

# PROCEEDINGS

of the 10<sup>th</sup> Northumbria International  
Conference on Performance Measurement  
in Libraries and Information Services

**EDITED BY:**

Ian Hall, Stephen Thornton  
and Stephen Town

York, UK | July 22–25, 2013



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# Introduction

The 10th Northumbria International Conference on Performance Measurement in Libraries and Information Services was held from 22-25 July 2013, in York, UK. The Conference was the most successful event in the series to date, attracting over 170 delegates from 22 different countries.

This anniversary conference welcomed participants to reflect on achievements and developments in performance measurement over the last twenty years and asked for a strategic view of the challenges facing libraries and information services in the longer term. A number of papers within these proceedings took up this challenge.

A selection of interesting and thought-provoking presentations were provided by our keynote speakers:

- Elliott Shore, Association of Research Libraries
- Roswitha Poll, DIN Deutsches Institut für Normung
- Margie Jantti, University of Wollongong
- John Robinson, University of York

The social nature of Northumbria Conferences was also reflected in a lively reception at York Minster Library and the Merchant Taylor's Hall, and the Conference Dinner at the National Railway Museum, York.

These proceedings represent the majority of papers presented. I would like to thank all the presenters, delegates and sponsors who made it such a varied and interesting conference. I would particularly like to thank members of the Conference Editorial Board:

- John Bertot (Professor, University of Maryland)
- Judith Broady-Preston (Reader in Information Management, Aberystwyth University)
- Colleen Cook (Trenholme Dean of Libraries, McGill University)
- Karin De Jager (Associate Professor, University of Cape Town)
- Mike Heaney (IFLA Publications Series Editor; formerly Executive Secretary, The Bodleian Library, University of Oxford)
- Martha Kyriillidou (Senior Director, ARL Statistics and Service Quality Programs, Association of Research Libraries)
- Roswitha Poll (German Institute for Standardisation; formerly Chief Librarian, University of Münster)
- Joan Stein (Head of Access Services, Carnegie Mellon University Libraries)
- Stephen Thornton (Editor: Performance Measurement and Metrics)

I would like to extend a special thank you to Stephen Thornton for his tireless work editing these proceedings.

These proceedings are dedicated to the late Niels Ole Pors, whose contribution to the conference as an Editorial Board Member and delegate was substantial and continues to inform our work.

I hope you enjoy these proceedings, and I look forward to welcoming delegates to the 11th Conference, which will take place in Edinburgh, UK, in July 2015.

J Stephen Town  
Conference Convenor  
Director of Information and University Librarian  
University of York, UK

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# Total quality management in academic information centres in Saudi Arabia: A pilot study

**Faisal A Altamimi, Barbara Sen and Peter Willett**

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## Introduction

The British Standards Institution (1992) defines total quality management (hereafter TQM) as the “management philosophy and company practices that aim to harness the human and material resources of an organization in the most effective way to achieve the objectives of the organization”. TQM was first developed for use in business and commerce but has since been applied in all sorts of organizations that need to enhance their performance in response to customer needs, including library and information services in higher education where the approach has become well established over the last two decades (Brophy, 2005; Hernon and Altman, 2010). The use of TQM, and of quality approaches more generally, in developing countries has, however, been much more limited. In Saudi Arabia for example, the focus of this paper, there have been just five studies published to date (Abbas, 2005; Alhaddad, 2003; Alhemali, 2003; Alomran, 2010; Alqouban, 2010): all have adopted a questionnaire as the sole data collection tool and all but Alqouban (2010) have adopted a case study approach focussing on just a single institution.

The work described here was undertaken as the first stage of a project that has adopted a mixed methods approach to study the use of TQM methods in the information centres (hereafter ICs) of several different Saudi universities, with the principal aims of determining whether TQM is an appropriate and relevant management concept for Saudi ICs and, if so, what are the barriers facing the application of TQM and how it should be implemented. A sequential methodology was used in which an initial quantitative stage based on an e-mail questionnaire was followed by a qualitative stage based on semi-structured interviews. In this paper, we present the results of the pilot study that was carried out on just two ICs; the results of the full study will be reported subsequently. The next section describes the questionnaire that was developed using the EFQM Excellence Model (European Foundation for Quality Management, 2000) and the schedule for the interviews; we then summarize the results that were obtained when these instruments were used with the staff of two Saudi ICs; and the paper concludes with a summary of the results obtained when this pilot study was extended to investigate six further ICs in the main part of the project (Altamimi, 2013).

## Data collection

There are currently 20 universities in Saudi Arabia: seven of these were established during the period 1957 to 1981; and there was then a break before the establishment of the 13 newer universities during the period 1999–2008. The pilot study involved the ICs of one of the newer and one of the older universities, referred to here as IC-A and IC-B, respectively, some of the characteristics of which are shown in Table 1. It will be realised that the two differ drastically in the level of staffing provided: both universities are of comparable size but IC-B has over five-times as many staff as does IC-A.

The questionnaire was based on the EFQM Excellence Model (European Foundation for Quality Management, 2000), which has been used to assess organizational performance in a wide range of contexts including libraries (Barrionuevo & Perez, 2001; Diaz et al., 2005; Johannsen, 1995; Jones et al., 2000). The EFQM Model is based on nine categories, each of which has a set of associated questions: five ‘enabler’ categories (10 questions on leadership, 11 on policy and strategy, 13 on people, 10 on partnership and resources, and 12 on processes) that reflect the organization’s efforts towards improving its services; and four ‘result’ categories (5 questions on user results, 9 on people results, 3 on society results, and 6 on key performance results) that reflect the degree of success that the organization has achieved in the quality process. Each one of these categories has an associated set of questions that cover the main processes in the organization, and these questions (formulated as statements with which the respondents were asked to agree or disagree) were used with a few minor modifications for this project. In all, the questionnaire contained a total of 79 five-point Likert scale statements preceded by ten demographic questions relating to experience, qualifications etc. Typical statements included: “The managers develop the mission, vision, values and ethics and role models for a culture of excellence”; “Policy and strategy are based on the present and future needs and expectations of users”; and “Extensive quality training programs are provided for employees”. The questionnaire was distributed by email to 83 of the 100 staff in the two ICs, those excluded

being the seven most senior managers (who could hardly be expected to provide totally unbiased responses) and the ten female staff (all of whom work at separate sites from their male colleagues).

The questionnaire was followed by a series of semi-structured interviews with nine managers or heads of department in the two universities, in which they were asked about the management systems and processes in their IC. Typical starting points for discussion included “Does your IC have a quality policy? If yes, how is this policy communicated to lower level employees?”, “Does your IC use clear work procedures and instructions?”, “To what extent is the top management in your IC committed to quality issues?”, “How does your IC deal with customer complaints?” and “What are your experiences of training in general and in quality specifically?” Each of the interviews typically lasted for about 40 minutes and was recorded for subsequent analysis.

## Results and discussion

A total of 40 responses were received to the questionnaire, 13 from IC-A and 27 from IC-B, and the key results are summarized in Table 2. Each part of the table corresponds to one of the nine categories in the EFQM Model, and contains the highest and lowest scoring statements for that category, together with the overall mean score averaged over all of the statements for that category. For example, consider the leadership category, which comprises the two rows at the top of the table. The highest scoring statement in this category (“Satisfaction of current internal and external users ensures the success of the IC”) had 21 “Strongly Agree”, 17 “Agree”, 1 “Neutral”, 1 “Disagree” and 0 “Strongly Disagree” responses, giving a mean response of 4.45 and a standard deviation of 0.68 for this statement when the five statements are assigned integer scores from 5 down to 1, respectively; conversely, the lowest scoring statement (“The managers use commitment to improvement as one of the criteria for selecting candidates for promotion and reward”) had a mean value of 3.27 and a standard deviation of 1.11. The corresponding data for the other eight categories are listed in the remaining rows of the table.

Characteristics	IC-A	IC-B
Date of establishment	2004	1974
Users (Student & staff)	43,500	40,249
Managers	3	4
Professional staff	4	43
Other Employees	9	37
Collection	Multiple disciplines	Islamic studies
Management system	Central, bureaucratic	Central, bureaucratic
Managers' qualifications	Non LIS degree	High LIS qualifications
Quality level	No evidence identified	Evidence reported

Table 1: Characteristics of the pilot study ICs

Inspection of the results in Table 2 shows that all but one of the lowest mean scores listed here was greater than 3.00, which hence means that the responses to the questionnaire were generally positive in tone, ie, either “Agree” or “Strongly Agree”. The most problematic category was that relating to People, a finding that will hardly come as a surprise to the readership of this conference proceedings. This category had the lowest overall mean score (of just 3.20 when averaged over all the 13 statements associated with this category) and included the only two statements amongst the whole 79 that failed to achieve a mean score of at least 3.00. One of these is listed in Table 2, and the other was “Formal processes are used (such as attitude surveys or employee briefing) to find out employee opinions”.

Given the very different natures of the two ICs, t-tests were conducted to determine the extent of any differences between the responses from the two sets of employees. No differences were identified that were significant at the 0.05 level of statistical significance, and this was also the case when those aged less than 35 were compared with their older colleagues, when those lacking a bachelor-level qualification were compared with those with higher educational qualifications, and when those who had worked in an IC for less than 10 years were compared with their more experienced colleagues.

The generally positive questionnaire responses indicated at least the presence, albeit not perhaps a very strong presence, of a quality culture in the two ICs. The interviews sought to investigate this in more detail, with sets of questions that ranged across topics such as the top management's commitment to quality, how their IC measured user satisfaction, the nature of the training programmes offered to staff, and the feedback provided to staff from both managers and users.

EFQM category	Statement	Mean response
Leadership	Satisfaction of current internal and external users ensures the success of the IC	4.45 ± 0.68
	The managers use commitment to improvement as one of the criteria for selecting candidates for promotion and reward	3.27 ± 1.11
Policy and strategy	Policy and strategy are based on the present and future needs of users	3.88 ± 0.82
	The managers communicate strategies and plans to all staff	3.38 ± 0.90
People	Formal communication procedures are established with staff and users	3.69 ± 0.73
	People resources are planned	2.77 ± 0.93
Partnership and resources	Information technology is managed	3.68 ± 0.84
	The IC ensures everyone has appropriate information for jobs and relevant indicators are displayed	3.13 ± 0.94
Processes	Relationships with users are managed and enhanced	3.60 ± 0.71
	Standardized systems are in place to deal with users' complaints	3.08 ± 0.97
Users' results	Communication with users has improved	3.68 ± 0.94
	Users' complaints have decreased	3.35 ± 1.00
People results	Employee opinions contribute to improving work	3.88 ± 1.14
	Employees share organizational values	3.20 ± 1.18
Society results	The IC participates in serving the community	3.75 ± 0.98
	The IC has an active involvement with communities groups, schools and voluntary groups.	3.43 ± 1.22
Key performance results	The public can use the IC facilities	4.13 ± 0.94
	Knowledge about efficient operations management has improved	3.53 ± 0.91

Table 2: Summary of questionnaire responses in each of the nine EFQM categories

None of the interviewees at IC-A had worked in an environment that implemented quality principles, so that the interviewer (FAA) had to explain the principles of TQM at the start of several of the interviews. Once explained, the concept was positively received. While some of the services in this IC had achieved a certain level of quality, this did not amount to a formal quality programme, with the dean of the IC noting that "The quality as a concept is available, but it is not written and spread as it is supposed to be. The quality culture is missing especially for the employees and librarians." He identified different reasons for this, such as the lack of training programmes and the educational level of the staff, with the better educated showing a greater awareness of quality concepts. The staff at IC-B were generally better educated than those at IC-A, at least in part because the institution has an LIS department from which several of the staff had obtained bachelors, masters or doctoral degrees. However this did not appear to have resulted in a fully-fledged quality scheme, with the Associate Dean noting that "We discovered that we have a good level of quality, such as standards and evidences established from years. We found that some employees have awareness about the quality, but they did not find a suitable environment. What I want to say is that the quality concept exists, but without written standards". This view differs only marginally from that of his opposite number at IC-A, and it hence seems

appropriate to conclude that TQM is currently implemented to only a limited extent in Saudi Arabia (at least as far as these two pilot-study institutions are concerned).

While there were many commonalities of response, for example neither IC made any systematic effort to carry out surveys of user satisfaction and there was evident dissatisfaction with the training opportunities available to staff, more differences were evident between the two ICs than had been observed in the quantitative phase of the study. For example, IC-A had a clear mission statement and associated objectives that were fully understood by the managers and, to a lesser extent, by their staff; an analogous statement was claimed to exist in IC-B but nobody was able to demonstrate the validity of this claim. However, IC-B appeared to be much better connected with its surrounding community than was IC-A, which appeared to have strong links only to the academic departments within its parent institution.

The pilot study showed that the two research instruments that had been developed were suitable for purpose and could thus be used in the main part of the study, with two principal modifications. First, the questionnaire was distributed to both male and female staff, although the latter had again to be excluded from the interviews as the interviewer (FAA) was male and Saudi society does not permit male-female interactions of this sort. Second, the interviews with the senior managers in the ICs were complemented by interviews with groups of junior level employees, so as to determine the extent of the agreement between the two sets of views that were expressed.

## Conclusions

The pilot study described above has provided the basis for the first mixed-methods investigation of the use of TQM in Saudi higher education libraries (Altamimi, 2013). The detailed results of this will be reported subsequently so we here present just some of the key results obtained with six further ICs.

Questionnaire responses were received from 318 of the total of 464 staff employed in these ICs (corresponding to a highly satisfactory 68.5% response rate) and demonstrated that some of the basic principles of TQM were evident and were understood by the participants, but that there was a lack of appropriate training for staff in many cases. There were clear differences between the ICs, and the second-stage interviews hence focussed on just three of them, with individual and group interviews involving twelve senior managers and 27 junior staff, respectively. The differences revealed by these interviews were profound: there was little evidence of a quality culture in one of the ICs, with most of its services appearing to be poorly designed, and with little attention paid to the needs of users; conversely, there was a strong quality infrastructure in a second IC, with substantial training programmes and a high level of both staff and user satisfaction; whilst the third IC fell somewhere between these two extremes. It would hence seem that there is still very considerable scope for the widespread adoption of quality approaches, such as TQM, in Saudi Arabian university libraries, and that role models exist that could be used to facilitate this highly desirable change.

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# A student partnership approach to developing library services

**Leo Appleton**

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## Background

This paper looks at how working in partnership with students can contribute to the ways in which an academic library service applies quality assurance and continual improvement and development. There is evidence to suggest that 'student engagement' is well practiced and commonplace in most higher education institutions as a tool to enhance learning and teaching in institutions (Trowler 2010). Student representation and student feedback into teaching and learning activities appears to be the accepted means of achieving such engagement (Little et al 2009) which is also practised within the academic library environment.

Engagement occurs when the library, or other service area, embraces, or even manipulates this relationship with the student in order to enable dialogues or activity which is mutually beneficial. Even in the 2011 white paper (Department for Business, Innovation and Skills 2011a) student engagement is referred to as a mechanism for feedback into teaching and learning activity. However the white paper does go on to suggest that the student union has a role in improving dialogue and facilitating stronger partnerships between higher education institutions and their students. Whilst this goes some way to addressing the clear difference between simply engaging with the students and developing a partnership, it is not exclusively the role of the student body. The whole concept of a partnership is that there are multiple 'partners' involved. In this particular discussion, it is up to both partners, the students and the library, to be proactive in the relationship.

*"The sum total of an institution's student engagement mechanisms does not equal partnership"*  
(National Union of Students 2012. p. 3)

Student partnerships can be applied to many areas of Higher Education and indeed have huge effects on all aspects of a university, both in academic and professional service areas. The recent white paper 'Higher Education: Students at the Heart of the System' sets out a strategy for making the higher education system more accountable to students and to put them into a stronger position to influence the sector (Department for Business, Innovation and Skills 2011a). How a student interacts and engages with an institution has become more and more important in the mission of the UK higher education sector, and it is not uncommon for universities to promote their 'student experience' initiatives. Partnership working becomes very much part of the 'student experience' and this paper will conclude with a case study institution to illustrate this.

## Students as partners or customers?

Before the concept of partnership is fully addressed it is worthwhile looking at the concept of 'students as customers' a concept that has been applied by UK higher education for some time. Certainly over recent years, as the student has become the fee payer and the cost of higher education has increased, so too has the notion of 'student as customer' or 'student as consumer.' This particular notion brings with it much debate, with many commentators suggesting that a consumer culture within higher education in the UK is detrimental to the pedagogical and learning aspects of university experience in that the educational experience becomes viewed as a commodity and the actual value of that experience is lost (Molesworth, Nixon and Scullion 2009). However, one particular characteristic to come from the consumer model is that of the 'student voice'. Higher education has sought many ways in which to engage the student as 'customers' and the notion of the student as such has been widely embraced by universities (Little et al 2009). It can be argued that student engagement and student experience initiatives practiced at UK universities have all stemmed from the student being acknowledged as the customer, complete with consumer rights.

Student engagement is now seen as a means by which universities can get to understand and enhance the student experience and this is often now achieved by having student representation on decision making bodies (Trowler 2010). Such student representation has been at the heart of the student movement for many years and over the last decade students' unions around the UK have actively been involved in campaigning for student representation that is at the core of university decision making processes. This form of representation includes having students on high level committee meetings, as well as the development of course representative systems which empower and engage

students to become active in their own teaching and learning experiences. Whilst such forms of engagement have certainly helped students and students' unions build mature, positive relationships with their respective universities there are also suggestions that this growing consumerism approach to higher education has resulted in student engagement becoming passive and tokenistic.

Universities' recognition of 'student voice' encourages active listening to what students have to say about their education and effective communication of these views to relevant bodies within their institutions. This alone however does not make for a partnership relationship, in which students are engaged in evaluation of their learning experiences and empowered to be actively involved in the development of their education (Seale 2009).

The 'You said – We Listened' or 'You said – We Did' approach to responding to students' demands and expectations is now quite a regular channel for promoting responsiveness in higher education professional service areas. This is not unlike customer facing high street retail, financial or commercial providers where such a charter comes directly from a consumerist and responsive service delivery model. Many university service departments will often aim to promote their 'You said – we did' initiatives in a public area in order to feedback to students the responsive nature of their service developments and improvements.

However, such a consumer or customer relationship model of higher education can distort the relationship between the student and the university and suggests that '*the customer is always right.*' For this reason, services try to develop according to the demands and expectations of their student body without necessarily engaging in discussion or conversation about how exactly services can be developed. In reality higher education is quite different to retail or commerce. Students do not simply receive 'an education' or a 'student experience', rather they are very much a part of it. That is what makes them a 'partner' in the relationship or experience.

In the current higher education landscape, that which fosters competition and consumerism, it can be argued that student representation needs to be re-evaluated so that 'representation' becomes 'partnership'. For many years students and student unions' have been asked to 'feed in' and 'give opinions' towards university developments or teaching and learning initiatives which can be regarded as 'representation' activity. This misses out a key aspect of partnership, that of 'co-creation.' Students should be involved in the co-creation of their educational experience, whether it is through joint curriculum design or reviewing library functions and services and under the model of 'representation' true partnership cannot be achieved. With this in mind there have been many local and national initiatives to formalise the co-creation or partnership approach to higher education. In 2011, the Department for Business, Innovation and Skills published the final report of their 'Student Charter Group' (Department for Business, Information and Skills 2011b) in which recommendations are made that higher education institutions develop charters at institutional level in order that students know what to expect with regards to what their university will provide and what they need to do to make the most of their time in higher education.

## Case study – Liverpool John Moores University

In order to validate the counter position of some of the above observations it is appropriate to illustrate some partnership strategies through the use of a case study, in this instance that of Liverpool John Moores University. Liverpool John Moores University (LJMU) has around 24,000 UK based students and operates from three main campuses, each catering for different faculties and academic disciplines.

### Responsiveness

The library service at LJMU has always endeavoured to meet the needs and expectations of the students and has always been proud to call itself a 'responsive' service in the way in which continual improvement and development is carried out. A good example of this, and by no means exclusive to LJMU, is the converging of library and computing services as a response to student demands that learning resources be located and supported holistically. In the case of LJMU this particular 'student experience' initiative occurred two decades ago (Sykes and Gerrard 1997) and the library service has been evolving and responding ever since. Since this time 'student experience' within higher education has risen to the top of many institutional agendas, particularly in light of increased student fees (Department for Business, Innovation and Skills 2011a). At Liverpool John Moores University this has been no exception. A series of reviews was carried out during 2007 looking carefully at the quality of the administrative services provide by the university to its students. Throughout the process, the student body worked in partnership with the university as part of these reviews. Student engagement and student representation was key to effective review and evaluation of and subsequent decision making. The reviews themselves combined to form the institution wide 'Student Experience Review' which resulted in recommendations for changes in the way in which student facing services such as admissions, student welfare and support, international recruitment, registry-related services

and student administration were delivered (Melling 2012). In 2009, as a result of the 'Student Experience Review' recommendations, a new professional service model was implemented at the university which saw the super-convergence of all student facing services including those offered by the library department. The resulting new department 'Library and Student Support' and the customer service model in which it now operates is a great example of change being driven by the 'student experience' agenda and students being at the heart of the partnership in which this is achieved.

## Student representation

The above 'Student Experience Review' illustration is an example of a large scale project in which the library and its students have worked together in partnership. This way of working has become the norm for both partners and representation on more recent project boards and teams again illustrate this partnership. Recent examples of this partnership working at project board level at LJMU include the selection and implementation of a single search interface for electronic library resource discovery and the introduction of a PC booking and availability system into the Learning Resource Centres.

In keeping with best practice the library service's responsiveness strategy has developed more recently into a strategy for partnership, and includes some of the communication tools and channels that have previously been discussed. But, it is the partnership approaches to continual service improvements and developments which add further value to the service both for those delivering it, and those making use of it. Library and Student Support (L&SS) and the Liverpool Student Union use three particular platforms which help to strengthen their partnership:

## Communications meetings

The two partners make use of quarterly agenda driven meetings between the senior managers of Library and Student Support (those responsible for delivery of services) and the Liverpool Student Union elected sabbatical officers (President and Vice Presidents) and also the union's Chief Executive and University Experience Manager. The agenda is set in advance by both partners and is intended as a platform to discuss current issues and activities and set responsive actions in order to resolve problems and move developments forwards. The meetings are also used in order that the senior members of each team can inform the partners of the key activities and developments going on around the university in which they are involved. Such an agenda allows for a partnership approach to information and communications and subsequent problem solving.

## Better university forum

The University's 'Better University Forum' is held quarterly by the Liverpool Student Union and provides an open platform for any students within the university to attend and share their view and opinions on all aspects of the university experience. Facilitated by student union representatives, the forum is divided into four themes: *Communications, Teaching, Facilities and Your Future*. The Associate Director of Library and Student Support is invited to attend each Better University Forum and is able to field questions and provide answers about library services and take back any suggestions or ideas which come from the discussions with students. The Forums are intended to be action oriented and part of the commitment to those attending is that where ideas, innovations, developments or suggestions have been generated from the forum discussions and dialogues, any resulting actions and feedback will come back to the next Forum. This makes the forums very accountable and ensures that the partners work together effectively. A good example of the partnership work of the Better University Forum is the joint campaigns which L&SS and Liverpool Student Union have run as a result of discussions at the forums. Issues such as access to PCs in the Learning Resource Centres (LRCs) and students making too much recreational use of the LRCs computers during busy assessment periods were widely debated. Solutions such as banning or restricting social media were suggested but neither partner really wanted to impose such sanctions. Instead an institution wide 'Respect your LRC' campaign was initiated and launched throughout the University which included slogans such as 'Don't be Part of the Unsocial Network' and made use of a variety of media including professionally produced videos which were shown on both the LJMU and Liverpool Student Union Web pages. The campaign has since run again every year at busy assessment periods and is a great example of partnership working and problem solving.

## Learning Resource Centre Critical Friends Group

Library and Student Support have also introduced a 'Learning Resource Centre Critical Friends Group', whose role is again to engage students in dialogue about the Learning Resource Centres in order to make decisions and

improvements in a collaborative manner. This particular instrument has been successful in other support areas of the University and subsequently became a strategic objective for Library and Student Support with regards to responsiveness and working in partnership with students.

The group consists predominantly of student representatives including the Liverpool Student Union Vice President for Academic. The remaining participants are made of course representatives and other students who have chosen to be part of the group. The group is chaired by the Associate Director of L&SS who is the sole member of L&SS staff on the group, the objective being for students to have a prominent voice within the group and the role of the chair is to steer discussion rather than to respond to it immediately. It is important for the chair of such a group to be able to pose probing questions and demonstrate active listening, as the group needs to be comfortable to discuss problems and issues and suggest solutions and improvements without the library representative defending or explaining current practice. The members of the group are expected to engage with its objectives which include: examining the activity of the LRCs, providing support and critique and ensuring that the services available are informed by and relevant to the student body.

The responsibilities of the group members are all explicit in the group's terms of reference which allow and encourage the student membership of the group to become active in asking probing questions about systems and service practices, which makes them better informed for suggesting solutions and problem solving. The role of the chair is to provide facts and clarity where the group does not understand the rationale behind a service decision, but also to take away the actions from the critical friends group with a view to resolving or moving forwards any suggested developments or service improvements. A simple example of this to illustrate the work of the LJMU LRC Critical Friends Group is that of students questioning why the LRC Website is laid out in a particular way. Discussion followed with members of the group and potential improvements suggested. This promoted a small scale review of the initial LRC landing page and was developed accordingly.

## Conclusion

Academic libraries can and should work in partnership with their students. The paper has focused on the benefits of such partnership working although it has been limited in its evidence base having used a single case study, Liverpool John Moores University, on which to draw examples of good practice. However, the case study can also be placed into context of other good practice illustrated in some of the associated literature and also on the more recent debates around changing student expectations and 'students as consumers.' Some of this has been covered as part of the discussion in the paper (Streeting and Wise 2009; Little et al 2009; Maringe 2010).

Library services are often at the heart of the learning, research and scholarship activities of the university and subsequently impact hugely on the student experience of the institution. In the case of LJMU student partnerships are fundamental to the institutional mission and in particular in achieving research and scholarship and student engagement strategic objectives. Students now expect to be part of the dialogue and discussions which affect them. "Students need to be involved in the various stages of the decision-making process. This not only leads to better decisions but a closer collaborative, supportive and respectful relationship between the student and the university" (Barrow and Hastings 2009).

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# Re-Skilling for the digital humanities: Measuring skills, engagement, and learning

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## Introduction

Lorcan Dempsey describes the deepening engagement that many academic and research libraries are working to create for their parent institutions by producing “distinctive value in the research, learning and teaching workflows of their users in ways which go beyond the provision of collections” (Dempsey, 2013). Taking the idea of creating distinctive value a step further, James G. Neal, Vice President for Information Services and University Librarian at Columbia University, suggests that academic and research libraries should “advance from the trompe l’oeil library facilities we currently maintain to new strategies for learning, intellectual, social, and collaborative spaces characterized by flexibility, adaptability, and usability... We need to bring the classroom and the academy into the library... (Neal, 2011).” For Neal, purchasing and providing access to collections, and even providing services like library instruction is too passive. These are certainly useful activities for an academic or research library to support but not sufficient for creating a path to remaining vital to the teaching, learning, and research missions of the university. Actively supporting services closely aligned with research and teaching practices in the library through strategic collaborations with faculty and other campus partners is the way to remaining vital.

To build such a path, Columbia University Libraries/Information Services has created a series of discipline-based digital centers supporting emerging research and teaching practices in the humanities, music, sciences and engineering, and social sciences.<sup>1</sup> These centers are high-end computing environments equipped with advanced, discipline-specific software applications and peripherals, configured to support both individual and collaborative work. The digital centers offer consultation services provided by librarians, technologists, and graduate student interns, and serve as test beds for service innovation for the larger organization. Staff in the digital centers are empowered to pilot potential services in smaller, bounded environments, keeping what works, quickly discarding what doesn’t, and testing whether or not new services can scale for the larger organization. A current example is the project in the Digital Science Center to test the viability of 3D printing as a production service offering.<sup>2</sup>

Digital scholarship coordinator positions were created to lead service program development and outreach activities for the centers. These positions are also charged with supporting skills development for the staff who work in the centers, most of whom are traditionally trained librarians and graduate student interns. Three digital scholarship coordinator positions have been filled by recent PhD recipients who bring deep research and teaching expertise from the disciplines they support. That being said, most of the staff supporting the digital centers are traditionally-trained librarians with widely variant levels of comfort and expertise with the emergent research tools and activities supported in the digital centers. Responding to this fact, and to a more general desire to update their skills to remain vital to the faculty and students they support, the professional staff from the Humanities & History Libraries division banded together to launch a re-skilling effort that they dubbed the Developing Librarian Project.

1 See <http://library.columbia.edu/dhc.html>, <http://library.columbia.edu/dsc.html>, <http://library.columbia.edu/dssc.html>, and [http://library.columbia.edu/music/music\\_lab.html](http://library.columbia.edu/music/music_lab.html) for more information about the Digital Humanities Center, the Digital Science Center, the Digital Social Science Center, and the Digital Music Lab respectively.

2 See <http://3dprint.cul.columbia.edu> for more information about the 3D printing pilot at the Digital Science Center.

## The Developing Librarian Project

Much is changing across the humanities research landscape. Libraries and librarians have responded in a number of creative ways to disruptions brought on by new technologies and research methodologies. Beyond providing new services utilizing new technologies, librarians have also emerged as partners and collaborators in the research process. This new partnership role for librarians illustrates that the most important change is not technological, but social: successful digital projects need partners with a variety of skill-sets to work closely together on teams. New skills, both technological and social, require librarians to engage in an ongoing learning process.

Librarians at Columbia University Libraries/Information Services are keen to understand and support evolving research practices. In the fall of 2012, and running in parallel with the expansion of the Digital Humanities Center, the Humanities and History Libraries (H&H) division initiated the Developing Librarian Project, a two-year training program, with the goal of developing new skills and methodologies to support the digital humanities. Two influential publications, “Re-skilling for Research” (Auckland, 2012) published by RLUK and “Research Support Services for Scholars: History” (Schonfeld and Rutner, 2012) by Ithaka S+R provided the initial inspiration for the program. Both reports highlight skills gaps among librarians in relation to supporting emerging research needs of scholars. Using these reports as a foundation, the H&H team created a provisional syllabus for the project, which covers those areas identified as the most significant skills gaps among staff (ie, data management and curation, data manipulation tools used by humanities researchers, metadata schema, etc).

The program is based on the assumption that learning happens best in context (Birchinall, 2013; Williams, 2008); therefore the training is project-based with all participants engaged in creating a digital humanities research project as a team. This approach enables the team to learn about new tools in a sustained manner that parallels the way other humanities researchers are likely to use them. The program’s designers built a set of practical training units and exercises for the purpose of individual and group learning and skills development.

Practical exercises are focused on individual contributions to a common and ongoing project to document the history of Morningside Heights and its environs (the area of Manhattan where Columbia University is located) for the period 1820-1950, as the expansion of Columbia University was changing the neighborhood.<sup>3</sup> The aim of the project is to produce a permanent public resource while giving the team an engaging project of manageable scope to increase the likelihood of success.

The H&H team understands that training and skills development are no longer activities to engage in sporadically, but a continual process of learning integrated into the fabric of daily work (Gutsche, 2010). Thus, it might be more accurate to describe the project not as a training program but part of continuing professional development and engagement. The team is committed to gaining a better understanding of emergent technologies and to being partners in the research process. While the product of the Developing Librarian Project is important, the process is the most exciting, and hopefully, most lasting element of these efforts.

## Methodology/assessment design

Before discussing the project’s assessment methodology in detail, it is worth highlighting a few characteristics of its design. First, during initial consultations with program designers, it became apparent that an outcome-based assessment approach would be most appropriate for the project. In this context, outcome-based assessment is defined as assessing the extent to which the project has achieved its intended results.

Second, although academic libraries have historically valued training and professional development for librarians, formal assessment is rarely integrated into these activities from the outset. Most often, an informal assessment is conducted at the completion of a training program to gather feedback to inform future program planning. In contrast, the Developing Librarian Project implemented a model for assessment design that involves evaluation of each unit immediately following a training session, thus providing feedback to program designers before the next unit is presented to participants.

Third, this assessment design is closely linked to the learning objectives outlined in the overall program syllabus<sup>4</sup>, which are tied to skill-set gaps discussed in RLUK’s “Re-skilling for Research” report. The assessment component is designed to assist program designers and others interested in implementing similar training activities to learn both from the project’s successes and missteps.

<sup>3</sup> See [www.developinglibrarian.org](http://www.developinglibrarian.org) for more information about the Morningside Heights digital project.

<sup>4</sup> See [www.developinglibrarian.org/syllabus/](http://www.developinglibrarian.org/syllabus/) for an outline of the Developing Librarian Project syllabus.

Finally, outcomes are measured using both *self reports* and *peer ratings* because the training is project-based with all participants engaged in creating a digital humanities research project as a team.

The development of a successful assessment design requires a clear and shared idea of what it is to be achieved among a project's stakeholders. Clearly articulated objectives are the engine that drives the assessment process. Thus, the assessment design for the Developing Librarian training program stems from the mission of the Digital Humanities Center: to effectively support the current and emerging information and research-support needs of humanities scholars at Columbia University. In order to measure the success of achieving this mission, program designers defined three corresponding learning objectives in specific and measurable terms:

1. Learn tools and methods that support the emerging research needs and trends in the humanities;
2. Create a more interesting and engaging work environment for liaison librarians and other professional staff; and
3. Engage effectively with the humanities research community across the University.

Armed with clearly articulated objectives and aware that some objectives may not be easily measured, program designers developed or selected the following three instruments to measure the extent to which the project achieved its intended results:

1. *Explicit Self-Reflections* to assess what participants learned in each training unit;
2. The *Utrecht Work Engagement Scale (UWES)* to measure how participants feel about their work before and after the training program; and
3. The *Skill Set, Knowledge & Researcher Engagement Assessment* to measure the effectiveness of the training program as a whole at the completion of the project.

Table 1 provides details about the objective-to-measure match and timeline for data collection processes for the project.

Objectives	Instrument/Method	Data Collection Timeline
1	Explicit Self-Reflections	Fall 2012 – Spring 2014
2	<i>Utrecht Work Engagement Scale (UWES)</i>	Fall 2012 (baseline) & Spring 2014 (follow-up)
3	Skill Set, Knowledge & Researcher Engagement Assessment	Spring 2014

Table 1: Objective-to-measure match and data collection timeline

*Explicit Self-Reflections* involve asking participants to name the four most important things they learned during the training unit. In this kind of reflection, participants step back from the learning process to think about what they are learning and their progress. These key takeaways are recorded immediately at the end of each unit for subsequent content analysis. Content analysis of self-reflections involves extracting key terms and concepts and mapping them to the learning objectives identified in the training syllabus. This method employs self-assessment and is based on the premise that individuals can become better learners when they engage in deliberate thought about what they are learning. Self-assessment may help participants to become realistic judges of their own performance by enabling them to monitor their own learning, rather than relying on an instructor for feedback (Sambell, McDowell, and Sambell, 2006).

Work engagement is measured by a brief, 17-item, self-reported questionnaire, the *Utrecht Work Engagement Scale (UWES)* (Schaufeli, Bakker, and Salanova, 2006). A baseline questionnaire was administered to participants at the project's launch to serve as a benchmark for comparing the impact of the training on creating a more interesting and engaging work environment for liaison librarians and other professional staff. Sharing results from the baseline questionnaire publically could create an answering bias for the follow-up questionnaire scheduled to be administered in Spring 2014; and therefore, these preliminary results are not included in the current discussion.

The *Skill Set, Knowledge & Researcher Assessment* (see Table 2) is still under development and will be administered at the completion of the overall program, utilizing peer-assessment methods. When peer-assessment is used, ideally the method should allow learners to practice making reasonable judgments about the extent to which their peers have



achieved expected outcomes (Falchikov, 2007). Therefore, this assessment will use constructive, positive terminology to describe how well any given topic has been mastered to make it easier for peers to give and receive feedback.

	Skill sets and knowledge competency areas	Self-assess	Peer-view	Essential/desirable
1.	Scan and produce electronic text			
2.	Use of Citation Management Software to assemble a bibliography			
3.	Understand author rights, copyright legislation, and intellectual property issues, and plagiarism, and to be able to advise or refer as appropriate.			

Table 2: An example template from the Skill Set, Knowledge & Researcher Assessment instrument

The skill sets and knowledge areas covered in a specific training unit will populate the assessment template for that unit. Using a four-point rating scale where 1 = Beginning, 2 = Developing, 3 = Good, and 4 = Advanced, participants will score themselves in each competency area and validate their scores by discussing them with a peer rater. The Director of Humanities and History Libraries will indicate which areas are essential or desirable for the effective performance of each librarian's participant's role to support humanities researchers in an evolving information environment.

## Findings

At the time of writing, the Developing Librarian Project is mid-way to completion, and implementation of the assessment plan is ongoing. The current discussion reports findings for only those parts of the assessment that are complete, which includes a summary analysis of the *Explicit Self-Reflections* data recorded for those training units completed to date.

Table 3 displays a summary of findings from self-reflections mapped to learning objectives for each unit completed. All comments for perceived knowledge and skills gained were matched against the learning outcomes of each unit. Check marks indicate learning objectives that participants believe they have mastered and cross marks indicate those areas where more work is needed.

Units	Learning objectives for each unit				
	1	2	3	4	5
1 – Introduction to Digitization	✓	✓	✗	✗	n/a
2 – Citation (and Resource) Management Software	✓	✓	✓	✗	✗
3 – Metadata	✓	✓	✗	✓	n/a
4 – Requirements Gathering	✓	✓	✗	✓	n/a
5 – Project Charter and Ground Rules	n/a	n/a	n/a	n/a	n/a
6 – CSS, HTML, and How the Internet Works	✓	✓	✓	✓	n/a
7 – Using WordPress I	✓	✓	✓	✗	✗

Table 3: Summary of findings for self-reflections mapped to learning objectives

Based on these self-reports, there is evidence that the training program has been effective, and participants have been successful in meeting most of the learning objectives identified in the units completed. Looking at comments for the question "What are the four most important things you learned today?" for the completed units, content analysis shows that the majority of responses mapped to learning objectives. For example, the first learning objective of Unit 1 (Introduction to Digitization) was "Use Adobe Acrobat and Finereader to scan a document and determine when to use one or the other software." Nearly all participants who completed the unit made comments specific enough

to map to the first learning objective, resulting in a check mark. Conversely, there were no comments from the participants that could be mapped to the third learning objective of Unit 1 (“Correct and clean up text in a Finereader document”) to serve as evidence of skills attained in that area. While self-assessment of knowledge and skills may have its limitations, this technique is proving adequate and efficient for achieving the program’s goals. This method encourages experimentation and establishes failure as an important aspect of the learning process.

## Conclusions

A successful training program should be benchmarked, evaluated in a substantive and systematic way, and improved continuously. A formal assessment plan, directly tied to clearly articulated objectives, helps assure that such a program is effectively evaluated, iteratively developed, and successfully implemented. The Developing Librarian Project provides a useful model of how an academic library can leverage assessment and evaluation processes to identify skills gaps and training needs and generate actionable data for improving staff learning.

An assessment approach such as this does not measure the impact of training and development on digital humanities research but initiates a valuable process, highlighting skills gaps at both the individual and organizational levels. This data is important for identifying and implementing appropriate training opportunities for librarians supporting emergent research activities and for understanding what skills and professional preparation are needed for new staff recruited into the organization.

What began, as a supporting element – the assessment of participant learning – has become a cornerstone of this project. Assessment does not sit on top of the project but is thoroughly embedded and operates as the engine of iterative program improvement. This project reminds us that learning always involves some amount of failure. The willingness to engage and quickly integrate learning from failure provides a valuable tool for libraries striving to create distinctive value by investing in the skills and engagement of their staff.

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# Value and impact: Convergence of assessment and performance measurement

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## Abstract

Libraries are increasingly asked by their institutions and governing agencies to demonstrate the value they provide to their communities. The traditional approaches of either performance metrics or assessment are not sufficient by themselves to provide the persuasive evidence needed by libraries to demonstrate their value. A convergence of these approaches offers great promise in providing a multidimensional perspective on library contributions to institutional goals and priorities.

Library assessment and performance measurement developed from different perspectives and motivators in North America and internationally. In North America, library assessment became associated with a user-centred approach that focused on user needs, the importance of library services and resources, usage, and user satisfaction with libraries. Common methodological tools included surveys (such as LibQUAL®), analytics and qualitative methods to elicit information that could be used to improve services that directly support user work. The lack of a national library or national higher education policy limited the development and use of standardised metrics as funding was done locally. In addition to assessment activities focused on user needs, North American academic libraries have pioneered assessments of student learning outcomes (using tools such as rubrics) that have contributed to the development of the value and impact approach by foregrounding the role of the library in fostering student learning and success.

While this paper will focus primarily on North American academic libraries, especially those in the United States, the development of metrics and performance standards outside of North America bears mention. European efforts were important in providing more rigorous quantitative approaches to measuring library efficiency. Libraries in many countries operated as part of national systems, and metrics (primarily input and output) were established by governmental agencies to support resource allocation. Metrics were also established by international standards developed by the International Organization for Standardization (ISO) and related agencies. Many of these standards were concerned with internal organizational processes and costs. ISO Standard 11620 (Performance Standards for Libraries) and nationally developed metrics indices (such as BIX) stressed the importance of metrics in evaluating library performance.

The relatively recent focus on library value and impact has led to a convergence of the North American reliance on user-centred assessment and the international work on performance metrics. This convergence has exciting implications for a multifaceted approach to value and impact that can transcend national boundaries.

## Statistics and performance measurement

The measurement and evaluation of libraries from 1900 to 1970 was characterised by a reliance on statistical data, primarily inputs, and local efforts to improve library processes, especially internal ones. In the United States, there was no official reporting of library statistics. While the library literature contained case studies of process improvement at individual libraries, it was difficult to make any meaningful comparisons between libraries in most areas. J.T. Gerould, then Librarian at the University of Minnesota, advanced the concept of 'A plan for the compilation of comparative university and college library statistics' in 1906. He posited three questions that he hoped comparative statistics could shed light on: 'Is this method the best? Is our practice adapted to secure the best administration? Are we up to the standard set by similar institutions of our class?' (Gerould, 1906, 761). Gerould followed up his plea with the first ongoing effort at collecting academic research library statistics in 1907-08, which focused on input data such as staff size, number of volumes, and budgets for staff, collections and overall. This practice was continued by Gerould

and his successors until 1962, when the Association of Research Libraries (ARL) assumed this responsibility. While comparisons with other libraries were used to request increased funding from institutions, there was little evidence on how they were applied to improve decision-making capacity within libraries. However, statistical measures began to be used to develop standards, especially by library organizations. Standards were often employed in facilities, staffing, and collections.

## Standards, performance, evaluation and assessment 1971 to 1995

Initial efforts at developing standards for U.S. public libraries began in 1933, while it took until 1959 for the first efforts to formulate academic library standards. However, standards for academic libraries had already been produced in several other countries, including Britain, Canada and Germany.

F.W. Lancaster's influential 1977 book, *The measurement and evaluation of library services*, was the first comprehensive and systematic review of evaluation and performance measurement. He covered all aspects of library operations including technical services, public services, collection development and automation, citing a multitude of studies that had been written on these topics. Lancaster also made a useful distinction between use of broad-based input/output data ('macroevaluation') and analysis of specific system processes ('microevaluation'). Performance measures, however, were either internal and/or transaction-based, focusing on how much, how fast and how accurate.

By 1970, the first generation of automated retrieval systems had substantially expanded the range of statistics available, especially usage and other transaction data. While most searches were librarian-mediated in such bibliographic databases as Medlars, they also provided a more robust method of searching, which included Boolean logic. The advent of a systems approach to library management and performance also tapped into the growing availability and power of computer systems for analysis, budget allocation and other programs.

The expansion of automated services in libraries continued to grow rapidly during the 1980s and became the focus of evaluation and assessment. Direct end-user access began with the online catalogue and then extended to a wide range of bibliographic databases. Combined with a new emphasis on strategic planning, automated services were evaluated not only on how well they performed but also how they were used as sources of management information. McClure, in a series of papers in the 1980s, examined organisational structures and data-based decision making. In his interviews with middle managers in ARL libraries, he noted that 'significant organizational change will be necessary before cost and performance measurement data can be integrated successfully into academic library decision-making' (McClure, 1986, 329). He went on to recommend that libraries

*Review existing management and organization climates; increase the knowledge level of the importance and potential applications of cost and performance measurement data; develop administrative systems that support the identification, collection, organization, analysis, and reporting of cost and performance measure data; and establish reward structures for librarians who use cost and performance measurement methodologies for library decision-making. (McClure, 1986, 332-333)*

Several ARL SPEC surveys during this period noted the dichotomy between the growth in statistical data and the use of this data for management purposes. Vasi noted that 'Despite the wide range of possible uses for management statistics, the predominant use is for comparison purposes. . . Comparative statistics seem to be ends-in-themselves rather than as initial steps in an analysis of a library's operations or in quality of service.' (Association of Research Libraries, 1989, ii).

*Measuring Academic Library Performance: A Practical Approach* by Van House, Weil and McClure was one of the first works to incorporate practitioners into the evaluation process. It assumed little or no statistical training on the part of librarians. Among the goals of the book were to:

1. Evaluate the effectiveness of library activity
2. Support decision making
3. Be easy to apply and use and inexpensive to administer
4. Be user oriented
5. Reflect common library goals and objectives
6. Promote the use of measurement for management decision-making in libraries



The ISO also began moving away from a focus on defining input/output statistics to using this data for performance standards, including some outcome standards. The first edition of ISO 11620, Performance Standards for Libraries, provided a number of examples using ratios of different variables, rather than relying on just a single statistic.

## Key Trends, 1996 to the present: Moving towards value and impact

While a great deal of assessment and performance measurement work in the 20th century emphasised input and output statistics and measures that placed the library itself as the central point of concern, the period from the mid-1990s onwards is characterised by a turn from an inward focus on the library to an outward-looking focus on the user and the institutional contexts in which the library operates.

