. In Nitecki's words (Nitecki, 1996b):

> "The instrument introduces a mechanism to shift the assessment of the quality of a library from the traditions of measuring collection size and counting incidents of its uses, to begin investigating how the provision of services relates to library users' service quality perceptions."

The really hard work is still in front of us.

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Value and impact of NVQs in the UK ILS sector

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The focus of this paper is an analysis of the performance assessment process of NVQs in terms of its value and impact on the ILS sector. The fundamental principle of NVQs is the demonstration by the candidate of competence in the workplace with that competence being measured against national standards specific to the sector in which he or she works. To ensure consistency and uniformity in assessment of competence and interpretation of the standards, all NVQs are based on a common quality framework. This paper will therefore first examine this generic quality framework and then report on the findings of the LIC-funded project on the Impact of NVQs on Staff Induction and Staff Training in the ILS sector (INSIST) which has just been completed in the School of Information Studies at the University of Northumbria at Newcastle.

INTRODUCTION

Scottish/National Vocational Qualifications (S/NVQs) were first introduced in the 1980s to provide a national framework for improving the skills of the British workforce. The starting point was the development of a system to classify all industrial sectors into 11 broad occupational areas and to define five levels of work ranging from Level 1, which covers a range of activities which are mainly routine and predictable, to Level 5 which involves "the application of a significant range of fundamental principles across a wide and often unpredictable variety of contexts . . . substantial personal autonomy and often significant responsibility for the work of others . . .". Within the occupational area each distinct sector then developed standards of competence based first on an analysis of the functions and secondly of the occupations undertaken within the sector.

NVQ PERFORMANCE ASSESSMENT

The aim of the system is to provide a universal and easily understandable system covering all employment sectors which establishes a benchmark against which to measure performance in the workplace. The key aim is then to assess candidates in terms of competence but with only one measure ie. at the given point in time the candidate is deemed either to be competent or not yet competent. So there is no gradation of measurement as, for example, with academic awards and therefore it is critical that the NVQ system incorporates a rigorous and robust quality assurance framework to ensure that assessment of candidates is uniform and consistent.

QUALITY FRAMEWORK

The quality framework has a series of levels which combine generic elements which apply to all NVQs and are established nationally, and specific components which are controlled within the relevant industrial sector.

The national framework and structure is established by the QCA (Qualifications and Curriculum Authority) which controls all awards except those provided by institutions and which was developed from the NCVQ (National Council for Vocational Qualifications) which was set up to approve NVQs and monitor the system. The key instrument in this system is the Common Accord which sets down the rules by which NVQs operate, by establishing:

- common terminology;
- roles in quality assurance for the various stakeholders;
- explicit criteria for approving organisations to offer NVQs;
- quality assurance and control systems to ensure rigour and to monitor equal opportunities implementation;
- minimum criteria for each assessment function.

First of all it establishes controls for the National Training Organisations which have taken over from the Lead Bodies as the standards-setting body for NVQs. In order to carry out this role these bodies are made up of representatives from the respective sector. Next there are the Awarding Bodies which have been approved by QCA to award NVQ candidates in specific sectors. The Awarding Bodies in turn approve Assessment Centres to work directly with candidates in the workplace by assessing their performance.

The quality control of NVQs within the part of the sector controlled by a single awarding body involves three levels:

1. **assessment** where an Assessor who also holds an NVQ in the process of assessment and judging of evidence measures the candidate's competence against the national standards;
2. **internal verification** where an Internal Verifier from the same centre as the Assessor checks for uniformity and consistency across assessment decisions within the centre;
3. **external verification** where an External Verifier appointed by the Awarding Body and external to the assessment centre checks for uniformity and consistency across assessment and internal verification decisions across centres within the same sector.

This is further complemented by periodic audits by the Awarding Body on a sectoral basis.

As with all sectors the NVQ process and quality framework operates according to this pattern in the Information and Library Services (ILS) sector. The ILS sector however is characterised by a diversity which is atypical of other sectors. This diversity is immediately evident in the suite of NVQs available which are in four separate groups and range over three of the five levels and is further reflected in the range of types of Assessment Centres which have been established.

NVQs have however made available a totally new set of awards for paraprofessionals who for the first time have access to a nationally recognised and calibrated qualification. Inevitably they have made an impact on the way staff are trained and developed in the workplace. In order to assess their value and impact on the sector the School of Information Studies at the University of Northumbria at Newcastle (UNN) undertook the INSIST project.

Research was conducted in sequential phases.

The first step was a comparative literature review to establish the status of development of NVQs in general and ILS NVQs in particular.

The second stage was a postal survey questionnaire to Assessment Centres offering Information and Library Services NVQs:

- to provide baseline of experience;
- to enable production of a summary comparison of structure and practices.

The responses from questionnaires were weighted in bands according to respondent type and a sample of six Assessment Centres was selected by degree of activity and as representative of a range of different types of Centres.

These were then followed by case studies together with the Centre based in the School of Information Studies at the University of Northumbria.

In each of the case study Assessment Centres the co-ordinators and other key personnel were interviewed and focus groups of candidates undertaken.

The report on the project was published this summer (Parker et al, 1999).

QUALITY MANAGEMENT IN ACTION

The Beaumont report (Beaumont, 1995) which reviewed 100 NVQs raised issues which needed to be addressed as evidenced from the following two quotes from the report:

> "there is a widely held perception that assessment is consistent within centres but less consistent across centres and Awarding Bodies" (p. 38)
>
> [and an expression of a] "lack of confidence that assessors are objective and independent when they are in close contact with the candidate" (ibid.).

Partially in response to Beaumont, the Awarding Bodies' Common Accord was revised in July 1997, and a set of guidance documents on best practice in NVQs was produced, including one entitled Assessing NVQs (March 1998). Since the fieldwork for INSIST began in the Summer of 1998 it would seem fair to assume that Assessment Centres visited had had sight of the guidance documents.

What then was found, with regard to the quality management of assessment, at the case study Centres?

ASSESSOR SUPPORT

How well did INSIST candidates feel their Assessors had supported them? Key descriptors used included:

- "enthusiastic"
- "sympathetic"
- "encouraging"
- "indispensable".

One Assessment Centre Co-ordinator said:

> "I think candidates succeed or take a long time due very largely to the quality of their assessor."

It is important therefore to explore the qualities Assessors need. Again some key descriptors were identified from interviews at case study sites. They need to be:

- communicators
- possessors of good interpersonal skills
- motivators
- clear thinkers.

SELECTION OF ASSESSORS

So, given the above qualities, how are Assessors chosen? Is there a person specification based on such descriptors to be used as a checklist? This was not found to be the case at the sites visited. Generally, potential Assessors were identified on a pragmatic basis:

> "people have to be in the right place where candidates are who wish to do it"
>
> "There's an imbalance between the number of assessors and the number of candidates . . . there's a little of the carrot and stick . . . we won't accept candidates from a particular area if they don't make a commitment to become assessors . . ."
>
> "We looked at things like, Would it be worth having an assessor who was based at x library having candidates based at y library at the other end of the Borough? The time spent travelling and taken out of the workplace would present difficulties. So we've tended to tie people who were in close proximity together"

"Some candidates prefer that their line manager is also their assessor because they worry about people coming from outside. Others quite like the objectivity of somebody from outside. That would come into our decision about who we choose but we couldn't guarantee it".

Does this pragmatic selection result in production of high quality Assessors? It would seem not always:

"If I'm being honest, the authorities sometimes get it wrong . . . I think that, in some cases, the whole process has been hampered by somebody in the authority thinking that's the right person . . . and that person didn't even have the interest or the capability . . . to do it, and so the net result of it has been that it has suffered".

Assessment Centre problems in the early days, identified by Hackett and Johnson's research (Hackett and Johnson, 1998), included a shortage of qualified Assessors. This was still evident in the INSIST research, resulting in Assessors being "volunteered against their will".

TRAINING OF ASSESSORS

Once Assessors are recruited, they need to undertake the D32/33 Assessor training which can be completed only by taking candidates through part of their NVQ. Can this instil in trainee Assessors the qualities desired?

"We expect the assessor to identify any gaps . . . Undoubtedly a more difficult operation when both your candidate and your assessor are in training . . . candidates with assessors while they are in training need extra support. It is possible to get your D32/33 and still not be a very good assessor and not to have got it yet and be an excellent assessor. Most of these problems are ironed out at the Internal Verification stage. I have certain assessors who, when they had finished their allocation of candidates, I won't be using again. So I'd say the quality control of assessors is ultimately with me."

The "me" in the above quote was an Assessment Centre Co-ordinator. Another Co-ordinator opined:

"You have to be more ruthless than I realised initially and, if there are people . . . who you feel are never going to meet the rigorous standards that you have set, then tactfully, they will have to go".

There are success stories, too, in cases where those undertaking Assessor training have initially been "volunteered". The INSIST project identified a number of Assessors who became converts to NVQs through undergoing Assessor training, eg.

"The process of doing the assessor award was exceedingly good for me because it totally convinced me of the rigour of the process".

This Assessor had originally believed NVQs could not be rigorous because there were no examinations to sit.

A SYSTEM OF CHECKS AND BALANCES

Mix and Match

The regular Assessors meetings between Assessors within a Centre were seen by Co-ordinators as opportunities to look at quality and at mixing and matching assessments and having different people assessing:

"Assessors share about where one of them has found a good way of assessing [they] might go and do it for someone else"

"Mixing and matching . . . gives us a degree of flexibility. Otherwise you're dependent on your candidates choosing certain units. They won't all go for the same units and you may never assess a particular unit if you're not moved about from time to time . . ."

"We swap candidates for particular units between trainee assessors and assessors so they get the breadth they need".

There are indications that mix and match may be used more for Assessor than candidate benefit but, long term, candidates will gain from being assessed by someone with breadth of experience.

Objectivity

The degree of objectivity can be a quality issue. One line manager who assessed her own staff who were candidates said that being "on the spot" speeded things up but she could see the down side and the advantage of someone coming in with a "fresh eye." Problems could, she acknowledged, arise because candidates were her "babies" and she favoured them or, if she didn't like them, she might be "too hard on them" – both pitfalls which an outsider could avoid.

Internal and external assessment and verification are designed to avoid such pitfalls, for example:

One centre had Assessors "criss-crossing the county like mad" to visit candidates when it started up. Then, "almost as a control, got a trained and experienced assessor in one fairly large library and gave her her own candidates to do . . ."

This was to become an issue at Internal Verification (the next part of the quality control system) because there appeared to be a "mystic communion" between Assessor and candidate and the Internal Verifier could not necessarily make the link. This was not, it was stressed, a case of bias but the fact that there is a "sort of shorthand" and an Assessor who line manages, and is familiar with the work of, a candidate will tick off something they personally know to be fine.

At the next level of quality control an External Verifier also

referred to the problem of "cosiness" and the danger of things being taken "on the nod which may or may not be present in an objective assessment".

The ideal perhaps, between having one's line manager as Assessor and an Assessor at some geographical distance, may be to have the physical proximity of an Assessor in one's home institution but not in one's department. One Co-ordinator believed that getting a candidate to explain something to an Assessor whom they just as well knew as their line manager but who did not spend the whole day with them was good discipline. To her the ideal arrangement was to have "neighbouring" Assessors. An Assessor who was in this "neighbouring" role described how she found this very useful because her candidate had to "explain his work just a little bit more . . . produce that little extra bit of evidence" and how she felt able to be more objective because she had no prior knowledge of his work.

The External Assessor (ie. one from outside the candidate's organisation)

One interviewee said that External Assessors could work just as effectively as internal ones as long as there was strong professional support and the relationship was perceived as a long-term employee development one, not just a business transaction. A candidate said his External Assessor probably didn't understand his job fully to start with but she visited several times to build up knowledge. The frequency of this Assessor's visits would seem indicative of the degree of support advocated above rather than a business arrangement.

One peripatetic External Assessor felt that, because she had knowledge of public libraries, education libraries and schools, assessing candidates in a variety of environments was not difficult. Some External Assessors, however, did not come from such a background. One candidate said her Assessor – with an administration background – had a stereotypical image of what library staff did. Another candidate at a different institution said her Assessor was "good on the administration side" but "specialised library bits she had to rely heavily on the managers" and she "freely admitted she didn't have enough knowledge on the IT to be able to cover it".

This problem was overcome at some sites by the mix and match approach described above. However, this approach is possible only where there is a team of Assessors who are prepared to be flexible.

A Co-ordinator said that Assessor support has not worked as successfully as it might with candidates supported by somebody who is nothing to do with their organisation. From candidate feedback, she continued, it was apparent they would like more workplace contact.

External Verification

External Verification again is a safeguard. An External Verifier said he did not perceive any advantage as to having an External Assessor and that this circumstance was merely an "unfortunate necessity" because an organisation lacked qualified or willing people within. He added that, if they lacked the will, they needed to revisit the whole process of whether their organisation was ready to pursue NVQs. He felt that having someone assess them "within the system who knows that system rather than as a paid visitor" advantaged candidates. This question of advantage versus disadvantage should not be an issue if the quality system is applied.

Coker (Coker et al, 1997) viewed NVQs as a catalyst for the recognition of the key role of library assistants in the smooth operation of a library service. Such recognition may be less easily attained if managers are removed from the NVQ process.

VALUE AND IMPACT

There was evidence from the INSIST focus groups with candidates that their profiles had been raised with their colleagues, managers and the Senior Management Team as a result of undertaking NVQs.

The way in which NVQs are approached plays a key role in terms of value and impact. The INSIST study found two basic approaches by Centres to delivering NVQs:

- mechanistic
- holistic.

In the mechanistic approach, candidates are taken en bloc through identical units over the same time period. The result of this can be too many candidates being assigned to Assessors; overmuch pressure being brought to bear on candidates; and candidates undertaking some units unrelated to their job roles.

With the holistic approach NVQs are planned and integrated into (or run in parallel with) other staff training and development. Assessors are practitioners, usually in the same institution as the candidate. There is a shift of emphasis from training to vocational development and recognition of achievement.

CONCLUSION

This snapshot of the INSIST project has tried to show how we looked at the performance of, and management of, quality processes at ILS Assessment Centres. The qualifications provide access to structured training and development into which evaluation and feedback form an integral part. There is a variety of approaches but a system of checks and balances should avoid the potential for abuse. Because they are based on national standards developed by the sector for the sector, NVQs can be used within a staff performance review and appraisal system. One Assessor confirmed the Assessor candidate relationship as "like having an appraisal all the time".

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Qualifications and Curriculum Authority <http://www.qca.org.uk>

Barriers to libraries as agents of lifelong learning

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Some of the situations which may inhibit ready access to our libraries as custodians of information and culture are considered. Report is made of a Library and Information Commission-funded project in progress. The research used a closed questionnaire to obtain data from over 400 Further Education students and over 500 Higher Education students; additional data was made available from over 30 detailed interviews. Selected data from the research is presented and considered with special reference to Social Class and "New Deal" participants. Some discussion is made on the significance of these preliminary findings. The research will be fully documented as a Library and Information Commission Report.

INTRODUCTION

This paper will examine:

1. Background to the Research
2. Research Design and Conduct
3. Preliminary Findings
4. Discussion.

1. BACKGROUND

This research project will run until November 1999. This paper therefore represents a report of the progress to date. The bulk of the data has been collected, but not yet fully analysed.

The motivation to conduct this research, which has been funded under the Value and Impact Call of the Library and Information Commission, came from a variety of sources.

Firstly, a feeling of professional frustration at the sheer waste of resources which can occur when barriers exist to block the interface between information provision and information users. Conversations with non-users reveal a distressing catalogue of reasons: ignorance of the capabilities of library systems, absence of previous library experience, negative library experience, feelings of personal inadequacy in a library environment.

Secondly, concern was felt on the relevance of libraries to those with poor literacy and numeracy skills. The Moser Report (Moser, 1999) found that 7 million adults, ie. one in five in England, are functionally illiterate. This means that, if given the *Yellow pages*, they cannot find the page number for "Plumbers". Presumably a library environment which calls for a reasonable degree of literacy is not one to which the functionally illiterate are likely to gravitate most readily. The research leader's own experiences as an Adult Education tutor in a Northern inner-city environment act as confirmation to the belief that some parts of our society are minimally informed about the storage and retrieval of information and the extent of the wealth of knowledge held in our libraries.

The professional classes continue to dominate education at all levels, eg. university education is largely the preserve of the professional classes who make up 80% of participants, with only 14% coming from unskilled backgrounds (*Social trends*, 1999).

Thirdly, some concern is felt for the possible gulf between the "information rich" and the "information poor". Barriers to access already existed in "traditional" libraries. The growing need for familiarity with electronic access may well serve to compound the problem: it is assumed that those from advantaged backgrounds will be more likely to enjoy more ready access to Information Technology in the home, eg. a recent Government report from the United States indicates a worrying widening in the gap between "information rich" and "information poor". The digital divides based on education and income level have increased in the last year alone; between 1997 and 1998, the divide between those at the highest and lowest education levels increased by 25 % (US. . , 1999).

If the United Kingdom is ***not*** to follow in the steps of the United States, as it so often does, positive steps need to be taken.

The above misgivings arose against a background of an impending new "Learning Society" in which, for example, those who do not enjoy personal access to the Internet will have their needs met in libraries. If some members of society are, for a variety of reasons, currently socially excluded from many services and facilities, including libraries, will the greater emphasis to be placed on libraries serve to exacerbate their situation? Public libraries are seen as the key deliverers in the realisation of the Learning Society.

Public libraries do indeed make great efforts to be welcoming but, on examining official statistics, we learn that membership of public libraries is dominated not by the impecunious but by the *professional* classes ie. those more likely to own their own collections of books etc. 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 three months, as opposed to 31% of class DE (*Social trends*, 1995). It is worth noting that a similar contrast occurs between AB and DE for participation in current or recent learning: 53% of AB report involvement

in learning either current or in the last three years; for social class DE the figure is 26% (Sargant, 1997). See Table 1.

Table 1 Use of Public Libraries and Participation in Adult Education

Social Class Class	Use of Public Library (%)	Participation in Adult Education (%)
AB	57	53
DE	31	26
All Classes	39	40

2. RESEARCH DESIGN AND CONDUCT

The research is designed to explore further the ideas articulated above. It has two sets of objectives.

The first concerns a sample from Further Education colleges with "Widening Participation" zones in their catchment areas and aims to:

1. determine the level of *awareness* of library and information services and of the initiatives supporting the policy on lifelong learning, for students recruited from geographical areas targeted by the Further Education Funding Council for increasing participation;
2. to assess the degree of importance, attributed by the sample, to ready access to information technology (ie. in the home, or elsewhere);
3. to identify any interplay between both the respondents' own current socio-economic status and the social class of their parents, and these decision-making processes.

The second set of objectives, using a sample from a "new" university, with a higher than average intake of "non traditional" students, seeks to explore:

1. students' perception of the degree of support actually provided by public, college and university libraries, in facilitating their educational career;
2. the degree of importance, attributed by the sample, to ready access to information technology (ie. in the home or elsewhere);
3. any relationship between social class, both of self and of parents, and the formation of attitudes towards libraries.

Methodology

Data for this study have been collected from qualitative sources (focus groups and semi-structured interviews) and quantitative sources (questionnaires).

Participants

Sample 1

Participants were students at two Further Education colleges situated in Teesside and County Durham, n=414. Included in this sample are New Deal* students, n=85, recruited from the same area. This sample consisted of 178 males (43%) and 236 females (57%).

* New Deal is a key part of the Government Welfare to Work strategy, which "gives jobseekers a real chance to develop their potential, gain skills and experience and find work" (New Deal Homepage).

Sample 2

Participants were Higher Education students at a "new" university in the North East of England, n=518 in total. This sample consisted of 242 males (47%) and 276 females (53%) and in order to achieve a spread of Arts and Sciences was administered fairly evenly across the University's six Schools.

Focus Groups

The initial stage of the research project involved setting up focus groups at all three sites to identify students' attitudes towards library and information services. The aim of using this qualitative approach was to generate items for an attitude scale in the questionnaire based on students' actual perceptions and behaviour related to these services. Three focus groups took place in the learning resource centre at the university site. The numbers who attended ranged from four to six.

The procedure for attendance at the Further Education colleges was slightly different. Members of staff were approached and asked to select a group of students who would be willing to participate. Seven focus groups took place at the Further Education colleges with numbers ranging from four to eight. The research assistant acted as moderator to ensure that participants adhered to the agenda. The main problem which arose in using focus groups was overcoming student reluctance to attend.

Questionnaire Design

The questionnaire was designed by the research team in consultation with librarians and other members of academic staff. It comprises four sections:

1) Library Usage

2) Attitude Scale

3) Learning Resource Centre services

4) Personal Details.

Item generation

A pool of 33 items for the attitude scale was generated using comments made by students during the focus group meetings. Wording of the items was informal using actual quotes from students eg. "I hate having to use a computer." It was felt that students would react more honestly to natural language.

Figure 1 Library Use by Social Class: FE Students and New Deal

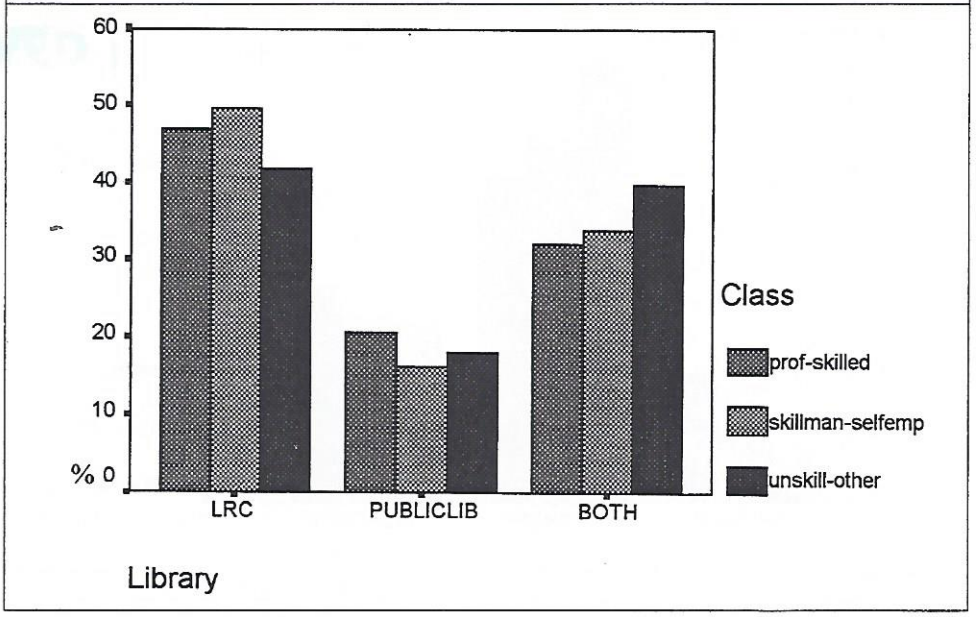
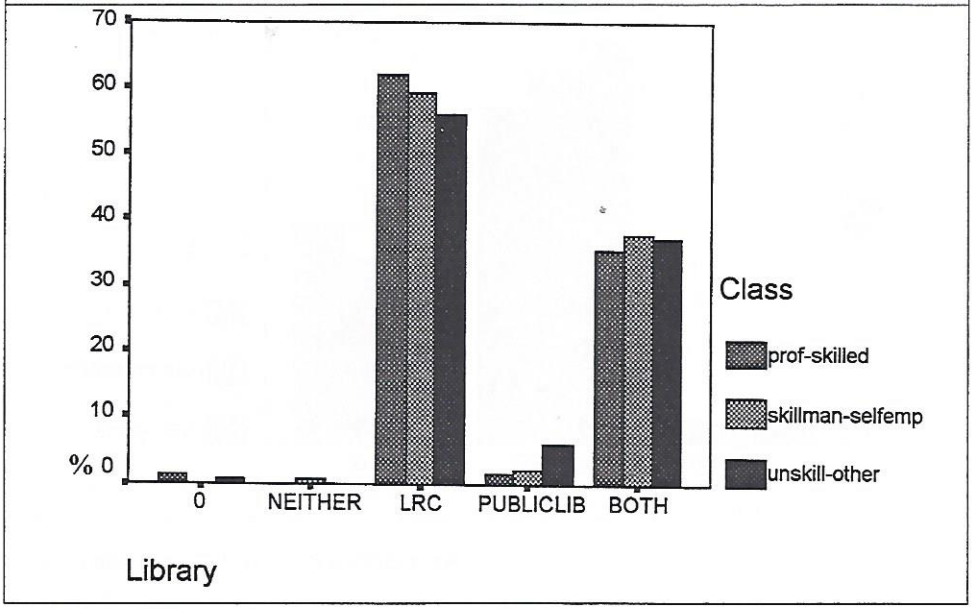


Figure 2 Library Use by Social Class: HE Students



The items address perceptions related to four main areas:

1) Staff and Services

2) Practicalities

3) Personal Comments

4) Information Retrieval.

Respondents could choose from three responses: "Agree", "Disagree" or "Neither".

Other questions addressed demographic details ie. age, gender, ethnic origin, socio-economic status, employment and library details. The wording of the questionnaire was edited slightly for distribution at the Further Education colleges although the content remained the same. Confidentiality was ensured during the distribution process. The questionnaire was piloted prior to distribution to a sample of 38 female adult education students.

Response Rate

The distribution method used ensured a generally high response rate, approximately 92%. The main source of non-response was New Deal students.

Interviews

The semi-structured interviews were conducted by the research team at the three sites. Interviewees were volunteers who had completed a questionnaire. Interviewers asked respondents to elaborate on comments made in the questionnaire and also elicited other information on the respondents' first experiences of libraries and interaction with a computer. A total of 33 interviews were carried out, 26 at the university and seven at the Further Education colleges (of which three were New Deal). The interviews lasted between 30 minutes and an hour and were conducted on site. A prize draw for a book token was offered as an incentive.

Figure 3 PC Ownership by Social Class: FE Students and New Deal

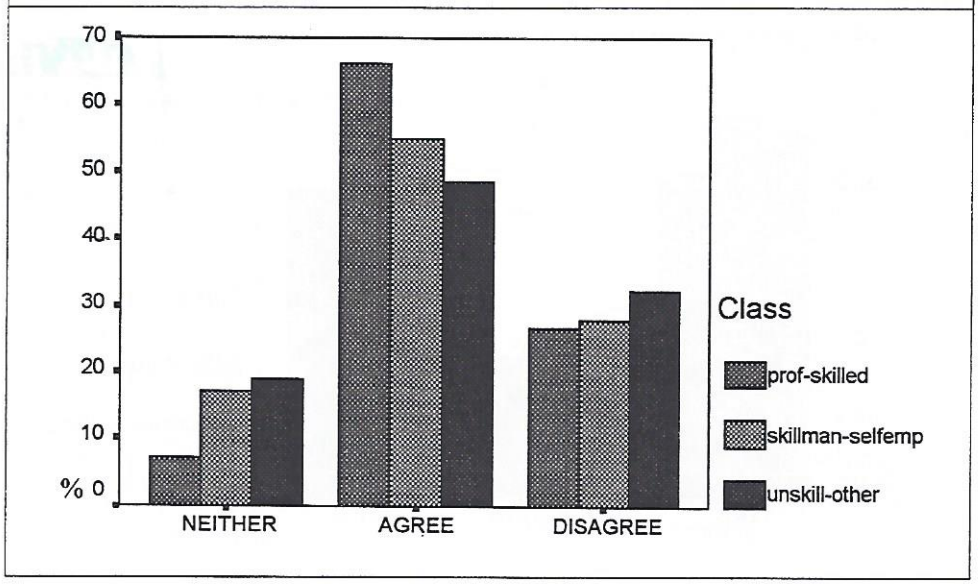
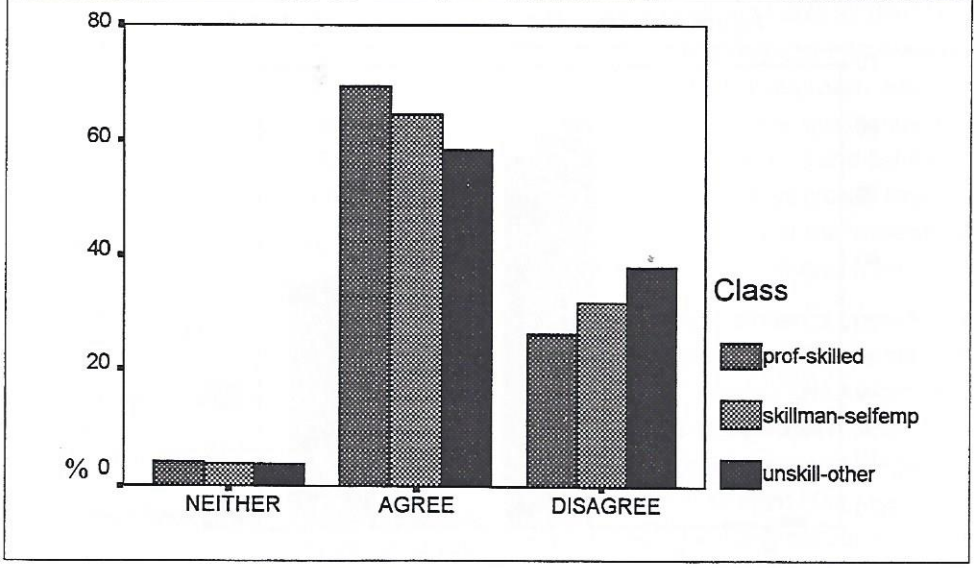


Figure 4 PC Ownership by Social Class: HE Students



Steering Group

Throughout the conduct of the research the research team has benefited from its regular meetings with a steering group which includes representatives from the local public library, the University Research Office, Centre for Lifelong Learning and other academic colleagues.

3. PRELIMINARY FINDINGS

A large amount of data has been generated, too extensive for consideration here. This section shows a selection.

Use of Libraries

The reported use of libraries was generally high, with the majority of students stating that they used their college learning resource centre and/or a public library. Figures 1 and 2 indicate the breakdown by social class for Further Education (including New Deal) and Higher Education respectively. NB. the ***full*** extent of reported use of the learning resource centre is the ***sum*** of the columns labelled "LRC" and "BOTH".

Access to a Personal Computer in the Home

The positive response to the statement "I have access to a PC in my home" was much higher than anticipated. Breakdown by Social Class is indicated in Figures 3 and 4.

The central importance of the learning resource centre appears to receive increasing recognition as students proceed into Higher Education, as indicated in their responses to the statement "The Learning Resource Centre is important in my educational career". See Table 2.

Table 2 Perceived Importance of Learning Resource Centres

	FE Students %	New Deal %	HE Students %
Neither	25	33	9
Agree	60	58	86
Disagree	15	9	5
Total	100	100	100

4. DISCUSSION

The research has generated a wealth of data, of which some preliminary findings are considered here. The main purposes of the research are to examine any differences between social classes in their awareness, appreciation and use of libraries, both public and academic. It also seeks to ascertain the degree of importance attributed by different social classes to ready access to information technology in the home and elsewhere.

Use of Libraries

The research was designed for the samples to be ***inclusive*** of the student populations, ie. not merely a user survey which concentrates on existing users. With the intention of reaching a full cross-section of students the research team had deliberately chosen to distribute questionnaires in lectures, classrooms and workshops, rather than in the learning resource centre. However over 70% of Further Education and over 90% of Higher Education students still report using their learning resource centre. Approximately a third of both Further Education and Higher Education samples report use of the public library ***in addition to*** their learning resource centre.

Some concern is warranted for the albeit small percentage (3%) of the Higher Education students who report use of the public library only: for the Further Education sample this is 18%. This could be interpreted in a number of ways: some kind of dissatisfaction or discomfort with the learning resource centre facilities; satisfaction with the services they already have at the public library; a wish to cling to the familiar; a mistaken assumption that "all libraries are the same", and that all libraries can offer access to the same facilities and resources.

It was heartening that recognition for the role played by library and learning resource centre provision is quite high. In response to the statement "The Learning Resource Centre is important to me in my educational career", almost 60% of the Further Education sample as a whole agreed, with those students recruited on the New Deal indicating only slightly less at almost 58%. There is even greater recognition of the importance of the learning resource centre by the Higher Education sample, with 86% agreeing with the statement. These differences may be attributed to a cultural difference between Further Education and Higher Education in terms of institutional recognition for the significance of the learning resource centre to the student experience. It is also possible that as students progress from Further Education to Higher Education, they themselves also become increasingly aware of the value of ready access to a wide range of information.

When broken down by social class, the greatest appreciation of the importance of the learning resource centre for the Higher Education sample was by those from skilled manual and self employed backgrounds (91%), followed by unskilled/unemployed (85%) and the professional and skilled (83%). This may be an indication of an interplay between an awareness of importance, tempered by available finances, ie. those from professional backgrounds will have the means to purchase more of their own copies of key texts and need to rely less exclusively on institutional provision.

When we consider reported use of the learning resources centre, it would be simplistic to equate a positive response to "Do you use the Learning Resource Centre?" as an indication of a full knowledge and expertise in exploiting all facilities; it could be indicative of use on a very minimal level. A truer picture will emerge when fuller analyses are made of the "Learning Resource Centre Services" section of the questionnaire which asks about take-up on all available services.

Attitudes towards staff helpfulness were rather ambivalent, with the majority (64%) registering a "neither agree or disagree" response to the statement "Learning Resource Centre staff are very helpful" and only 9% positively agreed with this statement. Greatest reported dissatisfaction with staff helpfulness was from those with a professional/skilled background of whom 30% disagreed with the statement, presumably indicative of their more exigent and articulate background. Some of the interview data also indicated the need to improve staff ***availability*** and ***approachability***. Some of the remarks were of the nature "You always seem to be so busy doing something else, I don't like to interrupt".

Confidence in staff expertise was quite high with 56% overall positively agreeing with the statement "The Learning Resource Centre staff know what they are talking about".

Access to IT in the Home

Official statistics (*Social trends*, 1999) indicate PC ownership at 26% for the population as a whole but a variety of sources indicates that this is heavily biased towards the professional classes. For example, a 1998 market research report indicates household penetration of home computers in class AB at 63% and E at 12% (MINTEL, 1998). In a survey published this year on young people's access to new media technology, children from professional backgrounds were found to be more than twice as likely than those of working class backgrounds to have access to a PC at home (Livingstone and Bovill, 1999).

Of our sample, a surprisingly high number report access to a personal computer at home. Of the Higher Education sample, almost 65% overall report access to a PC in the home. When broken down, not surprisingly, the usual relationship with social class ***is*** evident, showing PC ownership for the professional classes as 69%, skilled manual/self employed as 64% and 58% from the unskilled/unemployed backgrounds. Nevertheless, these

percentages are still very high when compared with reported statistics for the population as a whole.

All the students in the sample had access to IT facilities in their place of study. It is possible that they deemed the access provided as insufficient for their needs; the Learning Resource Centre at the University is open until 10 pm most nights of the week, but in interview students still said that this did not fit in with some of their other commitments eg. work, family. It is suggested that their high degree of PC access in the home be taken as an indication of the very high priority they place on this and indeed this was borne out by the data collected in interviews, in which many expressed the belief that not having access at home would have a negative effect on their work. Some who did not possess their own PC seemed desperate to obtain one.

The attitudes indicated by our sample, towards both libraries and computer ownership, when contrasted with figures collected nationally, are atypical especially for those of skilled and unskilled manual backgrounds. This could be interpreted as mere pragmatism: the wish to achieve a task undertaken most efficiently, ie. they are following a course of study and using the tools they see as most appropriate to do the job well.

Educators in the liberal tradition would see it perhaps more grandly as something perhaps more significant in terms of personal development, a step on the road to what Carl Rogers described as the "process of becoming" (Rogers, 1961). With careful handling, their perhaps fairly recent access to libraries could represent the start of a truly life-enhancing education. Let us hope that librarians will be able to play a full role in this and not be mere "tellers" in what Freire described as the "banking concept" of education (Freire, 1972).

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Value of information assets in UK companies

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The "Valuation of information assets in UK companies" project, funded by the British Library Research and Innovation Centre (BLRIC), was undertaken in response to the publication of a new accounting standard for intangible assets by the UK Accounting Standards Board (ASB). The Accounting Standard for Goodwill and Intangible Assets, FRS10 (1997) recommended three methods for valuing intangible assets in organisations: the amount they could be sold for; the difference between cost and fair value if they have been purchased; or by reference to any active market where frequent buying or selling takes place. The research project sought to identify which of these methods was the most suitable for valuing information as an intangible asset. A series of interviews with information and accounting professionals and with professional and regulatory bodies in the information and accounting fields were carried out. The results found that the current practice in UK companies was not to value information assets. This was not a result of difficulties in accounting for such assets, although these exist, but because of a basic belief that such assets were well managed internally and would not gain any benefits from being reported in company accounts. There was little evidence, however, that such effective management was in reality taking place.

INTRODUCTION

Understanding the value of information is a critical element in the overall process of managing information. Librarians and information professionals have always had an important role in selecting, analysing and refining information but they have not often addressed the potential of their role for contributing financially to their organisations. A library's success has often been measured by its cost effectiveness, or by supplying profit-making user groups with information.

Currently, there is no widely used method by which librarians and information professionals can demonstrate the value of the information they supply to their organisation or their own value in financial terms. While this situation continues there is a danger that librarians and information professionals will become increasingly marginalised, having neither the resources to develop their roles nor the means to illustrate their contribution to organisational success.

The UK Accounting Standard for Goodwill and Intangible Assets, FRS10 (1997) recommended three methods for valuing intangibles in organisations. These were: the amount they could be sold for; the difference between cost and fair value if they have been purchased; or by reference to any active market where frequent buying or selling takes place. The "Valuation of information assets in UK companies" research project, which this paper describes, sought to identify which of these methods was the most suitable for valuing information. To achieve this we carried out three parallel investigations. The first sought to classify information as an intangible asset using accounting terms and definitions. The second sought to identify to what extent companies in the UK were using FRS10 to account for information and identify a best method. The third sought to gather together current attitudes on information and how it could be valued from accounting and information professionals and from their professional and regulatory bodies. To this end, we interviewed 16 senior librarians and information managers and seven accountants and finance directors during 1999.

INFORMATION AS AN INTANGIBLE ASSET

Information has long been recognised as a valuable resource. However, there is little real evidence of tangible financial benefits to be gained from information assets. As a result, information is usually treated as a cost or overhead and this has been thought to negatively affect the perception of information and information professionals by decision makers in organisations. In the UK, many companies measure success in terms of achieving financial benefits or at the very least financial stability. For libraries and information centres, such measures tend to highlight the costs and ignore the benefits.

Achieving a valuation of information assets in UK companies is, however, difficult and depends in accounting terms on the recognition and definition of information as an asset. The Hawley Committee recommended the management of information as an asset like plant or machinery (Hawley Report, 1994). The report argued that UK company directors must manage information as a business asset which is equally, if not more important than, traditional assets. By treating information as an asset, the Hawley Committee attempted to codify the resource in terms which decision makers would understand.

Current interest in concepts such as knowledge management and intellectual capital have also focused the

attention of managers on the contribution of intangible assets such as information to business success (Skyrme, 1998).

Skyrme (1998) defines knowledge management as:

> "the explicit and systematic management of vital knowledge and its associated processes of creating, gathering, organising, diffusion, use and exploitation".

Edvinsson (1997) Director of intellectual capital at Skandia, the Swedish insurance company, has attributed the company's recent success to the exploitation of intellectual capital which is:

> "the possession of knowledge, applied experience, organisational technology, customer relationships and professional skills that provides Skandia AFS with a competitive edge in the market".

It is clear that companies like Skandia are achieving financial benefits from the active promotion of intellectual capital management. Among the companies interviewed by the "Valuation of information assets in UK companies" project there was a strong belief, however, that such success should be attributed to the drive of individuals like Edvinsson in applying and popularising intellectual capital within their own organisations. There was little recognition of such measures as productive in themselves and therefore a feeling that there was no need to account for such assets.

This is of concern, as it is increasingly recognised that the intangible assets of companies now make up a large part of the value of UK companies. Research by Citibank and Interbrand Newell and Sorrell suggests that, in most cases, out of date accounting methods prevent financial statements from accounting for about two-thirds of the real value of organisations (Batchelor, 1999). That value is tied up in brands, copyright, corporate reputation and other forms of goodwill which are internally generated. However, those interviewed by the project said that the effective management and investment in such assets was not dependent on inclusion in the balance sheet.

Recognition and Definition of Information as an Intangible Asset

For information to be recognised as an asset in accounting terms, it must give:

> "rights or other access to future economic benefits" (Accounting Standards Board, 1999).

Information clearly gives rights to future benefits and should be considered an asset. However, when we move from recognition of an asset to definition, problems do arise. One of the requirements for recognition of an asset is that it must be "separable". In other words, it must be capable of being sold separately from the business. Information will rarely meet this definition as it is diffused through all aspects of the business. The argument from accountants we interviewed was that information was necessary for better business practice, but that attempts to define it as an asset were not useful.