We will discuss these trends in more detail in a moment, but we want to outline briefly some of the factors that provide a framework for understanding the shifts toward user-focused and collaborative assessment. The first of these involves accountability, accreditation, and affordability. A major motivator for institutional (and library) assessment in the United States has been regional and professional accreditation. All colleges and universities must be accredited by a regional (non-governmental) accrediting agency in order to offer degrees. Professional associations such as nursing, engineering, library and information science, business and law also accredit those specific programmes. Until 1980, most accreditation standards for libraries centred around the number of volumes, staff, expenditures and facilities. However, the professional associations took the lead in moving away from an input/output based assessment to evaluating student learning outcomes. Regional accreditation followed in the late 1990s, although there was usually a separate set of library standards. By 2010, there was no longer a separate library standard but libraries were integrated with other academic programmes. The Northwest Commission on Colleges and Universities had four substandards for libraries:

- The institution holds or provides access to library and information resources that support the institution's mission, wherever offered and however delivered.
- Planning for library and information resources is guided by data that include feedback from affected users and library staff.
- The institution provides appropriate instruction and support to enhance efficiency and effectiveness in obtaining, evaluating, and using library and information resources.
- The institution regularly and systematically evaluates the quality, adequacy and utilization of library and information resources and services.

In this context of wider demand for accountability and the emphasis on outcomes assessment in higher education, librarians could no longer take the link between library resources and outcomes for granted, or assume those they served would see the link: 'in the last two decades, the implicit relationship among inputs, outputs, and student learning has been under fire by external stakeholders such as regional accreditors and other governmental bodies' (Ackermann, 2007, 2). In tandem with the demand for accountability, parents and students concerned by rapidly rising tuition rates also began asking questions about whether institutions provide 'value for money'. While libraries (and higher education institutions more generally) may have previously been able to rely on being seen as a good in and of themselves, the post-1990s period saw increasing pressures to demonstrate that libraries were being responsible stewards of resources.

In addition to trends in higher education related to accountability and affordability, the availability of information in the networked environment also meant that libraries were required to think about how they provided and demonstrated their value to users. With increasing amounts of information being available online, faculty and students no longer needed to come into the library to access information: '... the most notable feature of user behaviour in these [networked] environments is that the tools and resources they use are those which are embedded in their workflows ... Information usage is integrated into the workflow.' (Brophy, 2008, 9). The question for libraries became not how users fit into our work, but how we fit into their work and lives. This required libraries to understand how users worked, what their information needs were in this networked environment, and how the library could best integrate into workflows in order to meet user needs.

It is worth pausing to note, however, that while we are arguing that the trend toward user-centred assessment and an interest in the value and impact of the library certainly reached a critical mass from the last decade of the twentieth century onwards (largely because of some of the pressures we have just outlined), the ideas at the core of these trends emerged earlier. R.H. Orr's seminal 1973 article, 'Measuring the goodness of library services: A general framework for considering quantitative measures', was among the first to shift the emphasis of library evaluation from the internal

to the external: instead of focusing on the question of 'how good is this library', he asked 'how much good does it do?' Orr argued that 'the ultimate criteria for assessing the quality of a service is its capability for meeting the user needs it is intended to serve, and that the value of a service must ultimately be judged in terms of the beneficial effects accruing from its use as viewed by those who sustain its costs' (Orr, 318). He stresses the importance of the library's capability 'as perceived by its users' (326). In terms of value, Orr emphasizes the importance of trying 'to assess the beneficial effects attributable to a particular service of the library (or to all of its services collectively) in terms of how much the service contributes toward achieving [these] organizational objectives' (327). Orr's work is recognised as a foundational moment for library assessment because it represents an early signal of the move towards the key trends that would emerge in the 1990s – the focus on the user perspective, the call to expand beyond purely quantitative measures of library effectiveness, and the gesture towards the wider organisational context in which the library operates. Orr published his paper while still working in the United States, but it had far more impact in the UK and Europe.

The first of the trends we see emerging in the mid- to late 1990s is the turn to the customer (or user) centred library, which meant that library services and activities were increasingly viewed from the perspective of the user. Rather than emphasising 'what counts for the library' (eg, collection size, number of checkouts), the concern became more about 'what counts for the user' (eg, the services that are important to users, and their satisfaction with these services). The assessment work undertaken in U.S. academic libraries in this period is often characterised by two strands: the first is an effort to understand user needs and expectations, and the second is the use of surveys and other methods that attempt to measure user satisfaction and assess whether libraries are meeting user needs.

Much of this work to identify user needs and understand if those needs were being met took the form of satisfaction surveys. In the 1990s, a number of academic libraries (such as our own institution, the University of Washington) began conducting large-scale user surveys to gauge satisfaction and the importance of services and resources to library customers. This period also saw the beginnings of LibQUAL®, the development and implementation of which was guided by the desire to use a standardised survey to gather information on satisfaction with a variety of library services and resources. While LibQUAL® was developed for North American research libraries, it has been applied successfully internationally. These surveys have provided (and continue to provide) valuable information that can be used for improvement, as well as some sense of what users value and what the library enables them to do. The University of Washington (UW) Triennial Survey, for example, includes an 'impact'-type question that asks faculty, graduate students, and undergraduates to rate the UW Libraries' contribution to key aspects of their research, teaching, and learning activities. However, there is a limit to what surveys can do for us in terms of understanding the depth and nature of the impact on users' lives and work. In the absence of other measures, user satisfaction was often used as a surrogate for value and impact. With the recent development of alternative ways to assess the value and impact of library services, satisfaction measures can be used to complement, rather than substitute for, an understanding of value.

In addition to surveys, assessment approaches that emerged from the shift to a user-focused perspective include usability testing of websites and online tutorials, as well as user-centred design of spaces. This shift in perspective to the user also gives rise to outcomes-based metrics, which attempt to assess the difference library services and resources make for users, and how user behaviour is changed as a result of using the library.

A second key trend in assessment and performance measurement post-1990 is the turn outward from the library towards wider organisational contexts, both within and beyond individual institutions. We are calling this 'collaboration', and thinking of this as the move towards assessment activity that is connected to broader institutional and higher education priorities, as well as to the development of assessment work among libraries at the regional, national, or international level. This shift to a wider institutional lens means that libraries became increasingly concerned with measures that were meaningful to their parent organisations and with framing their work in terms of its contributions to institutional mission and values. As Sarah Pritchard notes in a 1996 article, 'the major objective for academic libraries, especially in an environment of increasing economic pressure, structural change, and technological innovation, must be to align themselves with the structures of higher education and the criteria by which those institutions are judged' (573).

Collaborative assessment activity also meant that libraries began to look for partners in other programmes and units at their colleges and universities to identify shared goals, outcomes and measures of success. A key element of this collaborative activity involves the alignment of assessment activities with strategic planning, both at the library and institutional level. When there is a meaningful association between assessment and strategic planning, assessment data can inform strategic directions (what's important to users/communities we serve, and what do we need to be doing to provide them with what they need in the next 2-3 years?), and assessment activity can be guided by strategic directions by ensuring that we are collecting the right kind of data to demonstrate how library and institutional goals are being met.

The period from the 1990s onwards also saw the trend toward collaborative assessment among libraries. Recognising the need for measures that would be meaningful to help institutions benchmark their performance in terms of peer institutions, and for assessment instruments that would speak to local needs but also be applicable across different institutions, libraries began partnering to develop tools such as LibQUAL® and on standardised definitions (such as those produced by NISO and ISO). From the 1990s, libraries also began to develop a shared community concerned with assessment and performance measurement. A key moment for this was, of course, the first Northumbria conference in 1995. To this conference has been added the biennial Library Assessment Conference in the United States, as well as training institutes such as the ARL Service Quality Evaluation Academy.

The case of instruction in libraries is a useful illustration of this move towards a focus on the user and collaboration, and the trajectory from inputs/output measures to outcomes, value, and impact. During the 1970s and 1980s, a great deal of library instruction concentrated on 'how to use the library' (in other words, the library was the focus, not the needs of users). There was some focus on outcomes and some collaborative efforts, but assessment tended to focus on surveys and pre- and post-tests or on satisfaction/opinion surveys.

The United States in the mid-1990s, however, witnessed a paradigm shift in higher education that placed an 'emphasis on moving from teaching to learning' (Gilchrist, 2009, 71). In this new 'learning-centered framework' (Gilchrist, 2009, 71), the student, rather than the teacher, was at the centre of the educational experience. This shift in pedagogical approach converged with demands from accreditors for the assessment of outcomes and helped to bring about changes in how we think about, and assess, library instruction. A key moment in this shift was the 1998 Association of College and Research Libraries (ACRL) Task Force on Academic Library Outcomes, which was formed in response to a concern that academic libraries were out of step with accreditation agency demands for outcomes measurement:

*The formation of the Task Force was a response to the ACRL Board's perception that the association has no statement on outcomes assessment, and that its standards, largely written as input measures, are out of step with the practices and philosophy of regional and professional accrediting agencies and state higher education agencies. (Association of College and Research Libraries, 1998)*

The Task Force report stressed that 'assessments should be client centred rather than institution centred; that is, they should assess changes in the library user resulting from library services or resources'. The report called on libraries to establish and assess outcomes, and to align library assessment with institutional outcomes and priorities:

*The purpose of outcomes assessment of academic libraries is to measure their quality and effectiveness, focusing on an organizational analysis of the library as a whole, and of its constituent activities and services, and the contributions they make to accomplishing the purposes of the university or college of which it is a part. It follows from this purpose that outcomes assessment must begin with an analysis of the parent organization's mission, goals, and objectives, and an identification of the elements of them that the library supports. (Association of College and Research Libraries, 1998)*

In response to the call for establishing outcomes, the ACRL Information Literacy Competency Standards for Higher Education, published in 2000, acknowledged that information literacy was being identified as a key outcome by some accreditation bodies, and aimed to provide libraries with a common language and a set of shared outcomes and indicators that could be used to assess information literacy student learning. The outcomes were designed to 'serve as guidelines for faculty, librarians, and others in developing local methods for measuring student learning in the context of an institution's unique mission' (Association of College and Research Libraries, 2000). Crucially, the Information Literacy Competency Standards aligned library instruction with the wider teaching and learning missions of higher education institutions, and highlighted the collaborative nature of information literacy instruction. The Standards signalled the shift in focus to a broader set of skills and competencies for academic success and lifelong learning, rather than a narrow concern with teaching students how to use the library.

With the publication of the Information Literacy Competency Standards, librarians and faculty partners had a tool to help them define learning outcomes, integrate information and research skills into course outcomes, and develop authentic assessments. Rather than relying on tests or surveys, librarians and faculty now often assess the work students produce for their courses. Instruction came to be framed not as a good in and of itself (students need to know how to use the library because it is good for them), but in terms of what it enables users to do (complete their coursework/assignments successfully). The assessment of information literacy student learning outcomes has allowed librarians to demonstrate how their instruction contributes to student learning and success, and this outcomes-based assessment is now increasingly being used in conjunction with other measures to assess the value and impact of library services and resources (including instruction).

## Value and impact studies, 2010-present

Much of the value and impact work that has taken place since the publication of Megan Oakleaf's *Value of Academic Libraries Report* in 2010 demonstrates a convergence of the trends in performance measurement and assessment outlined above: the efforts to develop a common language and set of meaningful metrics that can be used across institutions but which are still useful in widely varying local situations; the use of output measures in conjunction with qualitative and quantitative methods; the focus on users and attempts to understand how an individual or group is changed as a result of their interaction with the library; and the importance of collaborative assessment and the wider institutional context for the work of the library. The focus on demonstrating library value has helped develop a convergence of the user-centred assessment approaches with a more externally focused set of performance measures during the past five to ten years. Some examples include LibQUAL®, performance metrics linked to strategic planning, and mining of large data sets that compare library usage with user performance.

A number of value and impact projects take some of the output measures discussed previously – such as library usage data – and connect them with student data provided by the institution in order to explore correlations between library use and student attainment. In this approach, output data becomes meaningful when put in conversation with other quantitative and qualitative assessment information, as well as institution-level data. The 'Library Cube' project at Wollongong University in Australia, for example, uses a 'tailored database and reporting function that joins library usage data with student data, including demographic and academic performance information' (Cox and Jantti, 2012). The UK Jisc-funded Library Impact Data Project 'aims to prove a statistically significant correlation between library usage and student attainment' (Jisc). In doing so, the impact of library services and resources can be demonstrated, but the information can also be used for improvements: 'By identifying subject areas or courses which exhibit low usage of library resources, service improvements can be targeted. Those subject areas or courses which exhibit high usage of library resources can be used as models of good practice' (Jisc).

A number of key themes emerge from the variety of value and impact projects currently underway. The first involves collaborating with institutional researchers to access (and contribute library data to) institutional data and systems. In particular, there is an interest in collecting and accessing individual student-level data. As Joseph Matthews notes, this interest has resulted in a growing need for data systems that help to support the use of individualised student data and the ability to make linkages across library and other institutional data sources (Matthews, 2012, 394-395). While library systems capture a great deal of information about users, new tools (such as assessment management systems) are emerging that enable value and assessment work by helping libraries and their parent institutions manage, link, analyse, and report data in more integrated and robust ways.

The second theme is the alignment of the library's role with the core mission and values of the institution and allowing 'institutional missions to guide library assessment' (Oakleaf, 2010, 30). The University of Minnesota's *Library Data and Student Success* project exemplifies this theme. Conducted in partnership with the Libraries and the Office of Institutional Research, the project aims 'to show, using university metrics of success, what library use does for student success at the U of M' (University of Minnesota Libraries, my emphasis).

The final key theme is the importance of communicating library value to stakeholders. Value and impact work requires that libraries not only have 'evidence available that can show the contribution that libraries make', but also must be able to think about 'how that evidence can be presented and used' (Payne, 2006, 1). This involves an acknowledgement that libraries may need to craft customised messages depending on our audiences and purposes, and a consideration of the best ways to present evidence. With new tools available for data visualisation and the creation of infographics, libraries now have options to represent information in visual ways that may be more resonant with different stakeholder groups.

## Conclusion: 2013 and beyond

This paper has highlighted key moments in the history of assessment and performance measurement in U.S. higher education, and made a case for the convergence of important strands of assessment and performance measurement approaches in recent work to measure library impact and value. Looking back on this history and reflecting on current value and impact studies raises a number of questions to consider as we move forward with our work in library assessment and measurement. Four questions in particular can help to focus our work and continue to develop 'metrics that matter':

- What do we need to know about our communities and customers to make them successful?
- Who are our partners in collaborative assessment?

- How do we measure the effectiveness of our services, programmes, and resources?
- What do our stakeholders need to know in order to provide the resources needed for a successful library?

Libraries must engage in a continuous process of assessment in order to understand more fully how our users research, teach, learn, and work, and how the library can help them to do all these activities better. In addition, thinking about our collaborative partners, institutional stakeholders, and the effective measurement of services, we should be carefully reviewing the kinds of data we already collect, and the kinds of data we should be collecting in light of our institutional contexts. This involves an ongoing process of asking ourselves if there are other measures that might be more important or useful in helping us understand the impact of library services and resources on library users.

The incorporation of performance metrics from other areas, such as contingent valuation, has provided a varied set of measures to draw upon for specific assessments. There is increased use of performance metrics in North America associated with institutional assessment, the Balanced Scorecard, and other strategic planning tools that focus on user outcomes. Work in progress in the UK (Huddersfield), North America (Lib-Value and Value of Academic Libraries projects), Australia (the Wollongong Cube), and internationally (ISO 16439 – Methods and procedures for assessing the impact of libraries) demonstrate this growing convergence.

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# Creating a culture of assessment at the Illinois Institute of Technology Library

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Assessment practices in libraries are increasingly common and the importance of such practices is increasingly being recognized. This paper provides an informal look at the process of developing a strong culture of assessment at a mid-size, private university library in the United States, the Illinois Institute of Technology in Chicago.

The Illinois Institute of Technology, located in the urban center of Chicago, USA, is a technology focused, PhD granting research university. It has competitive programs in engineering, architecture, the sciences, humanities, psychology, business, law and design. There is a strong architectural culture, with most buildings designed by noted architect Mies van der Rohe. The university enrolls 7,800 students at all levels and has a very high retention rate. The new strategic plan has a bold goal to increase undergraduate enrollment by 5,000 in five years.

The university has one main library, the Paul V. Galvin Library. Students use the physical library very heavily and the entire building is open 24/5 during the autumn and spring terms. There is also a heavily used, vibrant virtual branch. Undergraduate and graduate students use both the physical and virtual libraries. Faculty tends to work through the virtual branch. The students are very vocal about their requirements for the library and are active participants in library surveys and focus groups.

Galvin Library, as with many libraries worldwide, struggled heavily with serious budget challenges. A very slow recovery is in progress. In 2012 a new library dean, the first from the “outside” in over twenty years, was hired. She made assessment a top priority and began working with the strong, change-oriented staff to evaluate existing assessment activities and to design a future strategy.

The library was no stranger to assessment, both as a concept and an action. The former dean saw the value of assessment, including LibQual+, but for budgetary reasons focused the analysis of results on collections. Other efforts were not organized and were very situational and reactive rather than proactive. They were managed by individual departments and not cohesive or ongoing. In practice, assessment was not seen by most staff to add value but rather serve as an activity to please a requesting body such as the President’s Office or an accrediting body. Assessment was also viewed as providing numbers but not analysis.

The arrival of the new Dean provided an opportunity to focus on assessment as a holistic, ongoing activity involving the entire library. The Management Team weighed creating a specific position for assessment against adding the responsibility to an existing job. Because the staff was not large, the team also explored related duties and needs that could compliment the assessment responsibilities. While support for undergraduate students was a major focus in the library, it was weaker in the support for graduate students and faculty. Thus, duties focused on scholarly communication were needed. It was determined that no existing position could logically assume assessment and scholarly communication without diminishing existing duties. A new Head of Assessment and Scholarly Communication position was created and a job description was developed. Reviewing job descriptions from other universities and looking at the specific needs of Galvin Library accomplished this. The basic job description for the role was:

- Develop, facilitate and implement successful and sustainable assessment programs in order to enhance existing services, collections and space.
- Identify the need for new services, collections and space, both physical and virtual.
- Coordinate planning activities based on assessment.
- Initiate and lead the libraries’ partnerships with researchers, students and scholars in the creation of a scholarly communication program.

Using these job elements, a national search was undertaken in late 2012.



The candidate pool was disappointing. While there were many good candidates, none met the qualifications for the position. Many were already working at too high a level for this role or conversely were in entry-level positions. Some were new graduates from library science programs. There was an apparent lack of understanding of the position, which was a surprise to the search committee and the Management Team.

After taking stock of the situation and conferring with the search committee, the Management Team determined that the ideal candidate was actually the chair of the search committee. He accepted the position and became a member of the Management Team.

This team immediately began to structure the first phase of an ongoing reorganization process with an eye on ongoing assessment. At the same time the Head of Assessment and Scholarly Communication coordinated the latest LibQual+ survey and began to sketch out a plan for the assessment program. This is when the first of two surprises occurred.

The Management Team and the Dean individually had discussed with the library staff the philosophy and elements of continuous assessment and the need to have a librarian whose duties were focused on taking charge of it. It was therefore unforeseen that there was a complete lack of understanding by most of the staff, and some librarians, about the role of the assessment librarian. Many thought that "assessment" meant the performance evaluation of individual employees and that an assessment librarian was there to critique their work. Because the staff and librarians were so open and honest about their concerns, productive conversations ensued that helped alleviate their fears and also helped structure this new position, making it stronger and more coherent. Things were progressing well when the second surprise hit: the Head of Assessment and Scholarly Communications resigned to accept a very good job offer at another institution.

Once the surprise passed, a plan to manage the situation was developed. The position description was re-evaluated with input from the outgoing Head. This involved discussions at staff meetings that were particularly focused on what assessment means on our campus, on giving examples of assessment activities, and providing a realistic discussion of the role of an assessment librarian. After this re-evaluation it was decided to add "Planning" to the title, since this was a critical component to the job. The position was reposted as Head of Assessment, Planning and Scholarly Communication. As of this writing, there is a pool of candidates with appropriate credentials. It is expected that the position will be filled by the end of 2013. When a new librarian is in place, an Assessment Team led by this librarian will be established to work with the library and the university to implement assessment initiatives.

In the meantime, the library is working on an annual report and the library's section of the university's strategic plan. Open dialogue with the staff is ongoing, and understanding of the concept of assessment is rising. The library is well on its way to developing a true culture of assessment.

# KPI: Keeping purposeful intelligence: a case study from Edge Hill University

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**Abstract**

This paper presents a case study from Edge Hill University and will outline how Learning Services has developed a set of key performance indicators (KPIs) to underpin our commitment to continually improving services, facilities and resources for all our customers. The case study travels from its starting point in 2008 with a project which aimed to rationalise and prioritise data collected, and moves forward to the development of a set of key performance indicators (KPIs). The goal is to effectively utilise the vast amount of data (both quantitative and qualitative) that is gathered to inform decision making and service planning at all levels across the Service.

**Background and context**

Learning Services is the largest academic support department at Edge Hill University with approximately 130 staff based across 4 sites as well as a number of outreach centres. It comprises library services, student support, including specialist services for students with learning disabilities, responsibility for classroom and media technologies, a virtual learning environment and associated learning technologies.

In 2008, a working group was formed to establish what data were collected by each division with the Service; the background and rationale for their collection; their use by the Service and their role in helping to inform decision-making. This initiative was progressed within the context of a Service whose culture was firmly grounded in the principles of high quality customer service. The Service had been successful in achieving the UK government's Customer Service Excellence award (previously known as Chartermark) since 2005 and as an integral part of that process had been collecting data to ensure that the service standards required were met and ideally exceeded (Edge Hill University, 2013).

This project started a journey, with the goal of constructing a framework and associated practices to give us an evidence base to help inform decision-making. The journey was not without its challenges.

**Project MIDAS**

To give an identity to this area the project group's focus on Management Information and Data Solutions became known by its acronym (MIDAS). Formed in 2008, the work of this group has helped drive this area of work, maintained its profile and raised awareness across staff working within and beyond the Service of the importance of keeping 'useful' data.

At the outset of the project, it was evident that statistics were kept in a variety of formats and locations with limited centralised knowledge or strategic direction. Senior staff within the Service identified a need to collect and analyse impact data from a wide range of sources and the existing ad hoc approach was no longer able to satisfy current and future requirements. There was demand for data to assist with marketing, to support funding applications, proposals for new developments, and business cases. It was widely acknowledged that the current processes lacked an overall strategic approach and what was collected owed much to a historical legacy of ‘counting’ as opposed to a critical review of what was required. It was also apparent that in addition to quantitative data, there was an increasing need to collect and utilise qualitative data, an area which had received little attention, not least due to the challenges associated with its collection and usefulness. Project MIDAS started to engage with the issues arising from the growing complexity of available information and the increasing need to have access to up to date, accurate management data. Almost inevitably, this led to a comprehensive review of current practice and future needs.

The review undertook a specific number of objectives, which were refined as the process developed:

- To define and create a shared understanding of what ‘management information data’ is within the context of the HE sector.
- To audit current practice for the collection of management information, both qualitative and quantitative, within Learning Services.
- To review stakeholders and their needs internally, both within the Service and University wide, and externally.
- To investigate good practice in the collection of management information and data, including freedom of information/data protection issues.
- To review systems and software available to assist in the collection of management information and data.
- To make recommendations and solutions for the future including the raising of staff awareness of the value and importance of information/data.

The approach adopted included a process review of the current collection of management information and data within Learning Services. As necessary, our practices were benchmarked against other HE providers to ensure that our approach was broadly in alignment. The review revealed a variety of inconsistent practices. One example illustrates the inconsistency associated with the collection of data. In some instances this formed part of an individual’s role and was detailed in a list of responsibilities. In other instances, it was regarded as a function for a team and data was collected by a broad range of staff. When the project team enquired why certain statistical/data information continued to be counted and retained, the reasons given were very varied – from historical reasons such as ‘not sure why we do this but we have never been told not to collect this data’ to justifiable reasons such as for SCONUL statistics or to assist with management of a budget.

Following the project report and recommendations and subsequent alterations to the practices of data collection, it was considered crucial that all staff within Learning Services, whether data collectors or users, should have a raised awareness of the value of management information. One of the ways in which this was achieved was the production of a statistical road map (fig 1). The roadmap also outlines where the responsibilities lie for the collection of the data, how it is collected and the frequency with which the measures are reviewed.

## Key performance indicators (KPIs)

Following this detailed review of management information and data across the Service, we were keen to explore if we could develop a set of key performance indicators (KPIs) and measures to assist us with our strategic planning and as a check to ensure that we were delivering a high quality service to our customers and aid the identification of tangible examples of where and how we are adding value to the University.

Our entry point to achieving this was low – it was generally acknowledged that we had little prior experience and were in effect novices. This is reflected in the key questions and areas of investigation:

- How do we define a KPI?
- How do we know that the data we gather is accurate and meaningful?
- Which data sets are in fact true performance measures?

- How can we gather meaningful qualitative information?
- What are our approaches to the dissemination of information to key stakeholders?
- How frequent and when should data be captured to ensure its value?

A review of the literature and benchmarking with other HE institutions provided some useful background information and examples of good practice from other services. A significant proportion of the literature focussed on the links between performance and financial measures which although of use was also highly selective. One interesting finding which emerged was the variety of interpretation, level of detail and range of KPIs which services select for public consumption. Although it is common for services to provide an annual report and balance sheet or a set of service standards, these were understandably limited in their broader use, however work at the University of Glasgow (SCONUL, 2009) provided a useful basis from which to build and develop our own set of KPIs.

However, as the project progressed it became apparent that the diverse nature of Learning Services was a key factor and we would require a more bespoke approach to the identification of KPIs and measures than originally thought. Parmenter (2012:xiii) argues that

*‘Performance measures should help your organisation align daily activities to strategic objectives’*

One fundamental mantra that we kept returning to was that the measures identified have to be aligned to what are identified as the Services’ success factors. In turn, the strategic objectives, KPIs and the measures should also be based around the core values which underpin the local culture, its ethos and quality measures. If this is accepted as a basis for the identification of KPIs it is important to ask everyone at the outset if they are aware of what those values are.

## KPIs – our approach

The development of the KPIs and measures was an experiential project, which was driven by a small working group led by the authors. The group reported back frequently to the wider senior management team as it reviewed literature and benchmarking activities. The majority of KPIs identified are used to evaluate success but choosing the right KPI relies on managers knowing what is really important and deemed to be of value. When we reached a point where we felt confident that we had made considerable progress on streamlining the identification and collection of quantitative data, we turned our attention to the more challenging aspect of defining measures for the less tangible activities of the service.

Reflecting on the University’s mission and the local Learning Services’ values, customers from each of our segment groups were consulted on what they regarded as being the essential activities which inform the KPIs. What emerged from this process are 5 KPIs, each addressing an aspect of the Service which underpins our performance. The content and approach is perhaps less definitive than might be expected and the statements may seem under ambitious, but their success or otherwise is determined by the robustness of the metrics which sit underneath.

The 5 KPIs identified are:

- Learning Services is the go to place for study, support (physical and virtual) and resources
- Learning Edge is a core teaching and learning system
- Learning Services provides value for money
- Staff are proud of the service and willing to go the extra mile
- Learning Services staff are engaged in academic liaison.

What underpins these KPIs are sets of metrics and measures, both quantitative and qualitative that are generated from activity across the Service. We have used the Balanced Score Card as an organiser to assist with strategic planning and our KPIs and metrics are compatible with the approach taken by the Score Card. On a practical note, an important part of the KPI project has focused on the development of a knowledge base and guidance notes in order to ensure everyone is clear on who is responsible for providing the data, the integrity of its origins and importantly, how the data is calculated.

In terms of dissemination, our approach has been iterative with KPIs featuring on the agenda at all team meetings resulting in staff across the service being encouraged to discuss and challenge the approach and identification of KPIs.

## Keeping Powerful Information – KPIs

*A road map for embedding statistics into our practice.*

Edge Hill University

- **KPIs** A set of 5 KPIs have been developed for the service based on our value statements around customer service. The 5 KPIs use a number of metrics from across the service, some available and gathered monthly as part of MIDAS, some we produce annually for SCONUL and new measures around engagement of staff. The KPI spread sheet is updated annually after the full cycle of an academic year.

Management of the KPI spread sheet	How often are the KPIs updated?	Role of divisional managers	Analysis and review
KPI Planning Team	Annually	Awareness of what data is captured for the KPIs	Strategy group to review in September
	Spread sheet is available as read only on the shared drive	Present to staff in the Autumn of each year. Use as a tool 'this is how we are doing'	Strategy group to agree any changes and manage how we gather key elements
			Used for spring planning

- **MIDAS SPREAD SHEET** MIDAS is a set of key Learning Services statistics gathered monthly. These are the service headlines and a quick glance barometer around our activity both across the service and at a divisional level. The spread sheet is able to provide a comparison with the previous year as a percentage increase or decrease.

Management of MIDAS spread sheet	How often is MIDAS updated?	Role of divisional managers and managers	Analysis and review
KPI Planning Team	Monthly by Learning Spaces Co-ordinator	Ensure stats are forwarded to Learning Spaces Co-ordinator	Divisional managers to review their data monthly
	Spread sheet is available as read only on the shared drive	Ensure you are capturing key data	Strategy Group to review every quarter
		Annually review what you wish to have as headlines	
		Ensure statistics are accurate	

- **TEAM STATISTICS** These are usually a larger set of statistics which are gathered and managed within teams. These may be located locally within team or divisional folders on the shared Drive. A set (or in some cases all) of these statistics form what are forwarded monthly to the MIDAS spread sheet.

Management of team statistics	How often are team statistics updated?	Role of team managers	Analysis and review
Team members	Monthly	Ensure you are capturing key data	Managers to review monthly
	Stored and managed on the shared drive	Annually review what you wish to measure including any national benchmarks – eg SCOMS	Selected statistics and dashboards to be used to inform annual planning during team meetings and team annual monitoring and reviews
		Ensure statistics are accurate	

- **DASHBOARDS** These are produced using Excel with sets of data we already hold. Dashboards can provide a very visual representation of a group of statistics. We will be producing dashboards for a number of divisional statistics. These could be used in team meetings; newsletters; blog posts; web pages and intranet wiki pages.

Management of dashboards	How often are the dashboards updated?	Role of team managers	Analysis and review
Learning Spaces Co-ordinator for MIDAS	Monthly or bi-monthly	Ensure team members are aware of the dashboards and how we use statistics	Managers to review monthly
Staff within teams for team information	Spread sheet and dashboards available on the shared drive	Managers to use in the annual monitoring and review meetings and setting objectives Aug/Sep	Team or divisional meetings to include dashboards
			Strategy group to review every quarter as part of MIDAS and forward ideas if they are to be used as part of a communication strategy

- **SERVICE STANDARDS** Our standards set out the current level of service students and staff can expect in key areas of Learning Services activities. These standards monitor quality, timeliness and access to facilities and services.

Management of service standards	How often are the service standards updated?	Role of managers	Analysis and review
Customer Services Division & Senior Management Team	Annually with results published on the Learning Services web pages	To ensure the standards are being monitored throughout the academic year	Annually with input from key stakeholders including students

- **SCONUL ANNUAL STATISTICS** As a HE library service we provide SCONUL (Society of College, National and University Libraries) with annual statistics. They are commonly used as a benchmarking tool. Our SCONUL return gathers information under a number of areas but key are budgets (staffing and resources), provision and use of resources, study space, and learner support. There are no requirements to provide data for SpLD, LTD, Media and ICT classroom support.

Management SCONUL statistics	How often do we provide the SCONUL return?	Role of divisional managers	Analysis and review
Senior Management Team & Learning Spaces Co-ordinator	Annually. Full return completed by March of each year. Strategic data set (10 top level stats) submitted and made available December	Managers involved in library provision are responsible for key parts of the return (eg Information Resources Division – usage stats)	Used as benchmarking data for budgets and planning. Strategic Data Set used for benchmarking.
	Full set of SCONUL published data is available in print from the Information Resources office.	KPI Team to ensure the right data maps to the KPIs	

- How we gather statistics and use these (both MIDAS and KPIs) to be covered as part of a new member of staffs induction.

Figure 1: road map

As a result we have been able to establish and achieve a high level of buy-in from staff. As a Service, it is important that all staff reflect and live our values; it is equally important that staff are engaged and understand performance measurement. We have been working with staff to develop skills to design and use dashboards; to bring them to attention of all key stakeholder groups formally at programme boards and other meetings, and informally through conversation.

Recent developments include:

- embedding KPIs into service planning and marketing with staff
- using KPIs and dashboards as a key driver for a change in culture
- developing a road map for embedding statistics (fig 1).

We have also focussed attention on the selection of communication tools to market our performance in engaging formats. As we have raised the profile of the data and measures we have also looked at developing a dashboard of the high level MIDAS data which we can use to identify trends based on historical and current activity. At a team level we have introduced dashboards to review local data and monitor performance which also includes producing infographics (Edge Hill University, 2013).

## Conclusion

This case study is our approach to reviewing the management information and data that exists in a complex library and information service and subsequently developing a set of KPIs to monitor and measure our performance and impact and to inform decision making and service planning at all levels.

Our approach has been a mix of strategic planning and serendipity and has developed over a number of years; we began with a focus on the quality of customer interaction which outlines what customers can expect in key areas of our activity, we have audited and streamlined existing information and data (under the umbrella of project MIDAS) and the work has now culminated in the production of 5 service-wide KPIs with associated measures which form the basis for a set of goals which the Service aims to achieve and progress from.

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# Dealing with the noise problem: Libraries improving their scores on 'Quiet space for individual work'

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## Introduction

This presentation/paper describes interventions made by libraries whose LibQual scores on "quiet space for individual work" have improved.

## Background to this study

LibQUAL+® is a tool used by libraries to assess user perception of service quality. Among other things, LibQUAL+® aims to provide libraries with comparable assessment information from peer institutions and identify best practices in library service.

The University of Limerick ran LIBQUAL+® in 2007, 2009 and 2012, and will run it again in 2014. We score well in many areas of the survey but when we first ran LibQUAL+® at the University of Limerick in 2007, the quiet space question was our lowest scoring of all the questions (we interpreted "lowest" as the question with the greatest adequacy gap, ie the highest negative score in red). The comments recorded in that year about noise in our building backed up the LibQUAL+® data:

*Please put "Please be quiet signs" around the library. The library is way too noisy! Thanks!  
I basically use the library to study, so when other people are talking or making noise it is very distracting. Maybe there should be someone walking around once in a while to make sure everyone is staying quiet*

We always suspected we had a noise problem but our LibQUAL+® result was strong qualitative and quantitative evidence that we couldn't ignore. We had previously blamed the architecture of the building for the noise problem ie open staircase, busy desks on every floor, 2 airy bright atria, and marble floor. Following the poor score on this question in LibQUAL+® 2007 we acknowledged that we could not continue to blame the building and we would tackle the issues behind the noise.

We embarked on a noise management programme that has spanned 5 years and consisted of numerous small and large scale interventions to continuously improve customer satisfaction with noise. Each time we run LibQUAL we see what we consider to be major improvements in the scores related to the quiet space question, and to the LP overall scores. We are closing the gap (ie the adequacy gap). In 2007 our adequacy gap was **-1.15** and in 2012 it was **-0.39**.

Frustratingly we are still in the red.

## Research question

Our experience with LibQUAL and our extensive experience with noise management prompted us to explore the quiet space/noise issue in greater detail. Were we the only ones who had such levels of dissatisfaction among customers? What did other libraries do (that worked) to manage noise levels.

In Ireland, the seven university libraries have all run LIBQUAL+®, some more than once. For 6 out of 7 of these, the quiet space question is the lowest scoring of the core questions. In the UK, the SCONUL consortium results every year for the last decade indicate that this is a problem for the majority. The quiet space question is the lowest scoring question in SCONUL libraries every year for the past 5 years. In the States, LIBQUAL+® scores are higher in all areas, but the quiet space question (which has slightly different wording) is still at the lower end, scoring 4th, 5th, and 6th lowest of the core questions.

This study set out to identify libraries that had significantly improved their LIBQUAL+® scores specifically on the quiet space question and to find out what they did that resulted in such an improvement. Primary questions:

- What did these libraries do to improve their scores on quiet space?
- Are there some interventions that are common across to libraries identified?
- What can libraries do to improve their LIBQUAL+® scores on the quiet space question?
- Which interventions are more or less likely to be effective?
- Is this an effective way to use LIBQUAL+® data – can it be used to point to an evidence-base that participants can use?

## Literature review

When looking for ways to tackle and manage problems, librarians will often consult the literature to find out what is already written about the problem. Given that noise is such a common problem for libraries, there is surprisingly little written on the issue of noise and virtually nothing that takes an evidence-based approach to dealing with the problem. Relevant literature tends to focus on library architecture (Young & Finlay, 2006) and design (Gayton, 2008) or case studies on specific interventions like zoning (Heaton & Master, 2007). In terms of LIBQUAL+® literature, there doesn't appear to be any other published research which takes a similar approach to the LIBQUAL+® data as this study.

## Research methodology

This study is based on a key assumption – that libraries who significantly improve their LIBQUAL+® scores over two iterations of LIBQUAL+® have done something in the period that led to the improvement. We are assuming that a participant that did nothing to address noise will not significantly improve their LIBQUAL+® scores.

Our colleagues at the ARL (American Research Libraries) extracted LIBQUAL+® data for us to use in this study. We asked them to identify all libraries that ran LIBQUAL+® in 2011 and who had run it previously at least once. This resulted in 115 institutions. The quiet space adequacy gap score of a library that ran LIBQUAL+® in 2011 was then compared with the same score the last time they ran LIBQUAL+®. The list was sorted to identify which of the 115 improved the most on the quiet space question, ie which had an adequacy gap that reduced the most in the period between two LIBQUAL+®s. We then contacted the top 25 institutions, who we identified as “significant improvers” and we received responses from 13. We added the University of Limerick to our study – although we didn't run LIBQUAL+® in 2011, we had a significant reduction in our adequacy gap from 2007 to 2012 that was comparable to the 13 institutions and so we knew we were a “significant improver” on the quiet space question.

It is worth pointing out that we didn't use the LIBQUAL+® data to identify the top scoring libraries on the quiet space question, ie those that had the highest perceived scores or superiority gaps. We didn't want to know which libraries *do best* on this question, because we didn't think the reasons why they do best would be particularly useful to other libraries. We wanted to know which libraries *improved most* on this question.

This study therefore includes 14 libraries and while the method used to identify these participants was quantitative, the study itself is very much based on qualitative exploration of the experiences of these participants. Through email interaction and some interviews, we investigated what these libraries had done to address noise levels. We developed a list of interventions and from this we identified a set of common interventions, albeit from a small set of libraries.

## Institutions included

The libraries included in the study were very varied. Four were European and eight were American. Of the Europeans, there was 1 French, 1 Irish and 3 from the UK. The libraries ranged in size from 1,000 to 50,000+ students. The libraries we spoke to were big and small, had operating expenditure of \$500,000 to that of \$12 million – this encouraged us because it meant that no matter how small your budget is, you can still make improvements.

## Limitations of the study

There are a number of limitations to this study. It is an exploratory investigation into whether there are common interventions that libraries can make to deal with their noise problem, and also to whether it is reasonable to use LIBQUAL+® data in this way. Other limitations include:

- From the wide variety of institution size, budget, location, population, age, etc. it is clear that we are not comparing like with like. The only thing they had in common was the significant improvement in their quiet space LIBQUAL+® scores.
- The list of 115 institutions originally identified is not a comprehensive list of all libraries that have significantly improved in this area. It excludes libraries that didn't run LIBQUAL+® in 2011. However, we are hoping to take the same approach with libraries that ran LIBQUAL+® in a future study, if ARL/LIBQUAL+® can once more provide us with the data.
- Our approach also excludes libraries that may have improved incrementally over many LIBQUAL+® iterations ie those that may have run LIBQUAL+® every year including 2011 but which couldn't measure a dramatic improvement between their 2011 scores and their previous LIBQUAL+® scores.
- The parameters in identifying *most improved*
- We didn't look at issues around relativity – we know that LIBQUAL+® scores for questions and dimensions can be relative, so that if you improve in one area, you tend to improve in other areas. We did feel that the quiet space question is very specific, more so than the other LP questions such as a haven or a comfortable environment, therefore it is more likely that the score would not improve unless something quite specific had been put in place.

## Findings

When we began this study we expected that those libraries that had improved the most were very likely to be because they had built a new library in the period between their two LIBQUAL+®s, or that their building had been a construction site the last time they did LIBQUAL+®. We found that of the institutions included in this study, 7 out of the 14 institutions had opened a new building or done a significant refurbishment but 7 had not. We treated both groups in the same way, identifying which specific improvements they made regardless of whether it was in the context of a new building.

Following our research, we developed an initial list of 26 interventions which we grouped together into a final list of 13 interventions. In the period between two LIBQUAL+®s, eleven of the 13 institutions in our study had zoned their spaces by designating silent areas and group areas and eleven had created or updated their policies on noise, phones, zones, etc. Close to half increased their noise-specific signage, prioritised noise management with their staff and ran campaigns in their institutions to raise awareness among users about noise levels. Five out of 13 had rearranged their zones, furniture, service points, etc. to make the best use of naturally quiet or noisy areas. In UL's case, for example, we move all our service desks off the upper floors and centralised them in one area close to the main entrance, which was busy and noisy anyway. Less common interventions in our group included issuing staff badges to facilitate patrolling, hiring dedicated noise patrollers, introducing study carrels or creating dedicated space for graduates. Only two of the 13 introduced penalty systems to punish noise offenders, through fines or loss of library privileges.

INTERVENTIONS TO IMPROVE QUIET IN YOUR LIBRARY	
Have designated silent AND group areas	11
Policies on noise, zones, rules, phones (create/update/publish)	11
Increase noise-specific signage	7
Highlight importance of quiet to library staff and/or issue guidelines and/or providing training	7
Structural / fixtures alterations eg glassing off, installing doors, carpeting, acoustics, access control, etc.	6
Run noise campaigns to raise awareness	6
Rearrange zones, furniture, collections, service points to make best use of naturally quiet/noisy areas	5
Staff badges that facilitate patrolling, shushing	4
Have noise patrollers (staff or student) (3 out of 4 use student patroller)	4
Study carrels/study rooms for individual use	4
Noise texting/emailing service	3
Create a postgraduate reading room	3
Penalise noise offenders, ie mobile phone fines, loss of library privileges	2

## Discussion

The following observations can be made from the findings:

- This list provides suggestions for approaches that libraries could consider when faced with what to do about noise levels, there may be other interventions which are effective but are not included here.
- Having clearly designated quiet space, group space and zoned areas, together with having clear policies on what users can do and where they can do it appear to be the most common interventions in this study.
- It is worth noting that the top 5 most common interventions in this list can be done at little or no cost.
- When the libraries that had new builds and refurbishments were excluded, it is also worth noting that the top 5 interventions remain the same. This should provide some reassurance to those libraries who feel the only way to improve on this issue is to build a new library.
- A further finding of interest relates to the lowest scoring intervention: where only 2 adopted a penal system – an intervention which is often suggested by users, students' union and some librarians as the only way to deal with noise.
- Noise texting/email is second least common, but is used by 3 of the institutions with the largest populations – this may be because this intervention requires a staff resource that the larger institutions can provide.
- In our discussions with these institutions, some feel they still have a noise problem and one or two were surprised that they were identified as high performing.
- So even though improvements can be made and user perceptions can be improved, it may be the case that the quiet space question is still the lowest scoring for some and may be a continuous problem that is never truly solvable for most of us.

## Recommendations

Recommendation for future research on LIBQUAL+® improvement scores would be to widen the study to be more representative. We also feel it would be beneficial to survey the lowest scoring 20 libraries to establish what if any interventions they introduced. This would give us some data about whether 'doing nothing' is an option.

In many ways, this study has led to more questions than answers. It is important to remember that these libraries significantly improved their quiet space scores; therefore they must have had success with whatever interventions they took. However, is it true to say that these interventions are successful or just popular? It is possible that, for example, a noise texting service could be hugely successful, however it isn't common and therefore, its effectiveness won't be demonstrated in this type of study.

### Other questions that this study raised:

1. Does the different wording of the question in US & UK matter? Is the wording of the question ambiguous (quiet space for individual study...how realistic is this...are people interpreting this as own carrels/rooms/offices)
2. Do the libraries in higher ranked universities suffer more or less with noise problems?
3. Is there a relationship between the frequency of the survey or time between surveys and the improvements achieved?
4. Is the ratio of staff to students a feature in libraries that have poor noise scores?
5. Is the ratio of undergrads to postgrads a factor?
6. If you target improvements at postgrads, how much would your overall score improve?
7. Which of the five LP questions improves your overall LP the most?
8. Is this an effective way to use LIBQUAL+® data – can it be used to point to an evidence-base that participants can use? This was one of the research questions we posed at the beginning of this study and we still don't have an answer.
9. Do these interventions actually improve quiet and reduce noise or do they just decrease dissatisfaction merely because you are demonstrating that you care.

## Acknowledgements

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# Assessing the impact of using volunteers in UK libraries: issues and methods

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## Introduction

Examined in this paper are a range of issues and methods in relation to measuring the impact of volunteer labour on the design and delivery of all types of library services. With the increasing use of volunteers to deliver library and information services in all sectors, managers need to assess their effectiveness and evaluate the impact of their use in relation to operational service design and delivery, and on the development of the profession and professional practice as a whole.

Presented here is an initial scoping study, outlining a range of issues, methods and challenges for more detailed future investigation. Where applicable, comparison is made with current practices in nations such as the USA, and with social enterprise organisations, many of which rely wholly or in large part on volunteer labour to deliver services.

Definitions of the term ‘volunteering’ are identified and examined, including a review of concepts, terminology and relationships. Appropriate reference is made to policy statements and/or guidelines issued by bodies such as professional associations, including those issued by the Chartered Institute of Library and Information Professionals (CILIP) (CILIP, 2012a; 2012b).