Perhaps the greatest difficulty we found with attempting to define information as an intangible asset under FRS10 was that the standard dealt only with goodwill and intangible assets in company acquisitions. All of those interviewed regarded their internally generated information as their most important asset. As the standard could not be used for internally generated intangibles, it was not helpful. The most valuable assets of the business would still not be accounted for by the standard. For most, the standard was considered a step forward in accounting for acquired intangibles which would previously have been written off but was too restrictive to be really useful.

Internally generated information assets were described variously as people skills, know-how, customer databases and library and information centres. Such assets were regarded as unique to the particular organisation in which they resided. Although many of those interviewed said they regarded information as an important asset, they regarded its valuation in accounting terms or inclusion on the balance sheet as not useful. Accountants and information professionals alike rejected valuing information as an asset for inclusion on a company balance sheet. Among the reasons given were:

- Information is not owned: information companies may be data rich, but they are unable to add anything to the value of the business because the information they collect cannot be divulged or recycled.
- Information is not a special case: if you put information on the balance sheet as an asset, you would have to put on other support functions.
- There is simply no need: no one puts advertising expenditure on the balance sheet but that does not mean that people do not think very seriously about their advertising.

The strength of consensus was surprising but perhaps understandable. Accountants aim to keep company accounts rigorous and comparable, and information professionals find it difficult to regard information assets in terms other than as cost. There was a strong belief that individual organisations' information was unique and could not be compared with others. Similarly, problems with proving that the value of information increased over time or that information helped decision making were identified as major stumbling blocks. Some of the reasons given were :

- There is no proof that information holds its value over time.
- Information value depends on currency; information degrades too quickly for a valuation to be made.

- The value of information for problem solving is time critical; only the right information at the right time helps.
- Managers are paid to deal with real-time problems for which there often are no precedents.
- The process of getting to the solution is as important as the solution itself; information saving us time is not an issue.

FRS10 AND UK COMPANIES ACCOUNTING FOR INFORMATION

We have found no companies in the UK that are currently using FRS10 to account for information assets[1]. In practice, companies when complying with the standard tend to exclude rather than include more intangibles on the balance sheet. There is an historical explanation for this. The Accounting Standards Board needed to prevent companies from inflating their worth based on unreliable intangible assets which only they had valued. FRS10 was designed at least in part to prevent such practices.

Companies complying with FRS10 are also taking an unexpected route according to the Accounting Standards Board when accounting for goodwill and intangibles by amortising them over their "useful economic life", usually no more than 20 years. It was expected that more companies would attempt to carry such assets on the balance sheet indefinitely. To do this, companies had to prove that value was maintained in the asset by carrying out an impairment test. These impairment tests proved extremely technical and only very large companies would have the resources to carry them out. As a result, so far little has been achieved in accounting for the "two thirds" of value missing from financial statements.

The majority of information and accounting professionals interviewed also argued that information was already valued in their organisation, so there was no need to attempt to value it using FRS10. Some of the comments included:

- There is a feeling of the importance of information in our organisational culture.
- Impact of information is regarded as high, we do not attempt to quantify this but we know it is valuable.
- Information resource allocation proves we are valued.
- Management and control of information is already important.
- Very difficult to measure how information contributes to a deal being made but we already accept it does.
- If you undertake research, it is in the belief you will get future benefits.
- If you harness information, you will have a better business.

However, we found that practical information policies were few and far between, and many of those interviewed could name no more than two information assets in their organisations. There is a clear mismatch here between rhetoric and practice.

Identify a Best Method

Although we found no companies that were using FRS10 to account for information, all those interviewed agreed that, in theory, the best and most acceptable method would be "by reference to any active market". The price at which information could be sold was not regarded as useful as this was not comparable. The second method, the difference between purchase cost and fair value, depended on there being a sound relation between the cost and the value of information.

An active market on which information assets were frequently bought and sold was clearly identified as the best method. However, as the information assets of those we interviewed were regarded by them as unique, no homogenous information asset market was seen as possible. Recent developments fuelled by Internet commerce and trading have highlighted the potential of information as a tradeable commodity. eBay, one of the most successful and popular commercial sites, has recently hosted auctions for intellectual property, trademarks, copyright and patents <http://www.patentauction.com>. Similarly, IQPort International <www.iqport.com> has attempted to bring "liquidity to the knowledge marketplace". Buying or selling knowledge assets allows participation in a "Nasdaq for knowledge". Perhaps attitudes on an information asset market are changing.

Current Attitudes and Future Plans

Such developments in information asset markets are interesting, but they by no means reflect the current attitudes to information assets in the companies and individuals we interviewed. While information is said to be regarded as vital to the organisation, few companies are actively exploiting their information for financial gain. Few practical methods for the management of information were in place, although most of those interviewed argued that there was no need to value information as an asset as it was already valued and managed in the business.

There was a distinct gap between saying the company or individual recognised the "value of information" and identifying any individual information assets with a view to exploiting them for financial gain. This is where the main problem lies. While many of those interviewed spoke of the merits of information, few practical examples of managing information assets exist.

[1] This does not necessarily mean that no company uses the standard for this purpose; only that our research failed to uncover a single example.

This has led us to conclude that an important step in achieving any valuation of information assets must be the development of a practical method of identifying and assessing such assets. One method identified, the Information Health Index (IHI), developed by the IMPACT Group from the work of the Hawley Committee (Horne, 1998) may well replace theory with practice for many companies in the UK. The IHI gives "a measure of the goodness of information management". We plan to develop the IHI as a self-assessed information asset management tool which will be widely used in UK companies and even the public sector. Once the identification and assessment of information assets in companies becomes widespread, a comparable information asset marketplace may well emerge.

Acknowledgements

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Innovative implementation of the Balanced Scorecard in an academic information service

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The paper starts by giving a short theoretical introduction to the concept of the Balanced Scorecard which was developed by Robert Kaplan and David Norton in the early 1990s for motivating and measuring business performance. The idea for the use of this management methodology as a tool for implementing organisational transformation measures at the Academic Information Service (academic library) at the University of Pretoria, was introduced by an external consultant. An outline of the implementation of the scorecard on both the strategic as well as operational levels within the Academic Information Service is discussed. Finally it is shown how the Balanced Scorecard is currently being used to facilitate the strategic management process in the Academic Information Service.

It is an accepted fact that one of the biggest challenges facing organisations, as we move into the 21st century, is the ability to function effectively in an ever-changing environment. As part of a proactive approach to move competitively into the future, the Academic Information Service at the University of Pretoria has been in the process of organisational transformation for the past five years. Some of the changes incurred during this time have been: a change of name – from the Merensky Library to the Academic Information Service; decentralisation of traditional services such as cataloguing and classification, inter-library loans and periodicals administration; and, most importantly, an in-depth reflection as to where and how the Academic Information Service was to be strategically positioned in the future.

The concept of the balanced scorecard as a support tool for this process of change was recommended by an external management consultant.

THE BALANCED SCORECARD : BACKGROUND

Ninety percent of organisations believe that a clear understanding of their strategies could significantly influence their success, yet less than 60% of their senior managers and less than 10% of the total organisation believe they have a clear understanding of their organisation's strategy (Kaplan and Norton, 1996). During a year-long research project with 12 organisations at the leading edge of performance measurement, Kaplan and Norton devised a "balanced scorecard" – a set of measures that gives top managers a fast but comprehensive view of their organisation.

The balanced scorecard can be seen as a management system that bridges the gap between the strategic objectives set at senior level within an organisation, and the front-line workers who are ultimately required to execute these objectives, thus enabling organisations to navigate future competitive success. This is accomplished by translating vision and strategy into objectives and measures providing a framework to communicate the vision and strategy to employees, thereby channelling the energies, the abilities, and the specific knowledge of people throughout the organisation towards achieving long-term goals. By developing a set of performance measures that gives managers a comprehensive view of the organisation, it serves as a methodology that strives to keep individuals and organisational units in compliance with a pre-established plan, focusing the whole organisation on what must be achieved to create breakthrough performance. By using the scorecard as a tool for planning, setting targets and aligning strategic initiatives, it acts as an integrating device for a number of diverse and often unconnected programs, linking each employee with the vision of the organisation (Campbell, 1997).

THE BALANCED SCORECARD: MEASUREMENT

The balanced scorecard measures organisational performance across *four balanced perspectives* (Kaplan and Norton, 1996). Each of these perspectives must be translated into specific measures and these performance measures must in turn be linked to the organisation's strategic vision and focus. Answers to four basic questions are provided:

- The *customer perspective* asks the question: To achieve our vision, how should we appear to our customers?

  Here companies identify the customer and market segments in which they have chosen to compete. This perspective demands that managers translate their general vision on customer service into specific measures that reflect those factors that really matter to customers.

- The question of the *internal perspective* is: To satisfy our shareholders and customers, what business processes must we excel at?

  The critical internal processes in which the organisation must excel are identified. The focus here is on those internal processes that will have the greatest impact on customer satisfaction as well as achieving organisational objectives.

- To achieve our vision, how will we sustain our ability to change and improve? is the question asked with the *learning and growth perspective*.

  This perspective identifies the infrastructure that the organisation must build to create long-term growth and improvement. Organisational learning and growth come from three principle sources: a) employee capabilities, b) information systems capabilities, c) motivation, empowerment and alignment.

- For the *financial perspective* one has to ask: To succeed financially, how should we appear to our shareholders?

  The drives in the financial perspective will be customised to the organisation and its specific competitive environment.

Together these four perspectives provide a balanced view of the present and the future performance of an organisation.

THE BALANCED SCORECARD: IMPLEMENTATION

The balanced scorecard is a concept that can be implemented in many ways. One prerequisite is that it must be adapted, or changed, to fit a specific organisation. The balanced scorecard can measure what you want, reflecting the nature of your business and your business strategy.

On the *strategic level* the scorecard translates an organisation's vision and strategy into a comprehensive set of performance measures that provides the framework for a strategic and management system. Senior management must agree on the vision and how it is to be implemented.

On the *operational level* the scorecard can be used as a vehicle of communication by cascading it down through the organisation. Broad participation serves as a foundation for communication, spreading the understanding of the corporate strategy and how it is to be deployed and measured (Booth, 1996). It then becomes possible to use the scorecard as a basis for setting personal goals and linking them to personal rewards.

A good scorecard reflects the strategic plan, provides a framework that helps to shape work behaviour, allows each person to measure their individual performance and gives data to make changes immediately a performance is enhanced.

IMPLEMENTATION OF THE BALANCED SCORECARD IN THE ACADEMIC INFORMATION SERVICE

When planning to implement the balanced scorecard in the Academic Information Service, a project leader in the person of the internal consultant was selected by colleagues to oversee the project, keeping it on track and on schedule.

For its implementation it was important to see the balanced scorecard as a *conceptual tool* that could be adapted to fit the organisation. Implementation was initiated on the strategic and operational levels simultaneously.

Strategic implementation

The strategic implementation of the scorecard consisted of two elements, namely the formulisation of a vision and the establishment of strategic objectives.

The most important aspect of the balanced scorecard is the strategic vision/focus which is used to align strategic objectives within the four perspectives of the scorecard. In the Academic Information Service the *"Virtual Information Service"* was taken as the key vision. This strategic focus consists of three elements, namely:

- mechanisms to fulfil this vision. Examples of mechanisms are the service units and the balanced scorecard;
- the infrastructure necessary, for example the seamless integration of paper and electronic information sources; and
- the results that are necessary to this vision. The most important result is the integration of the Academic Information Service with the university's telematic education effort.

As part of the renewal strategy of the University of Pretoria, the Academic Information Service was evaluated in 1998. As a result of this evaluation a three-year renewal plan for 1999-2001, reflecting the strategic objectives of the organisation, was formulated, using the balanced scorecard in the creation and organisation of this plan.

Although the plan included many objectives as arranged under the four perspectives suggested by the scorecard, for the purpose of this discussion a few objectives specifically illustrating the alignment with the strategic focus, are identified:

- Under the *customer perspective* the Academic CyberSpace, the newly established Internet café, can be singled out. The Web page was developed with the aim of grouping together various Web information services such as the Web catalogue (UP Explore) and the electronic journal Web page. Student services are also available on the Web interface, for example examination papers and the local student paper, *Perdeby*. The Academic CyberSpace is a direct response to a client survey.
- As part of the *internal processes* a comprehensive three-phase training programme was implemented for information personnel comprising courses in Web search engines, the design of Web databases, Web-page design (the use of Web editors) and a Web-based course on "Personal knowledge management and the Internet". The result of this course is a variety of Web databases for specific client groups.It can be seen at <http://hagar.up.ac.za/catts/learner/heilap/assignments.html>.

- As part of the *learning and growth* perspective the outcomes-based compensation system that is being implemented includes a direct link to Web competencies. These competencies are at this stage on the highest level with the most compensation coupled to it.

The *financial perspective* was divided into two perspectives, namely partnerships and resources. This shows how the balanced scorecard can be adapted to an organisation's needs. A fee-based system on the Web for external clients is in the process of being developed as part of the resources perspective.

Operational implementation

The balanced scorecard signals to everyone what the organisation is trying to achieve and, to be truly effective, a scorecard must be deployed to all levels of an organisation. As an outcome of restructuring within the Academic Information Service and the resultant flattening of hierarchical structures in the organisation during the process of transformation, various semi-independent teams, called Service Units, were formed. These Service Units loosely represent the respective faculties of the University and have individual leaders at the helm.

With the dual aim of introducing the concept of the balanced scorecard to the various service units within the organisation, as well as facilitating the process of understanding and internalising the concept within the framework of the overall organisational strategy, a series of *workshops* was held with the members of the individual service units. The workshops operated as follows:

- As an introduction to the concept and the practical implications of the implementation of the scorecard, Kaplan and Norton's Harvard Business School video: *The Balanced Scorecard: measuring corporate performance* was shown. This video profiles the individual processes of the introduction and implementation of the scorecard in two companies: FMC Corporation – a diversified industrial company, and Rockwater – an offshore underwater construction company.
- As a next step, in order to establish firm theoretical knowledge of the balanced scorecard, a short introductory lecture on the aims, processes, measurements etc. of the scorecard, followed by an explanation of the strategic implementation of the scorecard within the Academic Information Service, was given.
- Members of the service unit were then divided into groups of four or five and given the assignment of physically creating their own visual construction of the scorecard, representing their view of the application of the scorecard within the service unit. The material available for this visual presentation consisted of construction kits (children's toys), books and articles on the scorecard, and flip-charts and markers for further exposition. The execution of this task required not only the knowledge and a reasonable understanding of the theoretical underpinning of the scorecard, but considerable imaginative and creative skills as well.
- After completion of the assignment, each group was given a chance to explain their proposal, with the leader of the service unit ending the session by giving an overall view of application and future plans for the implementation of the scorecard in the service unit.

Impact of the workshops

The balanced scorecard is both motivating and obligating. If an organisation's strategy is to succeed it is important that the critical objectives that must be accomplished be communicated to and comprehended by all employees and departments within the organisation. It is furthermore imperative that departmental and personal goals be aligned to the strategy.

As service units in the Academic Information Service are, as a result of these workshops, currently in the process of formally developing their own balanced scorecards on the operational level within the overall strategic framework, one can confidently say that the chances of success of the scorecard are virtually assured.

COMPUTERISATION

It is important that strategic and operational objectives be integrated with a management information system. The Renaissance Balanced Scorecard was jointly developed by Gentia Software and Renaissance Worldwide to automate the management model developed by Kaplan and Norton in the Balanced Scorecard. It is an automated strategic management system for translating strategy into action at all levels of the organisation.

The new version of the Renaissance Balanced Scorecard uses Web technology to shorten deployment time and provide users with instant access regardless of location. By using graphics, text and statistics, it enables users to perform a variety of functions, such as viewing scorecard reminders and details, making assessments, and analysing portfolios, scorecards and initiatives from any department or location. A Web video of this software is available at: <www.gentia.com/balanced_scorecard/demo/rbsc_demos.htm>.

The Academic Information Service is in the process of discussing the possible implementation of this system.

THE BALANCED SCORECARD AS A MANAGEMENT PROCESS

The application of the balanced scorecard in the facilitation of the strategic management process in the Academic Information Service is being attained through the use of a quartet of successive management processes (Pienaar et al, 1999):

- *Clarifying and translating vision and strategies*, which ensures consensus of shared vision and strategies throughout the organisation.

  A business consultant assisted a group of senior staff in the formulation of a corporate vision and strategies according to the four perspectives of the balanced scorecard. The emphasis here was on the process and principles of co-operation and more specifically co-creation – unless the whole team was fully engaged in the process, a successful outcome was unlikely.

- *Communicating and linking* ensures multidirectional open communication channels allowing free circulation of organisational information.

  The director of the Academic Information Service communicated the vision and strategies to the rector of the University and had a series of open information sessions with the staff of the Academic Information Service as well.

  Translation of the focus and strategies also resulted in the establishment of a Performance Management System based on competencies and outcomes. As a direct result of continuous communication with the university top-management, a similar system is now in the process of being implemented for the university as a whole.

- *Planning and target setting* provides for the alignment of organisational plans with financial and other resources.

  Specific targets for renewal plans for the Academic Information Service were set for one-, two- and three-year periods. Strategic co-ordinators for the various established strategies were appointed. In accordance with the principle of adapting the scorecard to fit specific organisations, the financial strategy was split into two, namely resources and partnerships, each with its own individual co-ordinator. Mind-maps are being used to facilitate the integration and implementation of these strategies.

- *Feedback and learning* empowers the Academic Information Service to become a truly learning organisation.

  Quarterly feedback sessions are held by the strategic co-ordinators and service unit leaders on the progress made with the three-year plan. Open feedback sessions with the rest of the staff are also held regularly.

  Information that is fed back through these processes results in modifications to strategies where necessary. This reshaping means that the organisation learns, not only from its mistakes, but from positive feedback as well.

CONCLUSION

Kaplan and Norton (1992) are of the opinion that the balanced scorecard has its greatest impact when deployed to drive organisational change. In a rapidly changing environment, managers need a scorecard that provides measures of how well they are creating future value. As in the vision of Kaplan and Norton, the balanced scorecard is well suited to the kind of organisation that the Academic Information Service is trying to become. It puts strategy and vision at the centre and not control. It establishes goals, but also assumes that people will adopt whatever behaviours and take whatever actions are necessary to arrive at these goals. The Academic Information Service is in a constant state of positive change seen as integral to its culture; an organisation that keeps looking and moving forward.

Note

A PowerPoint presentation is at: <http://hagar.up.ac.za/catts/learner/heilap/balancedscorecard/index.htm>

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Benchmarking with the Wisconsin-Ohio Reference Evaluation Program

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Kent State University regularly evaluates its reference service with the Wisconsin-Ohio Reference Evaluation Program (WOREP). The WOREP is a nationally-recognized tool chosen by Kent to measure reference performance and to benchmark performance internally and against other libraries. The WOREP offers an objective appraisal and helps to pinpoint areas for potential improvement. It provides detailed data on factors that contribute to reference success and on other aspects of the reference transaction environment, enabling identification of best practices for excellent reference service. Kent is the only institution to have conducted the WOREP on four separate occasions and selected results from the first three occasions are presented here, including comparisons with similar-sized libraries and the top-scoring library.

I'm very pleased to have the opportunity to describe what we have been doing at Kent State University in terms of performance measurement. I would first like to acknowledge my colleague, Barbara F. Schloman, who is Director of Library Information Services at Kent. She and I have worked together on reference assessment using the WOREP and she has contributed substantially to what I am about to present. I appreciate her continued interest and support.

I would also like to mention that a slightly different version of this material will be appearing in a chapter in the book titled, *Library evaluation: A casebook for library managers*, to be published by Libraries Unlimited in 2000. The chapter, which Barbara and I wrote together, is "Case Study: Using the Wisconsin-Ohio Reference Evaluation Program at Kent State University".

Benchmarking is a relatively new concept to U.S. academic libraries. I do not pretend to have the depth of knowledge about benchmarking that others at this Conference do, but from my extensive reading of books and other materials about benchmarking, I do know one thing – you must begin your remarks with a quotation. Therefore,

> "Sophisticated learning organizations know that they'll never know enough, they'll never be good enough, and that they can learn from others, no matter what business the others are in."
>
> James G. Patterson, 1996

I like this quotation because I can recognize my own library as a "sophisticated learning organization" and of course it communicates the essential notion that we should not be complacent about our performance.

Before I talk about reference evaluation at Kent, I will describe the institution and its libraries. Kent State University is a Carnegie Research II University in northeastern Ohio with eight campuses. The Kent campus has nearly 17,000 full-time equivalent students. The collection numbers over 2,300,000 volumes with more than 10,000 serials. The budget is approximately $10.4 million and there is a total staff of 149, including 44 librarians. The libraries are a member of the Association of Research Libraries, the Center for Research Libraries, and statewide system, OhioLINK.

On the Kent campus there are six branch libraries in addition to the Main Library. The Main Library Reference Center is staffed 70 hours per week by eight reference librarians, along with staff from other departments (four hours per week) and graduate library school students (85 hours per week). The desk handles approximately 36,000 reference questions and 8,500 directional questions per year.

Today's reference librarians face a challenging combination of constant change and organizational pressures. Evolving information technologies and the networked environment have created an increasingly complex setting for service. Institutions are experiencing unchanged or shrinking budgets and neither libraries, nor their reference departments, are immune from being targets for reallocation. Such reallocation is not generally to the library's benefit. This situation means we have a greater-than-ever need for management information to justify the resources allocated for the provision of reference service. We need to know what constitutes good service and how a given service measures up. Growing commitment to customer service principles coupled with dissatisfaction with research findings about reference success creates pressure to improve service and to re-conceptualize reference service.

The Wisconsin-Ohio Reference Evaluation Program (WOREP) is the instrument we use at Kent to evaluate service. It was developed by Marge Murfin of Ohio State University and Charles Bunge of University of Wisconsin. The WOREP has many valuable characteristics. It has been shown to be a reliable and valid instrument. It measures perceptions of both patrons and staff and it is diagnostic in that it examines many factors of each transaction. This in-depth examination offers findings sufficient to suggest cause and effect relationships and provides data that can

be used to target improvements. The WOREP also offers data for comparison with other libraries.

On the practical side, the instrument is relatively easy to implement. There are two types of forms, one for reference questions and one for directional questions. Within each of these two categories, there is one form for the patron and one for the librarian. During the testing period, patrons are asked to fill out a form after each transaction. The library staff member also fills out a form that is coded to be matched with the patron's form during data analysis.

After the testing period is complete, the forms are sent off to the WOREP administrators for tabulation and analysis. The library will receive two reports. The first is a statistical profile that provides a report on the library's performance by each survey item and also a comparison with the top-scoring library and comparably-sized libraries. There are separate reports by type of staff and a combination of all staff. The reports compare responses on both forms, give success rates and reasons why. All-in-all, the statistical profiles offer lots of numbers.

The second report is a guided interpretation. It is provided by the WOREP administrators to suggest interpretations of the data along these dimensions: collection and environmental factors; administrative factors; reference philosophy, policies, and procedures; staff morale, skill, and knowledge; success and potential; time and assistance given; and strengths and weaknesses. This report includes possible indicators of strengths or weaknesses in broad areas by drawing together results for individual items.

As mentioned earlier, one of the valuable aspects of the WOREP is the examination of many factors that comprise the reference transaction. A sampling of those factors includes patron demographics, how busy the librarian was, whether the librarian searched with the patron or directed, understanding what was wanted, value of material used, time and assistance given, type and number of sources used, agreement in perceptions, and nature of the question.

Once the WOREP results are received, it is important to scrutinize the data and to understand them within the context of the surveying library's environment. This analysis may include identifying strengths and weaknesses, comparing performance with other libraries and among staff types, and developing recommendations for targeted improvement. An example of a recommendation might be to implement staff training in business resources, if scores for those types of questions indicated low success rates. Results and recommendations should be presented to appropriate parties, including participating staff and administrators.

Kent State University has used the WOREP four times to date. We surveyed in our general reference department in 1991, 1993, 1996, and 1999, and included government documents for the first time in 1999. Our Government Documents department is a separate service desk. We may be merging it with our Reference Desk, so this information will provide a valuable benchmark, including details on specific processes that may explain any differences in results with future assessments. We have built substantial documentation on our performance, including identification of strengths and weaknesses. The results presented here will cover the first three time periods as we are eagerly awaiting results from this year's assessment. Kent is the only library to use the WOREP four times.

Now, for a shift to a brief discussion of benchmarking, it's time for another quotation.

> "Benchmarking is the practice of being humble enough to admit that someone else is better at something, and being wise enough to learn how to match them and even surpass them at it."
>
> American Productivity and Quality Center

There are many conceptualizations of types of benchmarking. Table 1 shows one such categorization. Kent's use of the WOREP combines internal (over several years) with external benchmarking.

Table 1 Comparing Types of Benchmarking

Type of Benchmarking	Relevance of Information	Degree of Breakthrough
Internal	High	Low
External competitive competitive	High	Medium
External industry	Medium	High
External generic	Low	High
Combined internal and ext. generic	Medium	Very high

Harrington and Harrington, 1996

In terms of internal benchmarking, Kent's overall results for the first three surveys are presented in Table 2. The table shows what percentages of transactions were successful. A successful transaction is one in which the patron obtained just what was wanted and was completely satisfied with the information or materials provided or suggested. The results suggest a pattern: lowest numbers in 1991, up in 1993, down some in 1996.

To look at some specific factors and how they turned out across the survey periods, the following five tables are presented. First is success rates by difficulty level of question (Table 3). As part of completing the survey instrument, librarians indicate how difficult each questions is, and this is tied to success rate in the report. In 1996, Kent did better at "easy" questions and not so well at "hard." For "type of question" (see Table 4), we can see a pattern across the years that is similar to the overall results – lower in 1991, high in 1993, down in 1996. The exception is for "Analysis, trends, etc." Table 4 also

Table 2 Overall Results (Librarians only)

	1991	1993	1996
Number of surveys	62	57	183
Obtained exactly what was wanted and were satisfied	59.7%	73.7%	67.8%
Obtained exactly *or approximately* and were satisfied	64.5%	80.7%	78.1%

shows a particularly interesting change for "short answer facts" questions, going from 83% success to 62% success. This appears to be a dramatic downturn that calls for remedial action for this category of questions.

Table 3 Success Rates by Difficulty of Question

	1991	1993	1996
Easy	69%	68%	76%
Medium	44%	90%	67%
Hard	50%	50%	18%

Table 4 Success Rates by Type of Question

	1991	1993	1996
Short answer facts	33%	83%	62%
Something, anything	56%	87%	75%
Certain type of source	44%	63%	55%
Analysis, trends, etc.	56%	75%	80%

In addition to factors associated with success rates, the WOREP provides results for a number of relevant aspects of reference service. For example, as an academic library, we have a mission to teach students and to contribute to an environment of lifelong learning. We would hope to see results that indicate patrons learn at least one new source during every reference transaction. Table 5 shows patron reports of learning new sources.

Table 5 Other Factors – Patron Learning

	1991	1993	1996
No new sources	36%	19%	34%
One new source	44%	61%	52%
2 or more new Sources	20%	19%	14%

Another factor examined is patron reports of problems with the transactions or materials. Table 6 indicates gratifyingly low numbers, but there is a need to pay attention to the "not enough" category. There are many possible remedies to this, one of which I'll mention later.

These tables represent just a sampling of the many aspects

Table 6 Other Factors – Patron Reports of Problems

	1991	1993	1996
Not enough	13%	2%	12%
Need more in-depth	8%	7%	4%
Couldn't find information in source	10%	2%	3%
Librarian did not fully understand	2%	0%	6%

analyzed by the WOREP. These factors, combined with the many other factors examined, allow for in-depth internal benchmarking given repeated use of the instrument.

As mentioned, external benchmarking is also possible with the WOREP. It provides data for compatible organizations, that is, from libraries that have used the WOREP. This includes about 115 academic libraries. The WOREP allows us to focus on one service, reference, and gives us information on "best practices" of top-scoring libraries. The results present scores for the top-scoring library and for similar-sized libraries. Size is determined by size of collection. Table 7 shows overall results from Kent's 1996 survey.

Table 7 Overall Results (1996)

	Kent	Similar size libraries	Top-scoring library
Obtained exactly what was wanted and were satisfied	67.3%	56.1%	68.8%
Obtained exactly or approximately and were satisfied	77.9%	68.7%	78.1%

In looking for best practices, we can ask ourselves, "What does the top-scoring library do that is different from what we do?" The detailed WOREP results provide some answers. For example, Tables 8, 9, and 10 elaborate on specific actions that may be tied to reference success. Reviewing the results from Tables 8 and 9, we can see a trend of Kent staff spending less time and using fewer sources than the top-scoring library. Table 10 shows how often staff perceive that the patron thinks the interaction is not going well. Kent demonstrates a low detection rate, a finding that offers suggestions for improvement.

How do we explain and interpret all these results? Looking back to the 1991, 1993, and 1996 results, I would like to briefly describe some key departmental changes occurring before each survey period. Prior to 1991, we saw many retirements and other staff changes. Newly hired staff had much less cumulative experience than those they replaced. We also implemented our first integrated library system. Then, we did the survey for the first time in 1991, with somewhat disappointing results.

Table 8 Time Spent on Questions (1996)

	Kent	Similar libraries	Top-scoring
0 - 2 minutes	30%	35%	17%
3 - 5 minutes	48%	40%	44%
5 - 15 minutes	22%	20%	33%
over 15 minutes	0%	5%	6%

Table 9 Number of Sources Used (1996)

	Kent	Similar libraries	Top-scoring
1 source	57%	43%	24%
2 sources	26%	29%	41%
3 sources	12%	16%	6%
4 or more	5%	12%	30%

Table 10 Sensitivity to Patron Communication Difficulty (1996)

	Kent	Similar libraries	Top-scoring
Percent of patron communication difficulty detected	15%	34%	50%

Between 1991 and 1993, we transformed our Reference Center in terms of its physical layout. The reference desk was given a much more prominent position than before, and this change and others affected in a positive way the flow of people within the area. This time period also brought a significant growth in number of electronic resources, and we began "roving" through the reference area to proactively offer assistance to users. The survey results in 1993 were very high.

During the time between the 1993 survey and the 1996 survey, we underwent more staff changes and an overall reduction to the staff roster. We established an information desk in the Reference Center, a move that included our first use of classified staff from other library departments to offer public service. We increased our reliance on graduate students to staff the information desk. We implemented our second integrated library system, and brought the statewide library system, OhioLINK, to Kent. The 1996 results revealed a slip in success rates compared to the 1993 results.

Exactly how these changes and others affected the quality of reference service as reflected in WOREP results is uncertain. There is no obvious linear relationship between changes such as these and survey results. However, we have made some changes, or undertaken certain activities, based directly on WOREP results. After the 1996 survey, we implemented staff development sessions on the use of business resources. We also discovered a need to follow-up more with patrons (remember "not enough" from Table 6) and to learn more about being sensitive to patron's perceptions of the transaction (based partly on the low detection of communication difficulty). We will discover if overall performance has been improved by looking at our 1999 results.

In the future, we are interested in further exploring and applying the "benchmarking" and "best practices" concepts. We need to continue to examine processes and determine how to apply the notion of "process improvement" to reference interactions. How can we improve *human* processes? For example, one of our activities based on the Kent results was discussion of increasing sensitivity to patrons – how does that translate into measurable process improvement?

In conclusion, we find the WOREP works very well for us. It offers a total reference desk service assessment from both patron and librarian perspectives, looking at both satisfaction and success. It allows for systematic user input, unifies staff, and facilitates departmental changes. Although it evaluates only traditional reference service (not telephone, e-mail, or Web services), it is a valuable and important tool for reference assessment, and the only one that comprehensively allows for both internal and external benchmarking.

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The use of an impact survey as a measure of special library performance

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An Intranet electronic survey instrument was developed to measure authors' perceptions of the value and impact of DERA Information Resources Department's services on the authors' ability to carry out research. The survey enabled the creation of simple Performance Indicators for the services, and quantified how much they had been used in that research. Interviews with a sample of respondents were carried out to validate the integrity of the instrument, and analysis showed a close correlation between the electronic and the face-to-face surveys.

The Defence Evaluation and Research Agency is the research, development, testing and trials agency of the UK Ministry of Defence. Formed from an amalgamation of the Ministry's research establishments over the last seven years, with a staff of 12,500 and a turnover of £1.1 billion, it is one of Europe's largest research organisations.

Information Resources Department (IR) is tasked with management of the corporate knowledge base, and was created by merging 20 research libraries and the Defence Research Information Centre. It currently employs about 150 staff, and operates largely through 15 Information Centres on the major sites. In addition to "conventional" library functions, it has responsibility for the management of the corporate Intranet and Internet sites, archives and archive policy, corporate policy on report writing and production, and several other information and knowledge management areas.

The DECIDE report (Final . . ,) concludes with the following quote from Bommer and Chorba:

> "Studies of library productivity have in the main focused on the productivity of the library as a mechanism (the relationship of its service delivery outputs to inputs) rather than the productivity of library users."
>
> "User productivity might for instance be measured for academic and research libraries by . . . informational by-products such as published works, technical reports, patents, . . . "
>
> "However, it may be possible that understandable caution in this area has contributed to some of the difficulties experienced by libraries and librarians in some circumstances in securing desired levels of recognition and resourcing in their organisational environment."

For a research organisation such as DERA, technical reports and the like are not informational by-products. They are the manifestation of our research, and can be considered one of our major tangible products. Indeed, our level of output of reports and articles in the scientific press is considered by the Government to be a primary measure of the performance of the Agency.

By showing, in a meaningful form, what IR's impact has been on the production of these outputs, we would have a more solid base on which to develop our services, as well as "securing desired levels of recognition and resourcing in (our) organisational environment".

It was decided that, regardless of the fact that no one appeared to have attempted to create a measure of the impact of their services on the organisation, there was no reason not to try to do so. It would be simplistic, but would provide the groundwork for any more complex future survey.

Focusing on the scientific report alone has inherent pitfalls, however. It does not cover all of the services provided by IR; it does not target all of our customers, and it only loosely addresses the question of what services are needed in addition to those currently offered. Nevertheless, by conducting a survey based on the Agency's core product, we have the opportunity to measure the effectiveness and impact of our major services – at least in the eyes of our major group of customers.

SURVEY STRUCTURE AND METHODOLOGY

In designing the survey, several requirements had to be met. There is a strong feeling of questionnaire overload amongst many DERA staff. If we were to get a comprehensive response, the survey had to be short and easy to fill in, and yet allow the respondent to expand at length on topics of concern. From IR's point of view, the less effort needed to input and analyse the data, the better.

After several iterations, the structure of the survey took the form of:

- eight questions asking whether particular, identified IR services had been used and, if so, what level of impact each had had on the author's ability to produce a particular report;
- three questions relating to Internet use and its impact;
- a single question asking whether the absence of these services would affect the ability of the author to carry out similar work in the future;

- a text box, asking: if IR had failed to supply required information within the desired timescale; whether the information supplied had been critical to the success of the project; and if there were any identified savings in effort, time and budget;
- a final text box, asking "If none of the services were used, why?".

IR manages DERA's Intranet and Internet (DERAweb) systems, with a Web Team of programmers and system developers. They quickly and enthusiastically converted the draft paper survey, using a mixture of HTML, ASP, Visual Basic and JavaScript, into a Web-based electronic format. When completed, the survey instrument would deliver the data directly into an Access database on one of our servers, obviating the need for us to enter data at all.

With over 70% of DERA's employees connected, the DERAweb and its e-mail servers seemed an ideal delivery mechanism for the survey. At the time that the survey was proposed, DERA was corporately being converted to Windows NT, with Microsoft Outlook as its internal e-mail system. One very useful feature introduced by this change was the fact that any Web address in the text of an e-mail message could be used to automatically invoke an appropriate browser, allowing immediate connection to that Web address when clicked. By incorporating such an address in an e-mail pointing to the electronic survey, we could solve several problems in one go.

Initial trials of using e-mail to trigger the electronic version of the survey proved successful. After minor changes in the text of a few questions, together with some re-structuring, the survey was ready to be used in anger.

DIIS – TARGET SELECTION AND DELIVERY

Our corporate procedure for writing formal reports – Technical Reports (TRs), Customer Reports (CRs) and Working Papers (WPs) – mandates using the Document Identifier Issuing System (DIIS) to obtain the appropriate report number. The DIIS is another Intranet-based facility owned and managed by IR, and allows the tracking of all formal publications from initial concept to publication.

It is also mandatory for authors to deposit copies of their formal publications with IR's local service points – Information Centres (ICs) – when finally published.

Staff in the first IC to receive a copy of a formal publication are required by our procedures to record the receipt of the publication on DIIS, changing the document's status from "Draft" to "Received". Copies received at ICs other than the first are recorded in the Comments field. Using this status-change as a trigger, staff at any of IR's fifteen ICs could then send an e-mail to the first-named author of each newly published report, within a day or two of publication. Since the status field is changed once and once only, using that action as a trigger prevented authors being sent multiple copies of the survey. In addition, the local connection would often allow the personalisation of a template e-mail, of particular value on those sites where the IC staff know their customers well. There is a greater likelihood of the author responding to a personalised e-mail survey request from someone they know, than to one from an anonymous Improvements Manager.

As was stated earlier, not all DERA staff have access to DERAweb. In order to survey those individuals inaccessible to e-mail, paper copies of the survey would have to be sent out instead, and a Word template version was made available to all of the ICs.

It was estimated that the time taken by IR staff to modify and send an e-mail would be three minutes, while that to issue a paper copy would take five. Replies to paper copies were sent back to the issuing IC, where our staff would enter the returns on the respondent's behalf via the DERAweb address. The time this would take would vary, depending on the amount of written comments in the two text boxes, but the basic survey input should have taken no more than three or four minutes.

SURVEY RESPONSE AND OPERATIONAL PROBLEMS

The survey was carried out during March, April and May of 1999. During those three months a total of 710 surveys were distributed, 606 electronically and 104 in paper form.

The data received were scanned weekly, but reviewed in detail only every month. It was thus only during the first review that it was discovered that data were missing in certain fields, owing to a software error introduced during the final revision of the survey. The error was corrected quickly, and although valid data were obtained from the text fields of these incomplete surveys, it was felt that the incomplete statistical data from these responses should be ignored. The option of surveying all of the respondents again was rejected as customer-unfriendly!

It was also noted that some responses were too positive. No less than 24 out of the first month's 111 replies had marked every question with a maximum score. Steps were taken to revise the wording and layout of the survey, with an emphasis on "honest answers please". These revisions seem to have been effective, with only eight maximums in the next 226 replies.

Given these operational problems, the response rate was excellent, with over 358 returned surveys, just over 50% of those distributed. One hundred and eleven had been completed before the software error was discovered, leaving some 226 which carried full valid data.

DATA ANALYSIS – NON-TEXT FIELDS

One of the questions which did populate correctly from the start of the project related to the translation and

interpreting service offered by IR. This is not a widely used service. Less and less scientific material is not published in English, and translation, especially from Japanese and Chinese, is very expensive. Even conceding that the service is widely respected, a staggering 80%+ of the first month's respondents said that this service had some impact on their work – a figure that was just not credible.

Why did the unrevised survey show such extreme trends? Positive bias affecting survey validity is a well-known phenomenon, and is well represented in the literature (Havener and Murfin, 1998). When constructing the survey we attempted to take effective steps to eliminate such bias as much as possible, but blatantly failed. What additional factors then had come into play?

As stated earlier, DERA is an organisation suffering survey overload. Everybody needs to find out how well they are performing. Performance measurement and benchmarking are built into our Business Management System, and thus into our organisational ethos. This enthusiasm for performance indicators starts at the very top level of Government, and affects every level beneath it. As a consequence, DERA staff are not only deluged with surveys of one kind or another, but have become highly "survey aware", and consequently are both critical and sceptical about the motives behind them.

Anecdotal evidence indicates that it has become a basic assumption that many surveys are now seen as the last attempt by services under threat to help to justify themselves. Several respondents, when tackled in person, admitted to providing "the results we thought you wanted". It would be unfair to suggest that the responses from these individuals are inaccurate, only that they are positively inflated. It is merely a measure of the level of affection and esteem that IR – or "the Library" – is held in by the scientific community within DERA.

It was also decided that further work would be necessary to provide checks and balances against possible positive bias, and to verify the electronic survey instrument itself.

DATA ANALYSIS – TEXT FIELDS

The inclusion of text fields was something of an afterthought, but proved to be an extremely useful source of user feedback. It had originally been felt that few would take the time to fill in these fields, but in fact around 70% of respondents took the opportunity to provide some form of feedback, about half of which were considered significant.