Attempts to measure benefit and determine impact need to include a consideration of issues in relation to these from the perspective of (1) the individual (volunteer and professional), (2) the wider stakeholder community, and (3) the organisation; these are addressed below. Finally, the contemporary emphasis on client –focused and client driven perspectives of quality and value are reflected in a range of methodologies which require active participation by and partnership with customers as co-creators of service value and quality, and in so doing, help determine the future direction and shape of service provision. Thus assessing and evaluating how clients may engage actively in services to become co-creators of value and partners in service design and delivery is also explored.

## Context and background

Contemporary interest in the use, employment, and therefore impact, of volunteers on library service design and delivery, arises from the interrelationship of a number of factors, including the obvious driver, that of the global economic recession (see for example, Broady-Preston, 2012). Attempts to evaluate the impact of volunteer usage on and by library services should be viewed within the wider context of contemporary interest and concerns with measuring the impact and value of library services per se. More generally, efforts to date have focussed largely on deriving a suite of reliable methods to demonstrate economic outcomes or significance of library service activity, primarily to ensure continuity of funding or even continued existence. Examples include the 2011 *Economic Impact Toolkit*, commissioned by the Archives, Libraries and Museums Alliance UK (ALMA-UK) and the 2014 *Evidence Review* commissioned by Arts Council England. Neither of these key reports addresses societal impact or benefit specifically, nor attempts to measure the impact of volunteers (ERS, 2011; BOP Consulting, 2014). The June 2014 *Evidence Review* is concerned solely with establishing “the vital financial role that libraries play”, translating social benefit into economic or financial terms (BOP Consulting, 2014, 1). Similarly, despite its title, the 2014 Spanish FESABID Study employs methods which demonstrate economic impact and value, rather than measuring social outcomes or benefits in terms other than the economic (FESABID Study, 2014).

## Volunteering: definitions, terminology and relationships

Studies of volunteering traditionally focus on individual motivation<sup>1</sup>. Volunteering is normally defined simply as being work for which no monetary reward is obtained by the individual (see for example, Lynch and Smith, 2008, 81;

<sup>1</sup> For an excellent summary of research in this field, see Waikayi et al (2012).



Waikayi et al, 2012, 351). Implicit in these simple definitions is an element of 'sacrifice' or 'altruism' as a key motivator (Briggs, Peterson and Gregory, 2010; Wilson, 2000), although increasingly, more complex behavioural motivators are the subject of research, including self-satisfaction and the need for external recognition (see for example, Barnes and Sharp, 2009).

In terms of demographics, Choudhury (2010) reports predictions of increased levels of volunteer activity from the retiring baby-boomer generation, echoing earlier findings by Merrill (2006) amongst others. Waikayi et al (2012) identify increasing pressures on organisations of all types to demonstrate corporate social responsibility (CSR) as a further driver toward and explanation of the growing usage of volunteers, despite the relative importance of volunteers receiving scant attention from management theorists (Lynch and Smith, 2008).

A distinction is generally made in the literature between the use of volunteers to deliver additional, added-value services, and the direct replacement of professional staff by unqualified and unpaid volunteer staff to deliver core or statutory services (Broady-Preston and Swain, 2012; Goulding, 2013). Such categorisations may be expressed more colloquially as 'assist' or 'replace', to which may be added a third strand – 'displace'. Displacement in this context denotes the distinction between the direct intervention implicit in 'replace' ie removing staff in post to replace with volunteers, and an indirect intervention achieved by replacing posts of paid employees by volunteer workers when posts become available through 'natural' means such as retirement and reemployment elsewhere.

Policy statements on the use of volunteers often avoid such distinctions by a stated policy of no 'job substitution' (see for example, CILIP, 2012a<sup>2</sup>). In addition to general statements of policy issued by professional associations, increasingly individual organisations are issuing statements and guidelines outlining roles, responsibilities and expectations respectively in relation to the organisation and the individual volunteer (see for example, University of Aberdeen Library, 2014a; 2014b; National Library of Wales, 2014). 'Virtual volunteering' identified earlier by Choudhury (2010, 592) is highlighted as an area for future development in the current National Library of Wales policy, in a section entitled 'distance volunteering' (National Library of Wales, 2014). Most library volunteer policies have no stated upper age limit, but there are usually caveats in relation to health, safety and insurance issues (see for example University of Aberdeen Library, 2014a; 2014b). Earlier studies examined barriers to volunteering amongst the older generation (Tang, Morrow-Howell and Hong, 2009; Warburton, Paynter and Petriwskyj, 2007); however, there is growing evidence of increasing emphasis being placed on attracting and recruiting volunteers from all generations (see for example, McDougle, Greenspan and Handy, 2011).

In the academic and national library sector, there is often a distinction between the public programmes – the 'visitor experience' – and 'behind the scenes activity' in relation to special collections, preservation and digitisation (Broady-Preston and Swain, 2012). Increasingly, specialised training is provided to support such activity; the Welsh Government sponsored "The People's Collection Wales", offers free, formalised training, leading to an accredited course on the Agored Cymru Qualification and Credit Framework [which] "could provide the skills and qualification required to access the workplace" (Agored Cymru, 2014). This latter development offers evidence of a growing trend – a 'blurring' of the hitherto rigid boundaries between the two groups, with examples of individuals moving from volunteer status initially, to that of salaried professional, acquiring formal qualifications en route (see for example University of Aberdeen, 2014b).

Explorations of volunteer motivation and value are linked increasingly to a political agenda; in the UK, to that of the Westminster Government's "Big Society" agenda (Cabinet Office, 2010; Goulding, 2013; Lavelle, 2010). The issue is an emotive one; and in the UK at least, linked to that of the related issue of the development of Community Libraries, with the retention of a public library service in a physical space staffed by volunteers (*Public Libraries News*, 2014). This campaigning agenda has a high media profile, with widespread use of celebratory endorsement in relation to the role and significance of libraries in contemporary society (see for example, Kennedy, 2014). In contrast, in the USA, campaigning activity has an arguably differing nuance, with the 2013 establishment of the Volunteer Library Brigade (VLB) in New York City as a project of Urban Librarians Unite (2014). The VLB project emphasises community outreach by teams of paid professional librarians working alongside unpaid (but trained) volunteers taking library service activity out to the "sidewalks, parks and subway stations" via "library carts" offering a range of services, including Wi-Fi and e-books (Urban Librarians Unite, 2014). Urban outreach is often contrasted with 'softer' rural volunteer images linked to a celebration of age and the health benefits to seniors (Dyson, 2013).

Finally, from an organisational perspective, there is growing awareness of the need for a more structured and formal approach to volunteer management, with such expertise being viewed increasingly as a key skill for senior leaders and chief executives, especially in the non-profit sector (see for example Choudhury, 2010; Rob Jackson Consulting, 2012; Wales Council for Voluntary Action (WCVO), 2014).

<sup>2</sup> Interestingly, the 2012 CILIP statement Use of Volunteers was earlier entitled Use of Volunteers in Public Libraries; due for review and possible renewal June 2014 (CILIP, 2012a; 2012b)

## Complexity: What are we measuring?

Determining not only what should be measured, but also why and how is fundamental to achieving an understanding of impact in any context. What criteria should be employed, and from whose perspective are derived judgments in relation to quality, worth and value, is clearly significant. *Complexity* is thus a key characteristic of attempts to determine impact in the library and information sector, both in relation to purpose, and equally, in relation to questions of individual judgement and perspective. More generically, contemporary organisations have a complex array of multiple stakeholders whose views must be taken into account and satisfied when considering impact, beyond those of management and customers (Balmer and Greyser, 2006; Buchanan and Huczynski, 2013). The centrality of the need to anticipate and satisfy stakeholders' perception of value and worth is widely recognised and reported (see for example, Arvidson and Kara, 2013; Balser and McClusky, 2005; Besara and Kinsley, 2011; Broady-Preston and Lobo, 2011; Metcalf, 2013).

Moreover, in organisations such as libraries, archives and museums, evaluating indirect impact on third parties such as Governments, that is "service recipients not customers" (Kong, 2010, 287-8), is often crucial to continued success or even existence. As outlined above, attempts to determine impact and value more generally in the library and heritage sector have focused largely on deriving an array of robust methods to demonstrate the economic outcomes or impact of services. "Benefit-cost studies are the most numerous" but equally, "very expensive and complex to undertake to a credible standard" (BOP Consulting, 2014, 2).

The need to take account of the complex array of multiple stakeholders, including anticipating and satisfying their perceptions of worth and value – the public policy dimension – creates difficulties in employing economic impact assessment in the context of the UK. This contrasts with the USA library experience and in relation to other UK sectors (BOP Consulting, 2014).

From the organisational perspective, evaluating impact effectively is further complicated when staff are also customers or clients of the service, thereby contributing directly to service delivery and perceptions of value (Arvidson and Kara, 2013). Volunteer recruitment and selection processes have traditionally been somewhat informal; with the result that further research is required to assess the impact of contemporary practices on the expectations and motivations of volunteers and the resulting implications of this for organisational performance and health (Lynch and Smith, 2008, 92).

Difficulties arise in measuring the benefit and impact of volunteering from the individual perspective, not least in attempting to employ benefit-cost analyses. Handy and Mook (2011) outline a range of models to explain individual benefit, whilst noting that this must remain essentially a conceptual task given the subjective nature of the valuation of benefit and costs in this context.

## Methods, models and frameworks: challenges

Several methodological challenges are identifiable in attempting to assess impact in this context and from the perspectives identified above. From the organisational perspective, being able to calculate accurately the costs of volunteer programs, including indirect and opportunity costs, is of obvious practical and political value. At a minimum, an accurate assessment of costs serves as a starting point for determining best value (Handy and Mook, 2011). The *Evidence Bank* provided by the Institute for Volunteering Research (2014a) outlines a range of methods for doing so, of which the Volunteer Investment and Value Audit (VIVA) is one of the most significant in this context (Gaskin, 2011). VIVA is a key component of the Volunteer Impact Assessment Toolkit (VIAT) (Institute for Volunteering Research, 2004) and is

a measurement tool that assesses the 'outputs' of volunteer programmes (the value of volunteers' time) in relation to the 'inputs' (the resources used to support the volunteers)... The end result is the VIVA ratio – for example a total value of £50,000 and expenditure of £10,000 yields a ratio of 5 (ie 'for every £1 we spend on volunteers, we get back £5 in the value of the work they do', a five-fold return on the organisation's investment in volunteering) (Institute for Volunteering Research, 2014b)

VIVA clearly demonstrates marked similarities to both Return on Investment (ROI) and Social Return on Investment (SROI) (Broady-Preston, 2012). SROI was used by the Welsh Government to evaluate the impact of its strategic development programme Libraries for Life (LfL) 2010/11, with a view to adopting its use more widely, but it was found to be of limited value. Despite allowing a demonstration of excellent value for money and significant benefit to Welsh citizens directly resulting from Government investment in library services, it nonetheless proved complex (and costly) to design and apply consistently, impeding data aggregation and comparison (Kennedy and Tyler, 2012).

Challenges arise when attempting to determine volunteer benefit from the individual perspective. As outlined by Handy and Mook, the “private” benefits model derived from economics assumes amongst other benefits the intangible “warm glow” resulting from the act of giving (2011, 412). They acknowledge the difficulties inherent in measuring this “warm glow”, but offer a delineation of how this may be actualised through positional advantage, in relation to determining intangible, subjective benefits. More tangibly, benefits for the volunteer include “professional and personal development, social and professional contacts, and résumé building” (Handy and Mook, 2011, 418).

The Heritage Lottery Fund (HLF) commissioned final report on the social impact of volunteering examines individual benefit in respect of volunteering within the wider heritage sector; more specifically, the experience of volunteers participating in HLF-funded projects (BOP Consulting, 2011). Employing a mixed methods approach and including an econometric analysis of volunteering and its relationship with mental health, they also identified career-oriented tangible benefits, concluding that

in the context of a prolonged recession, it seems that volunteering in HLF-funded projects is also becoming more important in supporting people in terms of their labour market opportunities (BOP Consulting, 2011, 4)

Individual benefit, especially in terms of career development and enhancement is not confined solely to the volunteer. There is also evidence of an improvement in the health, well-being and motivation of professionals when working alongside volunteers (Choudhury, 2010; Hager and Brudney, 2005).

Widening the scope and including an evaluation of methodologies which assess cultural and social impact and value in general, as opposed to volunteer impact, still offers challenges and difficulties. Intellectual Capital (IC) is arguably a useful multi-dimensional and synergistic framework within which to evaluate and assess the social impact and value of service activity (Kong, 2010). IC seemingly offers a simple conceptual framework within which to place our understanding and evaluation of models such as the Balanced Scorecard (BSC) in relation to measuring progress towards the fulfilment of complex social objectives and purpose, especially in relation to its underlying purpose of changing individual behaviour and values (Kong, 2010). This change in behaviour and values resonates with Town and Kyrrillidou’s “values scorecard” (2013) and the concept of ‘blended value’ prevalent in third sector organisations (Westall, 2009).

However, whilst models derived from the strategic performance measurement context may appear appropriate, nonetheless there are acknowledged difficulties in employing these to determine social impact. Whilst Zangouinezhad and Moshabaki (2011) advocate using a knowledge-based BSC to cope with complexity, Northcott and Taulapapa (2012) report a “disconnect” between the potential and actual usage of the BSC in public sector organisations globally.

Equally, a case may be made for the use of Relationship Management (RM) as a framework, given the centrality of stakeholder engagement and value and focus on measuring actual as opposed to predicted behaviour in relation to customer and stakeholder service encounters (see Arvidson and Kara, 2013; Broady-Preston and Lobo, 2011; Palmer, 2014). Aspects of the deliberative research methodology employed in the 2013 Museums Association commissioned report *Stakeholder perceptions of – and attitudes to – the purposes of museums in society* (Britain Thinks, 2013) may be relevant, especially those methods designed to elicit perceptions of value, worth and purpose, but again, this has limitations as an over-arching methodological framework. Nonetheless, in its reliance on involving the public in service decision making it may go some way towards determining impact and benefit when customers are actively engaged in co-creating and delivering services.

As indicated earlier, contemporary libraries exhibit increasing similarities with Third Sector organisations, namely a complex stakeholder community, and increasing use of volunteers to supplement or replace services delivered by professional staff (Broady-Preston, 2012). Therefore, methodologies developed by the ESRC funded Third Sector Research Centre (Metcalf, 2013), and those from the three published case studies in the ESRC contemporary Developing Impact Evaluation strand (ESRC, 2012) are of relevance in this context. From an international, comparative perspective, the *Manual on the Measurement of Volunteer Work* produced by the International Labour Office (ILO), Geneva is an invaluable source (ILO, 2011).

## Where are we now? Conclusions

The discussion above represents an initial attempt to scope the range of issues in relation to effecting a reliable and robust assessment of the impact of the use of volunteers to deliver aspects of library and information services, either wholly or in part. As outlined above, this is an issue of relevance to service provision and professional practice across the entire range of library and information services now and in the future.

The issue is more complex than may appear apparent from an initial or superficial assessment. Volunteers are employed in a wide range of contexts, undertaking diverse roles within the sector. Any rounded assessment of impact and benefit should therefore include an assessment of benefit from the perspective of both the individual library staff member in addition to that of the volunteer. Establishing reliable and rigorous means by which to evaluate the true impact and value of volunteer activity, encompassing all perspectives is thus an issue of contemporary importance and significance for libraries now and in the longer term. The complex nature of the sector, including the existence of multiple stakeholders, makes it difficult to identify a meaningful methodology to investigate the issues. Examining experiences and methods established in related sectors such as the social enterprise sector is clearly of relevance, as is drawing on experiences of other cultures and contexts. Finally, the impact and influence that expertise in volunteer management will have on the future development of professional skills and knowledge is an issue which also requires further examination and investigation.

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# Working together: Library value at the University of Nottingham

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## Introduction

In 2012, two projects concerning the value of libraries to teaching and research staff were conducted simultaneously. These were *Working together: evolving value for academic libraries* (Working together, 2011) led by LISU, Loughborough University, UK and *Raising Academic Impact* (University of Nottingham, UK). The projects were initially unconnected: SAGE had commissioned LISU to conduct the Working Together (WT) project, whilst at the University of Nottingham (UoN), academic librarians began to investigate academic staff perceptions of library services through *Raising Academic Impact* (RAI).

The Working Together project was an international study investigating good practice in academic libraries' relationships with teaching and research staff in their institutions. As part of the methodology, described in Creaser & Spezi (2012), a call for the recruitment of case studies was issued and the UoN volunteered, after recognising the similarities between the projects.

This paper presents key findings from the two studies in parallel. It is anticipated these discoveries will be of interest to the wider library community.

## Projects' drivers

A common driver for both projects was the publication of a report commissioned by RLUK (Auckland, 2012), which outlined the skills sets required by academic librarians to effectively support the current and future information needs of researchers. RAI was also influenced by a separate small scale study (Cooke et al., 2011) undertaken at Loughborough University which evaluated the impact of academic librarians on part of their user community.

In preparation for an anticipated shift in the role of the academic librarian, RAI aimed to investigate how useful UoN academics found the services currently provided by their librarians in support of teaching, learning and research. At the same time SAGE expressed an interest in investigating the value of academic libraries to teaching and research staff following the publication of the ARL report (ARL, 2010) and, albeit more indirectly, the work surrounding the LibValue (n.d.) project.

## The 'Working together' project

The focus of this project was to investigate the value of academic libraries for teaching and research staff. The project sought to identify both evidence of value and perceptions of the value of academic libraries, exploring the range of services offered to academics in support of their teaching and research, in order to identify elements of good practice. Outreach and communication between the library and academic departments were also explored, identifying the extent to which both units work together to ensure that library services are supporting academics effectively.

The objective was to provide the library community with a better understanding of the connections between academic departments and libraries and to identify examples of good practice in working relationships.

Eight in-depth case studies (two in the UK, four in the US and two in Scandinavia) were conducted, followed by an online survey across all three regions. The aim of the survey was to triangulate the primary findings from the case studies and see the extent to which they resonated more widely with librarians' experiences.

## The RAI project

The aim of RAI was to increase the impact of academic librarians in departments across the UoN, by:

1. assessing the extent to which academic staff were currently aware of services, support and resources;
2. identifying practical interventions to raise awareness of services and resources;
3. involving academic staff in shaping the services offered to ensure their needs were being met; and
4. ensuring academic librarians had the appropriate skills to maximise impact in academic departments.

Four key phases were planned to address these objectives, the first being a survey (including a questionnaire and focus group) undertaken primarily to assess awareness, uptake and value of existing and potential services; but also to inform the remaining three phases. The questionnaire (which included both closed and open questions) was distributed to all 2,991 teaching and research staff at the UoN in March 2012, achieving a 9% response rate. Following questionnaire analysis, a focus group was held with four academics in order to gain a deeper understanding of certain findings.

Work was subsequently completed on the second phase of the project (to improve academic librarian web presence), however phases three and four – a programme of promotional events for academic staff and a training programme for academic librarians – were suspended following the announcement of a library service restructure midway through the project. This paper focuses on results from the first phase.

## Evidence and perceptions of value

Determining the value of academic libraries to academic staff proved extremely difficult, as little evidence beyond the occasional anecdotal piece is being collected. While institutions are aware of the need to gather evidence, with most beginning to do this, the WT case studies showed there is no systematic collection of evidence of value; nor is the impact of services provided to teaching and research staff assessed. The research team therefore turned its attention to perceptions of value, ie how value is perceived by libraries themselves and by academic staff.

The findings indicated some variation in perception. Overall, there was considerable librarian concern that academics did not value librarians because they did not understand or appreciate what the latter group already did or what services could be offered to both academics and students, with comments such as *"Staff never cease to be amazed at what we can actually provide/help them with"* (UK librarian). Academic staff interviewed were divided; some confirmed the librarians' belief about the lack of awareness of services – *"I'm not sure that the faculty as a whole appreciate what librarians do or understand what they do"* (UK academic) – but there were others who appreciated the 'helpfulness' of the library – *"I feel confident that if I need something ... I know that I can contact them and get help"* (Scandinavian academic).

Similar findings emerged from the RAI survey; a key undertaking of which was to explore academic staff perceptions of the value of existing services, support and resources. Open comments received on the questionnaire demonstrated that some academics were unaware of all their librarians could do to support them; whilst others were appreciative of the 'specialist' and 'invaluable' support they received.

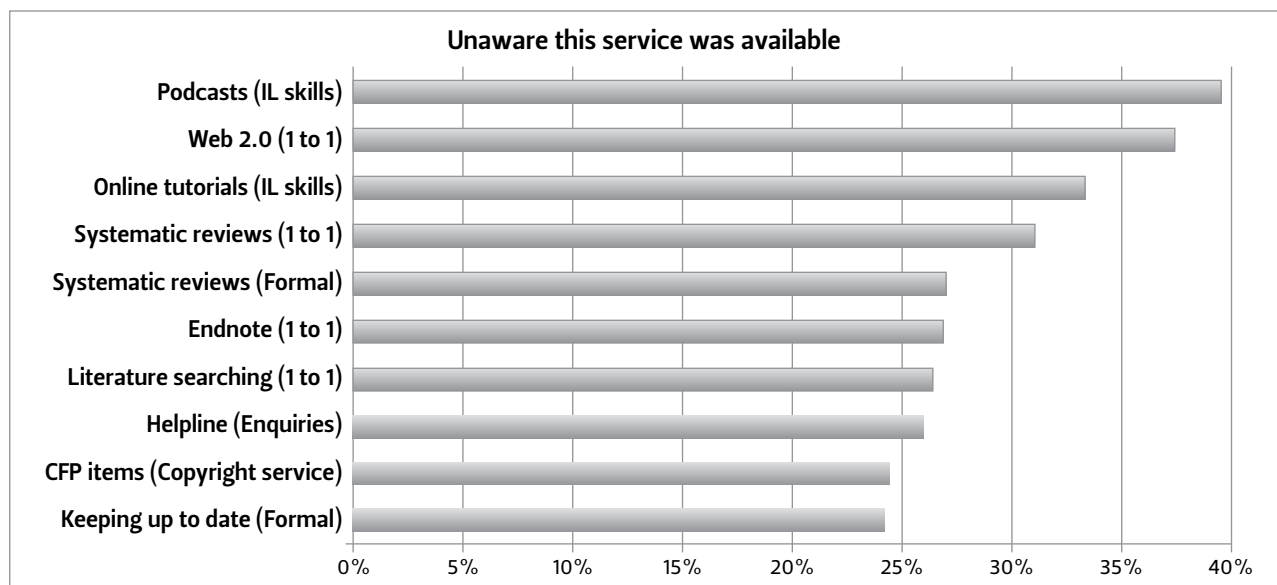


Figure 1: Unaware this service was available (RAI survey) (IL = Information Literacy)

Figure 1 identifies the top ten existing services (out of 20) of which academics were unaware, including information literacy (IL) skills teaching for students through eLearning (podcasts and online tutorials); and one-to-one support/formal training for academics themselves (eg systematic reviews, Endnote). These findings highlighted a clear need for improved marketing and communication amongst UoN academic librarians to promote certain areas.

In terms of ascertaining specific values placed on existing services, RAI questionnaire respondents were asked to provide a rating of very useful, quite useful, not very useful or not at all useful for each service. Figure 2 identifies the top ten services (out of 20) rated as either very or quite useful overall by academics. All are related to what could be termed as traditional library services – reading lists (ensuring currency and the availability of recommended texts/scanned items); enquiries (in-person); and information skills teaching (for undergraduates, taught and research postgraduates).

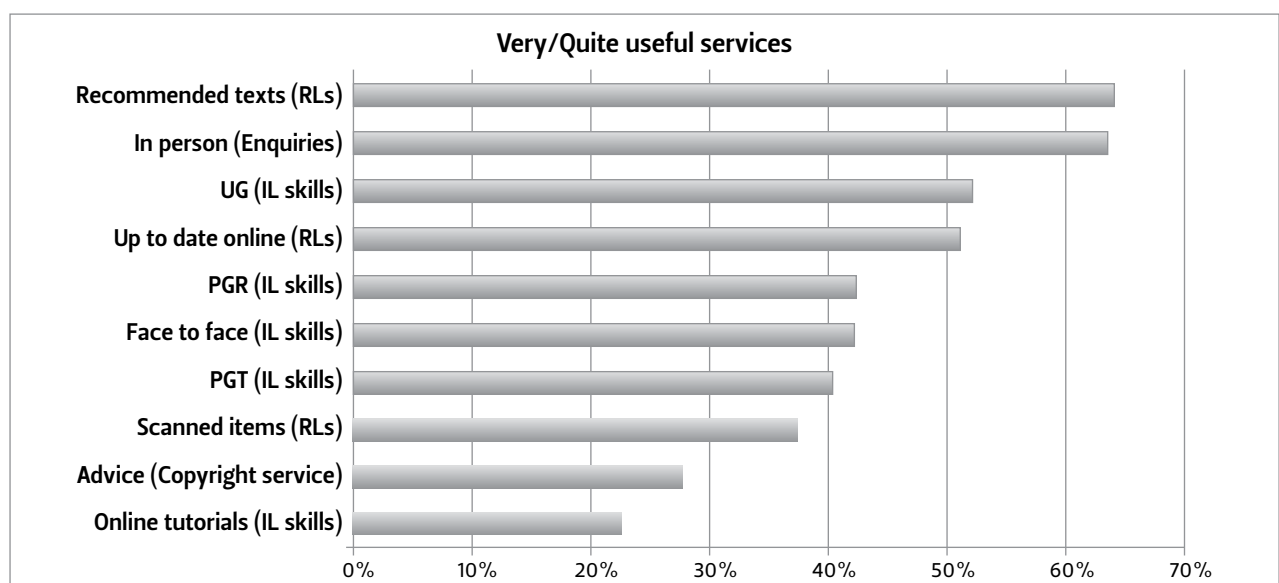


Figure 2: Very/Quite useful services (RAI survey) (RLs = Reading Lists; UG = Undergraduates; IL = Information Literacy; PGR = Research postgraduates; PGT = Taught postgraduates)

## Teaching and information literacy

As Figure 2 highlights, teaching IL skills to students remains a highly valued library service amongst UoN academics. This is further emphasised by Figure 3, which details the top ten additional services academics would like their librarians to provide. The RAI questionnaire asked respondents to rank their top five choices from a list of 20. Responses were weighted to gain an overall view of the top ten preferred services.

As Figure 3 highlights, the top five services all relate to teaching additional skills to students:

- how to avoid plagiarism (weighted score 423);
- study skills (weighted score 371);
- advanced Google (weighted score 256);
- digital literacy skills (weighted score 199); and
- critical appraisal skills (weighted score 191).

RAI focus group feedback supported these findings, with participants welcoming a move to librarians teaching study skills, critical appraisal and avoiding plagiarism in addition to more traditional IL skills teaching.

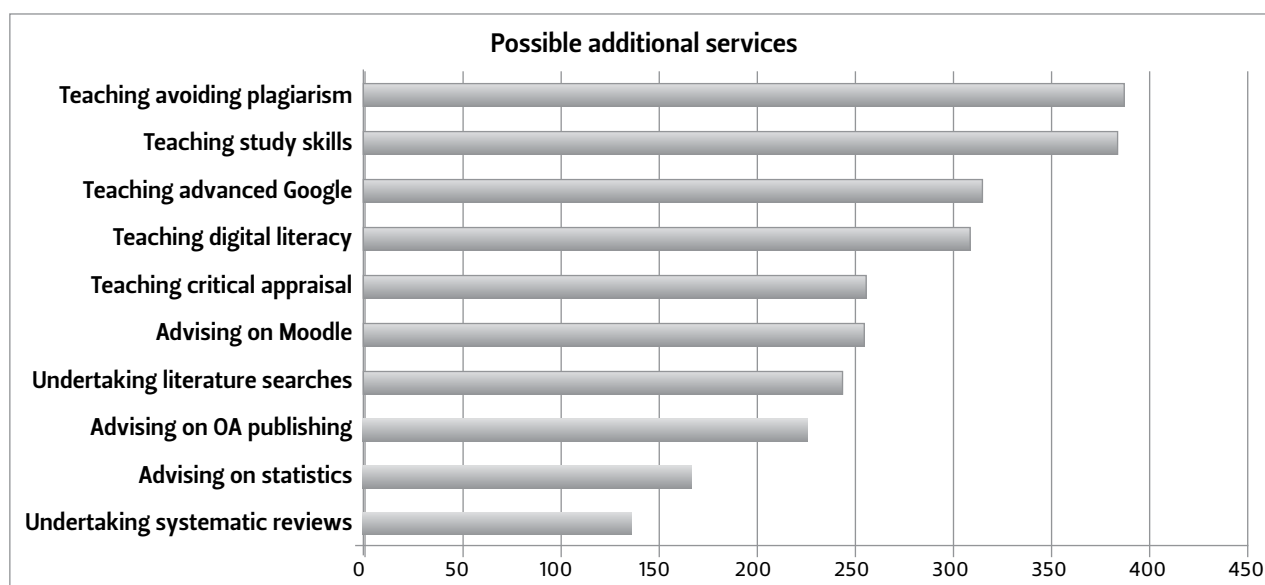


Figure 3: Possible additional services (RAI survey)

The value of IL teaching is further corroborated by the WT project, where it was shown to be a key component of the work of librarians, who were trying to embed IL into courses as much as possible. Eighty-eight per cent of librarians responding to the WT survey felt this activity was important or very important in their library. This requires collaborative work with teaching staff to design, plan and time interventions within modules; the objective being to make IL training relevant to course content and therefore to the student.

Taking embedded IL a step further, there were examples where classes are taught in partnership by both teaching staff and a librarian. This is particularly successful in vocational subjects geared towards an evidence-based approach such as nursing, physiotherapy or occupational therapy, although evidence showed this practice was not necessarily confined to these subjects. This denotes an important culture shift for librarians; no longer reacting solely to ad-hoc requests from teaching staff, they are now proactively approaching departments to embed their teaching into courses. Importantly, it was perceived that the involvement of librarians in curriculum design can make a significant difference. For example, driven by national changes to nursing education (*all nurses to be educated to degree level*) Nottingham developed a new course with a high level of blended learning. The health science librarian was directly involved in its design from the outset, over an 18 month development cycle, identifying relevant resources and developing information skills elements. Librarians were able to demonstrate to teaching staff

how they can help at an early stage, both in terms of contributing to learning outcomes and in helping students develop IL skills and become competent practitioners.

## Research support

Findings from the WT project indicate that research support for academic staff tends not to be as well developed as teaching support. Indeed, the librarians interviewed felt that more could definitely be done in this area, although they acknowledged it was generally difficult to strike the right balance between the two. Issues impeding the development of research support included the perceived self-sufficient image projected by academics, with librarians lacking the confidence to approach academics with offers of help. Librarians also struggle to envisage how they can help researchers in their journey because they are often unsure of the sort of support required.

Research support is very much dependant on the specific relationships librarians have established with both academic departments and individuals within them. Very few research partnerships were reported, although there was a consensus amongst librarians that this is the way forward. Those few librarian-faculty partnerships uncovered by the project included collaboration in the preparation of bids, conducting literature reviews, and co-writing articles.

Similar findings emerged from RAI. The RLUK report (Auckland, 2012) indicated a skills gap in several key areas amongst academic librarians in relation to research activities, and suggested researchers would value such support from their librarians; including advising on data management, and knowledge of sources of research funding.

However, as Figure 4 indicates, when asked to rank the top ten additional services academics would like to receive from librarians, assistance with research activities, such as assisting with grant applications and data management, and collaborating on research projects, were placed in the bottom ten, with weighted scores of less than 100.

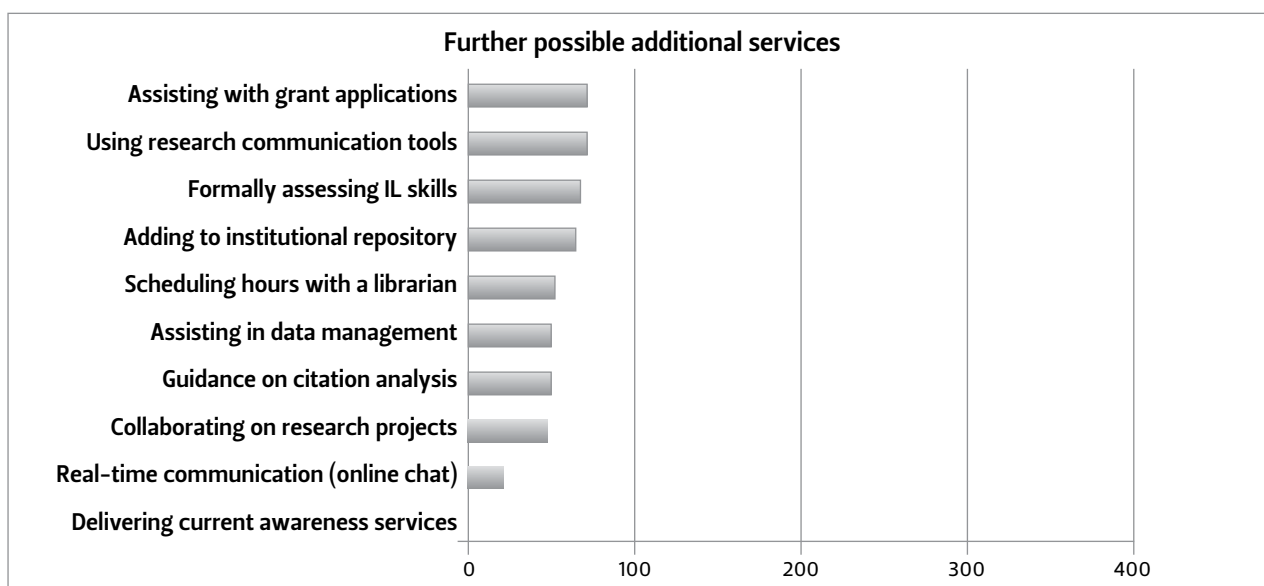


Figure 4: Further possible additional services (RAI survey)

Again, RAI focus group feedback corroborated these findings. Participants considered their research to be their own responsibility and would not think to request library collaboration. In light of the RLUK findings however, further investigation is needed in this area. Do UoN academics really not need support with research? Do they not see support for research as a valuable library service? Or, are UoN academics just unaware their librarians can help with research support?

Conducting literature searches and/or systematic reviews and advising on open access publishing were the key research activities in which academics indicated they would welcome library collaboration (Figure 3); again reflecting similarities with WT findings – one third of respondents to the WT librarians' survey felt that help with literature reviews was the library service most valued by research staff.

However, when exploring whether these research trends were consistent across all UoN faculties (Arts; Engineering; Medicine and Health; Science; and Social Sciences), some differences were identified. All faculties expressed a need

for support with open access publishing, but conducting literature searches and/or systematic reviews appeared to be faculty-specific. This service was considered of most value in the two faculties of Medicine and Health and Science; of some value in Engineering and Social Sciences; but of least value in Arts. Previous studies have also identified trends within subject areas, suggesting approaches to research, information needs and take-up of library services differ according to discipline (Auckland, 2012; Cooke et al., 2011).

## Communications and marketing

The visibility of the library was an important issue addressed by WT. Librarians understood that communication was key to promoting the value of the library, but they did not always do this effectively – ‘... *our library is bad at marketing and advocacy so that the staff doesn’t know what we can offer*’ (Scandinavian librarian). This was reinforced by those primary findings indicating that academics are not always fully aware of what the library does, and as a consequence may not value the library as much as expected.

Raising awareness of services the library could provide to support academics and students, and of its contribution to the wider institution, is a key component of demonstrating library value. It does however require time and enthusiasm from library staff, not just to develop and maintain effective lines of communication but also to be able to deal with the potential increased demand which may result from this. One (US) librarian said, ‘*One or two bad experiences [...] and the faculty disappear forever from librarian interaction*’.

Communication is a key component of library visibility. Channels are very diverse with different methods suiting different audiences and in the WT case studies there was little consensus over what worked best in different circumstances. However, it was recognised that academic departments often have different ways of doing things and librarians need a sound understanding of this in order to adapt their communications to departments. It was also recognised that faculty outreach relies on personal relationships but that it is time consuming and can get sacrificed accordingly.

Getting the library involved in university-wide events aimed at academic staff, such as conferences, festivals, author book signings/presentations or public lectures, proved beneficial in terms of faculty outreach. Informal communication with academic staff at these events promotes the library’s visibility, which in turn promotes library services to staff who may be unaware of some of them.

General marketing can help raise the library’s profile and is increasingly seen as an essential activity. One senior library manager noted that: “*our role has evolved to marketing as well in terms of making sure that people are aware of what the library has to offer because it has changed so much over time that it’s important to get the word out*”. Some libraries now have dedicated marketing teams, responsible for high-level, library-wide communications as well as helping to promote specific services, but this is far from universal.

A designated marketing role within the library can help to package the library message, to prevent over-notification and to be more strategic in communication. The WT survey did not specifically enquire about marketing, but many respondents raised it spontaneously as an issue. Poor marketing was seen as a barrier to good communication by survey respondents. Much of the communication which libraries have with users can be seen as marketing – announcing new resources and services being a prime example – but using this as a label within the library can change the emphasis, and lead to a broader promotion of the library as a whole.

Language is another element of the communication and marketing strategy. Librarians must talk the language of their users. One librarian reported using the expression “21st century competencies” coined by one academic at their institution instead of ‘information literacy’ because it was felt that it was more meaningful to academics. Another example is the use of ‘training’ for events promoted to academics – “awareness raising” was suggested as more appropriate and conveying a more positive note. The WT findings indicated that, although some new skills for the LIS profession are highly desirable, the existing skills of librarians are still relevant today but may need re-branding to show their relevance in this modern age.

## Conclusions

The WT project provided recommendations for individual librarians, library managers and university managers to help promote library value, and improve perceptions of value, among academic staff. Key amongst these was reaching out to academics to promote library skills and services using language which would resonate with these staff, rather than the traditional LIS terms; and to collect and use evidence of value at all levels in the institution. RAI reported its findings to senior management, to inform their discussions around the direction of the library and librarian roles.

Beyond the recommendations however, many of which were not unexpected (and which could be seen as tantamount to common sense), some fundamental questions remain. Why do some academics not use their libraries? Is this because the services are not required, they are inadequate, or they are not known of by academics?

Through RAI, the UoN library took the initiative of trying to address these questions. While current services were rated as very/quite useful overall, improved marketing & promotion was required in key areas to increase awareness and demonstrate value. Librarians will need to tailor promotion of services to meet the specific requirements of academics, and develop skills and expertise in new/emerging areas.

It is likely the same issues will apply to many Higher Education institutions and therefore there is more research, promotion, and training to be conducted.

## Acknowledgement

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# A preliminary bibliometric study of literature on performance measurement and library management

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## Abstract

This paper presents preliminary findings from the bibliometric study on performance measurement and library science. The purpose is to identify which are the most influential authors on the subject. The database used was the Web of Science. The keywords used covered two topics: firstly, performance measure, performance measurement, performance evaluation, performance indicator and performance assessment, and secondly, library management, library assessment and libraries. The category selected was Information Science and Library Science and some exclusion criteria were used to filter the results, totaling 138 papers. The analysis was conducted by the number of publications per year, frequently cited papers, frequently cited journals and keywords.

## Introduction

Customer demand is changing rapidly in terms of what they expect from products and services. In order to respond to these demands, managers need to be up-to-date about how their businesses are being run, and an accurate way to discover such information is the use of performance indicators. Performance information needs to be integrated, dynamic, accessible and visible to aid fast decision-making to promote a proactive management style leading to agility and responsiveness (Nudurupati *et al.*, 2011).

From the quality management and process improvement fields we have seen several approaches, such as Lean and Six Sigma, make extensive use of performance measurement to manage and improve performance of process and organizations (Banuelas *et al.*, 2006). According to Neely *et al.* (1995), performance measurement is “The process of quantifying effectiveness and efficiency of actions”. Efficiency measures the relationship between resources and the results obtained from using them, and effectiveness is directed to determine how well a service is provided or how successful a department or program is meeting previously established objectives (Smith, 1988).

Libraries have been changing for many years. Library managers coordinate how information will be delivered, but also need updated information to make their decisions. Libraries of all types are concerned about their management, including the outcomes, and how to evaluate their service. The process of performance measurement involves the selection and application of performance indicators, which quantify the efficiency and effectiveness of service-delivery methods (Fine & Snyder, 1999). According to Matthews (2011), in a library setting, assessing organization effectiveness is a challenge, due to the lack of consensus about the goals and objectives of the library.

Quality evaluation of library services involves various methodologies that provide quantitative and qualitative data to explore the extent to which they are satisfying the user’s expectations (Al Hijji & Cox, 2012, p. 184). In 1973 (Orr *apud* Matthews, 2011) organized a set of performance measures that reflected the activities of transforming resources into information and/or services, which was the Input-Process-Output-Outcomes model. There are general frameworks and tools that can be implemented on libraries, such as balanced scorecards (BSC), key performance indicators (KPIs), performance prisms, all of which are related to strategic goals. The integral framework is associated with the activities. There are specific tools developed for libraries, such as ISO 11620: Library performance indicators (ISO, 2008), LibQual+ and Measuring Quality (Poll & Boekhorst, 2007).

This paper is a preliminary bibliometric study on performance measurement and libraries. The purpose is to answer the following question: How are libraries using performance measurement in the literature?

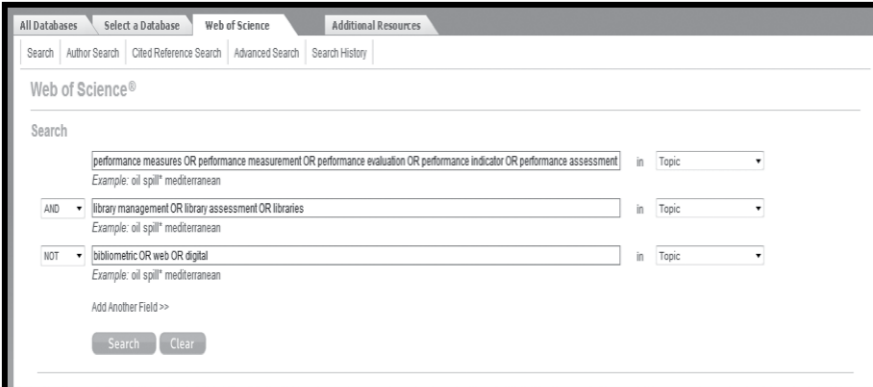
To achieve the goal of this paper it is necessary to understand what bibliometric study is. It refers to statistics and mathematical analysis of standards from information that can be found on publications and documents. The most common analysis are citation and co-citation. The citation analyses are based on the idea that the citations used by the authors are considered important for the research, and that the most often cited references have had more influence on the subject. (Pereira, Carvalho & Rotondaro, 2013).

## Research methodology

Bibliometric study is a method by which the state of science and technology can be observed through the overall production of scientific literature, at a given level of specialisation. The sources for bibliometrics nowadays are specialized databases, various of which are used to illustrate the results of science. With special processing they can be used to establish bibliometric indicators. (Okubo, 1997).

The choice of a database hinges directly on the objectives pursued and the questions to be answered. For this paper, the data used came from documents in the Web of Science database, published by the Institute for Science Information (ISI), which covers a range of disciplines in areas such as agriculture, biological sciences, engineering, medical and life sciences, physical and chemical sciences, anthropology, law, theater, architecture, dance, music, film, and library sciences. The coverage is from 1900.

The procedure search was done in one stage. In the first search field TOPIC, the keywords performance measures, performance measurement, performance evaluation, performance indicator and performance assessment were used with the Boolean operator OR. The second search field TOPIC, the keywords library management, library assessment and libraries, with the same Boolean operator. Both were added using the Boolean operator AND. The third search field TOPIC, the keywords were bibliometric OR web OR digital, with the Boolean operator NOT.



The screenshot shows the Web of Science search interface. At the top, there are tabs for 'All Databases', 'Select a Database', 'Web of Science', and 'Additional Resources'. Below these are search options: 'Search', 'Author Search', 'Cited Reference Search', 'Advanced Search', and 'Search History'. The main search area is titled 'Web of Science®' and contains a 'Search' section. It features three search fields, each with a dropdown menu for the Boolean operator and a text input for the search terms. The first field has the operator 'AND' and the terms 'performance measures OR performance measurement OR performance evaluation OR performance indicator OR performance assessment'. The second field has the operator 'AND' and the terms 'library management OR library assessment OR libraries'. The third field has the operator 'NOT' and the terms 'bibliometric OR web OR digital'. Each field includes an example: 'Example: oil spill\* mediterranean'. Below the search fields is a link 'Add Another Field >>' and two buttons: 'Search' and 'Clear'.

Figure 1: Fields from Web of Science

In the first result there was 2495 documents, which were refined using the Web of Science Categories, Information Science Library Science (370 results). One more search criteria was added: publication type (articles and proceedings of conferences), resulting in 296 documents.

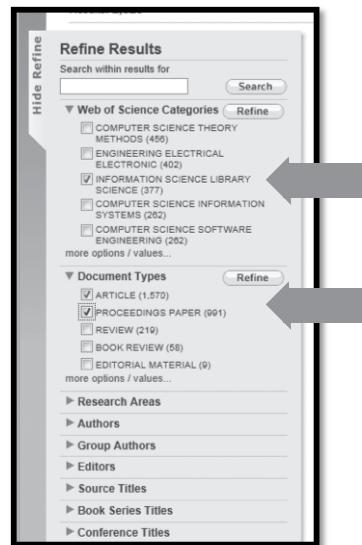


Figure 2: Search refine

All abstracts were reviewed, and the 138 documents were excluded from the study due to the subject, which investigated how libraries were using performance measurement to improve their management. Papers about IT, performance appraisal of staff, learning evaluation, scientometrics and bibliometric analysis were eliminated, due to the objective of this study.

The bibliometric study was conducted with 138 results, the data analysis was done using the VantagePoint Software<sup>1</sup> (Version 5.0, 2006).

## Results and discussion

Figure 3 shows the distribution of the 138 papers by year of publication.

Publications before 1990 were not selected to appear on the figure because of the low number of articles. The average is around 10 documents per year. In 1998, the number increased three times. From the 34 documents, 28 were published in the Proceedings from the 2nd Northumbria International Conference on Performance Measurement in Libraries and Information Services, which was indexed by Web of Science until the third. From the fourth to now it is indexed by EBSCO in the database Library, Information Science & Technology Abstracts with Full Text.