Thirty-four per cent of all of the survey responses (113) contained something along the lines of "I didn't use IR's services for *this* report, but I did for the previous one . . .". Although asked for IR's impact on their ability to produce just one specific report, 10% of respondents indicated that they felt that attempting to isolate one part of their work from the rest of the project was artificial, and that we should be looking at the impact on the project as a whole. Many authors also made the point that although IR did not impact directly on this current project, our background facilities and services provided them with additional support which enabled them to accomplish the task, in a secondary, if not primary fashion.

A proportion took the opportunity to outline individual problems that they had had with IR, and every one was followed up by the appropriate staff. The majority of these were minor, but suggested ways that services could be improved. A handful (four) expressed extreme dissatisfaction with IR, and these were followed up in detail. In most cases it was found that the dissatisfaction arose from a single incident, often in the far distant past, where they perceived we had let them down badly.

The majority of responses were positive, verging on the hagiographical. Several took the line: "Why do you even need to know this? It should be obvious even to the meanest intelligence that we cannot do our work without an information service".

One final spin-off from the survey was the number of responses on the lines of "I didn't know you did that", that have generated further interest. It is somewhat disappointing that in spite of local and departmental efforts to publicise services, the message often fails to get home. Nevertheless, such responses allowed targeted marketing to be carried out.

CORRELATION BETWEEN FACE-TO-FACE INTERVIEWS AND THE ELECTRONIC SURVEY

As this survey instrument was new to us, it was felt that some form of validation exercise was essential. In addition, it was felt that by including a representative sample of both positive and negative responses, an assessment of positive bias could be made. Fifty replies were selected at random from the total, and these were apportioned to a team of information specialists who were tasked with carrying out face-to-face interviews with the respondents. They were instructed to try to get as honest replies as possible, but were not informed what the original responses were.

The returns were collated against the original responses, and showed a high level of agreement. The survey uses a scale of 0-7 points, and most face-to-face returns showed a one point difference or less per question, with only a few (41 out of 528 answers) with more than two points difference. These differences largely cancelled each other out, and produced an average increase of just 0.2 of a point for face-to-face interviews.

There also appeared to be a close correlation between both the original positive and negative responses. Those interviewees who supplied negative electronic responses stood by their replies, as did those whose responses were far more positive. Both groups justified their stance, and it

Table 1: Data and Analysis Example, Question 4

	Replies
Total Received	226
"Perfect scores"	8
Valid replies	218
"Did not use"	152
% did not use service	69.7

Reply Value	0	1	2	3	4	5	6	7
Q4	152	6	10	8	12	19	11	0

Average Rating = Impact = 3.92 Median = 4 Mode = 5

seems evident that, with few exceptions, what they said accurately reflected what they honestly felt. In addition, the comments made proved to be very similar to those we had already received in the text fields.

RESULTS

Survey questions 9, 10 and 11 related to usage and value of the Internet. Only question 9 related to a service offered by IR. Consequently the results and analysis of questions 10 and 11 have not been included here. However, it is worth noting that the inclusion of "non-IR impact" questions within the survey proved effective.

Although we received a total of 357 responses, 111 of these were before we discovered and corrected the software problem and were excluded from the analysis. Eight more were excluded as "perfect" maximum marks, leaving a total of 218 valid responses.

The "Did not use" responses for each service were counted as a percentage of the total. The remaining responses, in the range of 1 to 7, indicated the perceived impact value of those services which were used. These impact values were summed and an average rating (arithmetic mean) produced, referred to here as the "IMPACT". In addition, the median and mode for each question were calculated.

CONCLUSIONS

The IMPACT survey seems to be an effective way of gathering simple performance indicators, based on authors' assessment of the value and impact of IR's services on their ability to produce DERA's main end-product, the technical report.

The Web-based survey instrument proved effective, and was well accepted by the respondents. Analysis of replies obtained from the Web-based survey and from face-to-face surveys shows little difference between the two methods. The automatic transfer of responses directly into an Access database proved a significant saving in staff time and effort over conventional paper surveys.

The resultant indicators should provide effective tools to monitor not only the performance of our services, but our marketing efforts to improve customer awareness of those services.

Some further thought needs to be given to whether the single-report approach on its own is wholly valid, or whether we should attempt to link it to its project.

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Table 2: Overall IMPACT Performance Indicators

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q12
IMPACT	3.04	3.40	3.34	3.92	2.84	2.00	3.54	3.31	2.30	4.07
Median	3	4	3	4	2,3	2	3	3	3	5
Mode	1	4	1	5	1	2	3	4	1	6
%"Did not use"	72.0	39.4	48.6	69.7	85.3	99.5	89.9	85.3	95.4	33.9

Popularity ratings, core sets and classification of performance indicators

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In recent years researchers have assessed the popularity of various performance indicators. Constant pressure, typically from funders, to reduce performance indicators to small sets are usually resisted by librarians as unrealistic.

Underlying features explaining these apparent idiosyncrasies are considered – chiefly the different purposes and audiences which indicators address. Specifying this feature should reduce argument and misunderstanding. An important feature is the frequency of indicator use: some are required infrequently, others on a regular basis.

Different classification patterns in manuals of performance indicators are also reviewed. The most logical in construction are not the most useful in practice. Consensus focuses on service features to users. Meaningful "menus" are valuable for selecting the appropriate indicator. Such classification questions can point to a better understanding of the indicators themselves.

INTRODUCTION

Since the last Northumbria Conference the author has been engaged (1) on a survey of the literature 1993-1998 for *Librarianship and information work worldwide 1999* and (2) in compiling an analysis for the DECIDE Project of Performance Indicators taken from some of the better known manuals.

Matrixes of performance indicators were completed for these sources:

> **UNESCO** (Nick Moore), **ALA Public Lib's, ISO 11620, IFLA Acad. Lib's, CEC 'Toolbox', ALA Acad, HEFCE** (*The Effective Academic Library*), **MIEL2** (Brophy & Wynne).

Keys to Success was not included. Its encyclopaedic nature meant such a multitude of "possible" examples that their inclusion in this sort of matrix would have had little meaning and would have doubled or trebled its size.

The full set of matrixes can be found on the Web at <http://www.efc.co.uk/DECIDE/REPORT/content_frame.htm> (Final Report, undated hard copy, 1998). These include some extra indicators proposed by DECIDE. It includes page and section numbers to be useful as a comparative index. Two example matrixes are given as Tables 1 and 2.

There were some obvious dissimilarities between the documents covered. Some are restricted to either academic or public libraries: only the CEC *Toolbox* and ISO set out to cover both. Most studies concentrate on particular aspects or services and make no pretension to comprehensiveness. The ALA manuals concentrate wholly on output measures. The CEC *Toolbox* study aimed at a completely comprehensive result so that its exclusions were intended to be meaningful.

There has been a general tendency over the ten-year period to concentrate on output measures and on user satisfaction and to fight shy of cost and expenditure data.

In the course of this work some interesting questions came up concerning CORE SETS of Performance Indicators and their CLASSIFICATION AND SEQUENCING.

CORE SETS

Various people and organisations are setting out to produce core sets of performance indicators.

This often starts with a survey to assess the popularity of different indicators. The DECIDE project included a sample of hundreds of librarians to assess the popularity of each indicator. Usually the majority of indicators are found to be used by only a small proportion of library managers, and library managers use only a small part of the armoury available to them. At a LISU Seminar in June 1998 Ian Mowat waxed enthusiastic about his eight key indicators – which all turned out to be concerned with speed of response and timeliness!

Many others have done this – including all those researching the "stakeholder" aspects. The main object of their research was to establish where different stakeholders gave different relative value to the indicators and how they related to the various objectives of each stakeholder group. However, it was also fruitful in demonstrating and tabulating the staggeringly large number of performance features and indicators available. Ranking their value and importance has been a concern of researchers in recent years. It is difficult to avoid regarding high scoring indicators as "superior" to low scoring ones; but a set of the most popular would be very unbalanced and unsatisfactory.

A continuing demand for short sets of "core indicators" seems to come mainly from funders, accountants, heads of institutions and civil servants. In the UK the Audit Commission's ration for public libraries in 1992 was five (Sumsion, 1993) and the university heads were looking for a maximum of ten (Blagden and Barton, 1998; Barton and Blagden, 1998). Poustie (Poustie, 1995) relates how

Table 1

1.3 Provision: Cost	UNESCO	ALA Pub	ISO	IFLA	CEC	ALA Acad	HEFCE	Func	Freq'cy
Total expenditure per item in stock							4-9	af	y
Total expenditure per item required							4-2	af	y
Expenditure on periodicals	16							a	y
Expenditure on materials	(13)				*F1 [1]		5-5 [2]	af	y
Acquisition expenditure per stock item added	13							af	y
Material price indexes					*F2*			af	y
Expenditure (external) on ILLs					H1			abf	y
Expenditure on Binding/Conservation					F3			af	y
Expenditure on Material as proportion of total exp're								af	y
Expenditure on one category as proportion of library spend on all materials								af	Oc
Material expenditure per FTE library staff								f	Oc
Cataloguing cost per title catalogued			3.3.1		J41-42			af	Oc
Expenditure on Staff	21				*B1			f	y
Expenditure on Staff by Main Function					B2			f	Oc
Proportion of Staff Exp're spent on Staff Development								f	Oc
User Instruction Hours: FTE Staff							3-5 [3]	af	Oc
Volumes in stock: FTE staff							4-8	af	y
Copies added per Title added					F63			af	y

[1] subdivided into: Lending Books, Reference Books, All Books, Serials, Audiovisual, Electronic, Miscellaneous.

[2] includes all sorts of Information acquired.

[3] in Annex C, but not described in main text!

Note: Tables 1 and 2

1. *Characters in the **Function** column indicate the following:*
   a. *Provision of stock and electronic information for unmediated use*
   b. *Public services, principally circulation/lending. ? In-house use*
   c. *Information services = all services mediated by staff plus user training and education*
   d. *Study facilities and reading places*
   e. *Other facilities, including buildings*
   f. *Management (facilities)*

   For many indicators several "functions" apply; for example, Access (Opening Hours, etc.) is designated "b-e".

2. *Characters in the* **Frequency** *column are explained on page 250.*

Table 2

7. Timeliness/Speed	UNESCO	ALA Pub	ISO	IFLA	CEC	ALA Acad	HEFCE	Func	Freq'cy
- of acquiring documents			3.3.1	77-79 [1]	* F94			a	y
- of processing documents			3.2.1	81-82	* F94			a	y
- in retrieving from closed access			2.3.1	90-92	* F95			ab	(y)
- of retrieving items from open stacks			2.3.2	90-92				a	?Oc
- of catalogue searches				90-92				a	y
Percentage of Requests satisfied in a time period	[3] 45	[3] 62	2.5.1			71		ab	y
Speed overall in satisfying Requests (median days for items not there)					* F96	71		ab	y
- in Recall of items on loan to another borrower					F97			b	R
- in satisfying Requests with material at another site or service point					F98			b	R
- to satisfy ILL Requests			(2.5.1)	94-98 [2]	H21			b	y
Waiting time in Queues					(J24)		MIEL2 for netw'd (5.2.4)	b-e	s

[1] divided into: Public'n date —> Order Date = Delay : "Ordering speed"
Order date —> Receipt Date = Delay: "Delivery speed"

[2] divided into: Request —> Order —> Delivery

[3] subdivide: from Reserve, from branch, from ILL, by purchase

Australian public libraries were confronted in the course of a year with a tidal wave of performance measurement demands from Federal, state and local authorities – resulting in ten "key indicators".

Typically the outsiders say "choose a handful of indicators, or up to a dozen, that will tell me what I need to know about the library's performance". Then, invariably, the library people come back and say "That's impossible: you need at least 30 or 40 to cover what we do".

Even after admitting that such "short lists" would have to differ between academic, public, special and children's libraries, most experts agree on the futility of such a quest and on the dangerous misunderstandings that are liable to ensue.

It is difficult to produce a core set for all stakeholders, for all purposes, and for all frequencies. An annual core set for accountants looks different from a core set for the library manager to check productivity or for a Library Committee to see how use and users have changed over the last five years.

Reasonably large bundles of indicators seem unavoidable. There are some 40 in the *Toolbox* core set (Ward et al, 1995 p. 163) and the French "noyau minimal" adds up to 32-37 (Giappiconi and Carbone, 1997, 232-236).

Explanation: Why should this be? Why do we need so many? One answer lies in the multiple activities and services provided by the typical library – another in the need to balance tangible and intangible factors (such as user expectation, user satisfaction, speed of response, the information/education/leisure objectives, provision for future generations) against straightforward cost efficiency.

An important feature is the purpose for which indicators are used. Only some are suitable for comparisons between institutions and authorities; only some are suitable for time series history of a library and for future plans. Too much concentration on inter-library comparisons can distort the set that may also be required to assess progress within each LIS organisation.

Our conclusion is that quite different sets of Performance Indicators are required according to these dimensions:

Stakeholders – Compare with others or over time – Frequency

The frequency of use of indicators was further classified:

Y	**Regular mainstream statistic – weekly/monthly/ annually**
S	**Regular mainstream survey – typically done annually**
Oc	**Standard survey not required regularly – year or month**
R	**Research – occasional monitoring or one-off project**

It is hardly necessary to give examples of the "Y" category. The "S" category will typically include indicators of throughput times for the acquisition process and Needs Fill Rate quality indicators. The "Oc" category will include, for instance, the ISO 11620 indicators on OPAC use (B.2.7) and on directional signing (B.2.3.2) – while some of the Space indicators are only relevant when there is a major space reorganisation or a new building happening or in prospect. These occasions present wildly different contexts and in consequence very different frequencies for the use of such indicators.

These distinctions, although obvious, are very important – and they go a long way to explain and justify the large numbers of performance indicators in the manuals.

Diversity or Standardisation? There is also a more fundamental question. The philosophy underlying the *Toolbox* conclusions was that there should be flexibility for different sectors in different countries in Europe to specify and select their own sets of most appropriate indicators. These should not be prescribed nor limited by the software and data processing solutions to be developed. There is virtue in nations or regions developing their own sets: *vive la différence!* And there will be different sets for each type of library: national, higher education, special and public libraries.

While there is a strong case for flexibility over time, and for flexibility between countries, in the composition of indicator sets for each type of library, that should not apply to the definitions of particular measures. It is highly desirable to have consistent definitions and consistent practice in data collection so that specific comparisons (over time and between places) can be valid. There should be standard definitions, terminology and procedures – so that, for instance, Enquiries per capita are calculated in the same way wherever and whenever. But it is not necessary – nor even desirable – for there to be standard sets of indicators worldwide.

CLASSIFICATION, SEQUENCE, DIMENSIONS

The question of **Classification/sequence** has not been a feature of academic work to date. Menus are, after all, of minor significance compared to the quality and spread of food provided! But menus have their uses – and, in the restaurant world, there is a fair consensus on their arrangement. For us, meaningful "menus" ("contents pages" in practice) are a valuable aid in selecting the appropriate indicator.

The DECIDE study demonstrated a need to resolve differences in the sequence and classification of PIs. For an explanation of the problem see the DECIDE section of the CAMILE web pages:
<http://www.dmu.ac.uk/~camile/>

The **CEC *Toolbox*** had, as its main categories:

The Library overall + staff, access
Use & users
Materials (provision, cost, use and satisfaction)
Enquiry Services
ILLs
Facilities

The important practical advantage of this arrangement lies in grouping together all aspects of each main service or provision – for example, for book provision: stock, acquisitions, costs, and timeliness along with the effects of adequate or inadequate provision.

But the authors had difficulty in agreeing these, so they introduced a second, and conflicting, classification where, within each section, there were subdivisions according to:

Population, Costs, Provision, Use, Needs Fill, Timeliness, Satisfaction.

The ***DECIDE*** matrixes took these subdivisions to construct a different classification and sequence according to the logical construction of each indicator.

The Classification-sequence used was:

1.	PROVISION includes Catalogue records/Discovery, Location, Access, Content
1.1	- per target population
1.2	- per use
1.3	- cost
1.4	provision : provision ratios
2.	POPULATION FEATURES
3.	USE & USERS
3.1	- per target population
3.2	- cost
3.3	use : use ratios
4.	COST
4.1	- per target population
5.	NEEDS FILL (with Quality Control)
6.	USER SATISFACTION
7.	TIMELINESS

A sub classification by function was incorporated and is shown above under Table 2 (Table 7).

In practice this works reasonably well for some sections (Needs Fill, User Satisfaction, Timeliness) but leads to awkward and confusing results elsewhere. For example, to get the measure of Book acquisitions, items have to be found in tables 1, 1.1, 1.3, 4.1 and 7 while the effects of adequate or inadequate provision are in 3, 3.1, 5 and 6!

While the classification by data type (population, cost, provision, use, satisfaction) may be logical and necessary for data compilation, it is far from ideal in displaying the results in useful sets for study. Focus on type of service and on type of use is much better.

The logic underlying this conclusion is that types of service are independent variables and are not attributes of each other. The attributes of cost, extent, per capita, and satisfaction are not interesting in themselves but only in relation to services and materials provided.

This seems to be recognised elsewhere by other authors – though with interesting variations.

The **ISO 11620** sequence is:

1. The library overall: use, satisfaction, cost.
2. "Public services":
   - document provision & use
   - information services
   - catalogue search success rates
   - user education
   - facilities
3. Technical services: acquisition, cataloguing
4, 5 Promotion and Human Resources – slots as yet unfilled.

Work in progress on the revision of **ISO 2789 *Library Statistics*** follows the orthodox classification by type of data – as is appropriate for basic statistics. However, an innovation is to distinguish between electronic sources used for "discovery" from the provision of full text, etc.

Libraries
Collections:
- **traditional**
- **electronic DBs – for discovery**
- **– full text**
- **– "other"**

Use & users
Access and Facilities
Expenditure
Staff

In all these examples there are many more items in the Provision and Use sections than in the others – creating a noticeable imbalance and revealing the concentration on separate service provision. It seems natural for most people to concentrate on the costs, benefits, use and extent of main services provided.

Another interesting perspective is found in Brophy, **MIEL 2**.

RESOURCE DISCOVERY	OPACs, User/staff training, professionalism
RESOURCE DELIVERY	Acquisitions, ILLs, DB subscriptions
RESOURCE UTILISATION	Loans, In-house use, Doc't delivery, Network sessions
INFRASTRUCTURE	Systems, staff, buildings, terminals
RESOURCE MANAGEMENT	Timeliness, plans, User satisfaction

CONCLUSION

Discussion of these questions, and the comparative study of manuals, may or may not lead to a consensus. But the issues raised by the discussion are interesting and cast valuable light on the many dimensions and purposes of the large family of Performance Indicators.

Above all, this analysis shows there is no need to apologise for such a large number of performance indicators. However, they need always to be selected on "Fitness for Purpose" criteria – and with the needs of different audiences in mind.

The feature describing the frequency of use of an indicator should not be overlooked. Although obvious, it does not seem to figure in the literature.

Note

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Benchmarking in Dutch academic libraries

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In 1998, the 13 university libraries of the Netherlands started a benchmarking project. The first version of the benchmarking instrument comprised 36 indicators that were considered to be relevant for external comparison and measurable without too much effort. Six libraries participated as test libraries. They were provided with extensive guidelines for data gathering and a form for comments. Based on the experiences of the first test, the second version was reduced from 36 to 26 indicators. Also, three questionnaires formed part of the second version. The third and final version should be implemented by all 13 university libraries in 2000. In order to stimulate its use by managers, extensive guidelines for interpretation were developed.

1. BACKGROUND

In 1998, the 13 university libraries of the Netherlands started a benchmarking project. This project aims to establish a small set of performance indicators which enable the libraries to compare their performance in a variety of aspects. Collecting data for national comparison is not an entirely new activity for these libraries. Earlier in the 1990s, statistics for Dutch academic libraries were compiled based on a uniform data-gathering instrument. However, it was decided not to continue collecting data for statistics, but instead to develop a more practical instrument for library management.

Statistics and benchmarking differ in one important respect. The goal of statistics is to describe the current situation. Therefore, among others, statistics are important sources for historical research. Although statistics can expose weak areas in a specific organization as well, this is not their main goal. The primary goal of benchmarking is to improve the performance of an organization, if necessary. The benchmarking philosophy says that we know how good we are only by comparing our results with those of others; and that we might get better if we learn from outstanding organizations in the same sector.

The project is coordinated by a small team of three experts. However, developing a benchmarking instrument can occur only in close cooperation with the libraries. Therefore, six libraries participate in the project as test libraries. The other seven libraries are being consulted and informed about progress periodically. The project is funded by IWI (a steering committee for Innovation in Scientific Information Provision) and runs from January 1998 until January 2000. The project goes through the following stages:

1. Design of the first version of the benchmarking instrument: a set of 36 performance indicators;
2. Test of the first version by the six libraries;
3. Design of the second version: an adapted and reduced set of 26 performance indicators, and three questionnaires;
4. Test of the second version by the six libraries;
5. Design of the final instrument;
6. Implementation by all 13 libraries.

At the moment of this writing, the second test is completed, but the results still must be analyzed.

2. FIRST SET OF INDICATORS

The first version comprised 36 indicators. Our policy was to start with a large number of potentially useful indicators and to reduce the set, if necessary, in the second version and again, if necessary, in the final version. The indicators were based partly on the literature on performance measurement and partly on suggestions made by staff members from the six participating libraries.

The first selection was made with two general criteria in mind. First, one should realize that most libraries already collect data for local performance measurement. External comparison should provide added value. Insight into the performance of other libraries should allow the managers to interpret their own results better. Second, data collection should not require too much effort. We hoped that we could extract a lot of data from automated systems. Unfortunately, most but not all of the 13 libraries use Pica as their library system. What might be feasible for Pica-libraries, could prove to be impossible for other libraries. Therefore, one non-Pica library was asked to participate as test library.

Examples of indicators that were rejected from the outset include:

- *the size of the collection.* Most library statistics mention the total number of titles or volumes in the collection. These data, however, are relatively unimportant for practical purposes. More valuable are data on recent acquisitions. Managers may decide to increase the growth of the collection by allocating more resources to collection development;
- *the number of questions posed at the information desk.* There are two problems with this measure. First, it may be relevant for local purposes, for instance, to decide

how many employees should staff the desk from hour to hour, but external comparison is less interesting. Second, it is not easy to interpret the data. Ideally, "higher" or "lower" should be "better". In the case of reference questions, however, things are not that straightforward. A high number may point to unclear procedures and signposting, a low number may be caused by unfriendly or too busy employees. So, without further research, it is hard to conclude whether high or low means good;

- *number of items used in the library*. Circulation counts do not fully represent the use of library materials. However, measuring the internal use of library materials is time-consuming and therefore has never been a tradition in the Netherlands.

The indicators that were selected are grouped in four categories:

A. Financial and human resources (primary input);

B. Supply of library products, facilities and services (secondary input);

C. Efficiency of internal processes (throughput);

D. Use and effectiveness of library products, facilities and services (output).

Some examples may serve as an illustration.

A. Resources

- *Expenditure on electronic publications/total expenditure on printed and electronic publications*

This indicator does not actually refer to performance, but shows to what extent the library is turning into an electronic library. However, one cannot compare a medical library with a humanities library. Therefore, we requested separate data for the humanities, social sciences, sciences, technical sciences and medical sciences within each library. Detailed overviews were presented on what subjects constitute each of the five disciplines.

B. Supply of materials

- *Number of acquired monographs/fte academic staff*
- *Number of current subscriptions/fte academic staff*

These are well known indicators. For external comparison, it is essential that collection size is related to the size of the population. However, this is not as clear-cut as it may seem. Instead of the number of full-time equivalents of academic staff, we might have chosen the number of academic staff members (individuals rather than fte), the number of students, or the total number of employees at the university (academic and non-academic). In fact, we found that the rank order of libraries differs according to the way the population is defined. A second problem with this indicator is that the relation between collection size and population size is not a linear one, but a logarithmical one. That is, a library with a population five times as large as another library does need more additions and subscriptions, but not five times as much. Libraries with a small population need a relatively large collection. Finally, sheer numbers of added volumes or current subscriptions do not take into account other factors such as the variety of disciplines, national collection responsibilities, the presence of nearby libraries and so on.

C. Efficiency

- *Number of processed books/fte book processing*
- *Number of cataloged books/fte book cataloging*

The first indicator is a rough measure of the efficiency of book processing. It comprises all book processing activities, such as acquisition, cataloging and subject indexing. The second indicator concentrates on the cataloging process. Librarians attach great importance to the second indicator, although external comparison is far from easy. There is little consensus about what activities constitute cataloging. The extent to which acquisition and/or subject indexing activities are integrated with the cataloging process may differ from library to library. Therefore, the first indicator is the one to be preferred. This indicator is less sensitive to organizational differences in the book processing departments of the participating libraries.

D. Use

- *Number of loans last year/number of additions during the last five years*
- *Average number of loans from recent additions*
- *Percentage of recent additions that were never loaned*

The first indicator needs some explanation. More familiar is the turnover rate, which is the average number of loans per volume. This indicator can be calculated easily, but it does not make sense in academic libraries that contain large amounts of old, obsolete materials. An alternative is the average number of loans from recent additions. This indicator, however, is hard to measure. Past experiences revealed that these data cannot be extracted from the Pica circulation system. Eventually, we chose the indicator *number of loans last year/number of additions during the past five years*. It should be noted that this is just a ratio, it does not mean the number of loans during the last year *from* materials that were acquired during the past five years. A part of what was loaned during the last year refers to publications which the library has owned for (much) more than five years, although in most libraries this will only be a small part.

To get some insight into the use of recently acquired books, the libraries were requested to draw a sample of 400 books, acquired three years ago and published three, four or five years ago. So, in 1999, a sample should be drawn of titles acquired in 1996, with year of publication

1994, 1995 or 1996. The libraries were asked to search each title in the circulation system in order to determine the number of loans. Then, the average number of loans from recent additions and the percentage of recent additions that were never loaned can easily be calculated. The first test concentrated on the social sciences.

3. TEST MATERIALS

The six test libraries were provided with the following materials:

1. Raw data form

The raw data, that are needed to calculate the indicators, were grouped in a logical order. Libraries could enter the data in an Excel spreadsheet or on a printed version. Past experience showed that data from faculty libraries can be hard to collect, especially those faculty libraries that are autonomous to a certain degree. Therefore, each library was requested to indicate whether the data referred to (1) (nearly) the entire library; (2) only the central library and some faculty libraries; (3) only the central library. Of course, the first alternative was preferred.

2. Comments form

This form was intended to gather additional information for each indicator, such as:

- the sources used to gather the data
- the problems experienced during data gathering
- assumptions made when data were estimated
- the effort required to gather the data
- suggestions for changing the definition of raw data or the measuring methods
- incidental factors that influenced the result
- structural factors that influenced the result.

3. Manual

An extensive manual was compiled to promote a uniform way of data gathering. Definitions and instructions must be as clear and detailed as possible, especially when the results are meant for external comparison. Even the most basic concepts such as cataloging output need an extensive treatment. For instance, we decided that authority records, retroconversion and marginally updated records should be excluded from the counts. Also, detailed methods are described for more complex matters such as how to measure book processing times, how to calculate earnings from fees and commercial services, and so on.

4. RESULTS FROM THE FIRST TEST

It appeared that not all data could be collected in a uniform way, while some data could not be collected at all. Some difficulties were:

- building costs. One of the indicators is the proportion of expenditure for a) collection; b) staff; and c) other costs. Building costs are an important element of the category "other costs". However, some libraries were not able to calculate building costs at all, because these costs are at the expense of the university. For those who could measure costs, the results diverged widely. We decided to give up measuring building costs. What remains is not a complete but at least a comparable overview of costs: the percentage of expenditure for a) collection; b) staff; and c) other costs minus building costs;
- costs for electronic journals. Libraries do not pay separate prices for the printed version and for access to the electronic version of a parallel journal, but a combined price. Therefore, in the second version the libraries were requested to report costs for printed publications, electronic publications and combined publications respectively. The indicator *proportion of costs of electronic publications to total collection costs* will now be calculated as follows: costs for combined printed and electronic documents plus costs for pure electronic documents/costs for printed documents plus costs for combined printed and electronic documents plus costs for pure electronic documents;
- separate data per discipline. We needed separate data per discipline for several indicators related to the growth, use and costs of the collection. In theory, it should be feasible to collect these data, since all libraries assign subject codes to publications, and even more so because since 1990 most academic libraries apply a uniform system for subject indexing. However, as often reported in the literature, it is not always possible to extract management information from automated systems, even though the system contains all necessary data. In the second version, the number of disciplines was reduced from five to three (humanities, social sciences, and scientific/technical/medical sciences), and libraries were allowed to base their counts on the department that holds a publication rather than on the subject code assigned to the publication, if they wished. So if a medical library holds documents on psychology or education, these are regarded as medical holdings;
- loans of recently acquired monographs. It took too much time to examine the circulation history of a sample of monographs that were acquired three years ago. Although one library had developed software for these and similar purposes, the other libraries reported that it took a whole day to collect the data for one discipline and that it would take a week to collect the data for five disciplines;
- use of electronic journals. The libraries were requested to gather usage data of those e-journals that are either stored on the library's own server or licensed from the publisher. No library seemed to be able to measure one of the following alternatives: number of log-ins, log-in

Table 1 List of Indicators

A. Financial and human resources

A1. Expenditure library/expenditure university

A2. Earnings from fees and commercial services/total library budget (including earnings)

A3. Percentages of library expenditure on: a) collection; b) staff; c) ICT; d) other costs excluding building costs

A4. Expenditure printed journals/expenditure printed monographs and printed journals. *Per discipline*

A5. Expenditure electronic resources/expenditure printed and electronic resources. *Per discipline*

A6. Percentages of staff at: a) technical services; b) public services; c) management and support

A7. Expenditure training and instruction per fte library employee

B. Products, facilities and services

B1. Expenditure collection development/number of academic staff (fte). *Per discipline*

B2. Number of acquired books/number of academic staff (fte). *Per discipline*

B3. Number of current subscriptions/number of academic staff (fte). *Per discipline*

B4. Number of opening hours per week (total hours and hours with full services only)

C. Efficiency of internal processes

C1. Number of processed books/fte book processing

C2. Number of cataloged books/fte book cataloging

C3. Book processing time. Days needed to process 50, 80 and 90% of acquisitions

C4. Time of document retrieval from closed stacks. Minutes needed for 50, 80 and 90% of requests

C5. Average speed ILL books (hours)

C6. Average speed ILL articles (hours)

D. Use of products, facilities and services

D1. Ratio number of loans last year/number of additions during the last five years

D2. Loans per user category. Average number of loans by students, academic staff, external users

D3. Fill rate ILL books

D4. Fill rate ILL articles

D5. ILL requests books sent to other libraries/total ILL requests books sent to other libraries and loans from own collection

D6. Ratio ILL requests articles sent to other libraries/current subscriptions

D7. Ratio received ILL requests books – sent ILL requests books

D8. Ratio received ILL requests articles – sent ILL requests articles

D9. Number of user training and instruction sessions

time, number of articles viewed on the screen, number of articles printed, number of articles downloaded. Although libraries may and must develop expertise in measuring usage data of electronic sources in the near future, at the moment we had to decide to discard indicators based on the use of electronic journals.

The results of the first test were discussed in a joint meeting with the managers of the six libraries. They were each asked to select three areas that most call for improvement in their own library, now that they are aware of the performance of other libraries. Most often mentioned was the book processing time. This indicator shows the amount of calendar days needed to process 50%, 80% and 90% of the acquisitions. The best performing library needed 11, 17 and 23 days respectively, the worst performing library 52, 77 and 100 days. Book processing times appeal to library managers, because they are easy to interpret (lower means better) and essential for the efficiency of library processes. Libraries with a long book processing time were interested in the procedures of better performing libraries. This is the real benchmarking philosophy: comparing the results with others can show that you have a problem; in order to solve it you have to learn from the "best practice" organization. The meeting was highly successful in that it made the managers aware of the actual benefits of benchmarking.

5. SECOND TEST

Based on the findings of the first test, the second set of indicators was reduced from 36 to 26. Reasons for discarding the ten indicators were in most cases that they could not or could not easily be measured, or that differences in library procedures impeded data collection in a uniform way. For some of the remaining 26 indicators the definitions and instructions for data collection were adjusted. Table 1 provides an overview of these indicators.

In the second test also two questionnaires were distributed by the six libraries. The first questionnaire aims to assess the degree of user satisfaction. Examples of statements include:

- the library owns the recent books (published during the last three years) that I need;
- I do not have to wait long when I want to use a computer in the library;
- the reading room is a pleasant study environment;
- the staff at the information desk are friendly and helpful;
- I can easily find my way around the library;
- I know how to search literature in my own discipline;
- in general, the library offers a good service.

For each statement, the respondents could express their opinion on a scale from 1 (I disagree very much) to 5 (I agree very much).

The second questionnaire was intended to measure the reach of the library. Therefore, it was not distributed among library users, but among a sample of the target population. Some of the questions include:

- how many times did you visit the library during the last year?
- what did you do there: borrow books, internal use of books, internal use of journals, use of electronic sources, use the reading room, ask for assistance and so on?
- how many times did you use the library from remote locations?
- how many journals do you consult regularly in the library?

In order to stimulate the response, both questionnaires can be completed within five minutes. Libraries can add questions of local relevance if they want to, as long as these do not interfere with the general questions. Because of the efforts related to questionnaires, it may be decided to distribute them not every year, but once every two to three years.

A third questionnaire, on human resources management, could be completed on a voluntary basis. The questions refer to job satisfaction, career possibilities and so on. The first part is addressed to the employees, the second part to the manager. The background for including such a questionnaire is the EFQM excellence model (European Foundation for Quality Management). This is an internationally agreed framework to assess the performance of organizations. Besides human resources management, the model contains other elements which are critical for the success of an organization, such as leadership. However, the managers of the six libraries considered them more suitable for an internal audit than for external comparison.

Probably, the second test will lead to a further reduction in the number of indicators. As mentioned earlier, our policy was to start with a large number of potentially useful indicators and to reduce the set to a limited amount of those indicators, which are relatively easy to measure and perceived to be important for external comparison by library managers.

6. GUIDELINES FOR INTERPRETATION

Finally, guidelines for interpretation were developed. These are meant for the managers, who must decide whether a low score on a particular indicator is alarming or just what could be expected against the background of their library. For each indicator, the guidelines contain:

- an overview of its potential determinants. Suppose that the number of books processed per fte compares unfavorably with the performance of other libraries. This does not have to point to weak performance, but rather may be regarded as a consequence of the fact that

more original cataloging is necessary, more authority work is done, and so on;

- the wider context in which it should be considered. For example: a low number of circulations may be caused by open access to library materials, and may be compensated by high internal use;
- suggestions for actions that could be taken to improve the results.

7. CONCLUSIONS

1. To establish a set of performance indicators for external comparison, standard sets as found in the literature on performance measurement are a useful starting point. However, the final set may differ considerably from the first trials, as the needs for management information from the participating libraries and their capability to deliver data are decisive.
2. The law of least effort applies not only to library customers, but also to librarians. Our impression is that low effort to collect the data is more important than the perceived benefits that could be derived from benchmarking.
3. Procedures, definitions of basic concepts and measuring methods differ from library to library. If you are critical enough, you may reject the whole idea of external comparison. Actually, the mere fact that extensive guidelines for interpretation are necessary is a sign of weakness.
4. It remains to be seen to what extent libraries perceive that they can benefit from the benchmarking instrument after its final implementation in January 2000. We found that a joint meeting with the library managers to discuss the implications of the first test, in particular the areas that call for improvement in their own library, was highly stimulating.

Balanced Score Card and intellectual capital in a library: a strategic view

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Balanced Score Cards (BSC) and Intellectual Capital (IC) are rather new concepts used as bases for accounting models developed for strategic purposes. These concepts and models are presented and discussed with respect to use in (public) libraries. The models do have some features suitable for the library. The performances are described in a framework of several dimensions, and with a nice flexibility. Furthermore, major success factors are included in the framework. However, the models do not solve the problem of complexity of the peformance description. This complexity is a property of the library itself. Most important is that the concepts of BSC and IC seem to support a strategic analysis of the situation of the library. The paper reflects some ideas in a first phase of an action research project in a public library in the county of Värmland, Sweden.

NEW STRATEGIC INSTRUMENTS TO USE

During the last few years the situation for the public libraries has changed in a dramatic way. New information technology and new roles have been introduced. Instead of stability, change has been the basic condition for the library. That means that strategic issues have to get a priority attention, and the literature mirrors the case very well.

In the business sector strategic issues have been in focus at least for 30 years. And some knowledge has been collected, usable as it seems in managing organizations in the public as well as in the private sector. In the library sector there has been some resistance to using knowledge first developed within the business sector. Economics, marketing and some other words have been dirty ones. Management models which may be very typical for business success theory of today are more easily accepted, it seems, if they don't have the dirty words in their names. Probably Total Quality Management is the best example at the moment.

During the last ten years, two (in a sense) new ideas and models with the ideal features mentioned have been introduced. They are named Balanced Score Card (BSC) and Intellectual Capital (IC), and they are partly related. Both are typical guru-products, promising success for all who use them. They operate in the centre of the discipline of management for business economics. And they don't use much of dirty words. They have originated typically in business circles, and they are coming along rather fast in non-business areas.

In a sense both BSC and IC are accounting models, developed to handle problems connected with traditional financial accounting, problems created by the transformation of the "typical business firm" from a manufacturing workshop to high-tech and/or service firms with knowledge as the basic factor of success and with fast-changing conditions for the activities. In this business world the intellectual capacities of the organization's personnel and of its associates, primarily its customers and suppliers, will have a vital impact on the success of the organization, in many cases more important than the supply of financial capital. Thus, the amount of intellectual capital, and its changes have to be accounted for.

Furthermore the profits of the past and current accounting periods seem to be not so good an indicator of future profits as they have been before. Attention has to be paid to things like customer relations and development work for new products, new markets and new production methods. And a balance between the different areas and between the short and the long perspectives has to be observed. The BSC and IC models basically are for accounting but they are based on ideas of what factors have the most important impact on the success of the organization. Thus the models can be seen as strategic maps to be used by the management of the organization.

In this paper I discuss the usefulness of BSC/IC-models for (public) libraries. Of course, some modifications of the models as they are presented for use in a business firm are required. Performance in financial terms is considered a self-evident principal task in the business examples, and there is no close correspondence in the library setting. But what about the basic ideas and formats?

It's too early for an evaluation of the issue by an empirical study. Up to now BSC/IC has been introduced in some business firms and public organizations and some experience has been gained from its development and introduction. However, to my knowledge there are no studies which give evidence of the (long run) impact of the use of BSC/IC. Furthermore most of the writing about BSC/IC is done by proponents of the models. So as far as empirical evidence is concerned we have to wait and see.

ACTORS AND FIELDS

In this section I will introduce some basic concepts and use these to describe the library situation. First of all we have actors operating on different fields.

The single public library is the organization in focus. Up to recent years the library has been local, and an organizational unit in most respects. During the last few decades, and in particular as a consequence of information technology development, the library unit is a part in a very strong library network. The virtual library is a reality. Among other things it means that the single library unit may be considered as the actor, but its capacity in an increased degree depends on the properties of the library network.

The library acts on several fields. The term "field" (or close synonyms) has been used as a part of different sets of concepts. A field has at a certain moment a certain logic. This logic can be changed, sometimes by a change of one or more major actors in the field. The fields of relevance for one actor may be independent of each other, but they may also to some extent be interdependent. Some fields might be seen as a specific dimension of arena. For instance, Richard Normann (Normann et al, 1989) identifies three different dimensions: a technical/economic, an institutional and a linguistic/symbolic one. Other fields may be seen as belonging to the same dimension, but constituting different arenas.

For a public library its different functions might constitute such fields, eg. a field for providing literature and another of providing information.

THE ECONOMIC PERSPECTIVE

To act economically means to act in such a way that the actor gets most out of the available resources. George Bernard Shaw defines economics as the art of getting the most out of life (in *Man and Superman*). The art (and science) is relevant when the resources are in short supply, in relation to the ambitions of the actor. The actor has to be defined. The actor may be a nation, an organization, a group or an individual person.

In the economic perspective the output of a process (or acting) is related to the impact of this process. If no values are put on the output and the input, the relation is named productivity. With values put on output and input, the relation is named effectiveness. Seen as a norm or a special kind of ethics, economic means an effort to get "good" output out of the input.

An economic perspective means that the situation in question is conceived and described with economic concepts. It also means that the value-creating aspect of the situation is emphasized. Different types of value-creation have been identified and modeled over time. Some of them have relevance in the library setting.

There are, for instance, different kinds of scale-economic models. A big scale means in many cases an advantage. Utilization of the available capacity is important. Use of (financial) capital is frequently considered as the main factor of success, in particular in large organizations. The well known and often used DuPont model is a good mirror of this idea.