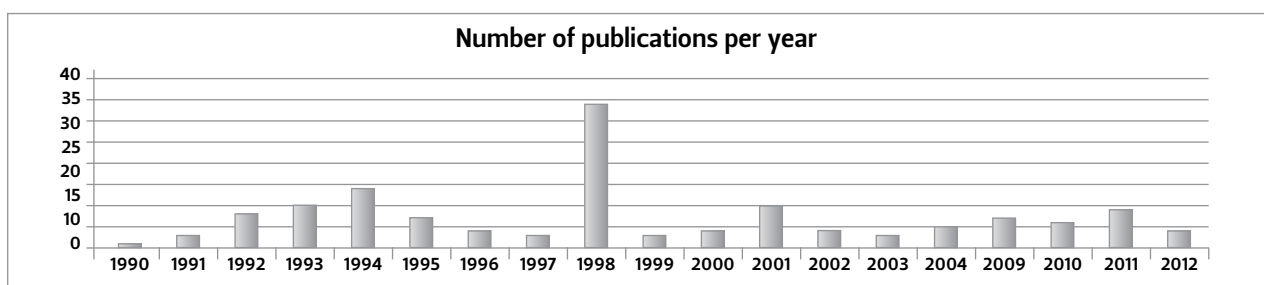


Figure 3: Number of publications per year

From the 138 papers, it was possible to analyse citation data, which is represented by Table 1, with the 10 articles most frequently cited.

<sup>1</sup> Software used during a course at Nucleo de Informação Tecnológica (NIT), Universidade Federal de São Carlos (UFSCar).

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10	REVILL, DH. Availability as a performance-measure for academic libraries. <i>Journal of Librarianship</i> , v. 19, n. 1, p. 14-30, 1987.

Table 1: Frequently cited papers.

Most references are about measuring service quality, focused in one dimension or indicator, such as user's perception, interlibrary loan or acquisition. There are few papers focused on the performance assessment in a library as a whole. However the most cited paper was Hamburg, Bommer & Ramist (1972), which is on performance measures and their use in decision-making.

The classic papers in performance measurement did not appear on the cited references, such as Neely, Bititci, Lynch and Cross, Keegan et al., Kaplan and Norton, and others. Although the object of this paper is libraries, the classic authors should be considered, based on the evolution of performance measurement.

The literature concerning performance measurement has had two main phases. The first went through the 1980s, with emphasis on financial measures. The second phase started in the late 1980s as a result of changes in the world market, which became more competitive (Ghalayini & Noble, 1996). Publications on performance measurement and libraries were more common after the second phase.

An analysis of where the documents were published was also conducted and the 10 most frequent publications are shown on Table 2. The concentration of publications on the Proceedings of the 2nd Northumbria International Conference on Performance Measurement in Libraries and Information Science was confirmed. 77% of all analysed documents were published in the publications on Table 2.

Citations	Publication Name
28	PROCEEDINGS OF THE 2ND NORTHUMBRIA INTERNATIONAL CONFERENCE ON PERFORMANCE MEASUREMENT IN LIBRARIES AND INFORMATION SERVICES
12	JOURNAL OF LIBRARIANSHIP AND INFORMATION SCIENCE
10	JOURNAL OF ACADEMIC LIBRARIANSHIP
10	LIBRARY & INFORMATION SCIENCE RESEARCH
9	COLLEGE & RESEARCH LIBRARIES
9	LIBRI
8	INTERLENDING & DOCUMENT SUPPLY
8	SPECIAL LIBRARIES
6	LIBRARY TRENDS
5	LIBRARY QUARTERLY

Table 2: Frequently cited periodicals

The keywords were analysed and compared in two aspects. The 10 most cited are shown below. The first two columns are the number of appearance of keywords defined by the authors. The last two came from the keywords collected automatically by the software VantagePoint from the field TITLE.

The analysis of keywords identifies a difference between the words authors register as keywords on the subject of their papers and the title of the published work.

n.	Author Keywords		n.	Title Keywords
4	Interlending	X	12	Performance
4	Performance evaluation		4	Academic-Libraries
4	Performance measurement		4	Services
3	Libraries		4	Standards
3	Public libraries		3	Dimensions
2	Costs		3	Efficiency
2	Document delivery		3	Information
2	Impact assessment		3	Libraries
2	Library management		3	Library
2	National libraries		3	Measuring Quality Service

Table 3: Keywords

## Conclusion

Performance measurement in libraries is still an important issue. In fact, some libraries have the need to measure what is happening today, understand the past to plan the future. The decision making without this kind of information shows how library management is amateur.

The aim of this paper is to demonstrate by bibliometric analysis how this issue is being discussed in literature.

The limitation of this study is the use of only one database, the Web of Science. It is important to highlight that the paper is a preliminary work on bibliometric study, and that some important journals and conferences proceedings are not indexed on this database.

A future proposal is to mix and compare information from Web of Science with Library and Information Science Category and the Information Science & Technology Abstracts with Full Text for the complete work.

The importance of a bibliometric study is to show how the issue of performance measurement and libraries is being studied in the literature published by a database.

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# Assessing library performance in the short and long runs: efficiency analysis and empirical application

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## Introduction

This paper presents an optimization approach to assessing library performance from an Efficiency Analysis standpoint. Concerning the empirical illustration, the paper employs data from a sample pertaining to a public system of academic libraries. Our approach combines in a simple way efficiency scores computed from the estimation of selected Data Envelopment Analysis (DEA) models and a long run evaluation provided by Markovian analysis. Managerial implications are mentioned throughout the text.

## Background

The proposed approach relies essentially on the application of the so-called Efficiency Principle to a public university system of libraries. Following the literature, “organization” may be taken quite broadly as meaning both public and private entities, and even nonprofit ones among them (see Carvalho *et al.*, 2012).

## Data Envelopment Analysis (DEA)

The Efficiency Principle simply states that, whenever a production unit uses the same resources but yields greater quantities of output than another unit, it should be considered “relatively more efficient” (ie, relative to one another). Analogously it should be considered “relatively more efficient” if it uses fewer resources and yields the same output. From a modeling standpoint these properties correspond to evaluating a library unit in terms of its position vis à vis an adequately defined and computed “efficiency frontier”, that is, the locus of all “equally best productive combinations of inputs and outputs”. Once identified the frontier, the performance of a specific library system may be evaluated by assessing the relative position of its component units relatively to each other and to the frontier.

There is an established body of knowledge – namely, Data Envelopment Analysis (DEA), a class of mathematical programming models – with a now long tradition (see references in Carvalho *et al.*, 2012) of being applied to a broad range of situations involving the analysis of production frontiers in a multi-unit, multi-input and multi-output framework where parametric restrictions are absent. The so called nonparametric models of frontier adjustment, such as DEA, represent the efficiency frontier as the best observed practices, that is, as the maximum output obtained from an input bundle when considering all the empirically observed organizational units in the population studied.

In applied work DEA has been used to evaluate several types of organizations, such as libraries (see references in Carvalho *et al.*, 2012), industrial plants, bank branches, educational systems and/or units, and hospitals, all properly understood as examples of “complex organizations”.

## Efficiency Analysis in the long run

In a seminal methodological paper Tulkens and Vanden Eeckaut (1995) describe and explain the main issues relating to the role of time in nonparametric efficiency analysis, especially in what concerns alternative ways to accommodate empirical information into reference production sets that will be submitted to efficiency computations. Their presentation depicts different approaches to panel data efficiency analysis. Of particular interest here (see Table 1) is their classification (p. 478-480) of the variety whereby time dimension may be treated.

There is some previous literature focussing the long run in (in)efficiency analysis (see references in Carvalho *et al.*, 2012). Some authors employed econometric techniques specifying a lag structure so that (long run) equilibrium may be discussed with appropriate difference equations. More close to the approach adopted here, the paper by Wang and Huang (2007) introduced a two-state Markov Chain model leading to the estimation, for each DMU, of its efficiency status as specified in their equation (2.12) (p. 1307).

Using results from finite ergodic Markov chains (Kemeny and Snell, 1972, p. 130-131), and assuming one (estimated) aggregate transition matrix is available, this paper computes the fundamental matrix and the long run distribution of the “system” (the set of DMUs) between the two states.

## Method

Our proposed procedure consists of three steps. The first two steps – involving the computation of efficiency scores and of operational plans in turn – are typical in many applications of Data Envelopment Analysis to performance assessment. The third step, a novel one, incorporates the “structural” long run assessment of efficiency.

## Data collection

The case is summarized in Table 1 following the Tulkens and Vanden Eeckaut (1995) framework.

Case (DMUs)	Number of DMUs	Number of variables	Time Period	DEA condition satisfied *	TVE classification**	DEA model
University libraries	37	7	2000 – 07	Yes	Contemporaneous	BCC-O

Table 1: Summary on case study

Notes: \*: number of DMUs not less than two (three) times the number of variables; \*\*: classification of (sample) observed subsets by Tulkens & Vanden Eeckaut (1995, p. 479-480).

We focus on Brazilian data collected from the centralized MIS maintained by the system of academic libraries pertaining to a traditional federal university in Rio de Janeiro. Our example is supported by a convenience sample of 37 units corresponding to more than 80% of the total population. Time periods refer to 2000 – 2007. Data relate to three inputs (*number of employees, physical area in square meters and number of volumes*) and four outputs (*number of visits, of loans, of registers and of consultations*).

## Efficiency analysis

The efficiency of productive units has been calculated by means of a Data Envelopment Analysis (DEA) deterministic frontier model as the solution of a linear programming problem (see references in Carvalho *et al.*, 2012). Given the *a priori* restricted nature of public budgets, the output-oriented version was adopted. The solution of the appropriate linear programming problem provides numerical scores for each DMU and characterizes them with respect to efficiency status. For each inefficient DMU an operation plan is also provided that indicates (re)allocative targets for the DMU to reach efficiency. Finally scores will again be needed to compute the transitions between the two states along the time period for the whole set of libraries.

## Markovian analysis

As soon as a transition matrix is available, passage times and long run analysis are possible and will result from the computation of a fixed point for the transition matrix (Kemeny and Snell, 1972, p. 130-131). In order to get a transition matrix from empirical data it suffices to use the *transition count* (Wang and Huang, 2007, p. 1306; see also references in

Carvalho *et al.*, 2012) corresponding to the proportion of units in a given state and then count the transition between each pair of states in the period.

According to Kemeny and Snell (1972, p.131), when the number of time steps grows indefinitely one has

$$\lim (1/n)(P + P^2 + \dots + P^n) = [1 \ 1 \ 1 \ \dots \ 1]' \pi \quad (3.2),$$

where  $n$  is the number of steps;  $P^n = ((p^{ij(n)}))$  is the  $n$ th power matrix of the one-step transition matrix  $P$ , whose  $(i, j)$  element then represents the probability of transition from state  $i$  to state  $j$  after  $n$  steps;  $[1 \ 1 \ \dots \ 1]'$  is a column vector with all elements equal to 1, and  $\pi$  is precisely the fixed point, that is, a constant vector containing the long run equilibrium distribution between states whose components are nonnegative and sum to 1 (as any probability vector), and such that  $\pi P = \pi$ . The expression “long run equilibrium” is then adequate since in (3.2)  $\pi$  does not depend neither on time, nor on the initial state.

Since one has

$$\lim (1/n)(P^n + P^{n+1} + \dots + P^{2n}) = [1 \ 1 \ 1 \ \dots \ 1]' \pi. \quad (3.3),$$

any power of the one-step transition matrix could be used to compute the fixed point  $\pi$ .

The first application of Markovian Analysis amounts to computing mean first passage time and mean recurrence time (Kemeny *et al.*, 1964, p. 411-414) for any state of the system. A possible link between the mean first passage time and efficiency analysis stems from the fact that the time before the (mean) first passage into efficiency may suggest how urgent may be the changes indicated in the “operations plans” provided by efficiency analysis (corresponding to the second step in the proposed procedure).

The second application of Markovian Analysis is also related to the fixed point of  $P^n$ , since  $\pi$  directly provides the long run equilibrium of the system (Kemeny and Snell, 1972, p. 131). This equilibrium may be interpreted as the long run (percent) distribution of units between states, since system transitions between states are defined as counts of units’ transitions.

## Results: description and discussion

In this section findings are presented relating to the selected academic libraries. Comments follow the order of proposed steps – computed efficiency scores, operation plans and long run distribution.

### First step – efficiency scores and library rankings

A sample profile for the 37 DMUs (see Table 1) is given in Table 2 for the last year of the period of study. Accordingly, the coefficients of variation imply that the libraries are quite different from one another on most attributes.

Variables	Min	Max	Mean	Standard deviation	Coefficient of Variation
Employees	1	33	8,41	8,06	95,83%
Total area ( m <sup>2</sup> )	37	6000	865,16	1400,03	161,82%
Volumes	872	277134	35228,92	53343,38	151,42%
Visits	108	137385	20974,68	33970,98	161,96%
Registrations	0	5603	1043,38	1115,40	106,90%
Loans	0	30191	5116,03	6578,68	128,59%
Consultations	0	66638	8091,62	12228,71	151,13%
Service mix (number)	5	13	9,54	1,87	20%

Table 2: Sample profile for university libraries in 2007

Computed efficiency scores appear in Table 3. Since every efficient DMU has a score equal to 1, the 8 libraries in that situation along 2000-2007 have been removed from Table 3. By the very definition of efficiency, there is no way to improve their productive performance: these DMUs present a quite robust performance and deserve attention no matter how “benchmark” is understood. Relatively inefficient DMUs receive a score less than 1. Note that some inefficient libraries never visited the efficient frontier and are even far away of it; in that sense they also deserve managerial attention. Note also that library number 5 has been efficient along the whole period except for one year. Should this situation be ascribed to measurement error? Does it mean a “true” although negligible loss in performance? In terms of management action all these signals must likely be accompanied by an individual follow-up.

### Second step: optimal changes for each library along the period

Operation plans are summarized in Table 4 and deserve managerial attention since resource decreases may occur simultaneously with output increases, so that managers must keep alert and proactive as to take advantage from potential efficiency gains along time. Volume discards deserve special attention because some collections and some individual titles should not be altered.

Allocative changes such as those indicated in Table 4 may also serve to compare recommended paths against observed actions in a yearly basis, for each DMU, and to that extent may help evaluate individual performance.

### Third step: first passages, mean recurrence and long run distribution

Given that we are working with contemporaneous reference sets (see Table 1), data for 2000-2007 provide an empirical version for the n-step transition as the seven factor product of the seven observed one-step matrices, say  $A = P1P2P6P7$ . The “seven factor product” approach simply amounts to envisage the long run as starting from the transitions occurring from the seventh year on and improve upon the “averaging” approach (CARVALHO *et al.*, 2012).

DMU	SCORES 2000	SCORES 2001	SCORES 2002	SCORES 2003	SCORES 2004	SCORES 2005	SCORES 2006	SCORES 2007
1	1,000	0,841	1,000	1,000	0,605	0,811	0,680	1,000
2	0,571	1,000	1,000	1,000	0,965	0,943	1,000	1,000
3	0,305	0,936	0,845	0,661	0,542	0,846	0,775	0,574
4	0,989	0,960	0,769	0,783	0,829	1,000	1,000	1,000
5	1,000	1,000	1,000	1,000	1,000	0,947	1,000	1,000
6	1,000	0,696	0,742	0,494	0,584	0,757	0,548	0,650
7	1,000	0,731	0,870	0,452	0,353	0,127	0,466	0,624
8	0,941	1,000	0,471	0,559	0,782	0,650	0,626	1,000
10	0,620	0,895	0,712	0,974	0,619	0,740	1,000	0,679
11	0,528	0,660	1,000	0,779	0,727	1,000	0,847	0,646
12	0,404	0,590	0,287	1,000	1,000	1,000	1,000	1,000
17	1,000	1,000	0,627	1,000	1,000	1,000	0,336	0,370
18	0,604	0,815	0,696	1,000	1,000	1,000	0,807	1,000
19	1,000	1,000	1,000	1,000	1,000	0,959	1,000	0,921
20	0,600	1,000	0,867	0,779	0,743	0,498	0,543	0,560
21	0,401	0,302	0,396	0,109	0,138	0,371	0,145	0,115
22	1,000	1,000	0,507	0,654	0,337	1,000	0,842	0,121
24	0,391	0,501	0,492	0,387	0,395	0,931	0,319	0,320

DMU	SCORES 2000	SCORES 2001	SCORES 2002	SCORES 2003	SCORES 2004	SCORES 2005	SCORES 2006	SCORES 2007
25	0,733	0,690	0,840	0,329	0,307	0,482	0,640	0,506
26	0,838	1,000	0,467	0,683	0,236	0,562	0,384	0,863
27	0,334	0,412	0,410	0,407	0,358	0,223	0,496	0,241
28	0,892	0,574	1,000	1,000	1,000	1,000	1,000	0,945
30	1,000	0,442	1,000	0,555	0,972	1,000	1,000	0,820
31	0,071	0,064	0,055	0,143	0,185	0,020	0,010	0,017
32	0,450	0,781	0,928	0,873	0,870	1,000	1,000	1,000
34	0,562	1,000	1,000	1,000	1,000	1,000	1,000	1,000
35	1,000	0,793	1,000	0,665	0,757	0,354	1,000	1,000
36	0,107	0,202	0,196	0,172	0,113	0,353	0,401	0,381
37	0,359	1,000	1,000	1,000	0,892	1,000	1,000	1,000
<b>Mean (n=37)</b>	<b>0,7486</b>	<b>0,8077</b>	<b>0,7886</b>	<b>0,7691</b>	<b>0,7381</b>	<b>0,7993</b>	<b>0,7801</b>	<b>0,7663</b>
<b>Pct effic.</b>	<b>45,96%</b>	<b>48,65%</b>	<b>48,65%</b>	<b>48,65%</b>	<b>40,54%</b>	<b>51,35%</b>	<b>54,05%</b>	<b>51,35%</b>

Table 3: Efficiency scores\* and yearly averages : 2000 – 2007

Note. \* – All libraries with scores equal to 1 for the whole period have been excluded.

From the fundamental matrix, the mean first passage time from “inefficiency” to “efficiency” is computed as approximately equal to 1 year and 10 months (KEMENY et al., 1964, p. 411). This means that if a given unit is inefficient today and if no managerial action is taken, then on average it will take 22 months for the unit to become efficient. This delay may be compared to the time required for any possible remedial measures to become effective, say revised budgeting or training.

Inputs	2000	2001	2002	2003	2004	2005	2006	2007
<b>Employees (number)</b>	- 1,44	- 1,15	- 0,76	- 1,29	- 0,93	- 1,18	- 0,61	- 0,81
<b>Area ( m<sup>2</sup> )</b>	- 60,75	- 71,04 *	- 29,85	- 70,35	- 48,94	- 143,47	- 88,05	- 136,27
<b>Volumes (number)</b>	- 3064,48	- 3373,49	- 1880,71	- 4601,0	- 6447,08	- 651,77	- 4720,75	- 3153,65

Table 4: Average operation plans : 2000 – 2007

Note \* – this figure relates to a single library.

Considering (3.4), to obtain the (estimated) long run distribution of the system between the two states the fixed point equation  $\pi A = \pi$  must be solved to give:

$$\pi E \text{ ( percent efficient )} = 51, 5\%; \pi NE \text{ ( percent inefficient )} = 48,5\% .$$

Note that  $\pi E$ , the percent efficient, differs from the mean and the median percent efficient (48,7%) in the last line of Table 3. Remember that, in contrast to “short run averaging”, products of transition matrices bring into play all the transitory visits to the two states along the time span.

The fixed point  $\pi$  in the equation  $\pi A = \pi$  also provides directly the mean recurrence time (Kemeny et al., 1964, p. 413) for the states of the system, that is, the mean time required before the system returns to a given state having started in that same state. The mean recurrence time is approximately equal to 2 years in both cases, so that the period of two years seems to be critical in the sense of monitoring the return of a state to itself. In the case of inefficiency it represents a sort of “safe mean time span” for managers to try to change the operating conditions facing inefficient units. Since the operation plans already point to “optimal changes” by unit, managers may evaluate for which units those changes

would be feasible within (the next) two years. Note that on average an inefficient unit will return to inefficiency four months before it may reach efficiency for the first time, if no managerial action is taken.

## Concluding comments

We proceeded in three steps. In the first two steps, typical DEA models provided quantitative indicators – namely, rankings and operation plans – that not only help evaluate library performance, but may also assist inefficient library units in their quest for efficiency.

In the third step we relied on Markov Chains for long run assessment. From a methodological viewpoint the model extends and improves upon previous work (CARVALHO *et al.*, 2012). We first computed an aggregate measure of the distribution of the productive system (the “organization”) between two states – efficient or inefficient. The other useful application of the Markovian approach provides better knowledge concerning the time delay required for efficiency to be attained for the first time when a prescribed operation plan happens to be adopted, as well as about the time during which an undesired (inefficient) situation will persist if that adoption is postponed. This timing aspect may help library managers in preparing their planning and control schedules and figures with a view toward the efficiency endeavour. For example, an inefficient unit will on average return to inefficiency four months before it attains efficiency for the first time, so that managerial attention to such time lags may become critical.

Future research is likely to provide better theoretical as well as empirical information that will allow for a better assessment of the proposed model. In particular, since the long run is here depicted in a very simple way, the “short memory” assumption involved in Markovian approaches may appear inappropriate in many contexts. The adequate approach to this issue still requires more work.

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# JUSP: Building on success

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### Introduction

Having successfully established JUSP (the Journal Usage Statistics Portal)<sup>1</sup> as a vital tool for UK higher education institutions to analyse their e-journal usage, the four partner institutions that form the JUSP Consortium have engaged in a number of activities that have arisen as a result of this success. These include enhancements to the JUSP service itself, an exploration of ideas for possible future functionality, and consideration of ways to meet interest in JUSP from other library sectors in the UK and overseas.

This paper describes some current initiatives to address these issues and to respond to emerging requirements in a period of financial constraint and a changing academic landscape. It emphasises the value of community collaboration and support to deliver a responsive service that is effective in meeting the needs of its users.

### Introducing JUSP

JUSP aims to provide a single point of access to e-journal usage statistics and provides a number of additional reports that help libraries to analyse usage and assess value. Funded by Jisc as one of the digital content services included in its subscription service, it has four partners, Mimas at the University of Manchester, Cranfield University, Jisc Collections, and Evidence Base at Birmingham City University. Partners bring a unique combination of skills and expertise to JUSP. This includes supporting provision of digital content for education, analysis of publisher deals, community engagement, technical development, training and support, and project management.

Since starting in 2010, JUSP has grown to include 160 libraries, representing virtually all UK higher education institutions and research councils. As at 31 August 2013, there were 55 publishers and intermediaries with usage data in JUSP, and almost 20,000 journal titles. Including more journal publishers in JUSP continues to be a priority.

Data are gathered on behalf of libraries via the SUSHI protocol. This is a machine-to-machine protocol that automates the process of data gathering on behalf of participating libraries. This quick and convenient access to data enables libraries to spend less time on manually gathering data and more time on the important tasks of data analysis, evaluating resources and decision-making.

JUSP enables usage comparisons across various publishers and years and it includes data from gateways and hosts such as Swets, EBSCO EJS or Publishing Technology to provide a truer picture of usage. With a number of tables based on the COUNTER JR1 and JR1a reports, libraries are able to assess the value of their publisher deals or subscribed titles in a number of ways, including:

- seeing how well titles in a deal are being used
- analysing trends over time
- comparing usage of core and non-core titles within a deal
- viewing or downloading reports, charts and graphs and export the data to other applications.

<sup>1</sup> [www.jusp.mimas.ac.uk](http://www.jusp.mimas.ac.uk)



## Community engagement

Community engagement has been key to the work of the JUSP team and to development of the service. JUSP is very much a collaborative, community based initiative where users of the portal influence development. The team works closely with libraries to understand how JUSP fits into their work processes and the service is developed in a way that is closely aligned with their needs.

The team also works closely with publishers who recognise the benefits and increased efficiencies that the portal can offer to their customers.

A monthly newsletter keeps all those interested in JUSP aware of current developments, and the website offers a range of support materials aimed both at those new to JUSP and to established users, including FAQ, guides to individual reports, webinar recordings and workshop presentations. Workshops have been held at different locations and a series of webinars have introduced particular features of JUSP. The helpdesk aims to provide a quick response to individual queries wherever possible. Surveys are used to establish publisher priorities and use cases have shown how JUSP is being used in the work process. At the end of 2012, the JUSP Community Advisory Group (CAG) was set up and this group of twelve institutional representatives has been extremely valuable in terms of advice and ideas to help inform the development of the service.

In addition to support materials available from the website, a community area has been set up within the portal itself, where libraries can share ideas, training materials and presentations that they have used within their own institutions.

## Standards and interoperability

Open standards such as COUNTER<sup>2</sup> and SUSHI<sup>3</sup> form the basis of JUSP and the team is reliant on these to deliver a cost effective and efficient service.

Collaboration is paramount to avoid duplication of effort for libraries, for publishers, and for the development team and it is therefore important for JUSP to be interoperable with other tools and services. Work with library vendors Ex Libris, Serials Solutions and Innovative Interfaces has ensured that JUSP is available as a SUSHI vendor in their ERM or usage statistics products and this service can also be extended to other vendors to offer a similar service.

The team is also working with complementary projects and services to share knowledge and data and by working together aims to deliver greater efficiencies for the community. Currently this includes services in the UK such as KB+, a shared, centrally maintained knowledge base. A project to explore integration with RAPTOR, which provides authentication data for e-resource platforms, concluded in 2013.

## KB+

KB+<sup>4</sup> is a shared service knowledge base which supports the management of e-resources in UK academic libraries. Jisc Collections are leading on this work on behalf of HEFCE and Jisc. Like JUSP, it is one of the digital content services included in the Jisc subscription model.

Members of the JUSP team have worked closely with KB+ since its inception to ensure that both projects can deliver maximum benefits to the community, with representation on its Project Board, Technical Advisory Group (TAG) and Community Advisory Group (CAG).

The primary aim of this co-operation is to ensure that the two services are integrated to the extent that libraries avoid any duplication of effort. It is anticipated that JUSP monthly usage data will be made available in KB+ in 2013 and work is ongoing to explore the benefits of and methods of enabling further integration. For example, interoperability between the two services could enable data exchange where libraries have already entered information about their core titles in JUSP. This work is informed both by collaboration on technical aspects and also by contributions from the KB+ and JUSP Community Advisory Groups (CAGs). Joint webinars intended for CAG members are planned to demonstrate new functionality and gather ideas for future enhancements.

<sup>2</sup> [www.projectcounter.org](http://www.projectcounter.org)

<sup>3</sup> [www.niso.org/workrooms/sushi](http://www.niso.org/workrooms/sushi)

<sup>4</sup> [www.kbplus.ac.uk/kbplus](http://www.kbplus.ac.uk/kbplus)

## Raptor-JUse

In the context of interoperability, JUSP has worked with the RAPTOR<sup>5</sup> team on the RAPTOR-JUse project<sup>6</sup>. This was a Jisc funded 'proof of concept' project (July 2012-May 2013) which looked at ways of combining the authentication data from RAPTOR with the platform or publisher data from JUSP. In other words, it aimed to find a way of combining RAPTOR information on users of a library's e-resources with JUSP information on the resources being used.

While JUSP is able to provide usage information at the journal title level, but is not able to identify actual users, RAPTOR provides authentication usage information for any service that the user logs into, using Shibboleth, OpenAthens and EZProxy but reports only on authentications to a service and cannot show usage of a particular resource.

A number of technical challenges needed to be overcome in order to create a working demonstrator site which was developed and tested with the aid of a small number of tester libraries.

While this proof of concept project was able to demonstrate the technical feasibility of combining these two disparate data sets, it still left many issues unresolved. The RAPTOR 'identities' contained a far wider range of resources than the JUSP publishers or platforms and were not strictly comparable. It was not possible to drill down within the JUSP data presented in RAPTOR to identify particular titles that were being used by particular users.

Surveys of JUSP libraries and a joint workshop showed how the RAPTOR-JUse proof of concept project had generated interest among the higher education library community which was keen to find a way of finding out more about how e-resources were being used. Both the JUSP and the RAPTOR teams learned much from this attempt to combine the two sets of data and benefitted from the process. It is hoped that the search for a means of combining authentication and usage data will continue and that a satisfactory solution can one day be found. In the meantime, the RAPTOR wizard developed for this project will make it easier for RAPTOR users to produce reports, and JUSP plans to include within its community area examples from libraries that are using both sets of data together.

## Usage profiling

Libraries have long been interested in comparing their own usage of e-resources with others of similar size or type. The interest in the SCONUL<sup>7</sup> Annual Library Statistics gives evidence of this. In looking at their own usage figures, libraries will be asking themselves these questions:

- How well are we doing?
- How does our usage compare with others?
- What constitutes good usage?

To help answer these questions, JUSP has introduced usage profiling. One of the features of JUSP has always been the good relationships built up with both libraries and publishers combined with a collaborative approach to facilitate development of new features. The usage profiling feature in JUSP is one example of the value of this working relationship. This has been developed in consultation with the JUSP Community Advisory Group (CAG) and is designed to fit the terms of both library and publisher participation agreements. Initially, usage profiling is available for three publishers, but it is expected to be extended further, subject always to publisher agreements.

The Usage Profiling reports allow libraries to view their own COUNTER JR1 and JR1a usage for a particular publisher against an average for that publisher for all libraries in the same Jisc band, regional group and any other groups to which the library belongs (RLUK, Russell Group, 1994 group etc). Reports can be viewed by calendar or academic year, with academic year reports also allowing comparison by average full-time equivalent (FTE) users.

The reports show the number of institutions in the particular band or group that take either subscribed titles or a deal with the selected publisher but do not attempt to sort the institutions by the particular deal or collection they take. Visual indicators show whether the library's usage is above or below average for each band/group.

<sup>5</sup> <http://iam.cf.ac.uk/trac/RAPTOR>

<sup>6</sup> [www.jisc.ac.uk/whatwedo/programmes/di\\_directions/accessandidentitymanagement/raptorjuse.aspx](http://www.jisc.ac.uk/whatwedo/programmes/di_directions/accessandidentitymanagement/raptorjuse.aspx)

<sup>7</sup> [www.sconul.ac.uk](http://www.sconul.ac.uk)

In order to test demand for this new feature, the twelve library members of the JUSP Community Advisory Group (CAG) were asked to give their views. All were in favour of making usage profiling reports as described above available to all JUSP libraries and covering as many publishers as possible. Particular comments received suggested the following ways the reports could be used:

- to use when comparing budgets in other institutions with actual usage
- to monitor effect of promotional campaigns
- to view trends across years
- to help provide context for what constitutes 'good usage'
- to analyse reasons for usage that was higher or lower than average.

By supporting the usage profiling reports, publishers are assisting libraries in analysing the value of their e-journal collections and responding to interest in this facility from their customers. Libraries have welcomed this new feature in JUSP as a means of comparing their own usage with others of similar size and type and it provides further evidence of how the collective gathering of usage data across the whole UK higher education community can lead to further opportunities for assessing usage and value.

## e-books

With the success of JUSP as the journal usage statistics portal, inevitably questions have been asked about the possibility of extending the JUSP service into other types of e-resource. Libraries are increasingly being asked to provide information on the value for money and return on investment for e-book collections for instance. However, finding the time and resource to systematically collect and aggregate this information is difficult for libraries. In co-operation with the CAG, the JUSP team set up a small e-book trial in order to identify some of the benefits to libraries and the issues that might arise in establishing a usage statistics service for e-books. Usage data (COUNTER BR2 reports) were gathered for a small number of test sites from two publishers who were already participating in JUSP. CAG representatives were then asked to review the functionality and provide feedback.

While this trial has been limited to a small number of publishers who had their own e-book collections, it has already identified several issues that would need to be addressed. A further stage would require investigation of the feasibility of including data from e-book platforms, and the types of report that libraries would wish to see.

These e-book reports have been very much welcomed by the CAG members, who saw this as a step towards JUSP truly providing a one stop shop for usage of all the library's e-resources. More work is needed now to make the case for including e-book usage in JUSP.

## Interest in JUSP beyond the UK HE sector

Although JUSP is a UK based service for academic libraries, it has applications beyond the UK and beyond the higher education library sector. Libraries around the world are struggling with the same challenges and it makes sense for others to benefit from the work done in terms of establishing the JUSP service.

As part of its service to the wider community, some of the outputs developed by JUSP are openly available or will be shortly. This includes SUSHIStarters, which is a free, open source SUSHI client. Support materials, tutorials and webinars about using and analyzing journal usage data are also freely available from the JUSP website.

A number of requests have been received from organisations that are eager to have access to the types of services provided through JUSP and expressions of interest have come from individual libraries and from consortia around the world. This has led JUSP to consider offering a range of services for different audiences utilising the skills and expertise of the JUSP partners.

## Pilot projects

In order to explore how JUSP could work in a different environment, the first step was to arrange a series of pilot projects. In this way, the various issues that might arise could be explored in more detail. The first two pilot projects have involved:

- An overseas university – University of Western Australia
- UK government sector – Defence Science and Technology Laboratory (Dstl)

Through consultation these two pilot sites were given access to JUSP and its various reports for an agreed number of publishers and good feedback has been received. A different approach was taken with the French library consortium Couperin<sup>8</sup>, who received support from the JUSP team to establish a similar JUSP-like service of their own. Both approaches have shown how JUSP can be adapted to different sectors and countries.

## JUSP Consult

As a result of the success of these pilot projects and the experience gained by the JUSP team, JUSPConsult<sup>9</sup> was established. This is a new service that aims to offer training, advice and consultancy to help organisations in managing usage data for e-resources. It harnesses the technical, analytical and contractual skills of the JUSP team and provides a base from which to extend the JUSP service to a wider community.

The initiative has developed following a demand for the services provided by JUSP and also IRUS-UK<sup>10</sup>, which deals with institutional repository usage statistics, and a recognition that these services offer a much needed solution to a global problem.

## Conclusion

The continuing support of Jisc makes it possible to deliver a service that is free at the point of use for UK academic libraries. Adding more journal publishers remains a priority and work with publishers to accommodate COUNTER release 4 has already started. This will extend coverage beyond the JR1 and JR1a reports to include the Gold Open Access report, and to assess the scope for including the JR5 report within the portal. Working closely with the Community Advisory Group and the JUSP community as a whole will ensure that new features such as the usage profiling reports can be added where there is a demonstrated need. This may include making a case to extend JUSP beyond its original remit to include e-books and databases. Collaboration with related initiatives such as KB+ will be key to future success, avoiding duplication of effort and saving libraries' time and money. With the introduction of JUSPConsult, there are further opportunities to extend the JUSP concept and respond to interest shown in other countries and other library sectors.

JUSP has proved a successful model which is demonstrably saving libraries time in the collection and analysis of usage statistics. With support from a committed and responsive user community, it has proved possible to build on this success and further enhance the JUSP model to meet the continued needs of the UK higher education community and beyond for quick access to the usage statistics that are essential to collection management and decision-making.

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# Capturing the contribution of subject librarians: Applying strategy maps and balanced scorecards to liaison work

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## Biographical details

Sheila Corrall is Professor and Chair of the Library & Information Science program at the University of Pittsburgh, where she teaches courses on research methods and academic libraries. Her research interests include the application of business management concepts to library and information services, collection development in the digital world, and the evolving roles and competencies of librarians and information specialists. Sheila moved to the USA from the University of Sheffield, where she was head of the iSchool for four years. She was previously director of library and information services at three universities in the UK.

## Abstract

### Purpose

The strategic contribution of subject librarians as information specialists in the digital world has been questioned by institutional administrators, but others have identified expanded roles and new opportunities in learning and research support. The present study investigates the application of Kaplan and Norton's strategic management system of balanced scorecards and strategy maps to subject librarianship in universities, with particular reference to the intellectual capital represented and created in the structures, relationships, and know-how of liaison work.

### Design/methodology/approach

A literature review was used to define established and emergent roles, responsibilities and skillsets of subject librarians, including their reach beyond the library. A website survey investigated goals, actions, and values related to liaison work in UK library strategies. Data were analyzed thematically to develop an exemplar map and assess its potential for evaluating the contribution of subject librarians.

### Findings

Core functions continue, with expanded scope and competencies. Collaboration and integrated services are key trends for mapping. Liaison work is poorly documented in existing strategies. Preliminary results suggest that strategy maps can be used to illustrate the strategic contribution of subject librarians.

### Research limitations/implications

The paper reports the early stages of a multi-phase project. The results are limited to the conceptual phase. The next phase will explore the development of both maps and balanced scorecards via case studies in different countries.

### Originality/value:

There are few examples of library applications of strategy maps and balanced scorecards at unit or program level, and none with a focus on the intangible assets of subject librarians.

## Keywords

Academic libraries; Balanced scorecard; Intangible assets; Intellectual capital; Liaison librarians; Library Assessment; Performance measurement; Strategy Maps; Subject librarians; University libraries.

## Introduction

Librarians in all sectors have become more intent on understanding and communicating the value of what they do, particularly as a result of the global economic downturn, and especially in the higher education sector, where notable work on methodologies, tools and techniques for demonstrating value and impact has been sponsored in the US and UK by organizations such as the Association of College & Research Libraries, Association of Research Libraries (ARL), Institute of Museum and Library Services, Research Information Network, Research Libraries UK (RLUK) and Sage Publications (Bowlby, 2011; Creaser and Spezi, 2012; Mays, Tenopir and Kaufman, 2010; Oakleaf, 2010; RLUK and RIN, 2011). Subject liaison librarians have traditionally formed a significant proportion of the professional staff in an academic library (Pinfield, 2001), thus representing a substantial financial commitment by the institution, and the expectations of the role within and beyond the library are being ramped up in response to challenges in the changing higher education environment. As Brown (2006, p. xiii) observes,

*"They are increasingly seen in higher education institutions as powerful change agents, advocates for good practice, sources of wisdom and brokers of productive partnerships."*

Yet, the contribution of subject librarians in the digital world has been questioned by both institutional and library administrators, some of whom have removed the position from their organizational structures (Cotta-Schönberg, 2007; Heseltine, 1995; Jones-Evans, 2005; Manchester University Library, 2012); but others have acknowledged their central role in information literacy education (Bewick & Corral, 2010; Powis, 2012) and identified important strategic opportunities for academic liaisons in e-science, data curation and other areas of research support (Gabridge, 2009; Garritano & Carlson, 2009; Holland, 2006). Both RLUK and ARL have recently funded reports on the evolution and transformation of subject/liaison roles, with reference to new skillsets required and new service models of service delivery, such as blended and embedded librarianship and hybrid informationist positions (Auckland, 2012; Jaguszewski and Williams, 2013).

Kaplan and Norton's (1996a, 2001) strategic management system of balanced scorecards and strategy maps has been adopted by university libraries around the world, notably in Australia, Finland, Germany, Singapore, South Africa and the USA (Cribb, 2005; Kettunen, 2007; Leong, 2005; Lewis et al., 2013; Pienaar and Penzhorn, 2000; Poll, 2001). The balanced scorecard has also been promoted by ACRL and ARL (Oakleaf, 2010; Bowlby, 2011). Existing library case studies have concentrated on mapping goals and measuring performance for the library as a whole. Although no reported instances of applying strategy maps or balanced scorecards to subject librarianship or liaison work were found, there are a few examples of successful library applications of the balanced scorecard at unit and program levels, including a cataloging department (Kim, 2010), a health sciences library (Chew and Aspinall, 2011), and an open scholarship program (Hammes, 2010). Hammes's (2010) reflection on the process of developing a scorecard at program level reinforced the impetus for the present study:

*"Creating a balanced scorecard for an entire organization can be a daunting task. Restricting it to one discrete programme was found to be manageable and hopefully will also prove to be sustainable."*

The purpose of the present study is to explore the feasibility and utility of using Kaplan and Norton's (1996, 2001) concepts and tools to characterize and evaluate the contribution of subject liaison librarians in higher education institutions. The development of the intellectual capital dimension of the balanced scorecard in particular (Kaplan and Norton, 2004b) has the potential to articulate the assets represented by subject librarians in new ways that highlight the significance of their organizational positioning, professional expertise, and stakeholder relationships. Insights gained and outputs produced from the study could be used as tools to support organizational development for libraries interested in developing or reviewing a liaison program, and also as learning resources for students of librarianship and professionals new to subject specialist liaison work, which might help to close gaps in coverage of liaison work identified in US postgraduate education programs (Attebury and Finnell, 2009).

The aim is to explore the application of strategy maps and balanced scorecards to subject liaison work, and their potential for disclosing intangible assets. The specific objectives are to:

- Produce theoretical examples of strategy maps and balanced scorecards as proof of concept and to inform and guide their development in practice settings.



- Develop strategy maps and balanced scorecards with practitioners in the field.
- Test the use of the resulting strategy maps and balanced scorecards as learning resources for new professionals (eg students, new entrants and career-changers).

## Theoretical framework

Kaplan and Norton (2000) developed the concept of a strategy map as a visual tool to help organizations communicate their strategies, and the processes and systems enabling implementation. The visual depiction of the links between critical objectives including crucial cause-and-effect relationships is an essential dimension of the strategy mapping approach. Kaplan and Norton (2000, p. 166) also emphasize how strategy maps can

*“show how an organization will convert its initiatives and resources – including intangible assets such as corporate culture and employee knowledge – into tangible outcomes.”*

Strategy maps are particularly promising tools for service organizations like libraries, whose activities are based on interdependent processes and professional expertise, hence the growing numbers of library and information services around the world experimenting with or adopting the concept. In addition to the communicative and related dimensions, strategy maps also promote the notion of balance in strategic planning and performance measurement, by requiring managers to focus simultaneously on financial, customer, internal process, and learning and growth perspectives. Kaplan and Norton’s (2000) focus on the customer, and the suggested typical customer value proposition of operational excellence, customer intimacy, or product leadership, also connect well with contemporary library concerns and values (eg, service quality, timely delivery; relationship management, trusted provider; distinctive collections, best practices).

Kaplan and Norton (2004a, p. 54) later developed their conceptualization of the intangible assets included in the learning and growth dimension of the balanced scorecard strategy map, defining this component as “strategic readiness” to underline the point that development and assessment of people, systems, and culture (human, information, and organization capital) only makes sense in the context of an organization’s strategy. The accompanying strategy map template consequently expands the bottom part of the map (“the foundation”), again in terms that speak directly to issues and concerns of contemporary academic libraries and subject liaisons. Table 1 extracts the relevant elements of the revised strategy map model, showing how intangible assets fit into the strategy map.

	Strategic Job Families	Strategic IT Portfolio	Organization Change Agenda
<b>Learning and Growth Perspective</b>	<b>Human Capital</b> <ul style="list-style-type: none"> <li>• Skills</li> <li>• Training</li> <li>• Knowledge</li> </ul>	<b>Information Capital</b> <ul style="list-style-type: none"> <li>• Systems</li> <li>• Databases</li> <li>• Networks</li> </ul>	<b>Organization Capital</b> <ul style="list-style-type: none"> <li>• Culture</li> <li>• Leadership</li> <li>• Alignment</li> <li>• Teamwork</li> </ul>

Table 1: Intangible asset component of strategy maps (Kaplan and Norton, 2004a)

The expanded coverage of intangible assets here is reflected in the growing interest in evaluation of intellectual assets in libraries. Several authors have argued that intellectual capital theory can assist academic libraries in developing new measures of performance (Corrall and Sriborisutsakul, 2010; Huotari and Iivonen, 2005; Kostagiolas & Asonitis, 2009; Town, 2011). Town (2011, p. 123) has asserted that “The assessment of intangible value added will be key to developing a compelling story around our overall value proposition”, which echoes Kaplan and Norton’s (1996b, p. 77) notion of “Using measurement to tell the story of the strategy”.

## Methodology

The investigation was designed as a project with conceptual and empirical phases that each comprise different stages. The research is in progress and the present paper reports on the initial stages only.

## Conceptual phase

A literature review was used to define established, emergent and expected roles, responsibilities and skillsets of academic subject liaison librarians, including their relationships within and beyond the library. The review is ongoing, wide-ranging in the types of institutions included within its scope, and international in its coverage, but limited to English-language publications. A website survey was used to investigate visions, goals and actions explicitly or implicitly related to subject specialist liaison work in university library strategy documents, and associated values, objectives, and metrics. Collecting data via documents in the public domain is an established method of Internet-based research that has been used previously to investigate library strategic plans in the UK and other countries (McNicol, 2005; Pacios, 2004). The sample used here was drawn from members of the Russell Group<sup>1</sup>, which represents 24 leading UK universities, known particularly for their research-intensive focus.

Thematic cross-case qualitative content analysis is being used to develop exemplar strategy maps and balanced scorecards reflecting typical liaison librarian roles and activities to assess the feasibility of using such tools to characterize and evaluate their strategic contribution. To assist with the identification of intangible assets for the intellectual capital components of the balanced scorecard, the study has adopted the categorization of intellectual assets provided by the Organisation for Economic Co-operation and Development (OECD) as an analytical framework. The OECD classification was chosen because of its international standing, and because the descriptors set out in the 2008 synthesis report resonated strongly with concepts and keywords surfacing from the preliminary literature review. Table 2 displays the three broad categories of intellectual assets specified with the brief descriptions and examples/keywords for each category.

Category	Brief description	Examples/keywords
Human capital	Knowledge, skills, and know-how that staff “take with them when they leave at night”	Innovation capacity, creativity, know-how, previous experience, teamwork capacity, employee flexibility, tolerance for ambiguity, motivation, satisfaction, learning capacity, loyalty, formal training, education.
Relational capital	External relationships with customers, suppliers, and R&D partners	Stakeholder relations: image, customer loyalty, customer satisfaction, links with suppliers, commercial power, negotiating capacity with financial entities.
Structural capital	Knowledge that stays with the firm “after the staff leaves at night”	Organizational routines, procedures, systems, cultures, databases: organizational flexibility, documentation service, knowledge center, information technologies, organizational learning capacities.

Table 2: Classification of intellectual assets (OECD, 2008, pp. 10–11.)