For a lot of organizations it seems clear, however, that financial capital does not have a major role in a success story. Instead the competence of the people working for the organization might be the key factor. Thus the intellectual capital takes a role as a complement or substitute for the financial capital. Sometimes other kinds of capital are considered too. Important is the capital of trust the organization might have, eg. among customers.

In many cases the organization has developed such a competence in the production area that the critical factor for success is the relationship to its environment, in particular to the customers. This includes different things. Sometimes it starts with the choice of the field where the organization will operate. Most times it includes the behaviour in relation to the customers.

The sketch above of key factors of success for an organization (like a library) must be broadened in at least one respect. The management acts out of its picture of the conditions of the organization. Information management has been an area of general interest and thereby the accounting is an important part. However, the attention paid to accounting in library circles is not very big.

ACCOUNTING IS DESCRIPTION

Accounting developed long ago as an instrument first to take care of the responsibility relation between a principal and its agent, later on also as a management tool. Basically accounting means creating and using a certain kind of description of resources available and results achieved by the activities of an organization. Sometimes the way in which the results are achieved is accounted for, too.

For a public library in Sweden, only available and used financial resources are reported within the accounting system. In a way the accounting report is supplemented with a huge amount of statistics about activities and performances. In most cases no relations are established between the different items. In the area of bookstock management there might be some exceptions, outside the accounting. The cause is an adoption of operation research models.

To some extent the performance statistics have been developed by tradition. But there are very conscious efforts to evaluate the library performance (see for instance Lancaster, 1998, and Van House et al, 1987). The efforts have not in any way solved the problems of performance measurement, but they have clearly identified the problems, or the cause of them. First of all the goal structure of the public library in most cases is unclear and multidimensional. The vast volume of rhetoric about the missions of the library seems to be of little

value. Furthermore it does not seem possible to summarize scores in the different performance dimensions to a sensible overall score. Indexing "customer satisfaction" and "total quality" do not seem to be a solution. The problem is broader and more complex. The situation calls for a test of new ideas.

BALANCED SCORE CARD AND INTELLECTUAL CAPITAL: THE BASIC IDEAS

Balanced Score Card (BSC) and Intellectual Capital (IC) are models and instruments developed as answers to a problem experienced in a lot of companies of today. The problem might be seen mainly as made up by two factors. The past and present performance in financial terms is no longer a suitable indicator of the company's performance in the future. And the financial resources available do not have the same importance as before for creating the results of the operations of the company.

Analysis of this kind has been done in different contexts and by different persons. The most important introducers of the new thinking are a few persons easy to identify, however. BSC was introduced in an article 'The Balanced Scorecard – measures that drive performance' (*Harvard business review*, January–February 1992) by Robert S. Kaplan and David P. Norton. The problem analysis behind the BSC was made by Kaplan, together with T. H. Johnson, in *Relevance lost: the rise and fall of management accounting* (Johnson and Kaplan, 1987). BSC was conceived both as an accounting and as a strategic model. The strategic aspect was stressed in later writings, eg. in the book *Balanced Scorecard* (Kaplan and Norton, 1996).

The BSC model describes the "vision and strategy" of the company. Profit still is supposed to be the aim of its activities. Thus the financial perspective will be there. But there are other perspectives as well. As *examples* the authors mention a customer, an internal business process and a learning and growth perspective. Within the perspective in question, a few core factors are identified, and measured. In the customer perspective they might be for example market share, customer acquisition, customer satisfaction and customer profitability.

The different factors in the BSC model can be conceived as main factors for creating the results of the company, "result drivers". At the same time at least some of the factors have an interest for some stakeholders of the company. That means that the model has some correspondence to the value chain model by Michael Porter (Porter, 1985), the stakeholder balance of Eric Rhenman (Rhenman, 1968) and the profit-creating model named after the DuPont company and created by Donaldson Brown. A main point of the BSC model as a description is its multidimensional feature. As a strategic tool it has a core in requesting a balanced approach.

Intellectual capital models have been launched by Karl Eric Sveiby (Sveiby, 1997), Leif Edvinsson (Edvinsson and Malone, 1997) and others during the last ten years. Some sociologists mention Pierre Bourdie for his concept "symbolic capital" as working from behind. However, this kind of relationship seems to be doubtful.The starting point is the observation that in a lot of companies, particularly in companies which create and sell knowledge products, financial resources have only a minor role in the profit-making process. Instead the competence of the people working for the company, and the tools of different kinds that people use, play the leading part. Intellectual capital will take a role corresponding to the role of financial capital in the DuPont model.

There are a few rather developed models based on the concept of intellectual capital. One is the Business Navigator, developed by Skandia, a Swedish insurance and financial services company. This model might be seen as a BSC model as well. In a centre position this model has a human focus, surrounded by a financial focus, a customer focus, a process focus and a renewal and development focus.

As originally presented neither the BSC nor the IC model can be direct transferred to the library setting.The models assume a profit as the ultimate goal of the organization. Some adjustments are required, as financial perspective means other things for a library. But the models do have features which seem to be attractive for a library.

First of all, the models describe the performance of the organization in a multidimensional framework. Furthermore, the model doesn't distinguish between performance and performance drivers. Some items may appear as factors of performance in the short run but as performance drivers in the long run. These features seem to apply to a common library situation.

If we leave the high statements in the rhetoric, the goal of a public library is seldom expressed in one dimension, corresponding to the profit for a company, for instance. Instead there is a multidimensional goal structure, sometimes with not so clear relations between the different dimensions. During the last few years the goal structure in some cases mirrors a set of roles, which the library is supposed to have. In defining the roles, inspirations might have come from the task group formed by the American Library Association and headed by Charles McClure (McClure et al, 1987).

Goals of the kind just mentioned are related (only) to services performed by the library to certain groups of users. Users here correspond to customers in the world of business. But a public library does have even other groups of stakeholders than users. And for the different groups of stakeholders the library may produce good things other than services to some users. For the local politicians, who represent (or are) the principals of the library, the value of

the library might be judged in terms of prestige (for the politicians). The BSC and IC models open up for observation these kinds of stakeholder values. There are customer values, personal values, and owner values, of course.

The different kinds of stakeholder values taken care of in the models mean that the performances of the library are considered in a perspective for the outside. The services to the users are conceived and measured as a value for the user, not as a certain amount of activities performed by the library. This from-the-outside-perspective commonly is mentioned as a customer perspective, connected mostly with a (strategic) customer orientation. This perspective the BSC and IC models have in common with most management models of today.

One of the major problems with the performance descriptions of a public library is the huge amount of performance dimensions to handle. And it seems very hard to reduce the number. Neither the BSC nor the IC model offers any solution to this problem. Among the advice about the use of the models there is one saying that it is appropriate to use rather few dimensions, and to make the choice with respect to strategic need in the present situation. That means that the dimensions might change over time.

The models open up for performance measures in terms of change in stakeholder values. This is a trick which might simplify matters for the library.

Both the BSC and the IC model are assumed to express the important aspects of the value-creating process of the organization. That is the logic of the activities of the organization. It's done on a rather general level, of course. On such a general level the same logic of activities might apply for the public library as well. Most important, however, is the challenge of the models to start the development of models of the logic of activities with respect to the public library. At present there are some models with focus on bookstock management, but for the library as a whole such models are lacking.

As mentioned, the BSC and IC models perspectives or focuses, and the creators of the models do emphasize that their choices of the items they use are just examples for illustration of the basic thinking behind the models. However, the examples chosen seem to be in accordance with the common ideas of management of today. The customer, the personnel and the development factor are considered as main performance drivers, and representing important stakeholders, too. What items might be chosen for a model of a public library?

Of course the choice depends on the current situation of the library in question. However, I think that as a start the following items would be considered:

- the users/customers
- the (local) politicians
- the personnel
- the profession
- the development factor
- the cultural establishment
- the (financial) resources.

These items mean different things for the library. Stakeholders and performance drivers are mixed. Some items represent different aspects of a common phenomenon. And the BSC model allows for such a mix. The items do not have to be added to a total sum.

The importance of the perspective in question will differ from library to library. As illustrations, a politician perspective and a user perspective are further developed in the following section of the paper.

POLITICIAN PERSPECTIVE

In the presentation of the BSC model the financial perspective is number one. Clearly this doesn't apply to the public library. However, the financial perspective stands for the owners, or the principals, and they are major stakeholders in the library case too.

The principals for a Swedish public library means the politicians in the local government (or the citizens they represent). The relationship to the politicians as principals is very important for the library of course. However, many public libraries in Sweden have a marginal position in the political arena. It seems to be a most important strategic issue to strengthen this position. The management of the library has to pay attention mainly to two items:

- the capital of trust the library has with respect to the leading group of local politicians;
- the contributions the library makes in areas of interest to the politicians.

How the politicians value the library is, in hard terms, expressed in the financial appropriations to the library. Of course, the amount as such is of greatest importance. But also its proportion to appropriations given to purposes which in some way are close to the library might give a hint of the politicians' trust in the library. For instance, is the amount given to the library declining or growing compared to amounts given to other cultural or educational purposes?

Of course, the commitment in the activities of the library has other forms too. It's hard to express such commitment in numbers, but statements and actions might be transformed to some (weak) index of trust.

All good things the public library stands for are taken for granted in librarian circles. In a way they are given some extra points as they are compiled to a manifesto issued by a prestigious organization. Most politicians probably are

rather pragmatic. To the extent that their interests are more than lip-service they probably ask for evidence of contributions by the library to the (local) society, and to their own areas of interest. They might appreciate intensive use of the library, as they see themselves as the payers. They certainly like the contributions by the library to the prestige of the local community, and to themselves. More specifically, they may look for contributions to solve current problems in the community, in particular when the problems are issues on the political agenda. These issues vary over time and differ from place to place. They might consider employment and education, democratic questions like the interchange between the politicians and the citizens, etc. The issues may not be included in the common library rhetoric, but in a strategic perspective they are important.

To sum up. Of course the relationship to the local politicians, which are/represent the principals, ought to be mirrored in a strategic BSC model for the public library. The choice of variables of the model, however, requires a rather detailed analysis of the political situation, an analysis which has a value of its own.

USER PERSPECTIVE

In all management models of today a customer perspective is emphasized. It means that customers are important in one way or another. Sometimes the customer is talked about as the most important resource of the company. It's the customer who supplies the company with income, by buying the products of the company. More and more the customer is seen as a contributor to the competence of the company, by requesting qualified products and services. But the customer is considered as a stakeholder to the company as well. The task of the company is to serve its customers.

There might be some grand rhetoric in statements about a customer perspective, but there might be some true implications as well. In a library setting, where the term "user" many times is prefered as a substitute to customer, "user perspective" means a few very real things.

A first issue might be "buying on demand". The core is the question of who is best suitable to define the needs of the user, the user herself or someone else. The issue is mostly considered in terms of the supposed value of books of fiction as literature. However, the non-fiction area seems to be of more importance with respect to the issue.

A second issue regards the availability of alternative suppliers of the services offered by the library. If a certain book is available for the user not just from the library but from a bookshop as well, the library service in reality means a difference in cost for the user. If there is no alternative source for the book, it's the availability of the book which is important.

Substitutes for a certain book may for some users be found within the library. For some users the task of a visit to the library is to find "a nice book to read", and in such cases there probably are plenty of books available. For non-fiction the substitutes are less numerous, and for required course reading they don't exist. If a library changes from giving leisure services to support education, the need for a large media collection will grow.

The position of the library in the users' minds is sometimes measured with a "customer-satisfaction index". Mostly high satisfaction is reported, which is nice. However, it's problematic to determine the level of expectation, and any changes in this level. Sometimes high satisfaction mainly seems to depend on "nice librarians". That's nice for the librarians, and an important item to observe by the management of the library. But it also means that the index is somewhat weak as a measure of the overall status of the library.

Some economists (Aabo, 1998) use a willingness-to-pay measure to determine the value of the library. This measure is based on a questionnaire to citizens, users and non-users. But the questions are very hypothetical, and it seems hard to trust the results.

Another way more down to earth is to collect information about different user groups. Who uses the library? For what? To what extent? In some user studies, mostly irregular ones, these questions are asked. Here probably are opportunities to develop the studies, in particular to relate the actual use to potential alternatives. For university libraries some studies of this kind have been done. A main study-question regards researchers' use of the different libraries available to them. How do the researchers allocate their information seeking etc. among the different libraries?

The contributions of the users to the public library are not easily seen. They don't bring money to the library as the customers do to a company, at least not directly. However, the picture is not so clear. Without use the appropriations may disappear. And if some pet, prestige or priority group of users is large it may influence the sum given to the library. If, for instance, employment is a hot issue in the community, the opportunities for youngsters and adults to improve their chances on the labour market by study or other activities supported by the library are important. To be observed by the politicians, however, such activities have to be pointed out by the library.

A user perspective might produce many dimensions in a Score Card. Traditional measures like media volume, opening hours, circulations and visits have a role. However, according to the discussions above, subdivisions and specifications are desired. Attention has to be paid to different user groups, in particular to regular and frequent users. It seems important to follow groups like children, students, unemployed adults and employed adults. How large a circulation and how many visits are represented by the group in question? What proportion of the services

are used by, eg. the 20% most active users in the subgroups? And how many regular users are added during the current period?

ENDING REMARKS

In this paper I have presented the main ideas connected with Balanced Score Card and Intellectual Capital. Furthermore I have discussed opportunities to use these as strategic instruments for public libraries. Of course, such a use will mean considerable adjustments to the instruments that have been developed within the business sector.

Already a first analysis of possibilities to use BSC/IC in a public library setting gives incentives to analyse the strategic situation of the library, and to create a strategic situation of the library. That may be the most important impact the BSC/IC will have with respect to libraries.

However, there are some more specific items. In the world of BSC and, in particular, of IC there is a stress on different capital values. To some extent that means a shift in the conception of what have been conceived, from the performances during a period to the changes of the capital values during the period in question. In this way it will be somewhat easier to describe the strategic situation of the library, in particular what has been done and what has to be done.

In the library case, in particular, the BSC/IC model does not make a clear distinction between the different performance indicators and the performance drivers. (In the business case that is an issue as the performance in financial terms has a self-evident first rank.) This feature might be considered not as a problem but as a benefit for libraries where the goal structure in reality is a rather operational issue. However, the importance of observing the balance between different value-loaded items is emphasized.The same goes for the balance between a shorter and a longer perspective.

The BSC/IC model does not offer a solution to the well known problem of the lack of one overall performance indicator. There is no performance dimension for libraries corresponding to the profit in the business sector. On the contrary the model stresses the fact that the public library is an actor on several fields, with different logics and with different value systems, partly connected with different stakeholders. That means that the concept of "willingness to pay" does not offer a solution to the problem of summing up different performances. There is no total and general value of the library. And for the management of the library a priority task will be to balance the interest of the different stakeholders.

Ending up the discussion of Balanced Score Cards and Intellectual Capital, it's appropriate to stress that the ideas and the corresponding models are partial and in no way "total". Contrary to its name, the same is true for Total Quality Management, of course. The model has a very modest content with respect to the logic in the different fields.

The contributions to the solution of the central problems of describing the different capital and performance values are modest, too. Here we have proper areas for research and development work.

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Measuring users' service-seeking behaviour

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The paper describes an innovative methodology designed to capture the pattern and sequence of users' information service-seeking behaviour, and reports on the results achieved in a pilot implementation. The authors hope this paper will encourage testing, replication and improvement of the methodology by others.

INTRODUCTION

This paper sets out the main features of what we believe is an innovative methodology, and then reports the results of an initial pilot survey. The methodology is likely to require further development. We are hoping for two outcomes from this paper. Firstly, we look forward to critical comment. Secondly, we would like to identify some sites willing to test the methodology and report back on that experience.

The project might be described as quirky, since it deals with an area of library performance measurement which appears to have received no attention previously: the fit of service provision with the pattern and sequence of users' service-seeking behaviour. Libraries have a great deal of knowledge of the performance of individual services for users – volume of use, success rates, user satisfaction, etc. They appear to have little knowledge of how users group their use of services and in what order they use them.

Smith and Rouse (1979) produced a method for studying and portraying users' patterns of physical movement around a library, but this had the specific objective of informing the physical design of libraries. A few years earlier the Cambridge Library Management Research Unit (Seymour and Schofield, 1973) explored users' intended next action following failure at the catalogue, but their main purpose was the specific one of analysing reasons for users' failure to find books. We are seeking to move forward from this in two ways: to produce a more generic method for describing sequences of use of libraries, and to make the method more conceptual so that it is hospitable to both print and electronic cultures.

RESEARCH OBJECTIVES

Expressed more formally our research objectives were:

- to clarify in a conceptual way the sequential patterns of use of a library, so that both print and electronic services are covered;
- to devise and pilot a methodology, including technical methods of analysis.

THE PROJECT PLAN

The project was small-scale. It began with initial thinking and piloting of our methods, given that there was little previous work to start from. Our resources comprised three months of researcher time plus thinking, analysis and writing time. The pilot survey took place in two libraries in a single university – two libraries to give some protection against bias caused by physical characteristics of a single library. But the aim was to answer the question "Is the methodology practical and potentially useful?" rather than to generate substantive answers. The main elements were:

- to devise a categorisation of users' service-seeking behaviour;
- to try to apply a standard categorisation of users: the HEFCE subject categories for funding teaching (HEFCE, 1997);
- to devise appropriate analytical and presentational tools;
- to conduct a trial of the methodology;
- to publish, and to seek replications and comment.

CATEGORIES FOR USERS' SERVICE-SEEKING BEHAVIOUR

Figure 1 shows the categories of service-seeking behaviour which we eventually used for our survey. We used a two-level categorisation to enable us to produce both a simplified analysis and more detailed results. The categories are based on UK work on library performance measures (see Winkworth, 1999, for example), modified to take account of electronic as well as print provision, and to give the schema a more conceptual character.

CATEGORISING USERS

To limit the variable factors, only student users were surveyed, since these constitute 95% of users at the survey site. The categories of users should ideally have applicability outside the institution studied, so local criteria such as "Faculty" or "Course" would be inappropriate. As a readily available alternative, we opted for the categorisation scheme used by the Higher Education Funding Council for England to classify courses for funding. This has 34 subject categories such as medicine, history and biology. Alternative subject categories are likely to be appropriate in other situations.