## Empirical Phase

The next phase of the research will explore the development of maps and scorecards in the field, using document analysis and focus groups/interviews with subject liaison librarians at selected case sites in the UK and USA, finishing with a research workshop to share and validate the emerging findings with a wider stakeholder group. The final stage of the investigation will also evaluate the use of maps and scorecards characterizing particular roles or areas of practice as learning resources in professional education and organization development to prepare students and practitioners for new roles and emerging models of service delivery.

## Preliminary findings

### Roles, responsibilities, and skillsets

Literature dating back to the 1960s reveals a wide range of job titles have been used to denote the subject/liaison role, which has evolved from its traditional conception as a reference librarian or bibliographer, through development of a focus on instruction or user education and consulting in the 1970s and 1980s (eg, tutor librarian, subject consultant), to more emphasis on liaison and outreach in the 1990s and 2000s (Feetham, 2006; Wang et al., 2010). The liaison title seems to have emerged a decade earlier in the UK, and was accompanied by arguments for using the term “information specialist”, instead of “subject specialist” as a more appropriate description of the expertise provided

<sup>1</sup> The Russell Group. [www.russellgroup.ac.uk](http://www.russellgroup.ac.uk)

(Feetham, 2006). The title “learning advisor” was another UK variant found in the 2000s (Bewick and Corral, 2010; Pinfield, 2001). Despite the prevalence of the liaison concept in current literature (Arendt and Lotts, 2012; Attebury and Finnell, 2009; Cooke et al., 2009; Gabridge, 2009; Jaguszewski and Williams, 2013), recent UK-wide surveys (Bewick and Corral, 2010; Brewerton, 2011) found that “subject librarian” was more frequently chosen as the formal title than “liaison librarian”, although the UK institutions whose strategies were surveyed for the present study revealed a slight preference for the liaison title.

Other important concepts featuring in contemporary literature include the “blended librarian” (Bell and Shank, 2004; Shank and Bell, 2011) and “embedded librarian” (Calkins and Kvenild, 2010; Dewey, 2004; Shumaker, 2012). Blended librarianship emphasizes the expanded skillset needed for subject librarianship in the digital world, which “combines the traditional skill set of librarianship with the information technologist’s hardware/software skills, and the instructional or educational designer’s ability to apply technology appropriately in the teaching-learning process” (Bell and Shank, 2004, p. 373), while embedded librarianship emphasizes “the importance of forming a strong working relationship between the librarian and a group or team of people who need the librarian’s information expertise” (Shumaker, 2012, p. 4). Although much of the literature on embedding is related to the library’s role in teaching and learning (Kvenild and Calkins, 2011), the concept is also applicable to library support for research (Carlson and Kneale, 2011), particularly in health sciences (Freiburger and Kramer, 2009; Greyson et al., 2013), where it is essentially a variant of the older concept of the “informationist” or information specialist in context (ISIC), promoted by the Medical Library Association for more than a decade (Shipman, 2007).

A key theme which recurs throughout the literature and supports the promotion of the embedded and blended librarian models is the importance of collaboration and partnership between librarians and faculty or other stakeholders in learning and research (Donham and Green, 2004; Fonseca and Viator, 2009; Garritano and Carlson, 2009; Held, 2010; Hoffman, 2011; Matthew and Schroeder, 2006). Shank and Bell (2011, p. 106) stress that “The principle that librarians can and should be integral, educational partners as well as a catalyst for students’ knowledge enrichment and intellectual inquiry guides blended librarianship”, while partnerships and collaborative relationships are central to Shumaker’s (2012) account of the embedded librarian. Jaguszewski and Williams (2013, p. 13) also emphasize their importance:

*“Collaboration and partnerships at every level, as well as clear roles and responsibilities, are critical to leveraging expertise and thereby developing and expanding new services, liaison roles, and library roles more generally. Librarians are increasingly inter-reliant with others on campus.”*

The skillset required by contemporary subject liaisons is a continuing subject for debate. In addition to the perennial question of how much subject knowledge is needed for liaison work, and the pedagogical know-how needed to support learning and teaching (Bell and Shank, 2004; Bewick and Corral, 2010), the competencies required to provide effective support for research in the current environment have become a major concern (Auckland, 2012; Gabridge, 2009; Garritano and Carlson, 2009; Jaguszewski and Williams, 2013). Auckland’s (2012) report has a clear focus on research support and also deliberately ignores core, basic skills that are unlikely to change (including personal and interpersonal skills). She identified knowledge and skills gaps and shortages in several areas of professional/technical expertise, including:

- preservation of research outputs
- data management and curation
- compliance with funding mandates
- data manipulation tools
- data mining
- preservation of project records
- sources of research funding
- metadata schema and discipline/subject standards and practices

Jaguszewski and Williams (2013, p. 14) stress the importance of “soft skills”, on the following basis:

*“...other knowledge can be acquired through training and experience. Emerging or new baseline workforce requirements will include, but are not limited to: capacity to cultivate trusted relationships with faculty and*

*others, the ability to engage and thrive in the messy and ambiguous, aptitude for systems thinking, an ability to connect research and learning, and skills including political savvy, analytical and problem-solving skills, program development, conflict fluency, civility, and strong leadership."*

The results of the literature review confirmed trends previously reported in characterizing the work of liaison librarians as requiring greater breadth and depth of skills, knowledge and understanding to provide learning and research support at more specialized levels than historically needed. A key trend identified was the increasing emphasis on collaboration and partnerships with both academic colleagues and other professional and administrative services, and continuing debate around the level of domain knowledge required for some areas of work.

## Visions, goals, and actions

Analysis of the library strategy documents found significant variety in their format and specificity, with relatively few examples in the public domain where the role of liaison librarians in accomplishing library and institutional goals was explicitly articulated, indicating the potential value of exploring new methods of capturing and presenting their contribution. The variety of responsibilities and activities assigned to subject liaison librarians can make it hard for them to communicate their distinctive contribution clearly and concisely and also make it difficult for others to fully understand the breadth and depth of their competence. However, by combining insights gained from the literature with relevant findings from the strategy documents, we can construct a prototype strategy map to illustrate how the tool could be used to display typical university library goals requiring actions by subject liaison librarians (or staff in similar roles) for their effective accomplishment.

The core components of the strategy map model are the sets of goals or strategic objectives grouped under the four perspectives of the balanced scorecard. Most organizations place a short vision statement at the top of the map. Jones (2011, p. 37) advocates "Framing your strategy with mission and values", by placing the mission or purpose at the top, and adding a separate "values perspective" at the bottom, underpinning organizational capability and directing organizational behavior. A values component has been included here in view of their prominence in the strategies examined and in related literature (Town, 2011; Town and Kyrillidou, 2013). Not-for-profit organizations often add to or change the perspectives represented (Jones, 2011); for example, Matthews (2008) suggests adding an "information resources perspective" for libraries. The model suggested here includes Vision, Purpose, and Values, and adds a Partnership perspective to reflect one of the key themes identified in the literature.

## Conclusion

Strategy maps are promising tools for articulating the competencies and strategic contributions of subject liaison librarians. Using a framework that includes different dimensions of intellectual capital should enable information professionals to articulate existing and required competencies in different ways that highlight taken-for-granted assets that are fundamental to the liaison role, such as personal know-how, working relationships, and structural arrangements, as well as identifying skills gaps and shortages, structural weaknesses, and other factors impacting their "strategic readiness". Additional work is needed to define performance measures or indicators for the balanced scorecard part of the model, prior to developing and testing both strategy maps and balanced scorecards with library practitioners in field settings.

Vision	A world-class university library delivering intellectual growth through application of vital professional expertise to enhance the quality of learning, teaching, research, and enterprise through collaboration and partnership, with a global reputation as an exemplar of innovative and transformative services.						
Purpose	Create flexible inspiring physical and virtual research and learning environments providing timely access to data, information, and knowledge resources, by <ul style="list-style-type: none"><li>• Selecting, developing, and curating distinctive collections and tools</li><li>• Delivering training, guidance, and assistance to individuals and groups</li><li>• Promoting, advancing, and exploiting beneficial changes in scholarly communication</li><li>• Managing relationships, building communities of learning and practice, and continuously improving interactions between information, people, and technology</li></ul>						
Goals	<b>Finance and funding</b> <ul style="list-style-type: none"><li>• Information resource spend per capita matches or exceeds our comparators</li><li>• Article processing charges (APCs) budget promoted and spent efficiently and effectively</li><li>• Library contribution to research grant income increases year-on-year</li></ul>		<b>Customer value proposition</b> <ul style="list-style-type: none"><li>• Flexible timely access to relevant content, advice and infrastructure</li><li>• Coordinated academic skills support designed around the student journey, for undergrads, Masters and doctoral students</li><li>• Collaborative services embedded in research life-cycle and workflows</li></ul>		<b>Partnerships and participation</b> <ul style="list-style-type: none"><li>• Students, academics, and service partners actively involved in service planning and resource decisions</li><li>• Extended liaison model promoting Integrated cross-service partnerships</li><li>• Subject librarians designing and/or assisting assessment of student coursework</li><li>• Subject librarians delivering expertise to research project teams in situ</li></ul>		
	<b>Operational processes</b> <ul style="list-style-type: none"><li>• Streamlined resource selection and acquisition through patron driven acquisition (PDA)</li><li>• Discipline-based academic skills tutorials/support available online for all subjects, including plagiarism guidance</li><li>• Professionally staffed library reference desks replaced by digital services and office hours in academic departments</li><li>• Consistent online presence for subject liaison librarians in virtual learning environments</li></ul>						
	<b>Learning and Growth</b>						
	<b>Structural capital</b> <ul style="list-style-type: none"><li>• Coordinator roles to support liaison in emerging specialty areas</li><li>• Institution-wide working groups to implement OA and RDM policies</li></ul>		<b>Human capital</b> <ul style="list-style-type: none"><li>• Immersion program for subject liaisons to develop research know-how</li><li>• Audit of existing knowledge and skills transferable to new specialty areas</li></ul>		<b>Relational capital</b> <ul style="list-style-type: none"><li>• Network of student library champions to match academic library representatives</li><li>• Strengthened formal partnerships with IT, research, and education services</li></ul>		
Values	Acess	Openness	Teamwork	Communication	Partnership	Expertise	Innovation

Figure 1: Subject librarian strategy map

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# The right to read: Assessing a project to expand library services to visually impaired users in rural South Africa

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## Introduction and background

In June 2009 the Director of the South African Library for the Blind (SALB) proposed a project to the Department of Sport, Recreation, Arts and Culture of the Eastern Cape Province where SALB is located. The proposal was for a partnership intended to create access to libraries and reading material for visually impaired people in the Eastern Cape, in order to eliminate some of the many disadvantages that visually impaired people in rural areas suffer, and reaching people that otherwise were difficult to reach.

The project, entitled “We are all on the same page” was novel in that instead of offering services to its constituency from a central hub, using postal services to deliver materials as was done before, a decentralised approach would be adopted by physically locating services in existing public libraries in rural communities and specifically promoting the new services to potential users. The rationale for the project was based on the disadvantage suffered by visually impaired people, especially those in impoverished rural areas. According to the 2001 South African census there were more than 700,000 sight disabled people, that is 0.64% of the population (Fact Sheet: Council/ECAM/Visual Impairment: stats). Women make up 57% of the number of visually impaired people, while 23% are young (between the age of 15 and 36 years), 80% live in rural areas, and 97% are estimated to be unemployed.

## Policy framework

Public library services are delivered by municipalities in partnership with provincial government in each of the nine provinces in an awkward governance structure which mandates and funds provinces to deliver services through agreements with local authorities. The South African Public Library Bill of 2010 which is to be enacted soon will provide for norms and standards for the delivery of public library services in an effort to improve and consolidate public library services and provide intergovernmental arrangements for greater efficiency (South Africa. 2010). The Bill enjoins public libraries to provide materials for the visually impaired and the blind (p. 8) and to take measures to ensure that services are accessible by people with disabilities.

In 2008, the South African government ratified the United Nations Convention on the Rights of Persons with Disabilities and Optional Protocol, which became International Law in the same year. The Department of Women, Children and People with Disabilities was established, which was intended, according to the current Minister, “to ensure the mainstreaming of gender, children’s rights and disability considerations into all programmes of government and other sectors. This will help government to respond to issues of these targeted groups in an integrated and coherent manner” (Xingwana, 2013).

Although cooperative governance between the three spheres of government (national, provincial and local) therefore underpins the Constitution, there are still problems of coordination resulting in uneven service delivery (Layman, 2003). His conclusion was echoed by the report of the Department of Cooperative Governance and Traditional Affairs into local government which found that “the Intergovernmental Relations System is not effective in its objective to coordinate planning across the three spheres of government” (2009: 7). While the rights of disabled people should therefore be recognised by law in South Africa, there remains a wide gap between policy and practice, and people with disabilities remain marginalised by society at large.

The mandate of the SALB is “to provide a free library and information service that is responsible to the needs of the Blind and the print-handicapped user” (South Africa. 1998). As a national library, its aim is to serve all visually disabled people in South Africa by providing material to members in Braille and audio format, primarily through the postal system. Its current membership of 3,419 users points to the difficulty of being a national library in a small town far removed from the homes of potential members in a vast country that bears the burden of socio-economic problems of poverty, unemployment and illiteracy.

## The project

The project proposed a strategic partnership between SALB and the Eastern Cape Province to address some of the disadvantages suffered by blind and visually impaired people, especially those in impoverished rural areas. The intention was for the Province to identify seven to ten existing public libraries which would be suited to serve as locations for “digital minilibs”, and to install in them the appropriate infrastructure and technology to set up and support a service for visually handicapped people in each library community. On its part, the SALB would guide and assist with setting up the minilibs; provide assistive technologies and reading material; it would train existing library staff in serving blind and visually impaired people, introduce them to the library and its facilities, and provide information literacy training to both library staff and users. For this purpose SALB would appoint and train a project co-ordinator to manage the project, and also contract the services of the authors who would develop appropriate information literacy programmes, and evaluate the implementation of the programme.

The project co-ordinator was appointed at the start of the project in 2010 and was responsible for visiting each minilib regularly and for training both library staff and users in the assistive technologies that were being rolled out. These consisted in the first place of “Daisy” (Digital Accessible Information System) players, which were specifically designed for the visually disadvantaged, with advanced features enabling users to search, insert bookmarks and to navigate text on a line by line basis ([www.daisy.org/home](http://www.daisy.org/home)). Each registered minilib user was given a free daisy player on permanent loan. Once the users were familiar with and using their daisy players, the co-ordinator continued with computer software training for both library staff and users. Classes consisted of basic computer literacy and training in the use of Jaws (audio output of printed text) and Zoomtext (text enlarging) software.

Our role in the project was two-fold: in the first instance we designed and delivered information literacy programmes for the librarians as well as for the new users who had no previous experience of libraries and library services. In order to do this, we visited some of the sites to assess the needs of the target groups. Once the first phase of the project was complete, the digital minilibs were established and the training delivered, we conducted further site visits in order to evaluate the progress and impact of the entire project.

## Findings

The Project’s Key Performance Indicators (KPIs) were to make seven public libraries in the Eastern Cape accessible to blind and visually impaired people by providing appropriate assistive technologies as well as reading material, and to train selected members of public library staff to serve blind and visually impaired people. The staff and these users would also be introduced to the necessary information literacy skills to utilise the materials and technologies that would be provided (Mahajana, p.3). A comprehensive manual to guide librarians in providing a service to visually impaired users was compiled to provide technical and operational information as well as address the skills required to communicate and deal with the information and other needs of visually impaired people. All the public libraries were to be equipped with computers that had Jaws and Zoomtext software installed (Mahajana p.11). Appropriate reading material would be available in all seven libraries. Internet access was not available at the start of the project, but was being planned.

We paid site visits to the Eastern Cape on two occasions between 2010 and 2012. The first visit was to conduct separate information literacy training sessions to librarians and users, the other to experience and evaluate the project as it was unfolding. In the process, we spoke to both the librarians who were involved in the project, and to groups of users who happily came to the libraries for tea, cake and an opportunity to chat about their needs and difficulties. We frequently felt overwhelmed by the struggles that they face on a daily basis and the relatively limited role that a library service can play in alleviating them.

At all our meetings the grave problem of adequate transport to libraries was aired and extensively discussed. In the sparsely populated rural areas where there is very little public transport, the provision of safe and reliable transport is crucial especially for visually handicapped users who have no way of reaching a library without special arrangements being made for them. Even the relatively modest amounts charged by drivers of informal minibus taxis were prohibitively expensive for people living on meagre disability pensions. The age groups were very mixed, ranging from old age pensioners, some of whom had become visually impaired later in life, to young adults, some of whom still had aspirations to study further, or to train for a career. By and large the older users were less interested in using the computers, while the younger ones were more proficient and enthusiastic. From the many comments we received, it is clear that the daisy players are very popular and provide a vital link to the real world for users that often feel isolated and cut off. Few of the library users were employed and they thought that their needs were neglected or ignored by society at large.

The reading material provided in the minilibs was discussed in detail. Books and popular magazines are provided in either audio format or braille, in isiXhosa, English and Afrikaans. Newspapers may be read with Jaws or Zoomtext. Reading preferences are varied, including adventure, juvenile, mystery and romantic fiction, poetry, non-fiction and work on social issues like HIV-AIDS, housing, farming, sport, religion and women's issues.

The users at our meetings expressed some dissatisfaction with the selection and variety of books on offer; insufficient variety and not enough titles for avid readers, and too few vernacular texts for readers who wanted them. We noted a strong demand for books on religion and for the Bible in isiXhosa, which had not been available at the time the project started. Another problematic issue was the need for even more training in the use of computers and the other assistive technologies. Some users who had not been blind since birth and who had not attended a special school for blind children, expressed an interest in braille and wanted to learn to read in braille. The on-going problem of the lack of internet provision was ascribed to complexities of responsibility between municipalities and the province, over which SALB had no control.

## Evaluation

In terms of its stated objectives, which had been to provide access to libraries, access to reading material and enabling librarians to assist blind readers with using library materials and resources; the project has been an unquestionable success. By November 2012, the seven originally identified sites had expanded to eleven functioning digital minilibs in the Eastern Cape and seven more were being implemented. At that stage this example was found to be so compelling that two other provinces with large rural populations, Kwa-Zulu Natal and Mpumalanga, had submitted proposals for funding and were starting to implement similar programmes in their own provinces (Libraries open doors to visually impaired, 2012).

Problematic issues that had been identified in the course of the project were being addressed in 2013. A project assistant was appointed to give refresher courses and to address transport, internet and other problems experienced by library users. A pilot transport project was established in Stutterheim, where the need was particularly acute. Quotes were solicited from registered taxi services, a service provider identified and by June 2013 library users were being picked up and taken to the library every week. The New Testament of the Bible in isiXhosa had been produced in daisy format and a further 62 isiXhosa book titles had been added to the SALB collection.

We found other evaluation data difficult to obtain. Our impression was that overworked library staff either did not keep counts or were unable to disaggregate minilib data from other library data as we requested. We were therefore unable to find details about circulation or use; for example how many books were borrowed by individual users over specific periods. We were also unable to obtain figures relating to numbers of library visits or the extent of use of the facilities.

## Impact

In view of these somewhat compromised results that show success in achieving the major project KPIs, but with insufficient evidence of output data like the extent of use of the new technologies or the circulation of materials, we sought to obtain more qualitative evidence of the impact of the project. We asked the project coordinator for stories or anecdotes of encounters that could be used to demonstrate that the project made any kind of difference to the minilib users. In using this approach to our impact evaluation, we were attempting to meet Brophy's challenge to use narrative to "capture the rich pictures that retain the essence" of the achievements of the project, "without losing the richness" of the context in which it operated (2008:15).

The co-ordinator was able to provide us with a few such narratives and during our last visit we were also able to observe how the minilibs were adding value to the lives of the users beyond facilitating reading and providing access to assistive technologies. The libraries were clearly providing a meeting point and a social environment where the visually impaired could not only connect, but find a forum and a voice. Being heard and having their needs met (eg in obtaining regular transport) provided a sense of empowerment and self-confidence, which we also saw developing in younger people as they learnt how to use the computers and the other technologies. We were told of a primary school group of sighted learners that attended one of the minilib workshops and interacted with visually impaired users, so that they left with a greater awareness of the implications of visual disability and the importance of literacy. A blind reader who has been taught braille as a child, offered to teach it to a recently blinded young man in his community whom he had not met before. A very depressed young library user who became blind at the age of 14 as a result of untreated jaundice, brightened up at the new challenge of using computers and writing his own story.

We used the capability approach, developed by Sen (eg Sen 1999) for the assessment of wellbeing of individuals and of societies, as a lens through which to view the positive changes to which the evidence pointed. The appeal of this

approach is that it stresses the importance of human agency, a dimension of experience that powerfully emerged from the literature of disabilities and from our interactions with the visually impaired in the Eastern Cape. For Sen, human agency is linked to a person's freedom to act and to pursue goals he or she deems to be of importance (1985: 203). Agency can be exercised by the individual or by the group, who should be "seen as actively involved – given the opportunity – in shaping their own destiny, and not just passive recipients of cunning development programs" (Sen 1990: 53).

In our opinion, these stories speaking of individual agency and group mobilisation, provide evidence of what Town has termed the "transcendent" value of libraries and in this case the SALB project. According to Town, evidence of transcendent value is to be found in the "higher-order beneficial effects libraries deliver" which are to be found "beyond the immediate or currently recognized temporal, spatial and influential boundaries of libraries" (Town, 2011:111). We believe that we found evidence of intangible value which may have been derived from interaction with the library, but which consists of benefits that could not have been pre-determined and were not foreseen.

In our opinion this project has, in spite of challenges and difficulties, been able to make a meaningful difference to some of the most disadvantaged and excluded members of society in South Africa; the visually disabled. When these minilibs were first proposed in the rural areas, many of the visually impaired reacted with disbelief, thinking that libraries were the exclusive domain of the sighted and nothing to do with them. These users have now been empowered, not only with the knowledge that they too have the right to read, but that the world of reading and learning is accessible to them as well. By providing facilities, technology and reading materials for these users and, essentially, engaging with them and their needs, their lives have been enriched well beyond what might be expected from the provision of new library facilities and materials in rural areas.

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# Auditing the accessibility of electronic resources

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## Introduction

Since the UK's 2001 Special Educational Needs and Disability Act (SENDA, 2001), academic libraries have had a legal duty to provide all students with information in a form accessible to them, an obligation strengthened by the 2010 Equality Act (c15). Crucially, the latter duty covered readers with all kinds of impairments, not just visual impairment, and thus covers a huge range of needs for an enormous number of individuals. Libraries have put a huge amount of time and effort into providing documents in accessible format (alt-format) but obviously it is preferable for both libraries and readers if the documents are accessible as supplied from the publisher. Electronic resources have the potential to address many of the accessibility needs of our readers, but concerns have been growing in the HE sector (see, for instance, JISCTechdis, 2013) that the way in which e-resources are delivered actually renders them, in some cases, less accessible. This paper describes a project undertaken by the University of Bradford library to systematically assess the accessibility of our electronic resources, and gives recommendations for others wishing to do the same.

## Print impairment and electronic resources

Ten years ago, print impairment was mostly equated with visual impairment: in the pioneering special issues of the journal *Library Hi Tech* on Accessibility of web-based information resources for people with disabilities from 2002, 13 of the 18 papers on accessibility were tagged with "Blind People" as a keyword, and none with dyslexia, motor impairment or any other disability. Dyslexia merits a single mention in the entire two issues (*Library Hi Tech* 2002). Since then, the range of impairments recognised as causing difficulties in using printed resources has broadened radically, including a range from dyslexic spectrum disorders to motor and tactile disorders through to fatigue and multiple sclerosis. This list is by no means exhaustive but reflects the range of needs encountered by University of Bradford library staff. Our awareness of the spectrum of print impairment has been raised in the last few years by Learner Support Profiles (LSPs<sup>2</sup>). Subject librarians receive LSPs for all new students in their supported areas, raising our awareness of the range of invisible impairments and giving us a broader appreciation of the variety of barriers encountered by our students.

Provision for visually impaired readers has largely moved on from Braille and large format printed books. Electronic resources provide options for zooming to font size that is comfortable for the reader, changing font and background colours to high contrast and reflow of the text to remove the need for horizontal scrolling. Text can be read out loud by a number of free and proprietary software packages, and PDFs have a built-in read out loud function.

Revenues produced by electronic games today represent one of the most important items on the income making, sports, etc.). Leveraging on the wide popularity of video games among all segments of the professionals have exploited in the past, and keep exploiting today, the use of computer games to create a whole new domain of games, termed serious games, that use technologies and other into stimulate serious purposes, for example, the acquisition of good principles (e.g., solidarity, diversity, training (e.g., for leisure or as a therapy), or the construction of a solid education foundation (e.g., see Chen 2005).

However, a wealth of research carried out in the past few years by many prominent medical practitioners may be considered serious. Any game, in fact, besides being entertaining, also hides one or multiple purpose. In such a sense, games are playing the important role of edutaining, rather than solely entertain individual relationship with their players, providing their benefits on a single-player basis, thus usual and pervasive computing, more can be done that can be beneficial for society as a whole [Weiser et al teamwork among players could produce results that are more significant than those that would be achieved by individual players].

Figure 1: HTML full text showing background colour change using AtBAR

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<sup>2</sup> Learner Support Profiles are personalised statements prepared by the Disability Office in conjunction with all students referred to them, detailing the type and level of additional support or individual adjustments required to create equality of learning opportunity in areas such as lectures, assessments and library services



However, a wealth of research carried out in the past few years by many prominent medical practitioners, psychologists, and sociologists concludes that any game, in fact, besides being entertaining, also hides one or multiple secondary objectives that often correspond to some purpose. In such a sense, games are playing the important role of edutaining, rather than solely entertaining. Nonetheless, most computer games today create an individual relationship with their players, providing their benefits on a single-player basis, thus usually ignoring communities of people. Instead, in the era of pervasive computing, more can be done that can be beneficial for society as a whole [Weiser et al. 1999; O'Reilly and Battelle 2009]. In some sense, teamwork among players could produce results that are more significant than those that would be achieved by any individual [Ferretti et al. 2010]. Scenarios where all players, enjoying a game, could provide a service to a whole community rather than solely to themselves. Examples emerge where the benefit together is rerouted towards very special communities, such as those composed by people with physical impairments.

Figure 2: HTML full text showing background and font colour change using AtBAR

impairment, so covers a huge range of needs for an enormous number of individuals. Libraries have put a huge amount of time and effort into providing documents in accessible format (alt-format) but obviously it is preferable for both libraries and readers if the documents are accessible as supplied from the publisher. Electronic resources have the potential to address many of the accessibility needs of our readers, but concerns have been growing in the HE sector (see, for instance, JISC Techdis 2013) that the way in which e-resources are delivered actually renders them less accessible in some cases. This paper describes a project undertaken by the University of Bradford library to systematically	receive a personalised statement of their learning needs in areas such as lectures, assessments and library services. Subject librarians receive these for all new students in their supported areas, raising our awareness of the range of invisible impairments and giving us a broader appreciation of the variety of barriers encountered by our students. Provision for visually impaired readers has largely moved on from Braille and large format printed books. Electronic resources provide options for zooming to font size that is comfortable for the reader, changing font and background colours to high contrast and reflow of the text to remove the need for horizontal scrolling. Text can be read out loud
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Figure 3: PDF before reflow

nge of needs viduals. t of time and in accessible y it is readers if the nlied from	receive a personalised s learning needs in areas : assessments and library librarians receive these their supported areas, r of the range of invisible
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Figure 4: PDF zoomed to 400%

individuals. Libraries have put a huge amount of time and effort into providing documents in accessible format (alt-format) but obviously it is preferable for both libraries and readers if the documents are accessible as supplied from the publisher. Electronic resources have the potential to address
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Figure 5: PDF zoomed to 400%, with reflow

Numbers of students with dyslexic spectrum disorders have hugely increased in recent years, and now constitute the largest single group of print-impaired readers. This is partly due to improved diagnosis and recognition: the University of Bradford screens all new students for dyslexic disorders, with many receiving the diagnosis for the first time. Working with our disability services, many readers discover that they read best with a particular font, or combination of font and background colours. The latter can be achieved by coloured overlays or photocopying onto coloured paper, but electronic resources have the potential to allow far more control over font type and colour variation.



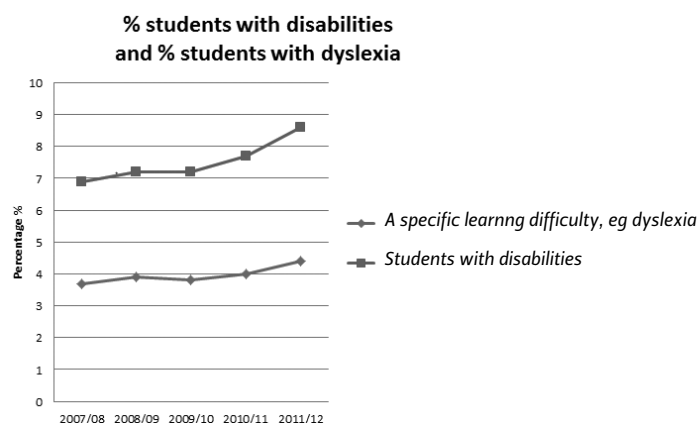


Figure 6: Number of students with dyslexia as a proportion of all disabled students at the University of Bradford, 2007–12

Other print impairments may come with the sheer weight and bulk of printed material. Readers with motor impairments often complain of the difficulty of handling and manipulating printed material, whereas those with fatigue disorders or Multiple Sclerosis can find that the effort of carrying their quota of library books is a significant obstacle to using them (Mann, 2013). Readers with mobility impairments can find the effort of moving around a large university library and reaching books from high shelves to be a major barrier (Mann, 2013). All of these can potentially be solved by accessing resources electronically.

We are increasingly finding that students arrive at university with coping mechanisms already in place: they have their own hardware with specialised software and personalised settings. If electronic resources work on the students' own devices then they are able to access them entirely independently as any other student would, whereas they may need significant assistance with printed material.

## Reliance on electronic resources

University libraries are increasingly reliant on electronic resources, especially for access to journals. The “big deals” offered by many publishers mean that libraries have access to tens or hundreds of times the numbers of journals titles they ever had in physical form. In tandem comes the increasing pressure on space in university libraries, where the demand for study space often means that there is less shelf space (vanDuinkerken, 2012; Yang, 2013). The obvious solution to these pressures is to discard holdings of printed journals which are also held electronically.

At the University of Bradford library, our printed journal holdings have decreased from over 6000m in January 2012 to just under 1300m (consisting of some 1500 titles) in July 2013. At the same time, our holdings of electronic journals have risen from 15,000 titles in 2009 to over 46,000 subscribed titles in 2013, with thousands more titles freely available. This is not an uncommon pattern across the whole sector, and has profound implications for student study patterns. Even in 2009, a student choosing to use only printed journal resources would miss a significant part of the corpus of knowledge on their subject. In 2013, using only printed journals is simply not a viable option, so libraries must ensure that their electronic resources are fully accessible to all users.

## Problems with electronic resources

There is obviously great potential for electronic resources to address a huge range of accessibility needs, but unfortunately this potential is often not realised. The primary problem is Digital Rights Management (DRM). DRM is employed by publishers to prevent unauthorised copying and dissemination of their copyrighted material, by preventing saving a PDF or limiting the percentage of a work that can be printed or copied. Unfortunately, it is well documented (Kramer, 2007; Turro, 2008) that these legitimate concerns often interfere with inbuilt accessibility features or specialist software, for instance preventing read out loud from working on PDFs. Another way accessibility can be compromised is through corporate styling within the electronic resources which may prevent colour or font changes. Taken together, these measures can render a work completely inaccessible: if the styling on an ebook prevents background colour change, and only 10% can be printed onto coloured paper, then a dyslexic student may only be able to read that 10% whereas a non-dyslexic student can read the whole work online.

In addition, the enhanced multimedia aspects of electronic journals, whilst welcomed by many readers, can cause problems for others. Advertisements, especially with animation, can cause an unwelcome distraction to readers with

a whole range of conditions from ADHD to autistic spectrum disorders and Obsessive Compulsive Disorder who find it more difficult to ignore irrelevant content (Winn, 2008). Given the reliance on e-resources discussed above, we must find ways of rendering them accessible to all readers.

## Previous work

Accessibility of web based information has been a concern since the original Web content accessibility standards in 1999 (W3C, 1999). Database and electronic resource specific studies include the Association of Specialized and Cooperative Library Agencies (ASCLA 2010) in the US who compiled data in a wiki on database accessibility from 2008 and 2010, mainly taking statements from vendors' websites.

Smith (2011) carried out work on accessibility on the most popular of the electronic resources used by the Open University, in their work supporting around 12,000 students with disabilities. The results of this study were passed onto JIBS to influence their work with publishers.

The publishing industry through Editeur collaborated with WIPO and the Daisy Consortium to publish the *Accessible publishing Best practice for Publishers guidelines* (Hilderley, 2013), which outline the key ways publishers can make their text accessible by combining structure, content and appearance, as well as highlighting some of the ways that the accessibility of the documents can be impaired (including by use of DRM, and page image PDFs etc).

In addition to the formal studies outlined above, there are several networks where regional groups of university libraries collaborate to share good practice on accessibility issues. One of the authors (George) is a member of one of these, the Open Rose Group (University of Sheffield, 2013). Other networks include CLAUD in the south and southwest (Oxford Brookes University, 2009), ALIS in Wales (ALIS Wales, nd) and SCURL Special needs group in Scotland (Scottish Confederation of University and Research Libraries, 2012).

## The electronic resources accessibility audit

In January 2013, the University of Bradford invited bids for a fixed number of paid graduate internships. These internships lasted 10 weeks and had to undertake a specific project. The library bid for an intern to undertake a systematic audit of electronic resources, and the audit framework was drawn up by the disability liaison librarian, the electronic resources librarian and one of the subject librarians (George). The job of the intern (Asif) was to test our most used electronic resources for each of 30 accessibility measures, such as read out loud, colour change and keyboard-only navigation. These measures are listed in full in appendix 1. Each of the measures were tested, where applicable, on the home page and navigation of the resource, the full text of articles in HTML format and the full text in PDF format, both read online and downloaded. The exercise was repeated for four browsers: Internet Explorer, Google Chrome, Mozilla Firefox and Webbie (King, 2013), a text-only browser. The results were recorded on a spreadsheet, with one sheet for each resource.

We tested only free software, mainly the inbuilt accessibility features of the PDFs and the AtBAR Lite (Wald and Draffen, 2011). We wanted our results to be fully reproducible by students wherever they were located, so programmes such as Texthelp<sup>3</sup>, which is networked on the University of Bradford student machines, were not used.

## Initial findings of the project

The findings of the project are still being examined, but a few early results stand out. Most notably, as we feared, the accessibility features in PDFs are often disabled. Many downloaded PDFs lack the menu bar, which prevents use of accessibility features.

<sup>3</sup> [www.texthelp.com](http://www.texthelp.com)

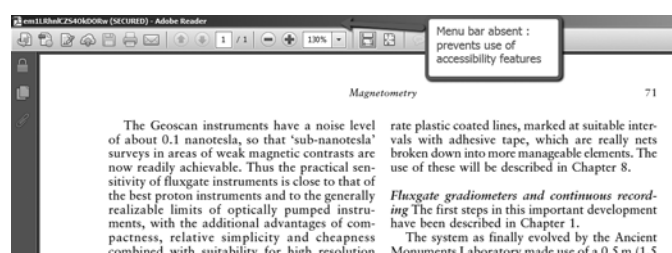


Figure 7: Downloaded PDF lacking menu bar

However, this can often be circumvented if the PDF reader has been opened previously in the session and accessibility settings changed. These changes will usually carry over to the downloaded PDFs.

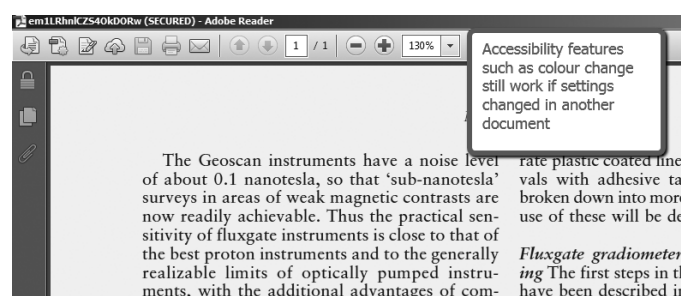


Figure 8: PDF reflecting changes made in another document

Reflow works in very few cases, with the Nature journals being the only major publisher examined where it works consistently. Usually when the reflow option is chosen all the spaces between the words are eliminated, rendering the document unreadable. In some cases, using reflow blanks the entire document.

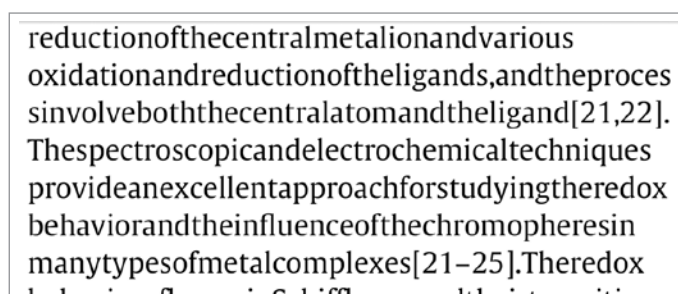


Figure 9: Reflow eliminating spaces between words.

In the most extreme cases, and with some older digitisation, the PDF is a page image rather than text, and no accessibility features will work apart from the zoom (Torro, 2008). These instances we can only assume are not malicious but just showing a lack of awareness of accessibility issues.

The AtBAR, which was used to change the colour of font and background, is often disabled when reaching the HTML full text, presumably by DRM. Of the browsers tested, Google Chrome was the most successful in maintaining the usability of the AtBAR. Even when the AtBAR colour change was not disabled, it sometimes caused major changes to the structure of the page, causing the full text content to disappear off the bottom of the page.



Figure 10: Full text HTML before colour change



Figure 11: Full text HTML after colour change. Full text has disappeared from screen and mouse scroll no longer works. The screen reader link takes the reader back to the original document.

In several cases, using the colour change disabled the scrolling function on the mouse, so the content had disappeared and one major mechanism for reaching it no longer worked. As noted above, colour change is particularly crucial for a large number of readers with dyslexic spectrum disorders, and none of the platforms tested had their own colour change mechanism. A few resources have built-in read out loud functions, but even then only for a small proportion of the database content.

## Discussion

The study discussed in this paper is best regarded as a scoping exercise rather than a comprehensive review, but raises some serious concerns for libraries and publishers. We are sure that publishers are unaware of the range of problems with their resources so feel that the primary duty of libraries is to raise publishers' awareness of specific issues with their products. Alt-format requests are time-consuming for publishers as well as submitting libraries, so we are sure they will be keen to address known issues to avoid a flood of requests.

We will produce "report cards" for each publisher tested outlining the accessibility problems found with their products and asking them to suggest alternatives or improvements. We will also produce recommendations for students, such as using Google Chrome as a browser. And, although it is difficult to base purchasing decisions on accessibility alone, as much academic content is only available through one provider, we will be adding an accessibility audit to the process of deciding on new electronic subscriptions.

In parallel to the work we have undertaken on the accessibility audit, we are currently undertaking a project to gather qualitative feedback from library users with disabilities to investigate how much the accessibility of e-resources matter to them. The research is ongoing but preliminary results indicate that accessibility of e-resources is almost the most important criterion, second only to quiet study space (Mann, 2013).

## Recommendations for further work

The audit described in this paper is a very simple, if time-consuming process, and we would urge other institutions to repeat and build on this work. The requirements are simply a literate person with an internet-enabled device. The Graduate Intern recruited for this project (Atif) had no prior knowledge of library resources beyond that acquired in the course of a literature-based degree, and received a single day of training before undertaking the project. This work could easily be undertaken by, for instance, frontline staff in quiet periods.

There is considerable scope for expansion on this project, testing on more resources using more criteria. Since we started this project the AtBAR has introduced the overlay function, which performs much the same function as the colour change, raising the question of whether this will allow colour change without the problems raised above. There are many other sources of free assistive software so these could be used to test the same criteria as in this study.

The study also focussed on solely PC desktop hardware/software, but there are many other platforms out there. Mobile devices, iPads, ebook readers etc enable very different zoom technologies which may offer greater flexibility to students.

## Conclusions

Alistair McNaught from Techdis starkly lays out the challenge to library staff in a post on his blog:

*“Library staff have been pretty passive about this up to now but I suspect it’s going to change sometime soon – it only takes one learner to sue one institution for one inaccessible ebook platform and there will be a scramble for platforms with decent guidance on their accessibility features” (McNaught, 2013, quote used with permission)*

We feel that with increasing reliance on and complexity of electronic resources this issue is likely to increase in prominence. Students paying a higher fee regime are more likely to demand that resources be fully accessible “out of the box” without them having to make alternative format requests for every item they want to read an article.

We are however ultimately at the mercy of the publishers, databases and software suppliers. We need to stop being passive and open the conversation on accessibility with all our suppliers. Libraries and publishers will need to work together to address or preferably anticipate these needs before they arise.

## Appendix: Criteria tested

Each of these criteria is tested for the database home page, then for the full text content in HTML, online and downloaded PDFs (subject to availability in each database). The tests are first run in Internet Explorer, and then repeated in Mozilla Firefox, Google Chrome and Webbie.

		Database home		HTML		PDF (online)		PDF (download)	
		Yes/ No/ N/A	Comments	Yes/ No/ N/A	Comments	Yes/ No/ N/A	Comments	Yes/ No/ N/A	Comments
<b>Internet Explorer</b>									
<b>Ease of use</b>									
Is it easy to find the log-in box?									
Is it easy to find the main search box?									
Are links visible and identifiable as such?									
<b>Keyboard navigation</b>									
Can you navigate using just the keyboard?									
<b>Navigation</b>									
Are the navigation tools consistent?									
Are the menu bars in the same place in all screens?									
Do the menu bars have the same options in all screens?									
<b>Read out loud</b>									
Is there a built-in read-out-loud function?									
Does the ATBar read out loud work?									
Does the reading order make sense?									
<b>Images</b>									
Are there descriptions attached?									
Are the descriptions useful?									
Are the images described in the text?									
Can the images be switched off?									

<b>Multimedia</b>								
Is multi-media content captioned?								
Are there transcriptions of the content?								
<b>Animations</b>								
Are there animations on the site?								
Is there advertising on the site?								
Can animations be switched off?								
<b>Font</b>								
Can font size be changed?								
Can font be changed to Arial, Calibri, Comic Sans?								
Can text colour be changed?								
<b>Colours</b>								
Can background colour be changed?								
Is there sufficient contrast?								
Are link colours clear?								
<b>PDF functions</b>								
Is the text readable or is it an image?								
Does the read out loud function work?								
Does reflow work?								
<b>Resolution</b>								
Change the resolution to 640x480 and 16-bit colour: Do the main functions still work?								
Change the resolution to 1024x768 and 24-bit colour: Do the main functions still work?								



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# Affective relationships between users and libraries in times of economic stress

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## Abstract

Academic libraries are considered as key factors in the educational system of a country and strong pylons for the economic and societal development. During the current economic recession libraries have been struck by severe budget cuts that have forced them to shrink and to reconsider services to the end users. Important questions that have been raised in countries, such as Greece – which has been in the eye storm of the economic downturn and has witnessed severe societal changes – include how libraries respond to this change of conditions, how they improve their service level and how they minimize user dissatisfaction. Moreover, one of the key questions is what is the range of substantial or symbolic interventions that can improve users' affective relationship with the libraries? The study aimed to measure the opinion of academic libraries users on four main criteria categories, namely cost, space and atmosphere, personnel behavior, and facilitation of collaborative work, and to reflect the level of affective relationship of users with their libraries. The study provides representative findings from all Greek academic libraries and shows that libraries are considered as spaces that facilitate pleasant reading and studying, as well as efficient collaborative work. Library users are in overall satisfied by the personnel behavior and productivity, but they also believe that there are margins for further improvement of its knowledge, while they think that the cost of services should be revised and echo the current situation. The findings of the study can assist library administrators to define the range of interventions and to prioritize them in a period of limited resources.

## Keywords

Greek academic libraries, user satisfaction, service quality, service evaluation.

## Introduction

Since 2008 the entire world has been in a whirlwind of economic insecurity. Some countries had had problems but are since recovering from them, but other are in a long period of recession that has severely affected the whole of their population. Greece is one of these countries that have undergone a major plan of fiscal adjustment, mainly translated in the form of austerity measures. Recent statistics show that the average income has decreased by 50% and that the official unemployment rate is 27% of the population, while the Hellenic Statistics Authority announced that the recession rate in 2013 – the sixth year in a row – will be between 4 and 4.5% of the GDP. This has had a massive impact on both the economic activity and the daily life of the citizens, while its effects run through the backbone of the Greek society. This situation is reflected in all the educational structure of the country, which has also undergone a major reshaping. Consequently these effects reach the Greek libraries in the form of big budget cuts, personnel redundancies<sup>1</sup>, and so on. It can be estimated that after twenty years of steady growth and development, Greek libraries have returned to the state before 1990 when they “were hardly able to operate due to scarce funding and resources that were not directed to these institutions” [Kyrrilidou, 2006].

The aim of this study is to identify the critical parameters that govern the affective relationships between academic libraries and their users. We mainly study the feelings of the library users and we argue that it is important to define those parameters especially inside this asphyxiating context in which Greek academic libraries find themselves, because we think that there is hardly a more challenging situation like this in the Western world. In this study we have used the Stimulus – Organism – Response (S.O.R.) framework to identify these parameters and this is the first time that it has been implemented in the Greek academic libraries. The survey followed a quota sampling technique and was addressed to

1 Approximately 100 librarians from the academic libraries of the eight larger Universities were dispossessed of their positions in September 2013

users at all levels (undergraduate and post-graduate students, faculty members, etc) from all academic libraries across Greece, resulting in 950 questionnaires that were then processed using inferential statistical methods.

## Background

Library assessment is considered to be the set of processes to assign value to a given unit at a given time point. Wright and White [2007] in the prologue of the ARL Library Assessment toolkit state that the “number of assessment activities undertaken in libraries over the last decade has grown exponentially”. While this echoes the practices of US libraries at that given time, the same can be said for most parts of the world. But, library assessment researchers understand the importance of standardized measurement activities that can be unambiguous and comparable over similar units or over time. This eventually leads to system-centered and -based statistics, such as web usage, books loan, fees, library visits and so on. In contrast, the user-centered and based evaluations are prone to the context of enquiry and might not be easily interpretable by other bodies. Occasionally, the measurement tools reflect something very specific and individualistic, which cannot be later reused.

In Greece, there are a few nation-wide systematic surveys, mainly between formal bodies, that cover the first leg of studies. The Total Quality Management Unit (MOPAB)<sup>2</sup> is the body that annually collects academic libraries’ statistics. MOPAB focuses on collections growth, personnel figures, library usage and book price rates. Similarly, the Hellenic Statistical Authority collects data biannually in similar fields. On the other side, one can find plenty of user-based studies over the recent years that are either very limited in scope, or due to methodological propositions cannot support generalization of their results.

## Motivation

In this study we aimed at finding a consistent way of measuring the users’ emotions inside the physical place they act, especially during challenging times. As it has been mentioned much of the work in library evaluation research up to now has been focused on users’ satisfaction, preferences and service evaluation, but not on feelings. By feelings we mean the emotional states in which the library users find themselves while using the library services. Obviously, these can be either positive or negative and we argue that the affective relationships can shape user experience in the library. Of course feelings effects are reinforced in times of stress, as it has been recorded by our Library’s personnel. Library users in Greece work in difficult conditions and they often seek security, understanding, comfort and warmth. Furthermore they seek motivational spaces that will make them feel confident and excited and where they will be received by helpful staff. During this period, state organizations, such as libraries, despite having been criticized for their performance, have attempted to shield vulnerable classes of users such as low income students. Powell [2006] mentions ten reasons why libraries evaluate their collections and services, listing (i) account for how they use their limited resources, (ii) explain what they do, (iii) enhance their visibility, (iv) describe their impact, (v) increase efficiency, (vi) avoid errors, (vii) support planning activities, (viii) express concern for their public, (ix) support decision making and (x) strengthen their political position. Some of the reasons correspond to system-centred and -based evaluation approaches, but in the case the last three are the primary reasons for libraries to engage in such studies.

## Methodology

One of the most important methods of evaluating the quality of library services is the survey method. A well structured questionnaire was used for the data collection process. Participants were users of all Greek Academic Libraries (21 libraries), except the University of Peloponnese.<sup>3</sup> Quota sampling (non probability sampling method) was used for selecting participants. Sample quotas for each Greek Academic library were proportionate to the total number of the population of users in each Greek Academic Library (see Table 2). This ensures that the final sample of the study is representative to the population in terms of number of users of Greek Academic Libraries.

The survey’s questionnaire included Likert type questions regarding: (i) the level of knowledge and usage of services provided by the Greek academic libraries, (ii) the evaluation of these services according to user perceptions, (iii) the three dimensions proposed by the LibQUAL model (information control, affect of service and library as place) and (iv) participant’s demographics. A pilot study to check the reliability of the items of the constructs (and the conceptualization and operationalization of questionnaire construction) took place at the Library & Information Center of University of Patras. A Cronbach a Reliability test was found to be good with a  $> 0.7$  for all constructs.

<sup>2</sup> [www.mopab.gr](http://www.mopab.gr)

<sup>3</sup> The statistical database of MOPAB had no library user data available for University of Peloponnese, so we could not calculate the corresponding sampling quota (research limitation).

Library name	Library users	Library users /total population	Sample size needed by each library
Athens School of Fine Arts	1,600	0.00631	6
Aristotle University of Thessaloniki	41,930	0.16541	165
Agricultural University of Athens	4,229	0.01668	17
Democritus University of Thrace	12,390	0.04887	49
International Hellenic University	470	0.00185	2
National & Kapodistrian University of Athens	11,169	0.04406	44
National Technical University of Athens	15,149	0.05976	60
Ionian University	5,433	0.02143	21
Athens University of Economics & Business	12,903	0.05090	51
University of the Aegean	9,943	0.03922	39
University of West Macedonia	3,000	0.01183	12
University of Thessaly	20,677	0.08157	31
University of Ioannina	12,699	0.05009	50
University of Crete	16,237	0.06405	65
University of Macedonia	10,797	0.04259	42
University of Patras	25,033	0.09875	99
University of Piraeus	22,808	0.08997	90
University of Central Greece	312	0.00123	2
Panteion University	18,014	0.07106	71
Technical University of Crete	6,958	0.02744	27
Harokopeio University	1,734	0.00684	7
<b>TOTAL</b>	<b>253.485</b>		<b>950</b>

Table 1: Sampling quotas per Greek academic library

After communicating with all Library Directors, the data collection process started by sending the appropriate number of questionnaires to the 21 Greek Academic Libraries. The data collection period was between April and July 2012.

## SOR framework

The Stimulus – Organism – Response (S.O.R.) framework is a model for the exploration of customer behavior. It has been proposed by Mehrabian and Russell [1974] in pursuit of establishing the link between physical environment and individual's behavior. The model empowers the customer to act as a catalyst that links environmental stimuli to effects, emotional and/or cognitive. In our study we focus in the emotional effects. The model has been also used for predictive purposes, taking benefit from sequential characteristics [Kim & Lennon, 2012]. In this setting, S.O.R. has been used for exploratory purposes; to model and interpret the critical variables that shape the affective relationships between users and libraries.

This section introduces the S.O.R. model and each of its dimensions from the perspective of retail store environment. The environmental psychology literature asserts that the physical environment influences the approach-avoidance behavior of individuals within it [Mehrabian and Russell 1974]. S.O.R. describes mechanisms for how environmental elements influence individuals' internal states and in turn their approach-avoidance behaviors. They propose that emotional states serve as mediating variables in determining a variety of approach-avoidance behaviors. Following the S.O.R. model, a number of marketing studies on atmospherics generally support the relationship between store

environment and consumer behavior [Baker,1987]. In a retailing context, the atmospheric variables are the stimuli (S) that drive consumer evaluations (O) and then influence their behavioral responses (R). Consumer behavior responses within a retail store are either approach, or avoidance. This view is consistent with Markin, Lillis and Narayana's argument [1976] that retail store designers, planners, and merchandisers shape a retailing space that creates one's mood, activates intentions and affects a customer's reactions. On the basis of the S.O.R. framework, environmental stimulus cues are the antecedents of consumer evaluations towards a retail store. Baker [1987] classifies environmental components into ambient, design and social factors. Ambient factors refer to the non-visual elements of a space that tend to impact the consumer's subconscious, such as temperature, music, and lighting. Design factors are the stimuli that represent the visual elements of a space that tend to exist more at the forefront of a consumers' awareness, such as color, layout and architectural elements. Social factors involve the presence of employees and customers in the environment. Researchers have found that physical environment induces two types of internal states for an individual: affective and cognitive [Zeithaml, 1988; Mehrabian and Russell, 1974]. Each type of evaluation impacts a consumer's shopping behavior in a different way. According to the S.O.R. framework, approach-avoidance behaviors are the actions resulting from individuals' internal states. Mehrabian and Russell [1974] suggest that approach behaviors include physical approach, work performance, exploration, and social interaction. Using the S.O.R. framework, Figure 1 summarizes the components and constructs of each stage in our study. More specifically the three dimensions of S.O.R. framework are: (a) stimuli that consist of ambient, design, social and economic cues, (b) organism that consists of cognition and emotions, (c) response consists of satisfaction and dissatisfaction. We approach these three parameters by using the personal situational moderators, such as age, gender, role and year of study.

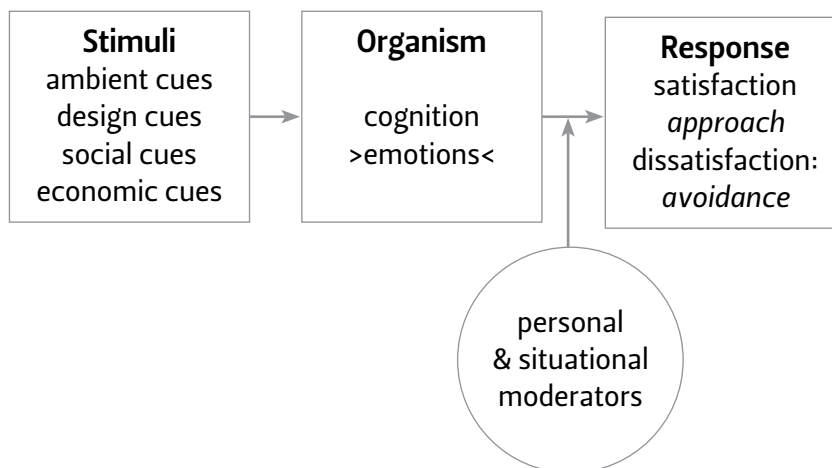


Figure 1: The S.O.R. model as adapted in our study

## Results

The final sample consists of 950 library users from the age of 18 to 55, including women and men at almost equal percentages (50.3% and 49.7% respectively). The majority of them were graduate students (69.5% of the sample), with 22.9% of the sample being postgraduate students, 4.7% academic staff and 2.8% external users. The average age of the sample library users is 24 years old and the mean of library visits is 8.5 times monthly. Participants use electronic services with mean value 6.83 times monthly. Figure 2 shows the percentage of usage of traditional and electronic services by library users. All the electronic services are in blue and all the traditional services – those served in the physical are in red.

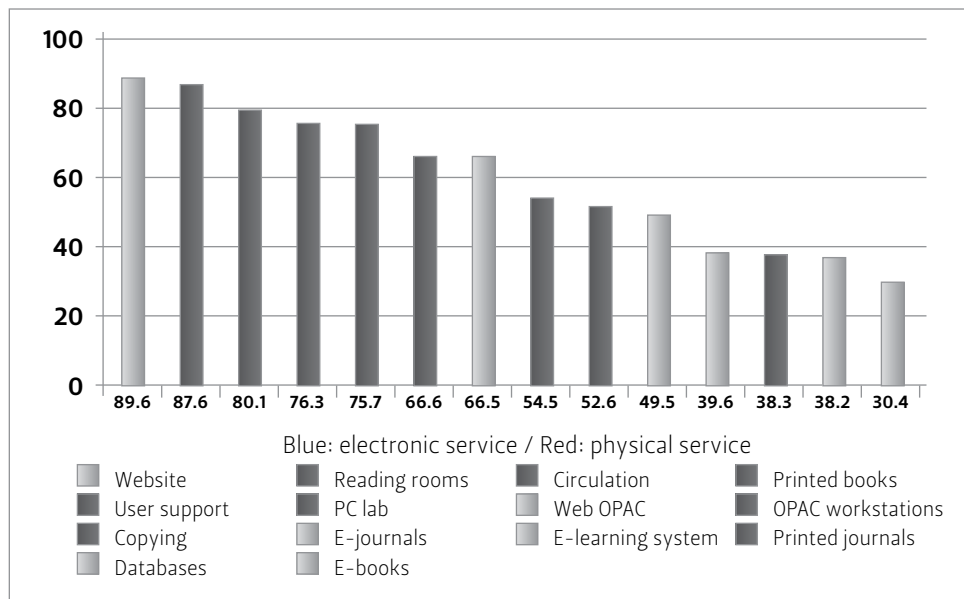


Figure 2: Usage percentages per service (legend reads from left to right, shows only up to 30%)

Our results indicate that the web site of each academic library has the highest percentage of usage with 89.5% of the total sample. The second bar highlights the preference towards reading rooms, a traditional service, with a percentage rate of 87.5. The diagram also shows that traditional services are used more often by Greek users. Circulation, Printed Books, User Support show also high percentages of usage. On the other hand, the Interlibrary Loan, user education, audiovisual laboratory and European Documentation Center services have low scores. In overall, the mean percentage of usage for the traditional library services is 46.3% of the total sample. Low usage percentages are observed by Databases (38,2%) and e-books (30.4%) from the electronic services, and printed journals (38.3%) from the traditional services.

User responses are stimulated by specific cues, which consist of ambience, design, social and economic cues. For the ambience cues, light scores the highest with a mean value of 3.86, while air conditioning and sound score high too. Signage, a design cue, scores also quite high (3.66) in every library. For the economic cues, fines score high (3.22), whereas in the social cues the highest scores of all are the willingness (4.00), the kindness (3.98) and the knowledge (3.94) of library staff.

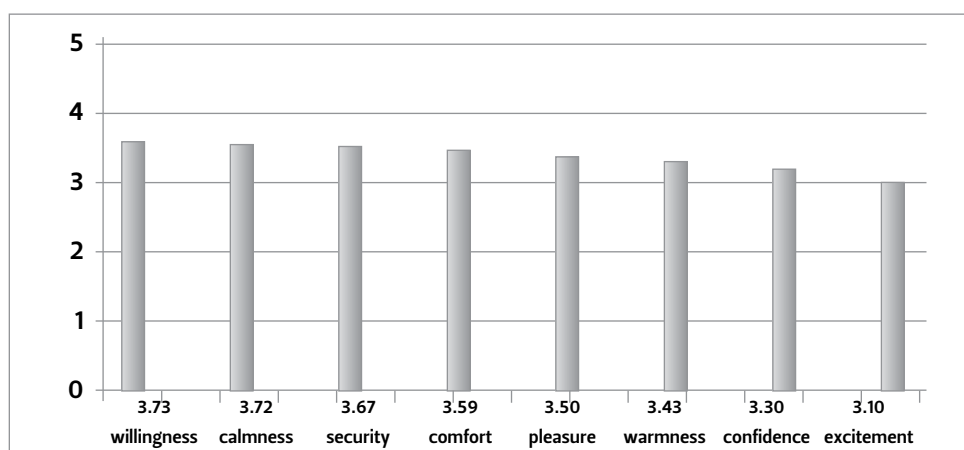


Figure 3: the S.O.R. model as adapted in our study

Consequently, the dimension of 'Organism' consists of the emotions that the library causes to its users. The results of our study show that the users are very willing to come to the library and that within their context they feel calm. All emotion responses were above the average with the users stating that they don't feel very excited when they come to libraries.

We found that there is a balance between the emotional responses of male and female users. Users of both genders stated that they are willing to visit the library and that they feel calm when they visit it, with a mean value above 3.70. These scores were followed by quite high scores – in both genders – on the feelings of security (3.68) and comfort

(3.58). We also found that users from the age of 28 to 47 years old are those that have the most positive feelings about the library services and the environment, whereas the younger and older users than this age group seem to have less strong feelings. The highest feeling for new users it is willingness (3.72) and for the older users – from the age 48 to 55 – it is security (3.90). Willingness has also received high scores especially from users aged between 38 to 47 (4.00). The scores of excitement are the lowest – between 3.1 and 3.3 – for all age ranges.

Faculty members show the top rating in all emotions. They feel safe (4.02) in the library, probably because they are familiar with the library environment. The external users express high levels of excitement (3.59), maybe because the academic libraries are not part of their normal environmental reality. Undergraduate students especially seem to be less emotionally attached to the library.

The year of study gave us very different results about the emotions of our participants. There were found differences in safety, willingness and confidence. First to third year students are more willing to visit the library (an aggregated 3.77) and feel more safe (an aggregated 3.78) in the library than the older students. Students who are in fourth of the fifth year are also willing (3.78 and 3.7 respectively), while students above the sixth year of study feel more comfortable (3.88). It was quite surprising to find that students that are at the end of their studies have high emotions of excitement about the library (3.8 for students at their eight year of study).

Factor 1 (Social)		Factor 4 (ambient)		Factor 5 (design)		Factor 11 (economic)	
Variables	Loadings	Variables	Loadings	Variables	Loadings	Variables	Loadings
Attentive staff	0.795	Quiet space for individual study	0.765	Colors	0.745	Fines and fees	0.940
Capacity of staff	0.764	Space for group study	0.764	Heating, ventilation, etc	0.723	Cost for photocopies	0.835
Caring staff	0.751	Perception of gateway for study & learning	0.724	Smells	0.689	Cost for printing	0.602
Ready and responsive staff	0.725	Inspiring space	0.698	Design of the library	0.637		
Understanding staff	0.720	Comfortable and inviting location	0.611	Lighting	0.390		
Courteous staff	0.699	Building of library	0.560				
Willing staff	0.684						
Knowledgeable staff	0.653						
Staff instilling confidence	0.575						

Table 2: Factor analysis groupings

‘Response’ consists of user’s satisfaction and answers to whether these emotions are translated to approval and approach to, or disapproval and avoidance of the services. In our survey it was found that the majority of users are very satisfied at a percentage of 49%. There is no difference between men and women about the percentage of satisfaction. Both genders are very satisfied about library services, a percentage of 49%. Students at the 3rd year of their studies have the highest satisfaction and at the last year of their studies the lowest.

Factor analysis confirmed the four theoretical groupings of cues. The first – and the most important – factor of ‘Stimuli’ is the social cues, which groups all the characteristics of the library staff. In this grouping, the highest factor loading is the opinion on the attentive library staff (0.795). The second factor is the ambient cues that consists mainly



of the physical aspects of the library and the highest factor loading is concentrated on the variable “Quiet space for individual study” (0.765). The third factor is the design cue with the top variable “colors of the library” (0.745) and the last one is the economic cue. The “economic fine” has the highest factor loading of that cue (0.940).

No significant differences were found between the various status categories with the exception of safety ( $p > .01$ ). In academic years, differences were found to be statistically significant for safety ( $p > .01$ ), willingness ( $p > .05$ ) and confidence ( $p > .01$ ). Homogeneity of variations, a test to show if the variations were similar, was found mostly insignificant, showing that they were in fact mostly homogeneous. We also performed correlation analysis (Pearson) the age and the emotions have a weak positive correlation (0.042), while the correlation of the year of study and the emotions is a weak negative one (-0.084). Correlation is significant at the 0.01 level ( $p > .01$ ).

## Discussion

Library users are generally satisfied by the personnel behavior and productivity, but they also believe that there are margins for further improvement, while they think that the cost of services should be revised and echo the current situation. Library users in Greece prefer using physical services in comparison to the electronic ones. This might imply that they are not well informed about electronic services or that electronic services are not well integrated in the curricula. Users also seem to prefer features that have immediate effect to their daily interaction. In their view an ideal library is a welcoming environment that facilitates reading and cooperation with friendly and willing personnel and affordable fees and fine rates.

Our study's impetus was internal. It was an arduous task to collect the data in a very methodological sound way. This was achieved with the assistance of liaison librarians in the surveyed libraries that helped us complete the survey. This reflects that with a careful planning one can achieve collecting user based data in a representative fashion.

Our future work is to examine whether these cues interact together and how and if they are drivers to social or systemic interactions. For instance, if there are fines and library users have a proven inability to pay them, what is the model of interaction that helps the resolution of this challenge in a mutually beneficial way?

## Conclusions

The study applied the Stimulus-Organism-Response behavioral framework and used a gap analysis scale to measure the opinion of the users on criteria categories. It is a quantitative survey and as such it provides the broad view of the current situation in the country. It focused on important drivers of the expression of affective relationships and its findings can be useful to library administrators as it highlights the effects of economic crisis on key areas of library operation. The findings of the study can assist library administrators to define the range of interventions and to prioritize them in a period of limited resources. In general academic library users in Greece consider them to be spaces that facilitate pleasant reading and studying, as well as efficient collaborative work.

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# Faculty Perceptions of Library Instruction

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## Introduction

What value do faculty perceive in library instruction? With requests for librarian-led instruction nearly tripling in a decade, librarians at the University of Wyoming decided to gather feedback from teaching faculty about aspects of instruction that faculty value, as well as areas for improvement.

Previous surveys of UW faculty addressed library services in general. Results of LibQual+® surveys in 2004, 2007, and 2012 found general satisfaction among faculty regarding library support for learning, research, and teaching needs. Surveys about library resources and services distributed to instructors of distance courses (Kvenild and Bowles-Terry, 2011) and to faculty in the College of Education (unpublished) found a majority of faculty willing to include library instruction, though many believed students already had necessary research skills.

## Background

Established as a land grant university in 1886, the University of Wyoming is the only four-year public institution in the state. The university enrolls over 13,000 students in campus and distance learning programs and is a doctoral-granting institution with high research activity.

In 2003, the university adopted information literacy as a component of the general education program. To earn the L (information literacy) designation, courses must demonstrate specified learning outcomes and include an online tutorial developed by UW librarians. In some instances, faculty consulted with librarians in developing courses. Librarians began offering credit-bearing L courses in 2008. Many L course instructors schedule a class session with a librarian, but it is not required.

A surge in 2003 to 179 instruction sessions accompanied the L requirement, but the overall climb from 127 sessions in FY2002 to 380 instruction sessions in FY2011 has been gradual. The numbers stayed level at 379 sessions in FY2012. The following each count as single instruction sessions:

- one-time or multiple meetings with a class, including face-to-face and audio or video conferences (accounts for over 75% of instruction)
- embedding in online course discussions for one week or longer
- drop-in workshops
- orientations (for programs instead of specific courses).

Librarians have used multiple methods for assessing student learning, including worksheets, citation analysis, transcript analysis, and pre- and post-quizzes. *The Value of Academic Libraries* lists student learning as an essential question in its research agenda and suggests “it is often helpful to gather faculty judgments of student work and any changes in quality that result from library instruction and interaction” (ACRL, 2010, p. 117). The current study adds another dimension to our assessment efforts by gathering feedback from instructors who have more familiarity with student work and context for developing expectations of students alongside their peers.

## Literature review

A number of studies have used surveys or focus groups to investigate faculty understanding of the concept of information literacy, its value, and who bears responsibility for developing information literacy skills in students (eg, DaCosta, 2010; Gullikson, 2006; Saunders, 2012; Singh, 2005; Stanger, 2012; Tyron et al., 2010; Weetman, 2005).

Other studies have investigated faculty perceptions of library instruction, surveying both users and non-users of library instruction (Arendt and Lotts, 2012; Cannon, 1994; Dickenson, 2006; Gonzales, 2001; Hrycaj and Russo, 2007; Leckie and Fullerton, 1999).

Surveys of faculty about the impact of library instruction on student work were more elusive. Bury (2011) found that most faculty at York University, Canada, who included librarian-led instruction reported at least some impact on student information competencies. Craig and DuFord (1995) surveyed off-campus faculty who had potentially used library instruction; most respondents agreed that instruction helped students complete assignments and that librarians used effective teaching methods. Librarians at The George Washington University surveyed writing program instructors about faculty-librarian partnerships and the effectiveness of instruction over a period of three years (Gaspar and Wetzel, 2009).

Manuel *et al* (2005) interviewed heavy users of library instruction at New Mexico State University and Simmel (2007) conducted value-in-use interviews at Bryant University. The authors of the current project were concerned that an interview-only approach might discourage faculty participation. Instead, we opted to send a short survey with open-ended questions to recent users of library instruction. The survey included an invitation to participate in further discussions about instruction.

## Methodology

Librarians used statistics from 2011 and 2012 to identify faculty, lecturers, staff, and graduate assistants who had requested library instruction for undergraduate or graduate courses. Freshman composition and public speaking courses using a common syllabus were excluded.

The authors created an online survey utilizing software licensed by the university. Questions were based in part on a survey developed at Moraine Valley Community College and shared by Troy Swanson (personal communication, November 6, 2012):

1. Which academic department or unit do you consider your home?
2. How many times have you included a class meeting with a librarian in your course syllabus/syllabi?
3. Why did you have a librarian meet with your class(es)?
4. What approaches/actions of the librarian were most successful in the instruction of your students?
5. What evidence indicates that your students benefited from the library instruction session (eg, student comments, better sources, reduced plagiarism, improved research skills on class projects, etc)?

The authors emailed 149 instructors with an invitation to participate in the survey during three weeks in February and March, 2013. Upon submitting the survey, respondents were redirected to a form where they could provide an email address for follow-up. The survey had 56 responses, and 13 participants expressed interest in further discussions with librarians. The authors held two focus groups with a total of nine people.

Discussion prompts used in the focus groups were borrowed from New Mexico State University (Manuel *et al.*, 2005):

1. Tell us about when and why you first began incorporating librarian-provided information research instruction into your courses.
2. Why do you think it is important that your students be taught library research skills and information sources?
3. Why do you ask a librarian to teach your students library research skills and information sources?
4. Tell us about your best and worst experiences with librarian-provided information research instruction.
5. Please recall some concrete examples of library instruction that made a difference, either positively or negatively, for you and/or for your students.
6. Beyond these concrete examples, please tell us about your perceptions of the effects, either short or long term, of librarian-provided research instruction on the students in your course.

Time limitations and interaction between participants resulted in inconsistent use of the discussion prompts. Each session was recorded and transcribed.

## Survey findings

### Department and Use of Instruction:

Disciplinary Area	Number surveyed	Number of responses	Response rate
Agriculture	8	3	38%
Education	23	12	52%
Engineering	7	5	71%
Environment & Natural Resources	3	2	67%
Fine and Applied Arts	13	2	15%
Health Sciences	24	9	38%
Humanities	21	8	38%
Math and Science	8	4	50%
Social Sciences	27	7	26%
Student Affairs and other programs	15	4	27%
Total	149	56	38%

Figure 1: Results for “Which department do you consider your home?”

The distribution of responses across departments was somewhat representative of those surveyed; the response rate from those who identified with the sciences was higher than those in the social sciences and humanities. One of the authors is the education liaison, which likely influenced participation from that college.

Once	13
Multiple semesters for the same course	29
Once or more for multiple courses	14

Figure 2: Results for “How many times have you included a meeting with a librarian on your course syllabus?”

### Why did you have a librarian meet with your class(es)?

The authors grouped responses into 8 categories. Categories and sample responses included:

1. Use library resources
  - “To explain database resources”
2. Search strategies
  - “So that the librarian could expose the students to a wider variety of search techniques than just Google.”
3. Librarian expertise
  - “The librarian is better than I am at showing the sts [sic] how to do this.”

4. Research assignments

- “Students are required to write a laboratory report using primary reference literature”

5. Get students into the physical or virtual library

- “Understanding how to utilize the online library”

6. University Studies “L” requirement

- “I believe the session with the librarian is an important part of instruction in a course that fulfills the information literacy requirement.”

7. Library services

- “Request It and Prospector” (interlibrary loan and consortia catalog)

8. Syllabus designed by another instructor

- “The instructor who authored the class set that up.”

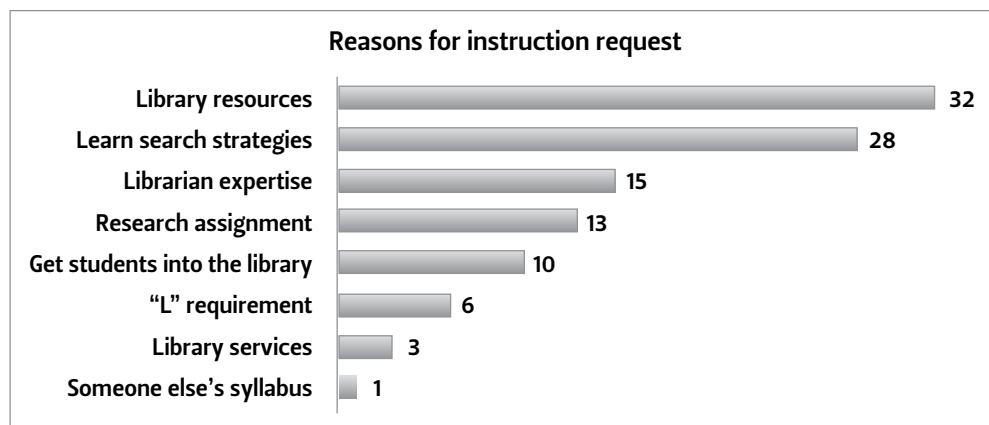


Figure 3: Results for “Why did you have a librarian meet with your class?”

The authors predicted that some faculty would say that a colleague recommended library instruction, which would help explain growth in demand. Only one said he or she was using someone else’s syllabus. We also expected more faculty would mention the “L” requirement. Instead, faculty responses spoke more to their goals for library instruction.

### What approaches/actions of the librarian were most successful in the instruction of your students?

Responses fit into the following categories:

1. Demonstrate resources

- “Step-by-step guidance on the computers”

2. Hands-on experience

- “They explained what was to be done and then turned them loose to do it”

3. Offered strategies, tips, and advice

- “The librarian was extremely clear about HOW to use the library for research purposes”

4. Used student topics

- “Using search topics suggested by students”
- 5. Included in-class discussion
  - “At the end everyone had to show what they had done.”
- 6. Used worksheet or assignment
  - “have them, with the use of a worksheet, formulate a topic and find sources”
- 7. Offered follow-up consultations
  - “Supported students in their literature searches by email”
- 8. LibGuides (<http://springshare.com/libguides/>)
  - “I love how she had created databases for our area before our library session”
- 9. Collaborated on course
  - “Assistance with developing the course”
- 10. Individualized attention to students
  - “I think one on one interactions”
- 11. Tailored to assignment
  - “I really like that [Librarian] gets my assignments in advance”

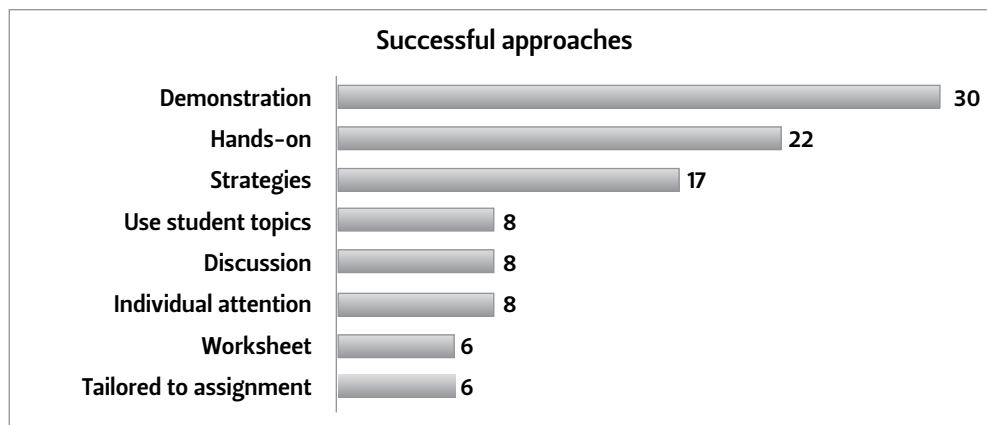


Figure 4: Results for “What approaches used by the librarian were most successful in the instruction of your students?”

Instructors most frequently mentioned demonstration of resources or strategies and use of hands-on activities as successful approaches. They liked customized, problem-based instruction using student topics as examples. Giving students individual attention – either during the session or as a follow-up – was also valued.



## What evidence indicates that your students benefited from the library instruction session (eg, student comments, better sources, reduced plagiarism, improved research skills on class projects, etc)?

Responses fit into the following categories:

1. Feedback that students followed up with a librarian
  - “students’ reporting that they had received additional help from a reference librarian”
2. Quality of sources
  - “improved variety of sources used in research projects”
3. Better product/improved grade
  - “more focused data and research presented in their work”
4. More independent researchers
  - “they also often require less help in defining topics to research”
5. Student feedback
  - “Student comments have been positive and state that it was a surprisingly positive experience and they actually did not know as much as they thought they did going into these sessions.”
6. Positive attitude toward library/librarians
  - “Most importantly, they view the library as a user-friendly resource to support future coursework”

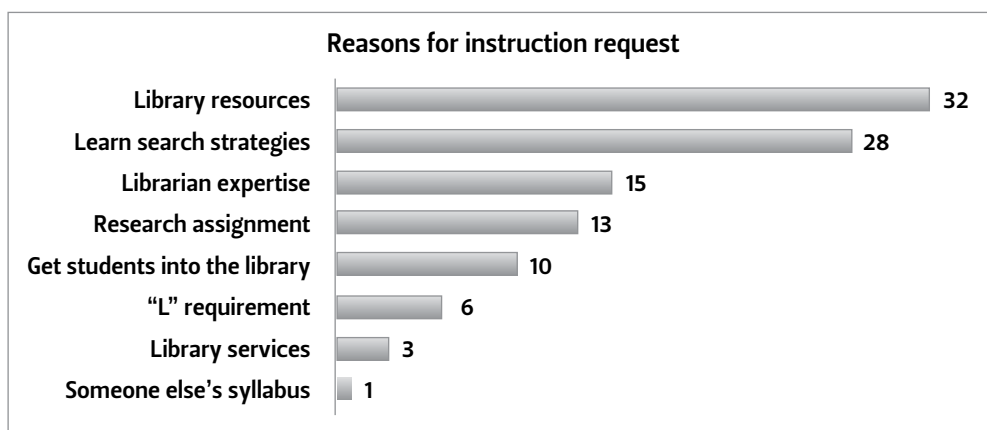


Figure 5: Results for “What evidence indicates your students benefitted from library instruction?”

Respondents most frequently mentioned improved research skills with less need for faculty intervention in refining topics and finding acceptable sources. Librarian assessments have examined completed student work, but faculty feedback tells us about changes in student behavior. One respondent actually analyzed student performance on a research paper and concluded, “there was a disproportionately heavy representation of low grades for those who missed the library search class...”

## Focus group findings

The authors anticipated that focus groups would give faculty opportunities to expound on what they valued about library instruction and what could be improved. Participants included two faculty from education, three from humanities, two from social sciences, and two from health sciences.

Overall, themes that arose in the focus groups echoed those from the survey. All group participants used library instruction continuously, and most had expanded instruction either from upper-division to freshman courses or vice-versa. Asking faculty *when* and *why* they began including instruction seemed to be a more productive approach than simply asking *why*, as we did in the survey.

Several areas for improvement arose that did not appear in survey comments. One faculty said that students viewed library instruction as repetitive and that goals for sessions were unclear. Some students got lost when trying to follow along with the librarian and would have benefited from an assistant roving the room.

Participants said they value the expertise of librarians, but students don't understand that librarians have advanced degrees and specialized training. A conflicting opinion was that students might be more comfortable with graduate students teaching about research – someone closer to their own age and experience level.

One sentiment expressed often was that students had even lower levels of research skills than what faculty expected; this was true for freshmen, upper-division, and graduate students. Participants appreciated that librarians broke down the process of research. Faculty also valued librarians as an external voice reinforcing what they were teaching students in the classroom about research.

Some faculty preferred that librarians emphasize specific resources to make searching efficient, while others felt students benefit from knowing multiple approaches for finding information. Either way, faculty believed that using student topics as examples was more engaging, and giving them time to apply strategies to their own projects made abstract concepts more concrete.

Several faculty felt strongly that customized LibGuides facilitated use of appropriate resources after the library session. Some faculty said that follow-up research consultations with librarians had the most value for students.

One faculty suggested some ideas for improving the image of librarians, including scavenger hunts with cash prizes, more presence on social media, and injecting more humor and popular culture into library instruction.

## Conclusions

While survey responses did not provide a complete explanation for increases in library instruction, the authors did confirm our assumptions that faculty value instruction enough to continue using this service. Even more important, faculty see a positive impact on student learning demonstrated not only by improved student research projects, but by changes in student behavior and attitudes.

The survey identified demonstration of resources and strategies, plus hands-on practice as effective approaches used by librarians. The focus groups pointed to more time-intensive practices: giving attention to individual student topics during or after the session and customizing instruction and LibGuides to specific courses. Our challenge going forward is finding a balance where librarians meet demand for instruction while focusing efforts on those activities that most impact student learning.

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# Developing a library quality model at University of Sunderland Library Services

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## Abstract

### Purpose

The purpose of this paper is to share the ways in which University Library Services Sunderland created and embedded a quality model, to engender service-culture change, ensure engagement with and best use of library services and capture and demonstrate evidence of the value of the library's contribution to the student experience. Launched in 2008 our Quality Model initiative is ongoing and has become our established way of working.

### Originality/value

The University of Sunderland Quality Model differs from many library performance models in that it takes an holistic approach. It aims to inform and shape cultural change and lead a strategic approach to customer relationship management in order to facilitate the capturing of impact evidence and demonstrate the value of our contribution. It is self-formed and based upon strategic marketing principles and underpins University priorities.

Our approach is of particular significance as Higher Education libraries are increasingly challenged to demonstrate their contribution to the academic experience and are exploring the role of cultural change to facilitate this. Although designed to meet our specific aims at Sunderland many of our techniques will be transferrable to the strategic priorities of other HE libraries.

### Key words

Academic Libraries, Higher Education, Quality, performance management, organizational culture, values, customer relationships, strategic marketing, organizational change

## Introduction

*'Increasingly... University leaders will challenge the university as a whole, and individual departments, to answer the question, 'What's so special about you?' In other words, universities and departments will need to justify their existence.'*

(Barber, Donnelly and Rizvi, 2013, p.50)

The University of Sunderland Library Quality Model is an holistic, strategic approach to facilitate the cultural change required to meet the challenges facing HE Libraries today. A challenge to be agile enough to shape services to meet continually changing customer needs and be able to articulate and demonstrate the impact and contribution of these services on the experience, success, and outcomes of our customers.

## Strategic priorities

Cultural change and organisational development were the key drivers for the creation of our Quality Model. Cultural change in terms of service ethos and staff roles; our relationship with our customers, and our perception of quality and

performance. Our Quality Model is both a catalyst for cultural change and a vehicle, which informs the ways in which our commitment to that cultural change is demonstrated to our customers through service delivery

At the University of Sunderland there were a number of strategic priorities that informed its creation:

### **Values and cultural change**

In 2006 University Library Services converged with eight other University services to form Student and Learning Support (SLS.) SLS Executive launched a programme of Values and Cultural Change with the aim of unifying a service, which whilst delivering professional specialisms, shared the central core values of: Information Sharing, Customer Focus, Customer Satisfaction, Teamwork and Continuous Improvement. These core values were developed in service wide workshops.

The vision was to nurture a 'liberating organisation' (McCaffery, 2008, p.69) characterised by an inspirational view of the future with shared values and vision. A non-hierarchical structure where leaders share behaviours and support staff to interface directly with customers, empower staff with the authority to self-manage teams and value organisational democracy. A culture where staff learn from mistakes and are encouraged to innovate without fear, to communicate openly and perceive change as a positive challenge.

In 2013 this cultural change was extended further with a library management restructure which replaced a structure based largely around physical sites with a matrix model of empowering leadership.

### **Contribution to the student experience**

Contemporary HE places significant emphasis upon capturing impact, difference, value and contribution.

Significantly, the 2008-2013 University of Sunderland Academic Strategy (University of Sunderland, 2008) for the first time challenged all areas of the University to articulate the contribution they made to the quality of the Student Experience. In addition The University's Student Voice initiative was launched with an emphasis upon forming a more meaningful relationship with our students. The current Academic Strategy 2013-2016 (University of Sunderland, 2013) is yet more explicit, driving us to articulate our impact not only upon high quality service provision and the student experience but also upon student success and outcomes. For University Library Services this translated into some clear challenges.

## **The Quality Model – our initial challenges**

It was imperative that every member of staff within our service understood our strategic aims and were able to relate their roles and daily work to the achievement of these; further, we were seeking to ensure that staff understood that they had a personal responsibility for the quality and impact of their work and thus they were an integral part of making our aims a reality on the ground.

We needed to shift our perception of the purpose of our service, from that of offering services and products to offering solutions and differences. We needed therefore to understand the contribution our customers were looking to us to make and plan and deliver services that could realize that contribution.

If we were to succeed in understanding what our customers looked to us to contribute to them, we needed to stop thinking of our customers as passive recipients and instead as 'active-agents' (Barber, Donnelly, Rizvi, 2013, p.65). We needed to be agile and flexible, anticipating and proactively responding to customer need rather than requiring customers to fit our shape, processes and procedures. This called for a new relationship with our customers and a new understanding of our role in an era when 'the student consumer will increasingly be king.' (Barber, Donnelly, Rizvi, 2013, p.51)

Having defined customer expectation we needed to be 'sharper and clearer' (Barber, Donnelly and Rizvi, 2013. P.51) about what we offer, to whom and why and ensure a shared understanding of this amongst staff within our service.

We could no-longer leave it to serendipity that our customers realise the contribution our services could make to them, to be left to select the relevant services to meet their specific needs or to work out for themselves how to make best use of them. We needed to be explicit about the expected contributions of our services to individuals, to proactively offer solutions to our customers according to their need and to demonstrate the value of our contribution by example.

In relation to performance management we needed to facilitate the collection of impact evidence. We could no longer leave it to chance that customers would provide us with qualitative evidence of the actual difference our services made or rely upon quantitative statistics alone as evidence of contribution. We needed a new perception of performance and a new performance model to facilitate the capture of evidence of our actual contribution.

Having captured evidence of the value of our contribution we must become skilled in collating our impact evidence, of using it to inform continuous improvement and to demonstrate our actual contribution to our customers and stakeholders. We needed to nurture our customers to become positive advocates of our service who were equipped and willing to amplify and demonstrate these benefits on our behalf.

Successfully meeting such challenges relied upon the nurturing a new kind of relationship with our customers. It also rested firmly upon significant cultural change ensuring a shared vision, ownership for the quality of this customer relationship and innovative, new ways of working.

## 7 Step Strategic Marketing Toolkit

Throughout the development cycle of our Quality Model it has become increasingly apparent that strategic marketing skills are key to developing successful customer relationship management.

In 2007 University Library Services developed a 7 Step Strategic Marketing Toolkit. This Toolkit enabled us to develop and employ key marketing techniques: to focus on the customer perspective; to align service planning with strategic priorities; to identify customer segments, their needs and expectations of us; to meet these expectations with benefit-based service offers and to manage customer relationships in order to capture and articulate contribution. The Toolkit is central in the formation of our Quality Model and has been shared with many libraries throughout the UK and at a number of international conferences.

## 9 Quality Promises

Our Quality Promise initiative was launched in 2008. In keeping with our cultural change objectives each member of library staff was involved in cross-team projects, to define 'sharper and clearer' core service offers (Barber, Donnelly and Rizvi, 2013. P.51.)

By way of detailed project briefs staff were challenged to define within each of these core areas, expected levels of service quality from a customer perspective.

As a result nine, core service offers and Quality Promises were defined:

- **Customer Care** – Every time you talk to us you will meet approachable, knowledgeable staff whose key motivation is to help you and ensure you get the most out of library services.
- **Customer Support** – We will give you help and support to enable you to use library resources to best effect.
- **Skills for Learning** – You will have the opportunity to develop information literacy skills that will help you to use library services to your best advantage, support your academic progress and your future development.
- **Resources** – You will have access to appropriate resources when you need them.
- **Learning Spaces** – Library spaces and virtual learning environments that are responsive to your learning needs.
- **Equity** – No matter where you are, when or how you reach us we will strive to deliver an equivalent library service.
- **Knowing your Customers** – We will always treat you as an individual and where possible will deliver support and services to meet your specific needs.
- **Feedback** – We will always consider your comments, thoughts and suggestions and respond to you. We will take actions and develop services where appropriate.
- **Communication** – You will always have the information you need to ensure that you are aware of service developments.

During the following four years our cross-team project groups worked to reshape our service offers, procedures and practices in order to realize the expectations of our Quality Promises.

These recommendations were then prioritized, actioned and fed into longer-term strategic planning.

## New perceptions of performance and the new model

Focusing the purpose of our service upon contribution and impact called for an entirely new perception of performance. We developed an understanding of performance which:

- focuses on outcome rather than output
- is fluid and evidence capturing is designed for specific purpose
- places importance on capturing the intangible eg ethos and culture, in addition to the tangible
- is based upon the customer perception of quality
- ensures customer feedback mechanisms are transparent, open and honest
- ensures evidence is shared, used for continuous improvement and successfully communicated to stakeholders
- places ownership for the quality of the customer experience upon all staff.

Having established a new perception of performance we established a new model through which, we too began to capture actual contribution and impact.

It was based on the following principles:

- A shared understanding of the contribution our customers are looking to us to make and how our services can meet these expectations.
- The ability to articulate and demonstrate the contribution we expect to make to our established customer segments.
- A commitment to enabling our customers to articulate and share the actual contribution, difference and impact we have made with us, to their peers and to our stakeholders.
- The development of an approach to capture evidence of actual and lack of contribution.
- The use of this evidence to inform continuous improvement and to demonstrate evidence of our impact to customers and to our stakeholders.

## Quality Promise Campaign

By summer 2010 we felt that we were ready to share our commitment to our Quality Model with our customers.

It was apparent that in order to articulate successfully our expected service contributions; ensure best use of services and capture impact evidence we needed to develop a different kind of relationship with our customers.

Our Quality Promise Campaign aims to facilitate the establishment of mutually beneficial customer relationships. These relationships have been nurtured through a strategic approach to building trust with customers and continuous demonstration of our commitment to a culture of customer focus and service quality. Through these relationships our customers know exactly what contribution we expect our services to make and are therefore informed and equipped to be able to use our services to best meet their needs. We have established open channels of communication through which our customers can be involved in shaping our offers and a culture where customers feel comfortable to feed back on their real experience of using our services. As a result the Library can be more certain that our services are being made best use of and that we are able to capture vital intelligence and evidence of actual contribution.

We have now delivered two successful year-long Quality Promise Campaigns. Examples of all of our Campaign themes can be seen online. ([www.pinterest/UniOfSunLib](http://www.pinterest/UniOfSunLib), 2013)



## The key campaign principles

- Clear service-wide conversational themes based upon our Quality Promises
- Exemplified by the promotion of key service offers within that theme
- The mapping of these key conversations onto relevant touch-points in the customer journey
- Contextualisation for key audiences eg by Faculty, subject, customer-journey point
- Facilitated capturing of actual contribution
- Sharing and amplification of the impact of our actual contribution.

## Key concepts of the campaign

### Leadership and ownership. Coordination and contextualisation. The balance.

Clear leadership is required in order to balance successful management of the Campaign with our core cultural aim to ensure that staff can fully contribute to and take ownership for building these relationships with our customers.

This has largely been achieved by:

- involving staff in Quality Campaign planning and delivery
- working with Academic Liaison Librarians to contextualize the themes and their delivery for their own audiences
- a coordinated programme of planning meetings and staff development sessions for library assistants, scheduled to run alongside our Campaign themes. Enabling staff to successfully articulate core messages and demonstrate relevant services to customers
- ensuring all staff are involved in managing and sharing feedback and impact evidence.