DATA COLLECTION METHOD

We wanted an interview method which would be quick but would give the sequential detail required. A graphical data recording form was devised (Figure 2). Testing

Figure 1 Service-Seeking Behaviour: Two-Layer Classification

Enter Library

Code	Service category	Code	Service sub-category	Examples of service use
1	The provision of information about documents (i.e. document 'metadata')	1.1	The provision of means permitting the identification of documents that match some search specification	Search of an OPAC, CD-ROM, online host, Web search engines, or printed secondary source to identify documents matching a specification (e.g. on a particular subject or by a particular author); physical browsing a local open access collection class code, or journal category area or journal title
		1.2	The provision of means for identifying local holdings of known documents, and/or their issue states	Use of OPAC, CD-ROM, microfiche or printed catalogue relating to local holdings
		1.3	The provision of means for identifying non-local holdings of known documents and/or their issue states	Use of catalogues accessible via BUBL or the Web, or on CD-ROM or in printed form, for this purpose
2	The provision of direct access to specific (known) documents prior to fuller use	2.1	The provision of one or more collections permitting the retrieval of specific documents prior to use	A user goes physically to the address of known documents held locally in an open access collection (with or without document delivery); a user scans *primary* information stored on fiche, CD-ROM or the Web prior to a decision to download, print out or return to, for later study; a user presents a document description to a closed access short loan collection service point
		2.2	Services supporting *deferred use* of known documents by the user	Lending or renewal of documents; photocopying services (subject to legal requirements); reservation of documents; interlibrary loan requesting or pickup; printing out or downloading of Web pages
		2.3	Services supporting return of lent documents	[only in-house returns recorded]
3	Support for immediate document study	3	The provision of study facilities	The user uses chairs, carrels, desks and reading facilities (microfilm readers, Web clients) for this purpose, whether to study locally held or non-local information sources
4	Advice giving and user education	4.1	Factual advice giving	An enquirer seeks information as to how to register as a user; a user enquires as to opening hours, fines policy, reservation procedure, etc.
		4.2	Professional advice giving	A user enquires as to how to proceed with an information search, or asks for the most appropriate person to talk to in that regard, or requests general advice on information searching
5	Utility services	5	The library provides for meetings, conferencing, e-mailing, document production using PCs, refreshment facilities, sales of study materials	A user seeks to word process his or her essay using a PC, purchases stationery, meets others socially, works with others on a group project, buys a cup of coffee

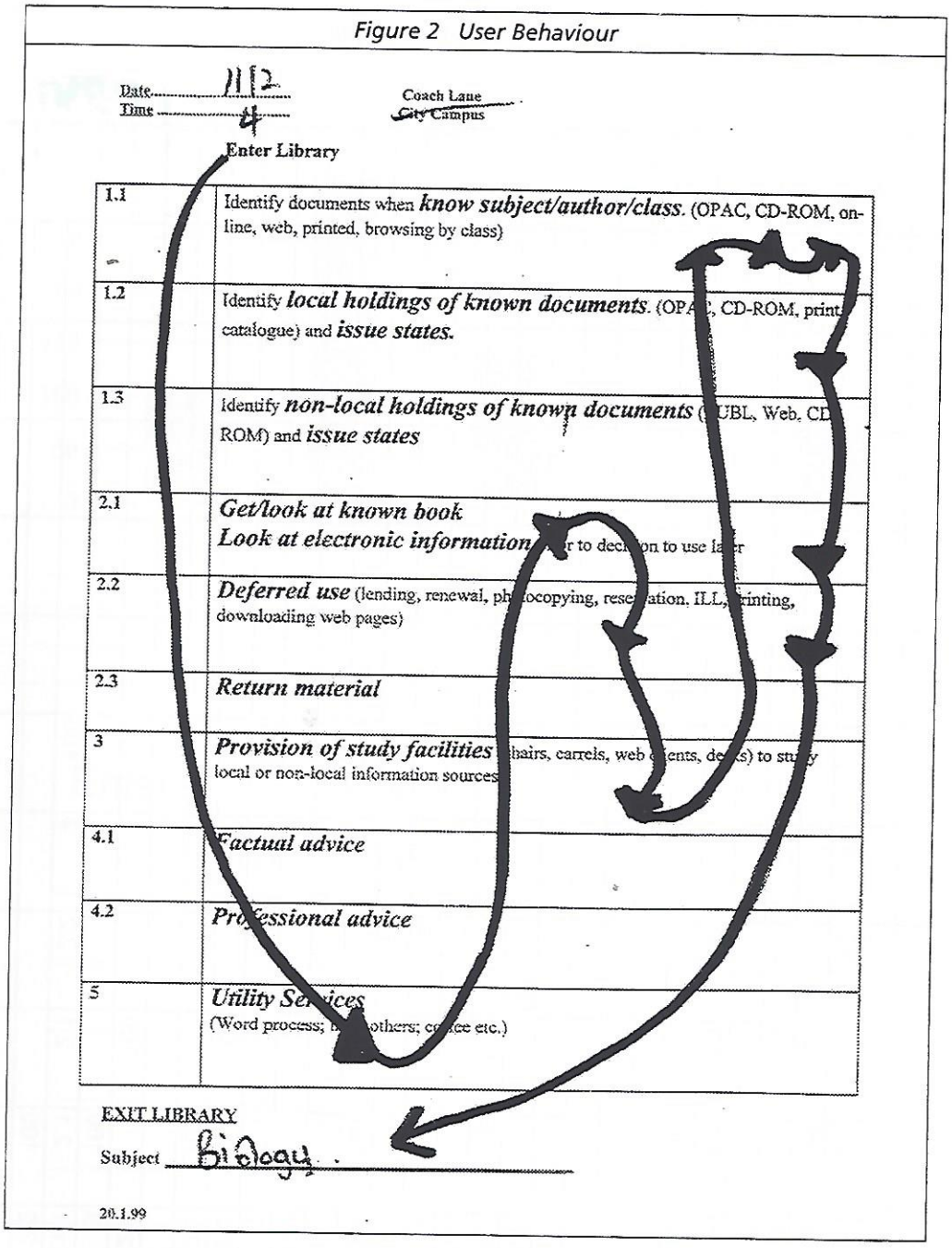
Exit from Library

showed that an interview could be completed in typically 30 seconds by a researcher readily able to translate reader statements into our service categories. Using this instrument, 300 usable interviews were completed in five hours interviewing, carefully spread across times of the day and days of the week. Interviewing took place at the conclusion of users' visits, to allow the full sequence of service uses to be recorded.

COMPUTER ANALYSIS

The codes for the service categories used by each respondent were then entered (in the original order) on to a spreadsheet containing a row for each respondent (Figure 3 shows some specimen entries). A C++ program was written to analyse the spreadsheet data. This allows production of frequency tables, frequency charts (Figure 4) and graphs; tests of statistical reliability; "transition frequency tables" – showing the probability with which users moved from one category of service to another (Figure 5); and data for visual presentation of results via service transition diagrams (Figure 6). Figure 5 translates as: 17 respondents on entering went immediately to service S1, whereas only 4 went immediately to service S2; 28 respondents used service S2 after service S1; 41

Figure 2 User Behaviour



respondents used service S1 after service S2; and so on. Figure 6 is simply one way of showing graphically the probability of users moving from each service category to others.

RESULTS

One issue in reporting many kinds of research is that when the results are published, people will rationalise that they knew all along what you have with great labour shown. Our light-hearted exercises with several groups of library staff and researchers show that for the most part we do not, as a professional group, have clear, shared perceptions matching all the results from the survey. There is therefore at least the possibility that the method could teach us something and establish whether we present services in ways helpful to users, given typical sequences of service use. So you may like to test your knowledge of the information service-seeking behaviour of student users of a university library, by answering the following questions before looking at our results.

- Using the five main service categories in Figure 1, how many types of service on average are accessed by a student on a single visit?
- Is the distribution for this: U-shaped? Bell-shaped? Flat? Skewed positively?
- What percentage go first to a catalogue?
- What percentage of these then check availability?
- What percentage use advice?
- What percentage use only "Utilities"?

ANSWERS

- 2.5 service categories are accessed by a student on a single visit;

COL 1 - Subject (HEFCE)
COL 2 - Coach Lane=1; City Campus=2

COL 3 - Enter Library
COL 4 - First Action
NB - Leave Library=100

COL 1	COL 2	COL 3	COL 4													
27	2	0	2.2	2.3	100											
29	2	0	1.1	1.1	1.2	1.2	2.1	2.2	100							
7	2	0	1.3	2.1	2.2	3	100									
27	2	0	1.1	1.1	1.1	2.1	2.1	2.1	2.2	3	100					
35	2	0	5	100												
12	2	0	1.1	1.1	1.1	2.1	2.1	100								
10	2	0	2.1	2.1	2.2	100										
32	2	0	2.2	3	100											
35	2	0	2.3	3	100											
34	2	0	2.1	100												
24	2	0	5	100												
33	2	0	1.1	2.2	100											
32	2	0	1.1	2.1	2.2	5	100									
32	2	0	1.2	2.1	100											
23	2	0	1.1	2.1	3	2.2	5	100								
35	2	0	2.2	100												
32	2	0	3	2.1	2.2	100										
35	2	0	2.3	100												
32	2	0	2.2	3	100											
32	2	0	1.1	1.1	1.1	2.1	3	2.2	5	100						
33	2	0	1.1	2.1	2.2	3	100									
33	2	0	2.1	4.2	2.2	100										
32	2	0	2.3	100												
38	2	0	5	2.2	2.1	3	100									
32	2	0	2.1	2.2	3	100										
32	2	0	1.1	1.1	1.1	2.1	2.1	2.2	3	100						
32	2	0	2.1	2.1	2.2	100										
21	2	0	2.3	100												
38	2	0	2.1	3	100											
24	2	0	1.1	1.1	1.1	2.1	2.1	2.2	3	100						

Figure 3 Codes for Analysis

Figure 4 Frequency Chart

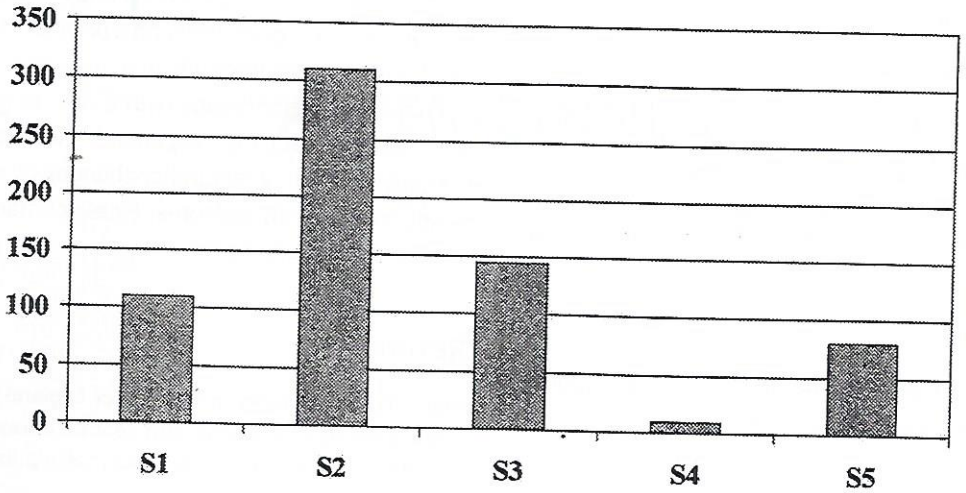
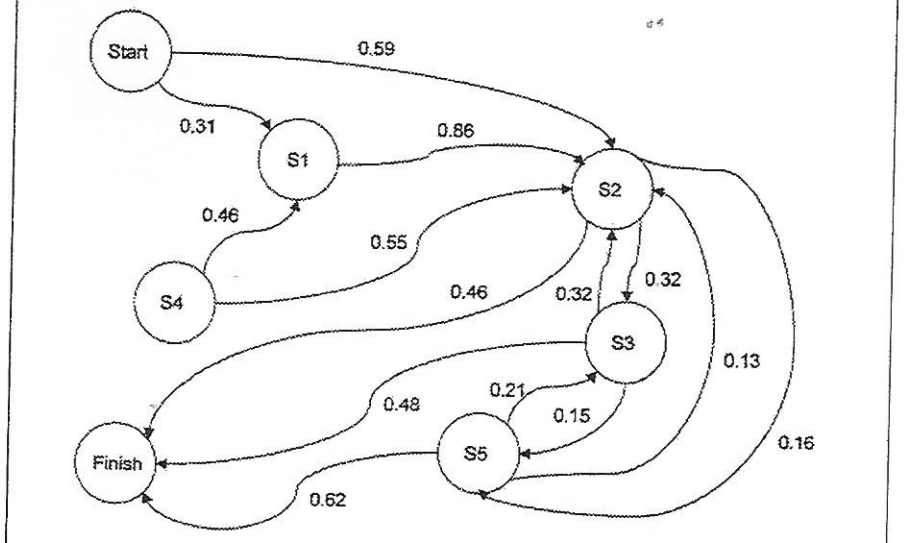


Figure 5 Transition Frequency Table

Enter	17	4	...		
	S_1	28	...		
	41	S_2			
	...		S_3		
				...	
					Exit

Figure 6 Service Transition Diagram



- the distribution is skewed positively;
- 22% go first to a catalogue;
- 56% of these then check availability;
- less than 1% use advice;
- 7% use only "Utilities".

Three hundred respondents in two libraries in one institution can provide only hypotheses to be further tested. But we believe there is the potential here of some new knowledge.

OTHER RESULTS

- the service used most is Direct Access to information sources – more than once per visit;
- 49% did a catalogue search;
- 47% used study facilities;
- there are differences between subjects. Humanities students use more services; Education less.

POSITIVE OUTCOMES

There was a number of positive outcomes to the project:

- we have a data collection method;
- we have some analytical and presentational tools;
- pilot results suggest libraries may learn something from this approach.

There is a number of issues to be further considered:

- data collection
  - users appear not to think conceptually about service use, but in terms of concrete physical actions;
  - users had difficulty recalling detail – errors arising from invalid self-reporting may need to be assessed;
  - interviews needed some probing – a skilled professional interviewer is essential.
- analysis
  - not yet an easy-to-use package.
- replication
  - any volunteers?
- value of exercise
  - any comments?

Footnote

The authors were very pleased with the interest the paper attracted at the PM3 conference and have received a number of provisional offers of replication sites. We would be pleased to hear from any readers who would like more details of the methodology with a view to replicating it and reporting back their experience. Results which aid an understanding of library policy changes on user behaviour would be especially welcome. Please contact: michael.heine@unn.ac.uk.

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AFTER-DINNER SPEECH

Evaluating conference presentation skills

Based on the speech given after the Conference Dinner

Geoffrey Ford, University Librarian, Bristol University, UK

The choice of after-dinner speaker at an international conference is a sign of the maturity of the conference. In the first of the series it is important to gain the backing of the host organisation because, after all, they will have to pick up the tab if things go wrong. So in the first Conference of this series the Dean of the Faculty gave the after-dinner speech. At the second Conference the organisational backing was assured so it was then necessary to gain professional credibility. Accordingly the President of the Library Association came along to give his blessing. Now with the third Conference in the series and with organisational and professional credibility assured, you get me!

The subject of this Conference is evaluation and performance measurement. I did think about reminiscing on my experiences of these topics over the last 33 years, which might have involved telling stories about when the present Librarian of the University of Northumbria was a cataloguer and I was a systems analyst and one of the things I did was to time how fast he filed catalogue cards (10 seconds each if you want to know). But reminiscences can be boring so I'm going to talk a little about the evaluation of conference presentations and presenters.

Presenting papers at conferences is an art and there are many branches to this art. Now of course we've all done Presentation Skills for Librarians 101, which is basically how to read your speech notes from the back of old catalogue cards, so I won't talk about that; nor am I going to talk about the really advanced skills like how, when presenting your paper, it is very important to mention your collaborators without actually giving them any credit; and how it is equally important to be able to discredit your rival's theory without understanding it.

The main thing on which presenters are judged is "how good are they at subjugating: subjugating the technology, and subjugating the audience".

The first important conference I attended was in the days when 35 mm colour slides were all the rage and the projection techniques had reached the stage when carousels and magazines of slides were used instead of single slides. In those days there were technicians in white coats available to project the slides and they sat at the back holding a lead with a button on the end, and the lecturer at the front would have a stick to thump on the platform when the next slide was needed. The first task of any decent conference presenter was to subjugate the projectionist. It was the presenter's task to wrest the initiative from the projectionist and reduce him to a nervous pulp: technicians were always men in those days. There were many techniques for subjugating the projectionist. You will remember that the slides used to have a little white or red dot in one corner to show which was the correct way of inserting them in the magazine. A good trick was to mark some of them with the dot in the wrong corner, particularly the first few slides. This would ensure that the first few slides were always incorrectly shown, backwards, or upside-down or sometimes both. This would make an absolutely devastating beginning for the presentation because the presenter could pretend to be puzzled by the fact that these slides were showing incorrectly; then light would suddenly dawn – "Oh I'm frightfully sorry about those slides being marked in an unusual way", he calls to the projectionist, "you see I always take my own projectionist with me to important conferences". Then as an afterthought, "and he's left handed". You could then say reassuringly that it's only the first few that are like that.

The next technique was to have a cunning slide which wouldn't project correctly no matter how it was placed in the projector; there are various ways of making such slides, and I could give a whole seminar on this topic. A particularly good one is the unfocusable slide.

What has happened to technicians? If you see anyone in a white coat these days it is probably the Professor of Librarianship in a snappy little designer number. Now some technicians have become IT Support Officers. This is a misleading title; some people think it means providing support for users of IT and some of them actually do, like the technician we've had supporting us through this Conference. But others actually live to support the IT itself. How can you tell which kind you've got? Well, let us say you come in to your office in the morning, you turn on your PC and nothing seems to work quite right so you ring up your IT Support Officer and he or she says:

"Oh, I upgraded the system last night and I've sent you an e-mail about it". So you look in your e-mail and there is this message which says "the system was upgraded last night, please look at URL . . . for information". So you find the right icon, you launch your browser to find the URL and you read this message:

"Your permissions have been changed. The old file has been saved on the backup server. To reset your profile open your saved file on the Unix server!"

There are at least four concepts there that you don't want to know about before coffee time, so if you're lucky enough to have a secretary, you talk to her and with a bit of luck she's got a better relationship with the IT Support Officer and can persuade him or her to come and reset your permissions for you.

The reason why technicians went off to do other things was of course the increasing cost of labour which led to lots of do-it-yourself presentations. It is no longer possible to get photographs specially taken to mount in little plastic holders requiring the use of a technician in a remote part of the lecture theatre. The overhead transparency was invented instead. This was technology fighting back and the quality of presentations went down as presenters put the transparencies on upside down and back to front. Or they would turn to point to the screen when they could point to the overhead itself, proving once again how few people can do two things at once. However, of course, things like that are now covered in the presentation skills course I alluded to earlier, so we can all do overhead transparencies now, can't we? But now again we have a new kind of technology.

I said earlier that some of the technicians went off to become IT Support Officers; what happened to the rest of them?

I think they've taken their revenge, they've gone off to work for software companies. They have invented a misleadingly comprehensive system of devising presentations which never do quite what you want them to do. It is a measure of the sophistication of the presenter that he or she can produce a presentation which doesn't look like everybody else's. Blue backgrounds with three yellow bullet points are the sign of a novice: even if you find out how to change the colour of the background and get more than three bullet points on the slide you will find that something else comes up and bites you and that everything comes out numbered 4.

Back to subjugation. We've lost the technicians, and now that the technology is so powerful that it can subjugate the presenter, if he or she is not careful, it is even more important to be able to establish superiority over your audience. This is very important and far, far subtler. The presenter's objective is to convey effortlessly to the members of the audience his or her immense intellectual superiority over them. The guiding principle of presenting at conferences is to conceal from the audience what you are talking about, and in using overheads you must equally conceal what the slides are about. It should be clear that whatever the slides are about is not what the talk is about, whatever that is. Once you get that clearly established, then it helps to say that the same point is made diagrammatically by the next slide. There is an exception to this rule, that is a time lapse technique which is very disturbing. In this the presenter says something very clearly which is extremely simple and extremely lucid and at the same time he shows a very simple slide. He then says he wishes to point out the very sharp distinction between that situation and the following one. The next slide is precisely the same as the predecessor and the presenter says precisely the same things as before. This may be repeated several times in succession. It is helpful if the presenter addresses his remarks specifically

towards the most distinguished of those persons in the front row who have just woken up. The distinguished elder will nod in more and more vigorous agreement as each fresh "distinction" is drawn.

Slides are very useful for conveying to the audience the presenter's "togetherness" with the great and the good. You can only do this really with overhead transparencies these days, but a good technique is to show a transparency with something written with a sticky pencil on the reverse side so the audience can just about make it out if they read it backwards and upside-down. What you write on it is something like: "Roswitha asked for two copies of this". The next transparency bears another transcription; this time it can be on the right side: "This one to McClure too".

The presenter/audience relationship is fostered by the interpolated slide. This is from a field utterly alien to that of the conference. So in the middle of a disquisition on the measurement of in-library use of video tapes you have the slide which shows the equations of the third law of thermodynamics. The presenter says, "I'm terribly sorry, that must have crept in somehow", and after a tiny pause, "another of my little foibles, you know". This implies first of all that thermodynamics is one of an unspecified number of your little foibles and secondly that you regard the evaluation of libraries as a foible too.

The final technique for browbeating the audience is to impress them with the number of remote and exotic conferences of which they have never heard, but which you have attended. A very useful point is to have a run of slides of graphs, all of which project on their sides so the Y axis runs along the bottom and the X axis up the right-hand side of the slide, which means that all the audience get cricked necks, and it enables you as the presenter to say, "I'm sorry about these slides, they were made up for the Beijing conference". At one time it was important to be able to say that one had been to a conference in Russia but now that everybody, even librarians, has been to at least two conferences in Russia you have to give up that particular ploy. However, it is useful to have a long run of slides all lettered in Cyrillic; but it is important that you don't translate the captions: and this implies that you are so frequent a visitor to Russia that it is worthwhile getting a presentation specially made up; and also, of course, that you are so familiar with the language that it never enters your head that it needs translation. Eventually someone in the audience will tire of this meaningless procession and say, "Look here, aren't you going to tell us what those slides are about, we can't all read Russian you know". After a pause the presenter says, "Not Russian my dear fellow, Bulgarian!".

If you have been, thank you for listening and thanks to all the lecturers in academia whose efforts have contributed to the subject of this little talk.

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The **Conference Dinner** was hosted by Professor Joan Day, Head, School of Information Studies, University of Northumbria at Newcastle. The after-dinner speaker was Geoffrey Ford, University Librarian, University of Bristol, UK.

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