## Quality Promise timeline

Our timeline is our central planning tool ([www.pinterest/UniOfSunLib](http://www.pinterest/UniOfSunLib), 2013). It is a visual representation of our core Campaign activities across the academic year eg core themes, timings, articulated benefits, specific service promotions and delivery methods, impact capture mechanisms and staff development. It is shared across the service and ensures a coordinated approach and buy-in from all staff.

## Quality Promise brand

Our Quality Promise brand is a visual identity, which is reflected in all Quality Campaign activities on campus and online. A key priority is that it can be easily adopted and re-purposed by staff in the creation of their own Quality Promise materials. This is a priority if we are to achieve contextualisation and ownership of our core messages.

## Culture of conversation

Facilitated dialogue is a core principle of strategic marketing. It is central to our approach to developing relationships with our customers.

We had a number of key aims in developing these customer conversations:

- to develop staff to be comfortable to lead and facilitate conversations with their own specific audiences
- to be friendly, warm, understanding, responsive, proactive and flexible
- to move from one way communication to multi-way conversations which encourage sharing

- to be honest, open and transparent
- to nurture a human voice in order to transform faceless, corporate communications
- to maintain a consistent message whilst nurturing multiple, diverse voices
- to shape conversations that are meaningful to our specific customer segments.

Social media has facilitated perfectly these conversations. It is egalitarian – enabling all staff and the majority of customers to interact in their own voice and style. It enables us to be where our audience is, to be agile, responsive and timely, to be informal and friendly, to quickly push content to customers in many formats and most importantly to facilitate sharing.

### **Articulating sharp, clear service offers and our expected contribution**

Having clearly defined our nine core service offers and promises of quality we are able to facilitate conversations around each. The fulcrum of each conversation comprises clearly articulated expected contributions. By articulating these benefits we not only motivate customers to use our services but also prepare them to be able to make judgments about the actual contribution of our services and equipped to identify and evaluate that contribution.

### **Inviting evidence of actual contribution and capturing it**

Each conversation invites our customers to talk to us, their peers and other stakeholders about the actual contribution our services have made to them. This often focuses as much on service ethos as upon specific service offers.

We employ various imaginative techniques in a blended approach both on campus and online. A key priority is to ensure that feedback receives a timely and honest response and that the process is transparent. Negative feedback sits side by side with the positive, the quality of our responses often transforming negatives into positive opportunities and detractors into positive service advocates.

### **Encouraging sharing, amplification and advocacy**

'In a worldwide Nielson survey 92% of online consumers said they completely trust or somewhat trust recommendations from people they know.' (Building brand advocates *www.parature.com*, 2012)

An intrinsic element of our approach is to facilitate the sharing and amplification of positive messages regarding the actual impact of our services. Each Campaign theme has a sharing element built into its design ensuring that customers are encouraged to become positive advocates of our service and that they are able and willing to share the real value of our contribution with their peers and with stakeholders – often with very powerful results.

## **Conclusion**

Our Quality Model and Quality Model Campaign are successfully enabling us to achieve many of our original and emerging strategic aims.

The holistic nature of our Model has both informed and facilitated cultural change and has been instrumental in enabling and demonstrating our commitment to our shared Values and 'liberating culture' (McCaffery, 2008, p. 69)

As a result of this cultural change we have been able to develop our customers as 'active agents' (Barber, Donnelly and Rizvi, 2013, p. 65) and to develop mutually beneficial relationships with them. We have been successful in re-evaluating our perception of our role in terms of making a contribution to student experience, outcome and success and in re-evaluating our perception and model of performance, enabling us to capture and demonstrate this contribution and impact.

Having now established and embedded our Quality Model we look forward to developing our vision and culture and further enhancing our relationships with our customers.

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# Can you measure IT? The UK experience of TechQual+

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## Introduction

Founded on principles of excellence, equality and opportunity for all, the University of York opened in 1963 with just 230 students. The University is first in the UK and seventh in the world in the Times Higher Education world rankings of universities under fifty years old (THE, 2013). York now has more than 30 academic departments and research centres and a student body that has expanded to nearly 15,000.

The University celebrates its 50th anniversary in 2013, and has a global reputation as a strong research-led university, competing against elite institutions worldwide. It also recently joined the Russell Group, a prestigious mission group representing research intensive universities in the UK (University of York, 2013).

Information Technology is provided and supported at the University by the IT Services department. IT Services forms part of the wider Information Directorate, a converged service comprising Library, IT and Archives. IT Services aims to provide world-class technology services to University of York staff and students, including:

- Enterprise Systems: Web and business systems
- Desktop & Printing
- IT Support
- IT Training
- Networks and Data Centres
- Systems & Security

In order to understand satisfaction with these services and get feedback from customers, IT Services ran a user survey in 2011 using the TechQual+ tool. The survey was conducted at a time of great change to the service – in October 2011, Google Apps for Education was rolled out as a replacement email and calendaring service for all University members and a new cloud printing solution, York Print Plus, was being implemented for all students.

The decision to use the TechQual+ tool was considered in detail before the survey was conducted. The rationale behind this is now discussed.

## Rationale

In previous years, IT Services user satisfaction surveys were conducted using an in-house tool. The tool provided the ability to tailor questions specifically to the service, including the content of the questions and demographic information required from respondents. The tool also had the benefit of allowing easy distribution to a sample of users; in the 2008 survey, 33% of undergraduates or taught graduates and 33% of staff or research graduates were invited to participate. Respondents received the invitation via email and were provided with reminders to complete

the survey. Creating a bespoke survey was, however, time consuming, and there were no data analysis tools provided, meaning that analysis had to be conducted manually.

As part of the newly created Information Directorate, which sought to share best practice and information sharing amongst staff, IT Services were keen to consider alternative methods for assessing and improving its service. The University Library had been using the LibQUAL+ survey tool for its user surveys since 2004. LibQUAL+ is a suite of services that libraries use to solicit, track, understand, and act upon users' opinions of service quality, based upon the SERVQual framework (ARL, 2013). Using a standard tool for this survey gave the Library the benefit of using an established tool, including the ability to benchmark its results against other institutions.

Similarly to LibQUAL+, TechQual+ offered a standardised survey tool for Information Technology services in higher education. Indeed, as the survey providers note: "The success of the TechQual+ project will be due in large part to inspiration derived from the pioneering research that resulted in LibQUAL+." (Higher Education TechQual+ Project, 2013). TechQual+ also offered strong data analysis and reporting features, which meant a reduction in staff effort for analysis in comparison to previous years, along with the ability to benchmark results against comparator institutions. Additionally, while LibQUAL+ is a charged for service, TechQual+ is offered free of charge to all higher education institutions.

IT Services therefore decided to conduct its 2011 user survey using TechQual+, becoming the first university in the UK to use the tool.

## Approach

After the decision was made to progress using TechQual, a small project team of three was formed to administer and promote the survey. The team confirmed a date for running the survey with the Information Directorate senior management team and the University's senior management group. As the University of York runs several surveys annually, including the National Student Survey (NSS), it was important to schedule the IT survey so that it did not conflict with any others, thus minimising the risk of survey fatigue and maximising the response rate.

After agreeing a date, the project team progressed to testing the survey tool. Similarly to LibQUAL+, the TechQual+ tool is web based, allowing for test surveys to be created easily. The site also contained sufficient guidance on how to administer the survey, with Timothy Chester, who developed the tool, available to provide support and answer any questions the team had. To run the survey, the project team were required to upload a list of email addresses of all users to the TechQual+ service in order that tailored links could be sent to each potential respondent to complete the survey. Whilst this offered the advantage of allowing users to partially complete the survey and return at a later time, it also presented an issue for the project team, as uploading user details to the TechQual+ server (based in the US) did not adhere to UK Data Protection laws. However, after discussions with the TechQual+ team, changes were made to the tool to allow a single link to be emailed to all potential respondents, removing the need to upload user details and allowing anonymous completion, thus satisfying data protection requirements. This approach also allowed the team to promote the survey through other channels, such as social media.

In 2011, TechQual+ included 18 core questions (Appendix A), covering three core areas of IT provision:

1. Connectivity and Access
2. Technology and Technology Services
3. The End User Experience

The TechQual+ tool also allowed for the inclusion of additional questions chosen by the survey team. After analysing the core questions, and comparing these to what was covered by the in-house survey in 2008, the team identified a number of areas of York's IT provision which were not included. In particular, having recently implemented Google Apps for Education and the York Print Plus service at the University, gauging user perceptions regarding email, calendar, printing and collaborative tools was of interest. It was therefore decided to include the following local questions:

1. Having an email service that meets my requirements as a member of the University
2. Having a calendar service that is easy to use and helpful to me
3. Having printing and scanning facilities that are reliable, available and perform in an acceptable manner

4. Access to collaborative tools that enable me to be successful in my role as a member of the University
5. Having IT classrooms and study areas in the areas that are important to me.
6. Support staff who can assist me with issues relating to personal devices and non-Windows operating system (eg Mac OS X and Linux)

After finalising the additional questions, the IT survey was scheduled to run from 28 November – 19 December 2011. It was decided that no sampling would take place and the survey link was sent to all staff and students at the University of York via email, as was established practice with the Library survey. To maximise the response rate, it was also promoted through various communication channels, including the IT Services website, the University news feed and the IT Services Facebook and Twitter accounts. Incentives, in the form of an iPod touch for the main winner and USB sticks for runner ups, were also offered to encourage users to respond to the survey. A reminder email was also sent to all potential respondents midway through the survey period.

## Results

The survey resulted in 1,888 responses in total, representing a 10.45% response rate across the University. This response rate was comparable to the LibQUAL+ survey ran by the University in May 2011, which received a similar number of responses (1,865).

Analysing the responses by date (Figure 1) showed that email promotion of the survey was particularly successful, as the majority of responses were received shortly after the two email reminders were sent, as indicated by the spikes on the graph.

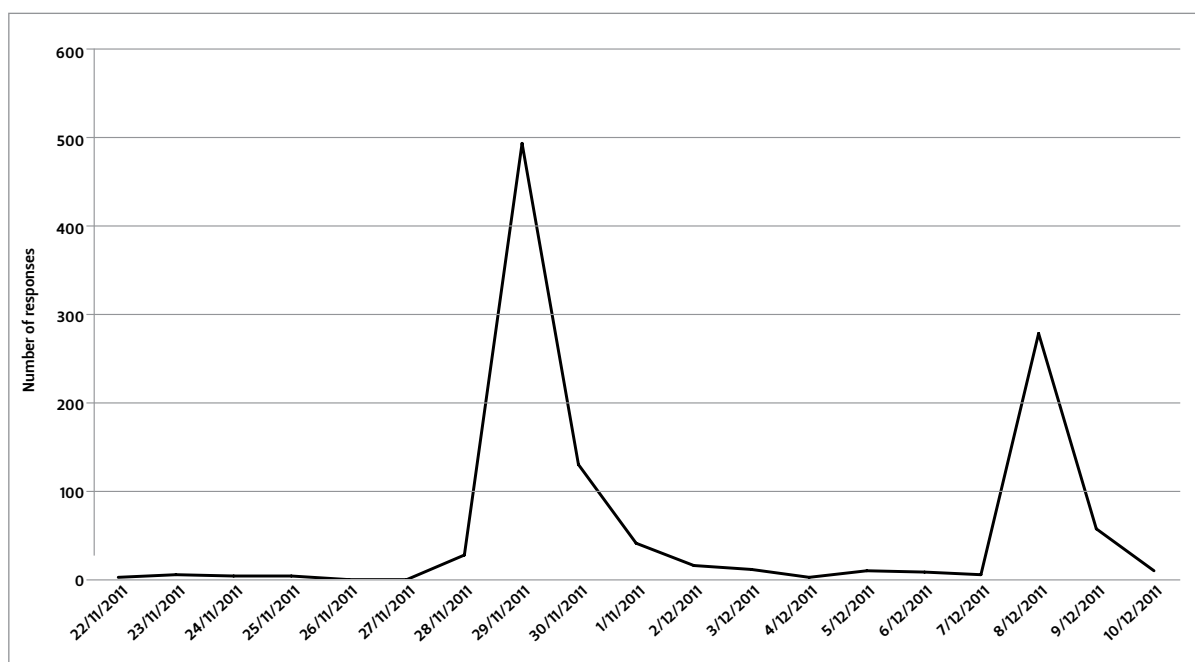


Figure 1: Survey responses by date

The survey also elicited a large number of comments, with 2,855 comments being received in total. This comprised 2,520 comments on specific questions in the survey, and 335 free text comments at the end of the survey, indicating that our respondents typically gave comments on specific items, rather than general comments about the service.

The TechQual+ tool provided a results notebook to survey administrators similar to that provided in LibQUAL+. The notebook gave an overview of the survey, some information on the demographic profile of respondents, quantitative results for the survey and full text of the comments received. The report for the University of York 2011 Survey was uploaded to the IT Services website, with all comments removed in order to maintain privacy (University of York, 2012).



The results notebook also provided a radar chart showing the quantitative results for each of the core and additional questions in the survey, similar to those given in the LibQUAL+ tool. The radar chart for the 2011 Survey is shown in Figure 2.

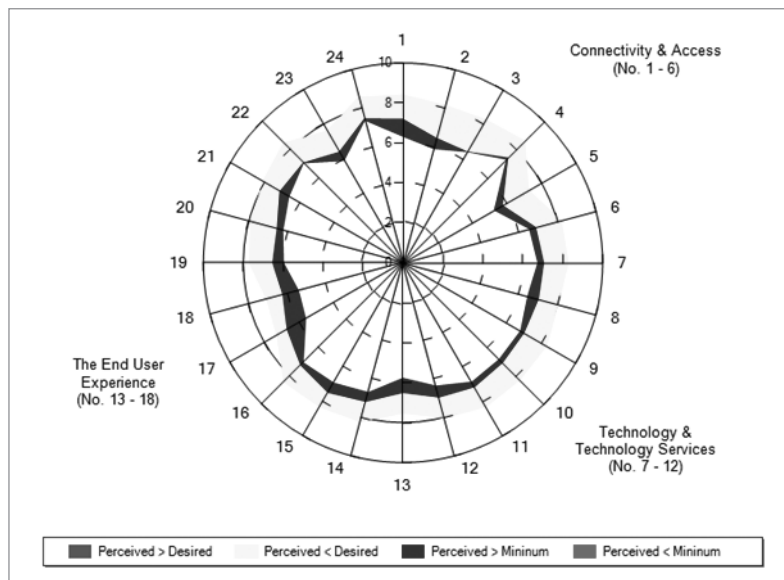


Figure 2: University of York TechQual 2011 Survey results radar graph

The radar chart was a helpful way of visualising overall results for the survey. It was also particularly helpful to have results in this format, as staff within the University were familiar with this presentation from the Library surveys previously conducted.

## Data analysis

The following types of analysis were conducted on the survey results:

1. Identification of greatest superiority gaps (areas where IT Services were furthest away from meeting user desired needs)
2. Benchmarking results against other institutions
3. Coding and analysis of free-text comments

The TechQual+ tools provided assistance with the first two sets of these analyses. In the first instance, superiority gaps were identified from the results notebook, which indicated potential areas of focus. The TechQual+ website also provided the ability to benchmark the results received against other institutions running the survey. This proved useful as it highlighted areas in which York had both strengths and weaknesses in comparison to other institutions. However, as the first university to run the survey in the UK, it was not possible to compare results with other UK institutions and therefore comparisons were only made with international universities, perhaps limiting the applicability of this function at the time. In spite of this, the benchmarking information was deemed as providing useful context when the results were presented to senior university stakeholders.

TechQual+ provided no free-text comments analysis tools at the time the survey was conducted. It was, however, possible to download all free-text comments for analysis in a separate qualitative analysis tool, such as QSR NVivo. In our case, comments were downloaded into an Access database which had previously been used to code Library Survey comments. The database had a form that allowed the project team to assign up to four different themes or nodes to each comment, and also to create new themes or nodes "on the fly" during coding. The database also allowed each node to be labelled as positive or negative, and for comments to be flagged as being potentially sensitive (for example, if they mentioned people by name).

Thirty-three different themes were created during coding, covering topics such as "Email" or "Wireless Network" to systems such as "Timetable" or "VLE". Comments for each area were then distributed to the relevant section heads

(for example, networking comments were sent to the Head of Infrastructure) for consideration and action. In some cases, these were sent to service owners in other departments within the University, who were grateful to receive feedback on their services.

When presenting the results to senior stakeholders, an overview of the number of comments given on each theme was also provided, as shown in Figure 3. Whilst this approach arguably oversimplifies the qualitative data, examples of both positive and negative comments were also presented to illustrate specific points. A selection of comments received from the survey are shown below:

*“Would prefer more computer areas, particularly in or near the library. Also, more wireless access in areas of campus, such as in sections of Langwith, and other places where it is hard to access (not just in study areas – while walking about campus etc)”*

*“Very happy with the services and support from IT Services. When things go wrong (which is rare) they are always on hand and very helpful.”*

*“Make it suit all technologies please, not just windows and PCs, can you get a MAC friendly system? ”*

Item	No. Comments
Wireless	404
Email	320
Printers	210
Staff/service as a whole	192
Website	188
Calendar	152
Google	123
Mobile	117
Off Campus	114
Supporting Personal IT	104
IT Classroom/Study Space	100
Response Time	98

Figure 3: Number of comments by theme for the 2011 IT Survey

Following analysis, the project team worked with the Head of IT Services in order to address areas of concern identified in the survey. The feedback was helpful in several cases for highlighting specific needs, and this was developed into an action plan and reported to senior budget holders. This action plan was reviewed two months later to monitor progress, and to communicate progress to users in a “you said...we did” format, which was published on the IT Services website (University of York, 2012). For example, access to the wireless network was identified as an area of priority for users in the survey, and over £1m has since been invested in wireless infrastructure in order to improve this.

## Reflections

On reflection, the TechQual survey tool worked effectively. It was relatively easy to administer, with the online tool proving straightforward to use. The results of the survey were presented in an accessible format and it provided the opportunity to benchmark our results with similar institutions globally. However, there were some issues which should be noted. Firstly, as the tool was initially developed for an American audience, some of the language used was confusing for participants in a UK institution. In particular, the use of the term “faculty” in the demographic questions did not translate well and it was necessary to define this term in the survey introduction. Secondly, the demographic data that was collected was not extensive, and unlike LibQUAL+, departmental data was not recorded. Arguably this

may not be as crucial for an IT survey, however, as the IT support received on a departmental level varies significantly across the University of York, it would have been beneficial to have obtained this data.

The benefits of the tool, however, far outweighed any limitations and a number of improvements have been made to the survey tool since 2011, including the editing and reduction of the core questions (Appendix B). Plans are therefore in place to run the survey again at York in February 2014.

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## Appendix A

### CORE QUESTIONS 2011

#### Connectivity & Access

Measures service quality of network access and the ability to access online services

1. Having adequate capacity (speed, bandwidth) when using the wired network
2. Having adequate capacity (speed, bandwidth) when using the wireless network
3. Having wireless network coverage in all the areas that are important to me as a faculty, student, or staff member
4. Having a university network that is reliable, available, and performs in an acceptable manner
5. Having access to important university provided technology services from my mobile device
6. Having access to important university provided technology services from off campus when at home or travelling

#### Technology & Technology Services

Measures service quality of technology services such as software applications or classroom technology

1. Having a university web site that provides timely and relevant information
2. Having a sufficient number of online (ie web based) services that are helpful to me
3. Having university information systems (finance, HR, student, library, or portal) that are easy to use and are helpful to me
4. Access to timely and relevant information from university information systems (finance, HR, student, library, or portal) necessary to be successful in my role as a faculty, student, or staff
5. Having online (ie web based) services that perform (or respond) in an acceptable manner
6. Having technology within classrooms or meeting areas that enhances the presentation of information

## The End User Experience

Measures service quality of training, technology support, and the end user experience

1. Getting training or self-help resources that help me become more effective with technology services at my university
2. Support staff who are knowledgeable and can assist me with resolving problems experienced with technology services at my university
3. Support staff who are consistently courteous and ready to respond to my request for assistance with university provided technology services
4. Getting timely resolution to problems I am experiencing with technology services at my university
5. Opportunities to provide feedback regarding technology services at my university
6. Participating in a university wide community of end users seeking to make the best use of technology resources

## Appendix B

### 2013 HIGHER EDUCATION TECHQUAL+ CORE SURVEY INSTRUMENT

#### Connectivity and Access

Tell us about the quality of the Internet service on campus

When it comes to...

Having a campus Internet service that is reliable and that operates consistently across campus.

1. Having a campus Internet service that is fast and that provides speedy access to Web sites and rapid downloads.
2. Having wireless Internet coverage in all of the places that are important to me on campus.
3. Support for accessing the campus Internet service using my tablet or other mobile device.

#### Technology and Collaboration Services

Tell us about the quality of Web sites, online services, and technologies for collaboration

When it comes to...

Having campus Web sites and online services that are easy to use.

1. Accessing important campus Web sites and online services from my tablet or other mobile device.
2. Having campus technology services available that improve and enhance my collaboration with others.
3. Having technology within classrooms or other meeting areas that enhances the presentation and sharing of information.

#### Support and Training

Tell us about your experiences when obtaining assistance with technology on campus

When it comes to...

Technology support staff who are consistently courteous and thoughtful.

1. Technology support staff who are knowledgeable and can help me resolve problems with campus technology services.
2. Getting timely resolution to problems that I am experiencing with campus technology services.
3. Receiving timely communications regarding campus technology services, explained in a relevant and easy-to-understand form.
4. Getting access to training or other self-help information that can enable me to become more effective in my use of campus technology services.

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# The development of performance measures through an activity based benchmarking project across an international network of academic libraries

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## Abstract

### Purpose

This paper outlines the findings from the initial stages of an activity based benchmarking project developed across an international network of academic libraries. Through working on a shared response to the question: “if we enable and support the academic endeavour how do we measure our effectiveness?” the network of libraries is using the formal mechanism of benchmarking as a means of continuous improvement.

### Design / methodology / approach

Actual improvements as a result of benchmarking are known to arise from considering and looking at processes, tools and techniques rather than from simply comparing and reviewing measurements of activity. The establishment of the Matariki Network of Universities provided the opportunity to begin work on international benchmarking amongst the member libraries. The project is a collaborative exercise involving comparisons across the libraries on a selected number of services and activities that are similar across the institutions and are representative of overall library service provision. In this first stage of the project the focus is on support for teaching and learning, specifically activities and programs that support the transition of first year students into University life. To simplify the process the libraries have shared details in relation to specific cohorts of students. In order to achieve this, participating libraries used an online collaborative workspace to respond to a series of questions. These responses were analysed to identify common themes, highlight exemplars, and select further topics for discussion.

### Findings

Acknowledging the challenge of international collaboration, processes and mechanisms were developed. It was important to establish a shared language with a set of agreed terms and definitions. Similarly, taking time for each partner to contribute to the project has been valuable. Consideration of each of the libraries responses to the survey questions reveals a diverse number of activities and practices that represent a strong commitment to the needs of students. Drawing on institutional strategic direction and policy, each Library allocates substantial resourcing to these activities and practices. The exercise within the benchmarking project produced a valuable set of data for each library to review and learn from.

In terms of managing the project, findings are consistent with those reported in the administration of other benchmarking projects.

The libraries are in the early stages of developing a series of common international performance measures. It is evident that learning more detail about assessment processes used across each library is necessary to advance the project aims. Further work with the project partners on measuring the effectiveness of their activities will allow the testing of the application of a maturity model for quality improvement of library assessment practices.

## Research or Practical implications

The project provides the opportunity to develop a series of performance measures that can be verified across an international network of libraries. Sharing information on activities and practices that impact upon the wider institution provides a means to review and improve library assessment practices.

## Originality / value

This paper outlines the first benchmarking activity in the development of a review of performance measures through an activity based benchmarking project. The activity included an international network of academic libraries. This work will lead to benchmarking effectiveness measures and the development of a library assessment capability maturity model. This will offer a development path, and a better understanding of progress, to demonstrate value and provide evidence of successful outcomes.

## Introduction

This paper details the findings from the administration of an activity based benchmarking project across an international network of Libraries; the Matariki Network of Libraries. The project is in the early stages of developing a shared response to the question "if we enable and support the academic endeavour how do we measure our effectiveness?" Through this the Libraries are using the formal mechanism of benchmarking as a means of continuous improvement.

This benchmarking is a collaborative exercise that involves comparisons across the libraries on a selected number of services and activities that are similar across the institutions and are representative of overall library service provision. With the initial round of information-sharing successfully completed, a valuable set of data for each library to review and learn from has been produced. How one library has responded to the data is presented in this paper as an illustration.

Detail on the process and mechanisms developed in managing the project to meet the challenges of the international collaboration are also presented. The findings here are consistent with those reported in other benchmarking projects. These are discussed in this paper within the context of the administering the project. To advance the project aims, it has been identified that there is a need to share more detail about assessment processes used across each library. Further work on measuring the effectiveness of activities will allow the testing of the application of a maturity model for quality improvement of library assessment practices.

## The Matariki Network

The Matariki Network of Universities ([www.matarikinetwork.com](http://www.matarikinetwork.com)) is an international collaborative venture that has been established to enable member universities to enhance diversity, and to share ideas, experiences and expertise. Each member of the Network is a leading university demonstrating international best practice in research and education, based on established academic traditions. The Network includes: Dartmouth College, Durham University, Queen's University, the University of Otago, Tübingen University, the University of Western Australia, and Uppsala University. The Network takes its name, Matariki, from the Māori name for the group of stars called the Pleiades, which are also known as the seven sisters. Matariki is also the word for the Māori New Year, symbolising a new beginning.

## Activity based benchmarking project

The Matariki Network provides the platform for the Libraries to share in the development of a series of common international performance measures which will provide each of the universities with a benchmark for reviewing and comparing library performance in areas of specific interest.

It is well understood that university libraries need to be working towards methodologies and strategies to show that they are making an impact on the teaching, learning and research endeavours of their university. All are under increasing pressure to show how they perform relative to like institutions in the global community. While there is growing interest in cross-national benchmarks there is little benchmarking that allows reliable international comparisons (Löfström, 2002).



Benchmarking is the process of identifying best practices and learning from others. It has been found that actual improvements following benchmarking arise from considering and looking at processes, tools and techniques rather than simply comparing and reviewing measurements of activity. Benchmarking activities extend networking, build collaborative relationships and mutual understanding between participants, enable better understanding of practice, process or performance, and provide insights into how improvements might be made (Jackson, 2001). Activity based benchmarking is a methodology in which a selected number of activities, which are either typical or representative of the range of services an institution provides, are analysed and compared with similar activities in other selected institutions (Schofield, 2000).

Why use the Matariki Network? Each member of the Network is amongst the leading places of learning in its respective country while reflecting a modern and international outlook. Each has distinguished traditions in research and each focuses on a rounded education which is research-led. Matariki members encourage an inter-disciplinary approach and support a full subject base across the sciences, social sciences and humanities; in addition all have Medical schools. Each also has a mix of postgraduate and undergraduate students with a high residential component, and a significant “town and gown” relationship.

Comparison of performance and process amongst institutions possessing similar characteristics will lead to a better understanding of relative performance in an environment where there is an increasing need to demonstrate value and provide evidence of accountability. Benchmarking amongst the Matariki Network Libraries will set individual institutional performance in an international context and help each identify areas of strength and weakness. Identification of best practices amongst the group will augment quality assurance processes and highlight areas for potential improvement. This data will inform the development of a library assessment capacity maturity model that allows each library to identify an improvement path (Wilson, 2012). In a climate of competition for local and national resources, sharing on an international level offers great potential, but requires careful relationship management and considered planning (Amos and Hart, 2013).

## Setting up the project

The project is managed by a team from the University of Otago Library with the assistance of a seeding fund from a University Quality improvement grant. Following agreement from each of the partners to participate in the project, a discussion document was distributed. This sought agreement on the project scope and timeframe, as well as the establishment of a framework for information exchange.

Coinciding with the release of this document a member of the project management team, the University of Otago University Librarian, undertook visits to four of the seven partner Libraries. This provided an opportunity to continue discussion about the project and explore commonalities. Resourcing did not allow for site visits to the remaining two partner Libraries. Consequently, the cooperation of one of these partners was fostered through the use of online video conferencing; the other required a number of email letters. One of the partners required additional explanation to clarify the kind of benchmarking that was being proposed as initially it was perceived as a statistical task. Previous researchers have also reported that “the concrete nature of benchmarking as a self-improvement tool to improve organisational performance is not always fully understood and it is often confused with rankings and league tables” (Burquel and van Vught, 2009, p. 4).

In defining the scope it was agreed that the project should consider existing and emerging practices that support selected service components and identify developing initiatives. The service components were divided into three prime areas: support for learning, support for research, and the Library and the student experience. Each survey cycle would consider in turn an aspect of each service component and a single aspect of that component. Resonating with previous findings, that existing academic library measures offer limited value as they tend to be too internally focused and lacked meaning to stakeholders (Matthews, 2007), it was agreed that, rather than measuring and comparing traditional processes, the project would focus on activities that support wider institutional strategic imperatives. This was in order to provide a better understanding of progress in an environment where there is an increasing need to demonstrate value and provide evidence of successful outcomes.

It was then agreed that the first area of focus was to consider support for learning, and specifically, activities and practice for programmes that support the transition of first year students to university life. How new undergraduate students transition into university and the drive for increased social inclusion are areas of interest that contribute to the broader aims of the Network institutions and funding bodies.

It was acknowledged that each partner was at a different stage of working with certain groups of students across the disciplinary range for which there was an identified need or institutional/funding body priority. To simplify the

process it was agreed that each partner identify a specific cohort that they wished to provide data on. This would allow each partner to undertake some internal benchmarking in identifying the most pertinent cohort to report on.

In recognition of the varying priorities and time zones across the Network, an online workspace was developed as a secure environment to facilitate the sharing of information and foster collaboration. Within this workspace a series of terms and definitions were discussed and agreed to. As identified in other international benchmarking exercises (Fielden and Carr, 1998; Schreiterer, 1998; Burquel and van Vught, 2009), this enabled the Libraries to translate activities so they could make meaningful comparisons and ensure a high level of commonality across potential language and cultural variations.

## Methodology

A series of nine questions were posed and agreed upon. Each question consisted of a main part that was followed by guidelines to prompt the reporting of standardised information, for example:

*Question 1: Describe the cohort – Include details on size, specific characteristics, and identified learning needs. Subsequently each Libraries response to these questions was posted to the workspace.*

*Question 2: Explain how the library works with the cohort -Briefly outline the history of this relationship. Include details of the other groups in the University who work with this cohort. Highlight the way the library and these other groups work together.*

To ensure a successful outcome for all the partners, each was asked to confirm a timetable that would allow for their resources to be allocated. It was agreed to extend this over a nine month period to accommodate the various academic calendars. This timetable may not be what would be expected in a local or national project, but it was important to recognise the local academic cycles so that the individual members could allocate resources to the project. The benefit of identifying measures that could translate across an international network outweighed any urgency to deliver. As confirmed by Epper (1999), the long term benefits of bringing each of the partners to the project in their own time, for each to realise the benefits from investing resources, became an important focus.

Once all the Libraries had contributed a data analysis of the responses was undertaken. A second document that summaries aspects of the survey resources and suggested areas for further consideration was then distributed to the partners. The aim of this was to provide a catalyst for on-going discussion; both across the network, and within each of the Libraries. Each of the partners was invited to consider their activities and programmes in relation to what others reported.

## One library's approach to responding to the data

From the position of participant in the project, The University of Otago Library undertook strategies to maximise engagement within the Library. This included sharing tasks across the liaison team. One group identified the cohort to report on and answered the survey questions; another group reviewed the results and produced a summary report. This report identified what we do well and what we could do better. This was used by the liaison management team to support and prioritise planning.

In confirming the processes, issues of ownership and responsiveness were present, as experienced by Town (2000). Some staff only viewed the data in terms of services to first year students and did not extrapolate the examples provided to their experience or a wider service provision. Other staff reported that there were no plans to change anything as things were working successfully. Despite this, six initiatives were added to the Library operational plan. The management team reported that while some of the initiatives were already being considered, identifying that others were implementing them successfully provided affirmation and an emphasis to make them a priority.

## What libraries reported

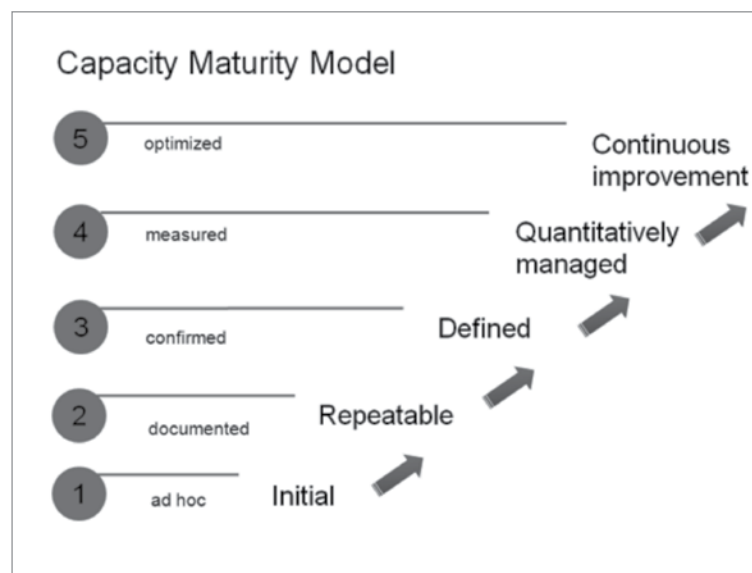
Consideration of each of the libraries' responses to the survey questions reveals a diversity of activity and practices that represent a strong commitment to the needs of students. The cohorts reported on by the partners all varied in size and scope. Three libraries reported on discipline specific cohorts of students, two libraries reported on cohorts that had distinctive characteristics, for example, students with disabilities, and two libraries reported on generic and specific activities offered to students.

Drawing on institutional strategic direction and policy each library allocates substantial resourcing to these activities and practices. Notwithstanding, a challenge facing all the libraries is that of sustainability; adequate and secure resourcing, scalability, service continuity, and student capacity were common issues.

## The research question

In considering our research question, “if we enable and support the academic endeavour how do we measure our effectiveness?”, we found there was a rich array of activity reported by the libraries in collecting data to inform practice and measure effectiveness. These range from formal assessment survey processes through to more subjective levels of feedback collected in action. Many indicated that a combination of quantitative and qualitative data is collected; from data on numbers attending through to data on how clients felt the activities and programs impacted or contributed to learning outcomes. In considering this diverse range the project team propose that in order to advance the project aims that the partners make it a priority to learn more detail about assessment process that are used across each Library.

Further to this, the development of a library assessment capacity maturity model, as described by Wilson and Town (2006), Wilson (2012) and Tang (2013), could allow each library to identify an improvement path. From a review of what works and what doesn't one might be able to draw a guide to building library self-assessment capability maturity which has relevance to the wider academic library environment. This isn't a new concept and borrows heavily from capability maturity models that have been under development for some time (Paulk, Curtis, Chrissis, and Weber, 1993; Crawford, 2006; Rendon, 2009).



As illustrated in the model each level represents a measure of the effectiveness of any specific process or program.

- Initial (ad hoc), where low level work is often repeated as there is limited time to document procedures so that a process can become repeatable.
- Repeatable (documented), where the process is at least documented sufficiently such that it can begin to become standard procedures.
- Defined (confirmed), where the process is defined/confirmed as a standard business process.
- Managed (measured), where the process is quantitatively managed in accordance with agreed-upon metrics and required outcomes.
- Continuous improvement (optimized), where process management includes deliberate processes to incorporate continuous improvement and organizational optimization.

Drawing on this work and building on the Matariki benchmarking activities, using the project data and resources, we intend to map out an assessment and performance measurement capability maturity model. This work will inform

each of the libraries with examples and practices that each is able to adopt and embed. The project to date has helped each library understand the environmental factors of one another, which should help support easy adoption of each other's tools and initiatives.

## Where next?

These issues, along with the focus and operational aspect for the next survey cycle, will be on the agenda for a face to face meeting of the partners planned for September 2013. This will run as part of a wider Network meeting that will focus on Research and the Humanities. This event will provide a valuable opportunity for the partners to extend networking, acquire tacit knowledge, and build mutual understanding whilst identifying further collaborative endeavours.

This will be a critical time in the future of the project: through advancing this face to face meeting we increase the risk of questioning the project's continued viability and the on-going participation by all the partner libraries. Each of the partners is now being asked to invest further in order to advance the project and extend the partnership. It is hoped however that the benefits to the partners of participating are now evident. An infrastructure for sharing information and resources has been established, and the partners have all contributed to the first survey cycle, and have shared in creating a data set that they can all learn from. The reward from sharing in the development of a series of common international performance measures now depends upon harnessing this collaborative activity.

## Lessons from administering the project

In administering the project the findings are consistent with those reported in other benchmarking projects.

- Defining the scope of the project can be the most challenging but also the most important step (Epper, 1999).
- Benchmarking partners need to agree on common definitions, objectives and practices (Schreiterer, 1998; Fiekers, 2000).
- Consistency should be encouraged as much as possible by providing detailed definition and instructions (Voorbij, 2009).
- Benchmarking as a self-improvement tool to improve the organisational performance is not always fully understood and it is often confused with rankings and league tables (Burquel and van Vught, 2009).
- Allowing sufficient time for individual members to allocate resources to contribute to the project is an important factor to the success of a project (Epper, 1999).
- Benchmarking can serve to legitimise internal plans and provides a glimpse into the future (Löfström, 2002).
- Involvement of staff at all levels is essential to their ownership and in turn the long term success of the project (Town, 2000).

Throughout the process, we have found it useful to remember that "the benchmarking approach is as much a state of mind as a tool; it requires curiosity, readiness to copy and a collaborative mentality" (Town, 2000 p. 164).

In our approach we have aimed to keep it:

- **Real:** with a focus on activities that support wider institutional strategic imperatives.
- **Flexible:** through providing time for each partner to allocate resources.
- **Simple:** through identifying service components and focusing on a single aspect of that component; requesting that each partner report on a single cohort that is representative of activity in that aspect.
- **Open:** by providing a space and process to share in the development of the project; and in the development of a shared language.

The administration of the project will be developed over time with improvements fed back into the process as it advances. It is intended that further survey cycles are undertaken with a focus on activities that support wider

institutional strategic imperatives. Sharing more detail about assessment processes used across each library and further work on measuring the effectiveness of activities will allow the testing of the application of a maturity model for quality improvement of library assessment practices. This will offer a development path, and a better understanding of progress, to demonstrate value and provide evidence of successful outcomes. This will facilitate developing a shared response to the question “if we enable and support the academic endeavour how do we measure our effectiveness?”

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# One score on – the past, present and future of measurement at UOW Library

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## Abstract

This case study provides an overview of the evolution of performance measurement at the University of Wollongong Library (UWL). The paper describes the impetus for iterative review to continuously repurpose an internal measurement framework to optimise alignment with current and anticipated operational and strategic priorities.

## Purpose

For decades, university and college libraries have sought to promote and affirm their worth, value and contribution to the academy. That through engagement with services and resources, students and the academy receive some form of benefit; there is an affect or impact from the investment of time and energy with the library (de Jager, 2002; Neal, 2011; Nitecki & Abels, 2013; Stone & Ramsden, 2013; Wells, 1995). The capture of data is now commonplace for many academic libraries, either through integrated library management systems or manual counts or surveys. These models have typically focussed on inputs, outputs, outcomes and satisfaction measures and opinions (Hosseini-Ara & Jones, 2013). Back in 2010, UWL began to question whether these types of data and information offered sufficiently persuasive evidence to demonstrate excellence in the contemporary higher education sector and that outcomes are aligned to the institution's aims. What was lacking up until recently, was ongoing valid and reliable data collection from both library and enterprise systems, which in turn prevented UWL from making supported assertions about the value provided by the Library (Jantti & Cox, 2010 & 2013).

To address these obstacles UWL sought to develop a measurement and assessment framework that would enable it to:

- demonstrate value and impact – moving beyond measures of satisfaction and usage
- better assess the demand and uptake of services; to evaluate relevance
- improve the capture and reporting of continuous improvement initiatives
- create a new narrative for communicating our role and unique contribution to the university's strategic agenda.

## Approach

Early forays into assessment commenced in the mid 1990's with results indicating that clients' (students and academics) perceptions of Library services were mostly favourable, however, success was difficult to measure and promote due to the lack of robust performance indicators and measures. To address this deficit, the collection and interpretation of information and data was essential to facilitate and sustain the vision for transformational change. A Performance Indicator Framework (PIF), mapped to stakeholders' needs and expectations was developed, providing a foundation for the methodical review of services and processes using quantitative and qualitative measures. Through the reporting mechanisms embedded in the PIF, it became possible to systematically measure and evaluate performance (ie how effectively and efficiently processes were managed and improved) and to assess clients' satisfaction with services and resources. This represented a significant shift in the way that data and information was viewed and used; the emphasis was starting to change from inputs and outputs to measures of outcomes. (McGregor, 2004; Jantti & Cox, 2010)

The PIF has become a significant artefact of our commitment to excellence. Since its inception in 1996, it has mapped UWL's quality journey in terms of monitoring and improving core business processes and the acquisition of evidence and milestones of success. It provided the catalyst to query stakeholders of their expectations of the Library. In turn these expectations were translated into indicators and measures to gather meaningful evidence of performance. Through the capture of data and information, a new dialogue was established within and external to the Library. UWL



became better equipped to engage in new conversations founded on quantitative and qualitative data and information on performance and aspects of the business stakeholders had a vested interest in.

The PIF through its various iterations served the Library well. The adage of *what gets measured gets managed* rang true and the PIF provided the necessary platform for guiding continuous improvement initiatives and innovation to ensure effectiveness and efficiency. As competency in assessment and the application of best practice principles matured, and the issues of value and impact emerged in both in assessment theory and practice, it became clear that UWL needed to critically reassess the capability of its measurement systems. This need was coupled with the acknowledgement that the former PIF was no longer optimally aligned to the Library's current structure, planning model and strategic focus; and importantly the changing strategic imperatives of the University.

Right from the beginning, best practices principles indicated that a holistic, balanced approach was required to test and assess performance. Even the earliest PIFs were multi-layered, focusing on critical success factors, KPIs and measures centred on clients, core business activities (eg support for research, teaching and learning), processes and people. The latest review affirmed the need to refine the PIF to provide focus and strengthen alignment to the goals of the Library and importantly, those of UOW, particularly in the areas of strategic research support, learning and teaching and cross-unit or faculty collaboration. UWL sought to create a framework that would allow it to identify whether it is: focussing on known priorities for UOW; performing in a sustainable way, and mitigating future risk.

While the processes for evaluating expectations, performance and satisfaction with available resources were considered robust and sustainable; measures of impact or affect were less well addressed. For UWL the critical impact questions were: *what is the value to the student when they use library information resources? What is the affect or value of the library for scholarly and research endeavours?*

The ability to gather meaningful data and information that are centred on outcomes and impact required a new approach in relating numbers (inputs, outputs) to address the notion of 'affect' (Hosseini-Ara & Jones, 2013). At that time, as is for now, the aim was to identify indicators and measures that would challenge UWL's thinking about what could be considered evidence of a high performing organisation; across all facets of business activity and engagement with clientele. For UWL it became apparent that this question and others relating to perceived and real value could no longer be answered fulsomely through satisfaction indices, or by de-identified usage rates of resources.

In thinking about the approach for a revised PIF, several aims were sought:

- greater simplicity – to focus on what could be considered as essential indicators of a healthy, thriving library
- that it be a holistic model – to ensure all key facets of organisational performance were monitored: clients, stakeholders, people, operations, resource management etc
- to strengthen ability to demonstrate value and impact – to move beyond measures of satisfaction and usage; to challenge and develop the necessary competency and systems to seek out necessary evidence.

In addition to the above, the PIF was to be used to assess UWL's capability to influence demand and the uptake of services; that is, to evaluate relevance. Through the reshaping of data and information, a new narrative for communicating the role and unique contribution of UWL to the institution's strategic agenda was established.

The new PIF consists of four key indicators modelled on the earlier iterations of the PIF and the principles underpinning the Balanced Scorecard model (see: Kaplan and Norton, 1996). To aid the review process and to provide a foundation for progressing a new approach to measurement, the following model (see Model 1) was developed to illustrate what the new indicators would enable UWL to assess: relevance, sustainability, competency and impact.

Scenario	Indicator group				What does the scenario tell us
	Demand	Operational Excellence	Learning & Growth	Impact	
Library A	✓	✓	✓	✓	thriving library
Library B	✗	✓	✓	✓	poor marketing
Library C	✓	✗	✓	✓	inefficient operations, not sustainable
Library D	✓	✓	✗	✓	will stagnate
Library E	✓	✓	✓	✗	producing the wrong things, not sustainable
Library F	✗	✗	✗	✗	failing miserably

Model 1: Indicator Scenarios

The language used to define the indicators and articulate their purpose (see Table 1) was selected to unambiguously communicate UWL's priorities for performance:

Indicator	Purpose
Demand	To ensure we are providing the right mix of services and resources; that our capacity to supply services and resources are being absorbed through client transactions
Operational excellence	To encourage continuous improvement; working effectively and efficiently with available resources
Learning and growth	To encourage the continuous alignment of people's professional capabilities; ensuring that we anticipate the competencies and capacities need now and into the future
Impact	To encourage maximum alignment of Library operations with UOW goals; the contribution our services and resources make to the realisation of UOW goals

Table 1: Indicators Defined

Throughout the history of the PIF, staff involvement and buy-in was instrumental to both the development and review processes (Martin, 2013; McGregor, 2004). In the most recent review (completed in 2012), the Library Executive, the Strategic Planning and Quality Assurance Committee, and all teams participated in discussion and debate on how to progress the PIF. All meetings focused on future directions and what could be constituted as demonstrated success. From the outset, UWL signalled that it required a new way of thinking about performance. Not surprisingly, through the engagement process, a number of challenges emerged as some initial concepts were difficult to grasp or simply unpalatable. This was particularly highlighted when the measure 'elimination of waste' was proffered to support the new indicator 'operational excellence'. The engagement process revealed the importance of cultural context and language (Martin, 2013), for when the measure was renamed 'efficiency gains', support and acceptance was immediate.

UWL acknowledges the real challenges of developing measurement systems to assess outcomes and impact. Yet early examples have resonated with the University Executive, including:

- student academic performance (Library Cube) [see: Jantti & Cox, 2012 & 2013]
- collaboration success (learning and teaching and research)
- course accreditation
- research publications – accessibility and visibility (rankings and other excellence in research initiatives).

To illustrate: research performance is uppermost in the minds of UWL's key stakeholders. To address shortfalls in UWL's capacity to respond to this challenge, a number of planned systems and structural reviews were enacted. Divisions and teams were repositioned to create new services and administer associated processes, or enhance existing ones. Resources were reallocated to build outreach services, establish listening systems, develop a local CRM and so forth. These new sources of business intelligence quickly informed the establishment of new business streams into

UWL, eg citation analysis, research impact reports, strategic publishing support; as well as new channels to accelerate existing services, such as growth of the institutional repository. The new data pointed to the benefit of further restructuring (Daly & McIntosh, 2013) to ensure scarce resources were allocated to where value could best be added [OPERATIONAL EXCELLENCE]. Through the new PIF, UWL has in place mechanisms to capture how well it is performing against targets for contacts (outreach); where it is reaching out and to whom; capacity to track and respond to business opportunities (eg research impact analysis services); as well as evaluating sources of client frustration to inform the continuous improvement of services [DEMAND & OPERATIONAL EXCELLENCE].

Throughout this period of transformation, UWL invested in the development of new staff competencies to succeed in this new demand driven environment [LEARNING & GROWTH]; sought out collaborators to improve the interoperability of research support systems across the institution [OPERATIONAL EXCELLENCE & IMPACT]. Importantly, the research profile and performance of the institution is improving and stakeholders such as the University Executive can observe the influence of UWL leadership and strategic contribution to research goals [IMPACT].

## Findings

To date, two half yearly reports have been created drawing on the measures in the new PIF. Initial observations reveal an improved:

- Confidence and independence in team leaders and managers' using the PIF and communicating results, and importantly outcomes.
- The ability to illustrate the interdependencies of processes, activities and projects.
- Framework for the selection of content for reporting to the executive; offering a new narrative for performance reporting; aligned to the aspirations of the UOW Executive and other external stakeholders.
- The capture of new datasets and information ensure that we are outward facing in thinking about our services and resources. There is an increased focus on strategic collaboration, driving change and innovation for the benefit of the institution.

## Practical implications

UWL acknowledges its limitations in competency to establish hard, rigorously tested measures for the indicator 'impact'. This is an issue not uncommon to UWL as models and approaches are still emerging within the profession. A key outcome sought from the review was the formation of a new mind-set; a different way of thinking about performance (Hosseini-Ara and Jones, 2013). In the absence of universally accepted indicators for value and impact and in some instances an inability to produce or collect such data, UWL was prepared to accept, on a pragmatic level, the identification and selection of proxy measures that could support, in some way, the narrative and habits sought in considering performance data and outcomes.

## Conclusions

For almost two decades, the PIF in its various manifestations served to build UWL's competency to measure, assess and communicate performance outcomes. Throughout its history, UWL has sought to distil the measures needed to capture information for the effective and efficient management of internal operations and to enable more effective, compelling external reporting of outcomes and value.

During the creation of the latest version of the PIF, UWL sought to challenge its thinking and cultural mind-set as to what constituted excellence and impact. While some exemplary measures of impact feature within the PIF, eg analytics derived from the Library Cube, others are unapologetically noted as proxy measures. This is a state that UOW Library is prepared to accept for the time being until the necessary competencies are developed, as a primary aim of the latest PIF is to underpin a culture that is progressing its aspirations for defining and communicating contemporary standards of excellence.

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# Librarians' attitudes to resource usage measurement and decision making in UK academic libraries: a content analysis

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## Research problem

*"Making judgments is hard work. For many of us, it's a responsibility that accompanies our jobs. Scholars, administrators, and librarians need to accept that responsibility."* (Ewing, 2006)

*"There is a tendency to assume that measurement is in a state of imperfection similar to that of the early physical sciences and that we have to use expert subjective judgements only until the experts have developed better technical methods of measurement."* (Allred, 1979)

There is a perception that there is an over-reliance on usage measures, to the point of substituting numbers for judgement, although others some such as Hamburg *et al.* (1972) suggest that intrinsic value is not as important as connecting users to content.

The aim of this research was to explore how and why librarians use usage measures in decision making in practice and whether this has changed over time. This was achieved by analysing the content of mailing list discussions to identify typical practice; exploring trends in the use of usage measures by librarians; seeking explanations for changes; and determining whether usage measures are substituted for expert judgement.

## Background and literature review

Academic libraries are a vital support service for academic endeavour, providing resources which enable institutions to achieve their goals (Brophy, 2005). In small institutions, devolved selection is suitable for allocating funds, but most require a systematic approach, which considers both expert opinion and usage.

Ranganathan (1931) describes how library collections change in response to the interests of its user community. Academic librarians are fortunate in knowing this community precisely, even personally (Hardy and Corral, 2007). Decisions about resources are linked to changes in academic interests, rather than the innate quality of specific titles (Hahn and Faulkner, 2002). Usage statistics can highlight areas for consultation (Enssle and Wilde, 2002; Albitz, 2003) and librarians have measured usage since the nineteenth century (Thompson, 1951).

Continuing resources require annual funding to be maintained. Librarians use evidence of low usage to negotiate cancellations with faculty (Enssle and Wilde, 2002; Derven and Kendlin, 2011; Bucknell *et al.*, 2011). Monographs do not require ongoing subscriptions, but funds to purchase them must be available each year for the collection to remain balanced. Packages increase the collection by offering discounted access to a range of titles, but these can be inflexible (Nabe and Fowler, 2012) and tie the library to irrelevant subscriptions (Bucknell, 2008). Librarians monitor package usage to ensure they are more cost-effective than single title selections (Taylor-Roe and Spencer, 2005; Ives and Fallon, 2009).

E-books function as monographs or continuing resources, depending on whether they are leased or purchased outright. Comparisons between providers are problematic (Cox, 2008), particularly if section measurement is used, as this may be anything from a dictionary definition to a chapter (Bucknell, 2010). However, usage enables patron-driven acquisition of e-books (Bucknell, 2012a) and collection performance can be evaluated to indicate which business model suits institutional usage patterns (Grigson, 2009).

Physical items are measured using circulation figures, which are used to identify usage patterns and determine obsolescence, as well as offering an indication of future interest (Broadus, 1985). Many solutions have been employed to identify use of reference materials (Lambert and Taylor, 1996; Palmer and Sill, 1988), usually based on a sample period. E-resources have made the continuous collection of usage statistics simple (Taylor-Roe and Spencer, 2005), but linking usage to users is challenging. The cost per use of a subscription is often compared to that of inter-library loans (Williams, 1975). The convenience of e-resources has changed the nature of usage (Medeiros, 2007). Platform design, diverse content types and subjects also affect figures and the conclusions that can reasonably be drawn from the data (Bucknell, 2012b).

Librarians need simplicity and consistency for effective decision making (Hill *et al.*, 1979). Analysing usage statistics is time-consuming (Grogg and Fleming-May, 2010), and must be weighed against the ability to make well-informed decisions (Conyers, 2006). Runyon (1982) describes library decision making as a social process, especially where the decision maker is not the end user. The combination of use and expert advice is a cost-effective approach (De Gennaro, 1977).

COUNTER standardised usage reports, which are automated using SUSHI. UK librarians benefit from the Journal Usage Statistics Portal (JUSP) (Cradock *et al.*, 2011), which provides basic analysis and automates several common processing tasks (Conyers and Lambert, 2011).

Librarians rely on providers to supply usage statistics (Cole, 2000), and costs incurred in generating COUNTER reports (King *et al.*, 2009) can cause publishers to choose between providing usage statistics or enhancements for users (Powell, 2010). However, the data on how publications are used is positive for the whole system (Pearson and Box, 2011). Vendor-supplied statistics are rarely able to gather demographic data (Stewart, 2011); data from local systems offer an alternative (Chrzastowski *et al.*, 2009; Duy and Vaughan, 2003).

Librarians employ usage measures to defend the library against budget cuts (Conyers, 2006), to justify bids for increased funding (Taylor-Roe and Spencer, 2005) or show the impact of cuts on both the institution and senior decision makers (Bucknell, 2008). Benchmarking usage and expenditure is common among senior librarians, often using SCONUL figures (Jilovsky, 2010). Recent studies have shown the impact of libraries, including a study by Tenopir (2012) which linked investment in library materials to research income and University of Huddersfield's work on the relationship between library usage and academic outcomes (Stone *et al.*, 2011).

## Methodology

Literature on usage measurement consists largely of case studies, which are usually examples of best practice; and surveys, which can evoke a "social desirability effect" (Sapsford, 2007). In both these cases, the research process has an impact on the outcomes reported and an unobtrusive approach is needed to gain a new perspective. The analysis of existing documents is an unobtrusive method, which avoids influencing responses (Berger, 1998).

Librarians working with usage statistics are often specialists, and rely on networking electronically with colleagues in similar roles at other libraries. As a result, there are several mailing lists devoted to this and related topics. Collection management is a broader skill and usage measurement is also discussed by non-specialists on general lists. Mailing list messages are useful because they offer an insight into the concerns and opinions of librarians based on real areas of interest.

There several approaches to analysing the content of documents to gain an insight into the practice and attitudes of the creators. These include hermeneutical phenomenology, discourse analysis, and content analysis. Because of its suitability for analysing large numbers of documents, content analysis was selected for this study, as themes could be tracked over a period of years.

LIB-STATS, LIS-E-RESOURCES, LIS-SERIALS, LIS-E-BOOKS and LIS-LINK were used in this study, as all had publicly accessible archives and it was reasonable to treat the messages as documents rather than personal communications. While there are some ethical concerns surrounding the perceived privacy of online communications, JISCMAIL's stated terms and conditions clarify the expectations for content posted on lists, and contributions were anonymised after data collection.

These lists were searched using the word 'usage', which produced a sufficient balance between recall and relevance. Each message was coded against a scheme derived from the literature review, and although message interpretation will "reflect a perspective, orientation and approach" (Altheide, 1996), so cannot be entirely neutral, the interpretative bias was countered by the process influence and self-reporting bias inherent in survey and case study methods (Neuendorf, 2005). The analysis was exploratory and qualitative, rather than quantitative and reductionist.





of reference-only materials was discussed in detail, with recommendations for monitoring usage being made for journals collections and current issue displays. Consultation with academics was mentioned, but it was suggested that collection users may bias survey results by claiming to use resources more than they actually do, confirming the need for usage evidence to justify decisions.

The challenges associated with usage statistics for e-resources were largely technical, with no established methods of counting, and limited cooperation from suppliers. Measuring usage through library systems was common. However, multiple access routes rendered these methods inaccurate, and the IT resources involved could make them impractical.

Figures which were acquired were used to evaluate different kinds of purchase models, and monitor the shift in usage from print to electronic, with cancellation decisions being focused on format changes rather than reducing provision. Many of the ideas discussed became standard in future years, such as the potential benefits of patron-driven acquisition:

*“One or two colleagues, however, have suggested that there is value in getting access to a wide range of material, making it available and letting the user decide – usage statistics then become a key tool in assessing the value of any material.”*  
(LIS-E-RESOURCES – October 2000)

## 2001-2003: Electronic challenges



Figure 3

As the inclusion of e-resources in library collections became widespread, there was a focus on usage patterns to understand the impact of these changes. Discussion around usage of physical resources tended to be oriented towards service provision, for example pricing external membership based on book issues, or monitoring highly used journals to ensure provision during a refurbishment.

Package evaluation saw librarians comparing usage of previously subscribed titles with additional titles. Some reported that core titles were well-used despite demands for cancellation, although where lower usage of subscribed titles was reported, it was felt that this might be due to the continued use of print resources.

There were concerns over the quality of usage measures, with local systems capturing usage, regardless of publisher policies on supplying statistics, while publisher figures were able to capture activity coming from all channels. One contributor suggested cross-referencing local and vendor-supplied statistics to verify results. The COUNTER code of practice introduced in 2003, was not yet having an impact.

Discussions took place around the role of librarians, and the value of spending time analysing usage statistics. Although some were sceptical, others had positive outcomes from this work:

*“provide analysis of usage stats (and I have used this to bid successfully for additional recurrent funding from the university for us to take up more NESLI deals, and to be able to renew the print subscriptions tied to these).”*  
(LIS-E-RESOURCES – May 2002)

## 2004-2006: Emerging standards

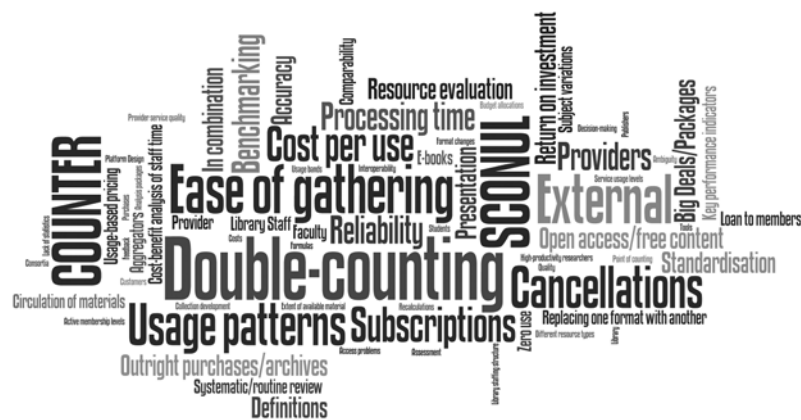


Figure 4

Since the introduction of e-measures questions in SCONUL statistics, interest in gathering statistics increased. The COUNTER code of practice also increased the number of librarians gathering usage statistics for their e-resources, although non-compliant providers still caused additional work. Concerns emerged around the quality of publisher data particularly in relation to double counting.

Discussions around open access resources were common. In a discussion on the impact of repository articles, the importance of combining usage figures with faculty consultation was emphasized, as it was acknowledged that the statistics did not give the full picture:

*"Librarians don't cancel on the basis of COUNTER statistics, though they take them into account; they cancel on the basis of relative suggestions from their faculty, budget-multiple-constraint satisfaction. Researchers are not recommending the cancellation of good journals ... regardless of where they access their working copies."*

(LIS-E-RESOURCES – September 2005)

There was more evidence of the inclusion of usage measures in the decision-making process. As well as using low-usage as an indicator of a possible cancellation, the idea that usage measures could be used as a predictor of suitable new purchases was also gaining ground. The measurement of e-book usage was also explored, particularly the issue of varying granularity.

Time spent producing useful data was considered positive, but there was considerable frustration at time wasted on inefficient provider systems. Identifying necessary data before gathering figures was considered a sensible approach, which could be used to improve the information available to decision makers.

## 2007-2008: Rising expectations



Figure 5

With e-journal usage measurement being well-established, librarians began to expect more from the figures, particularly for package analysis, where cost per use and usage patterns dominated the conversation. E-books were discussed, as the COUNTER code of practice made reliable statistics available. However, understanding of e-book usage patterns was still developing, as it remained unclear what constituted typical use. Backfiles were problematic despite the existence of dedicated COUNTER reports due to variation in publisher pricing policies. Librarians wished to assess the performance of each purchase, so the difficulty in identifying usage of content purchased separately proved frustrating.

The preparation of systematic reports, such as key performance indicators became possible. Decision makers became used to receiving regular figures on resource usage, which raised expectations. Many contributors expressed frustration with delays in providing usage statistics, but greater still was the problem of resources not providing statistics at all:

*"These could be low-use titles, which we could consider for cancellation, or high-use titles, which we could promote as flagship e-journals: it is impossible to tell."* (LIB-STATS – February 2008)

While low use may reflect institutional interests, knowing a resource was completely unused was considered a vital piece of information. Problems identifying zero-use titles were described, either through the presence of non-subscribed titles or the absence of subscribed titles from reports.

Contributors explored the value of cost-per-use calculations and the importance of reliable statistics was emphasised, particularly where pricing was usage-based. Concerns were raised over accuracy, and whether spikes should be corrected.

## 2009-2010: Best practice



Figure 6

During this period, there were several discussions related to value-for-money calculations. The global financial crisis was beginning to be felt, with librarians using the mailing lists to compare ideas for managing anticipated funding reductions.

Typical analysis involved comparisons between cost per download and the cost of inter-library loans. Others questioned whether value for money was absolute, or whether other aspects needed to be considered:

*"Interpretation needs approached with a great deal of sensitivity to the vagaries not only of the information sources properties, characteristics, but also the local institution's goals and peculiarities."*

(LIS-E-RESOURCES – June 2009)

The underlying reasons for atypical usage patterns were discussed by several contributors. In one instance, a publisher reported a problem that might have reduced usage, which was confirmed by list members, providing an opportunity to better understand user behaviour.

There were discussions on the value of usage analysis software for gathering and analysing statistics. There were varying levels of dependence on automated solutions and while there was work involved in processing data into useful reports, the ability to combine data was praised. Authentication systems were being used to identify usage by department.

Following the mention of the lack of provision of statistics by one publisher, based on the views of Ewing (2006), contributors reflected on whether too much reliance was indeed placed on usage statistics. There was divided opinion on whether this justified not providing statistics at all.

## 2011: New innovations



Figure 7

The conversation diversified and several new topics arose as librarians increased the sophistication of their analyses. Usage patterns were frequently discussed, as was demonstrating impact rather than value for money, although cost per use was still significant. Financial concerns were discussed, with pressure on library budgets taking precedence over usage in cancellation decisions.

The introduction of services such as resource discovery demonstrated that librarians were unable to wait for theoretical papers to be written in order to provide information require by decision makers. Extracting usage measures from authentication systems was discussed, with librarians showing interest in learning more about those using the resources, especially at a departmental level. Questions were asked about the approach needed to demonstrate value for money for specialist resources.

Data quality issues were considered, particularly around platform functionality and usage spikes, noting the difference between incorrect data and atypical usage. Discussion around the meaning of the statistics also took place, with ambiguous definitions causing particular problems. In terms of decision making, there was agreement that, except for the extreme ends of the usage scale, professional judgement was still required:

*"IMHO usage stats can identify the very well used from the very poorly used, but there is a whole swathe of stuff in between where usage cannot be relied on to make fine judgment calls."* (LIB-STATS – June 2011)

## E-books



Figure 8

E-books were a frequent topic of conversation from 2006 onwards. As they often function differently to e-journals as well as to print books, librarians had to learn more about how they were used before judging whether they were getting value for money from their purchases:

*"I have to throw out my old notion of thinking performance is not simply how many times a person requests a page, but maybe how long they spend browsing the book's content before they have gained the information they need. Clearly mapping users' behaviour is a key part of e-book analysis"* (LIB-STATS – September 2007)

Units of measurement for journals are well-established and counting usage at the article level is accepted as a fair measure, despite differences in the nature of articles. E-books posed a problem as providers offered full-text content at different levels of granularity.

A COUNTER standard was introduced for e-books that enabled publishers to report on usage of whole books, or "sections", although the granularity was interpreted differently by each provider. While relative usage was comparable for a particular provider, inter-publisher comparisons were impossible, and reporting of statistics was particularly affected by these variations.

E-books were acquired using several models including access-only subscription, outright purchase or patron-driven acquisition, the latter being described positively by list participants, although with an understanding that getting the best value from this model would involve careful evaluation of the data.

## Conclusions

The research confirmed that the topics discussed closely matched the literature, with a focus on practical, rather than theoretical methods. Several authors included in the literature review were regular contributors to the lists, which suggests that the literature is grounded in a working understanding of usage measures in libraries.

Librarians use usage measures to manage large collections, but also employ other measures to ensure their assessments balance value with cost-effectiveness. Usage statistics are particularly valuable for the assessment of packages, although librarians expressed concerns over their quality and reliability. The COUNTER code of practice had the most significant impact on usage measurement, although the granularity of e-book reports is still a challenge. Technological developments offer librarians sophisticated analyses, but also affect the meaning of figures. The value of librarians who understand both the limitations of statistics and the nuances of their collections cannot be underestimated.



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# Using LibQUAL+® to Identify commonalities in customer satisfaction: The Secret to success?

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## Abstract

### Purpose

What is the key to library user satisfaction? Can LibQUAL+® help in the quest for delivering a quality library service? This paper presents international research into library customer satisfaction as measured by the LibQUAL+® survey methodology. Commonalities of satisfaction and dissatisfaction have been identified which influence the customers overall view of the library. This knowledge can be used to further increase customer satisfaction through targeting these areas for service improvement.

### Methodology

LibQUAL+® is a library service quality survey instrument developed by the Association of Research Libraries (ARL) in association with Texas A&M University. The survey comprises of 22 questions categorised by three dimensions of service; Affect of Service, Information Control and Library as Place. LibQUAL+® uses gap theory to evaluate customer expectations as well as perceptions. For each of the 22 questions respondents are asked their minimum and desired expectations along with their current perceived level of service on a nine point scoring scale. From these ratings two score measures are calculated; service adequacy, and service superiority. The adequacy score is calculated by subtracting the minimum rating from the perceived score, with a negative score indicating that minimum expectations are not being met. Similarly, the superiority score is calculated by subtracting the desired score from the perceived rating, with a positive score indicating that desired expectations are being exceeded.

This paper builds on research conducted at Utrecht University in 2012. The LibQUAL+® results from Utrecht University were analysed to explore the differences between customers who were very satisfied, and those who were very dissatisfied, with the service. This research has now been extended to an international level using the UK and Ireland's Society of College, National and University Libraries (SCONUL), LibQUAL+® consortium results and the results from Leiden University in the Netherlands.

Results from each of the three dimensions of service quality were reviewed separately. The survey results from respondents who had given a high satisfaction mean score to one of the three dimensions were analysed separately to assess if they had also given high satisfaction mean scores overall. This process was then repeated for those who had given low satisfaction mean scores. High satisfaction was defined as a mean superiority gap score of larger than zero, indicating that their desired expectations were exceeded, together with a mean adequacy gap score of more than one, indicating the minimum expectations were clearly exceeded. Low satisfaction was defined as a mean adequacy gap score of less than zero, indicating minimum expectations were not being met, together with a superiority gap score of less than minus one, indicating the desired expectations were clearly not met.

Initially all responses meeting the research criteria were reviewed, except for those from library staff who traditionally have different expectations than the other customer groups. The analysis was then replicated with the results from the different customer groups separately; undergraduates, postgraduates, staff and academic staff.

## Findings

For all customer groups the findings showed a pattern to satisfaction levels with regards to the Information Control dimension of the LibQUAL+® survey and a similar pattern with the Affect of Service dissatisfaction levels. Respondents with high satisfaction mean scores (as defined above) in the Information Control dimension were discovered to have the largest positive scores for the overall average perceived scores, indicating they are the most satisfied customers. When reviewing the surveys with low satisfaction mean scores in the Affect of Service dimension it was discovered that these respondents also had the largest negative scores for the overall average perceived scores, indicating they are the most dissatisfied customers. The findings show that both information resources and customer service affects the overall opinion of the library service for all customer groups.

## Research limitations and implications

The implication from the research is that good information resources could have a positive effect on customers' opinions of the library just as much as poor service from library staff could have a detrimental effect. Nevertheless, any conclusions drawn from these findings should recognise that the research is limited to measuring service quality within the confines of the LibQUAL+® survey methodology. The research has not investigated the reasons for the commonality, nor do these averages say anything about the motivation for each individual respondent to give these scores in the survey. Therefore, these averages can, with respect to ideas for improvements, only be used as indicators for what should be emphasized. Even within both groups, the satisfied and the dissatisfied customers, there remain considerable differences in what causes the (dis)satisfaction.

## Preliminary conclusions

Statistical analyses confirm that these findings hold for every user group. Therefore, for the library manager seeking to deliver a quality library service it will be important to take both of these factors into account and deliver information not only in a professional, but also in a helpful manner.

## Originality and value of the proposal

Although based on previous research, the extension of the analysis from an institutional level to an international consortia level strengthens the initial research conclusions. The findings, implications and conclusions are valuable to library managers seeking to improve the customer perceptions of their library service, providing evidence of factors that influence customers' opinions.

## Keywords

LibQUAL+®, Academic Library Performance, Customer Satisfaction.

## Introduction

This paper presents international research into library customer satisfaction as measured by the LibQUAL+® survey methodology. Building on research initially conducted at Utrecht University in 2012 the research has sought to identify commonalities in customer satisfaction and dissatisfaction.

LibQUAL+® is a library service quality survey instrument developed by the Association of Research Libraries (ARL) in association with Texas A&M University (Association of Research Libraries, 2011). The survey consists of 22 standardised questions on library services which are used internationally, allowing libraries to benchmark their performance against one another.

One of the key strengths of LibQUAL+® is its use of gap theory to evaluate customer expectations as well as perceptions. For each of the 22 questions respondents are asked their minimum and desired expectations along with their current perceived level of service on a nine point scoring scale. Alongside the minimum, desired and perceived scores two further scores are calculated to aid the evaluation of the library; the service adequacy and the service superiority. The service adequacy score is calculated by subtracting the minimum score from the perceived score. A positive adequacy score indicates that the customers' minimum expectations are being exceeded, whereas a negative adequacy score indicates that the library is failing to meet minimum expectations. Similarly, the service superiority

score is calculated by subtracting the desired from the perceived score. A positive superiority score indicates the library is exceeding customers' desired expectations, whereas a negative score indicates that desired expectations are not being met.

The 22 questions are split into three dimensions of library service, Affect of Service (AS), Information Control (IC) and Library as Place (LP). The Affect of Service dimension contains nine questions relating to the library staff, including their knowledge to answer customer questions and the level of customer service received. The Information Control dimension consists of eight questions covering the library resources and how easy it is to access information. The Library as Place dimension consists of five questions assessing the physical environment. For each dimension the scores are averaged providing a dimension mean score for each of the five question scores; minimum, desired, perceived, adequacy and superiority. The survey is administered in two formats, LibQUAL+® Long which asks all 22 core questions, and LibQUAL+® Lite which presents 8 of the core questions to each respondent. LibQUAL+® Lite deploys a random sampling methodology resulting in all 22 core questions being assessed at the participating library, but each individual respondent only answers a sub-set of the core questions.

The research sought to identify if there were any common factors for the scores received from satisfied and dissatisfied customers. The analysis used all of the scores received from individual respondents from the sample group. The dimension adequacy and superiority mean scores were used to identify respondents who were satisfied or dissatisfied with one of the dimensions. The scores from these sub-sets of respondents were then analysed to see if there were any commonalities in their scores for the other two dimensions. For example, if a customer was satisfied with the Affect of Service dimension, were they satisfied or dissatisfied with the other two dimensions? This research was then repeated for respondents who were satisfied with the Information Control dimension, and finally those who were satisfied with the Library as Place dimension. Correspondingly, the same analysis was conducted for customers who were dissatisfied with one of the dimensions, with each dimension reviewed separately.

## Methodology

This research used a sample of 33,820 surveys, of which 28,208 were from the SCONUL consortium, 3,761 from Leiden University (LU), and 1,851 from Utrecht University (UU). The UU surveys were in the long version, the LU in the lite version, and the SCONUL surveys in mixed form.

Firstly, the Library Staff surveys,  $n_{libst} = 371$ , were removed since, as stated before, they traditionally have different expectations than the other customer groups.

Secondly, all surveys were removed which had inconsistent responses,  $n_{inc} = 5,346$ . Inconsistent responses are defined as when a respondent has rated their minimum service level higher than their desired service level (ie score inversions), which is illogical. Ordinarily LibQUAL+® automatically filters out excessive inconsistent responses as part of their data screening. As the research was using the raw survey data and specifically focussing on gap scores, using them to define (dis)satisfaction, it was necessary to remove all inconsistent responses.

Thirdly, incomplete data sets were removed for respondents who had selected "not applicable" to all questions within one dimension,  $n_{empty} = 1,057$ . Since this research compares scores given by respondents for the three dimensions, it is important that all dimensions had at least one rating, otherwise it is not known what the respondent might have said in connection to the other two sections. Following this data screening the final number of surveys used for this research was 27,046, which represents 80% of the total sample.

## Satisfaction and dissatisfaction

Satisfaction and dissatisfaction are defined by the average adequacy and superiority gaps for the three dimensions, Information Control (IC), Affect of Service (AS) and Library as Place (LP). Searching for definitions several criteria were tested. Owing to the large sample group the research had the freedom to apply a strict definition to satisfied and dissatisfied customers.

Satisfaction can be defined as an average perceived score exceeding the average desired score; the level of service is higher than desired expectations. In cases where the desired and minimum scores were close together the respondents were not deemed to be highly satisfied customers. For example, an average minimum score of 6.7, an average desired score of 6.8, and an average perceived score of 6.9, receives a positive superiority score (indicating desired expectations are being exceeded), but the minimum expectations are only just being met. Therefore, a second criteria was chosen, the perceived level of service should not only exceed the desired levels, but also clearly be larger than minimum. As shown in figure 1, the definition for satisfied respondents was selected as where the dimension average adequacy

gap score is larger than one, and the average superiority gap score is larger than zero. Using the same arguments, dissatisfied customers were defined as respondents giving a dimension average adequacy gap score of smaller than zero and an average superiority gap score of smaller than minus one. This definition indicated that the respondent's average perceived score was below minimum expectations and more than one point lower than the desired levels.

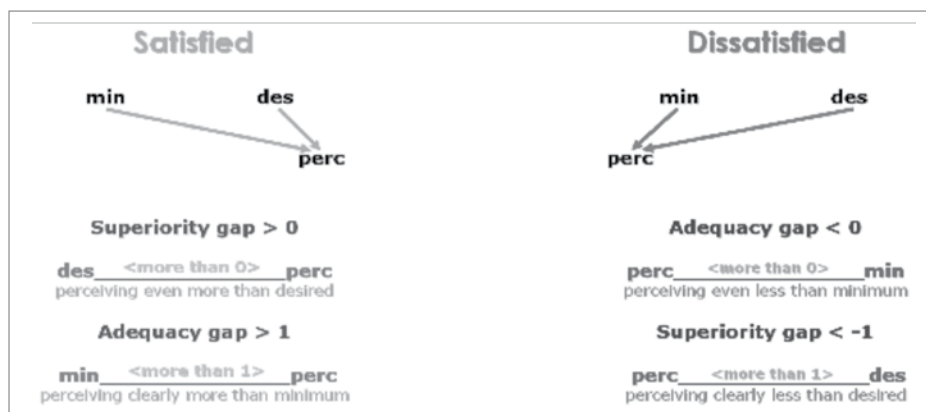


Figure 1: Conditions for satisfaction and dissatisfaction

## Findings

The above definition of satisfaction was applied to the sample group for each dimension in turn, and the overall perceived score reviewed for each sub-set, as shown in table 1. It was discovered that respondents who were satisfied with the IC dimension yielded an average perceived score of 7.61. Applied to the LP dimension, the average perceived score was 7.44, and applied to the AS dimension the average perceived score was 7.34. Clearly, **the positive IC group was the most overall satisfied group**, which is shown in figure 2. This indicates that customers who are highly satisfied with the IC dimension are, on average, satisfied with all aspects of the library service.

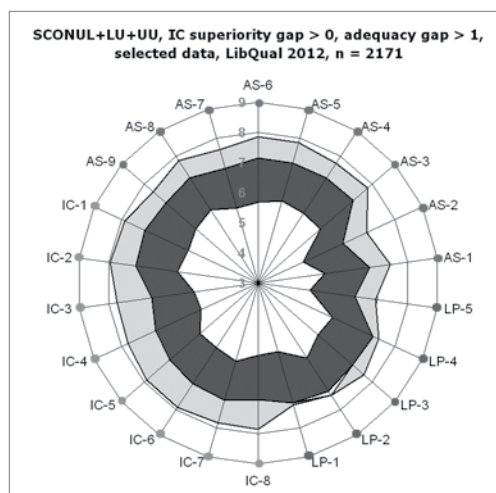


Figure 2: Responses from the sample group with high satisfaction with the Information Control domain.

Next applying the conditions for dissatisfaction, the average perceived score for the negative IC group was 6.05, the average perceived score for the negative LP group was 6.15, and the average perceived score for the negative AS group was 5.69. As shown in figure 3, **the negative AS group thus was the most overall dissatisfied group**, indicating that customers who are highly dissatisfied with the AS dimension are, on average, dissatisfied with all aspects of the library service.

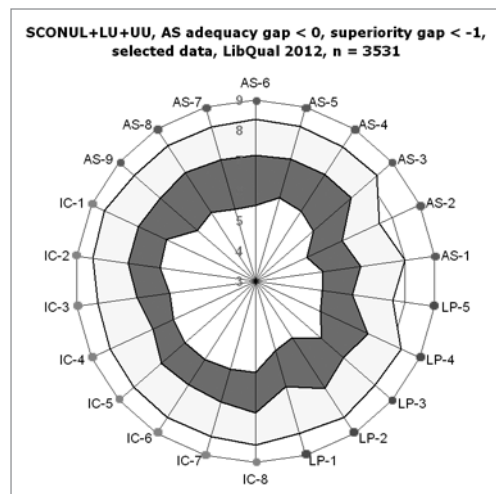


Figure 3: Responses from the sample group with high dissatisfaction with the Affect of Service domain.

Comparing the average perceived scores per dimension, the highest score was for the IC dimension in the satisfied IC group, but the lowest score was for LP dimension in the dissatisfied LP group, even when the average perceived score of this dimension was not the lowest, this being the negative AS group. Respondents who were very negative about the Library as Place, were not so negative about the IC and AS dimensions, raising the average scores of the negative LP group.

	Group Average	Information Control	Library as Place	Affect of Service
Average	6.87	6.91	6.47	7.13
Satisfied IC	<b>7.61</b>	<b>7.83</b>	7.26	7.69
Satisfied LP	7.44	7.35	7.51	7.55
Satisfied AS	7.34	7.27	6.88	7.78
Dissatisfied IC	6.05	5.78	5.64	6.61
Dissatisfied LP	6.15	6.39	<b>4.98</b>	6.68
Dissatisfied AS	<b>5.69</b>	6.02	5.43	5.47

Table 1: Perceived mean scores for each sample sub-group for each dimension.

Next, the same analysis was done for the different user groups who responded to the survey: undergraduates, postgraduates, academic staff, and staff. Surprisingly, when reviewing the results for the different roles, although the values were different for each group, the outcomes were always the same. Customers who were satisfied with IC were the most satisfied overall and those who were dissatisfied with AS were the most dissatisfied overall. The highest score was in the IC dimension for the satisfied IC group, the lowest score was in the LP dimension for the dissatisfied LP group. This held true for all user groups surveyed.

## Statistics

Using the program Statistica 7.0, the results for the average perceived scores were checked for significance, to see if, for instance, the most positive group, the positive IC group, is also significantly the most positive group.

To see if the most positive average perceived score, the 7.61 score of the IC dimension, is significantly higher than the second highest score, the 7.44 score of the LP dimension, the Student's t- test, was used to determine if two sets of data differ significantly from each other by looking for the statistical probability (p) that the sets overlap.

Assuming normal distributions,  $p < 0.0001$  is found, confirming the statistical difference. For the lowest average perceived scores, the test is performed for the 5.69 score of the AS dimension and the 6.05 score of the IC dimension, again finding  $p < 0.0001$ .

Clearly, mainly due to the large numbers of surveys, the results of these significance tests were in order.

A second set of tests was performed to see if the most positive and negative average perceived scores per dimension were differing significantly, the results can be seen in figure 4. In these graphs, the means and 95% confidence intervals are shown; red lines represent the IC dimension, green lines the LP dimension, and blue lines the AS dimension.

The used codes are defined as:

Code -1: The first set of values on the left in each graph represents the excluded surveys. These values are the same for the three graphs, since they were excluded before the selections were made.

Code 1: The second set of values is, in the left graph, from the group selected for negative scores for the IC dimension, representing their given average perceived scores for both the selected IC dimension, together with their scores for the other two dimensions, and likewise for the middle and right graphs, for the LP and the AS dimension, respectively.

Code 0: The third set of values is from the groups of respondents who are, according to the criteria, neither satisfied nor dissatisfied.

Code 2: the fourth set of values is generated similarly to Code 1, but now for positive scores.

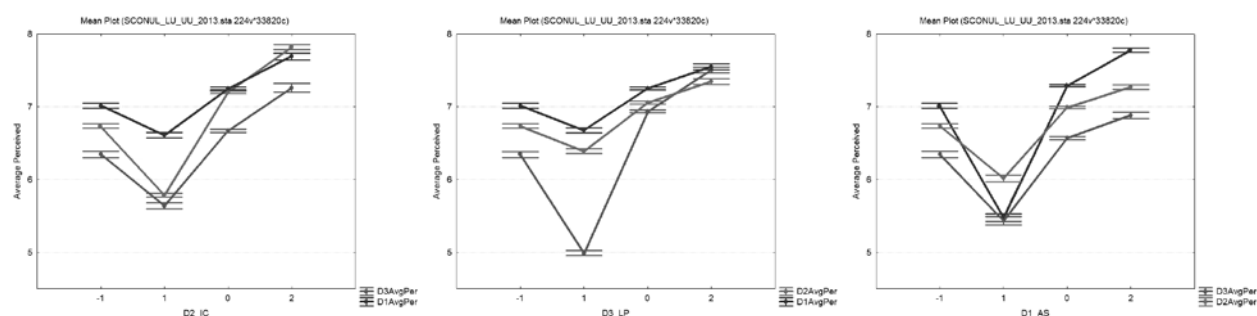


Figure 4: Graphs of the selections for positive and negative average perceived scores for the three dimensions (means and 95% confidence intervals; IC = red, LP = green, AS = blue)

In the three graphs of figure 4 each coloured line, consisting of three segments, represents the total amount of surveys, thus in total six different selections are made for the whole set of surveys: three times a positive selection and three times a negative one. For each of the six selections the average perceived scores are plotted in one colour, red for the IC selections, green for the LP selections, and blue for the AS selections. This figure shows the groups formed by selecting the response for a specific dimension, and the other lines represent the answers they gave for the two other dimensions. In the left graph the positive and negative responses for the IC dimension were selected, in the middle graph the responses for the LP dimension, and in the right graph the responses for the AS dimension.

In the left graph, the blue AS groups and the green LP group are plotted for the red IC group, likewise in the middle and right graph the other two dimensions are plotted for the green LP group and the blue AS group, respectively. Therefore, in the left graph the second set coincides with the Dissatisfied IC data in table 1 and the fourth set coincides with the satisfied IC data in table1, in the middle graph the second set coincides with the dissatisfied LP data of table 1, etc.

In these graphs it can be seen that in the negative selections, the LP dimension always has the lowest scores, although not entirely significant in the right graph. These lowest scores can indeed be recognised in table 1, where for the negative selections the LP dimension each time has the lowest score.

In the same way the scores for the various roles, and the overall average perceived scores for the six selections, represented in the first column of table 1, were checked, and each time, the main conclusions hold, the positive IC groups consist of the overall most satisfied customers, and the negative AS groups consist of the overall most dissatisfied customers.



## Conclusions

Librarians have long been comfortable with the concept that the more information available at a library, the better the library must be. Indeed, the earliest forms of library assessment centred on the size of a library's collection. Performance measurement has moved on since those days, however this research has shown how the human element is a vital component for delivering a good quality library service.

It is found that for each role, undergraduates, postgraduates, staff and academic staff, the same conclusions hold; if respondents are satisfied with the level of service in the IC dimension, they are satisfied with the library overall. If they are dissatisfied with the level of service in the AS dimension, they are dissatisfied with the library overall.

Since these findings hold for all customer groups, the main objective of the library should be to target service improvements in the areas measured by the Information Control dimension, as a positive level of service in these areas increases satisfaction for the entire library. Alongside this, the research has identified that the interaction and support from library staff also play a significant role in the customers' perception of the library service. Should customers receive a poor level of service from the library staff it is likely to impact upon their view of the entire library service. In order to meet customer needs it is therefore vital to improve both the Information Control and Affect of Service elements of the library service.

Strikingly, although the scores for the Library as Place can be very low, these do not reflect on the overall positive or negative scores; the LP dimension has the least impact on the overall satisfaction, or dissatisfaction.



# LibQUAL+ Triads: Results from the pilot experiences

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## Abstract

The purpose of this paper is to determine whether the LibQUAL+ Triads Protocol offers a viable alternative for determining service improvement priorities clearly and unambiguously. The protocol was tested and improved over two phases (Fall 2011 and Spring 2012) across eleven libraries that received results that led to insights and actionable improvements. Further research is recommended to explore the comparative advantages of setting priorities between perceptions and expectations, among various local alternatives, as well as alternative ways of scoring rubrics and exploration of dyadic priority setting as libraries are engaged in developing improved ways of determining priorities.

## Introduction

The purpose of this paper is to determine whether the LibQUAL+ Triads Protocol offers a viable alternative for determining service improvement priorities clearly and unambiguously. Among the many implementations of the LibQUAL+ survey protocol over the years, we often heard people express a difficulty in determining actionable priorities as the three LibQUAL+ dimensions of Affect of Service, Information Control and Library as Place relate to one another. So, a library sometimes has difficulty determining whether they need to invest effort for improving one or the other dimension, ie do I spend my limited resources to buy more journals, to refurbish our chairs, or to increase in person service hours? Which one of these actions is the most important for our users since often LibQUAL+ Likert scale scores are often close to one another with minor differences in scoring. The participants have asked for a clear and unambiguous way to determine such priorities.

## Design and methodology

The general design of the LibQUAL+ Triads was presented in a concept paper at the 2011 Northumbria conference.<sup>1</sup> The basic premise is that it uses iterative ipsative (instead of internal Likert-like) measurement where users are asked to rank order their choices. By providing a set of six potential choices presented in groups of three, ie triads, we can present 20 sets of triads exhausting all the possible combinations of the six potential choices. Respondents are asked to rank the six choices presented as triads and theoretically give us a clear and reliable way of ranking the priorities represented in these six items. The design allows us to calculate an intra-individual reliability coefficient that determines the consistency by which each respondent was able to make clear selections. Not every respondent responds in a consistent and reliable fashion when presented with the six statements in 20 triads. Some may be confused by the design of the survey, some may not care, some may be erratic on purpose, and some by accident among other things. By selecting only a subset of the respondents who have higher intra-individual reliability coefficients we can define clear and unambiguous priorities based on those respondents that are able to express them.

## Items Selected

We implemented two pilot phases of LibQUAL+ Triads (the first included New Mexico State U., Towson U., and U. of Dallas) and the second included eight institutions (Arizona State, Merrimack College, Pennsylvania State, Radford University, U of Central Florida, U of Manitoba, West Virginia U, and York University Libraries [Canada]).

<sup>1</sup> Bruce Thompson and Martha Kyrillidou. "An Introduction to the LibQUAL+ Triads Protocol: Using Ipsative Measurement to Assess Highly Desired Outcomes." Concept paper presented at the 9th Northumbria International Conference on Performance Measurement in Libraries and Information Services, York, England, August 22, 2011. [https://www.libqual.org/documents/LibQual/publications/LQ\\_triad.pdf](https://www.libqual.org/documents/LibQual/publications/LQ_triad.pdf)

The first phase of the pilot was improved with improved explanations and an adjustment on the six items we used for the triads protocol. We chose the items originally so three of them were the core items with the highest relation to the underlying three dimensions (these are the same as the constant items in LibQUAL+ Lite)<sup>2</sup>. The other three were the ones with the highest desired scores. This resulted in all three of these items being from the Information Control dimension. However, many respondents had difficulties identifying priorities among similar items reflecting the same dimension (Information Control).

In Phase II, we changed one of the Information Control items with the highest desired with the highest desired items from the Affect of Service Dimension (“Employees who have the knowledge to answer user questions”).

Phase I
A – The electronic information resources I need
B – Employees who deal with users in a caring fashion
C – Library space that inspires study and learning
D – Making electronic resources accessible from my home or office
E – A library Web site enabling me to locate information on my own
F – Print and/or electronic journal collections I require for my work
Phase II
A – The electronic information resources I need
B – Employees who deal with users in a caring fashion
C – Library space that inspires study and learning
D – Employees who have the knowledge to answer user questions
E – A library Web site enabling me to locate information on my own
F – Print and/or electronic journal collections I require for my work

Thus, we originally included 4 items from the Information Control dimension and one item each from the Affect of Service and Library as Place dimensions (Fall 2011). So, in the second phase (Spring 2012), we included 3 items from the Information control dimension, two items from the Affect of Service dimension and one item from the Library as Place dimension. An example of the survey is included as an appendix.

## Findings

We have found that the scoring method used to determine the intra-individual reliability is an interesting and useful heuristic for determining priorities on the perceived service delivery but the scoring rubric of comparing pairs from triads using a correlation coefficient presents an interesting issue. It is not the only way that can be used to determine priorities as is described below.

We did calculate the intra-individual correlation of 15 pairs (30 comparisons) and that of 45 pairs (90 comparisons) to see if it results in noticeable improvements. Indeed the 90 pair model is calculating slightly higher correlation coefficients in the Phase I participants. Of course a number of cases are dropped because not everyone fills in the

2 Martha Kyrillidou. (2009). Item Sampling in Service Quality Assessment Surveys to Improve Rates and Reduce Respondent Burden: The ‘LibQUAL+® Lite’ Randomized Control Trial (RCT) (Doctoral dissertation). Retrieved from [https://www.ideals.illinois.edu/bitstream/handle/2142/14570/Kyrillidou\\_Martha.pdf?sequence=3](https://www.ideals.illinois.edu/bitstream/handle/2142/14570/Kyrillidou_Martha.pdf?sequence=3)

survey completely and for the calculation of the reliability coefficient it is important to have all responses complete. Alternative notebooks based on data from those cases that have intra-individual reliability coefficients of .7 will be used to deliver the final version of the notebooks to the participating libraries.

We also found that there were some practical scoring considerations with the intra-individual reliability coefficient to compare pairs derived from triads. To explicate the issue we are presenting here the spreadsheet table below that describes some scenarios of comparing Triads elements.

Pairs	Column																
1,3	Left	2	0	2	1	2	1	1	0	1	0	1	2	1	1	0	1
2,4	Right	2	0	1	2	1	2	0	1	0	1	1	0	1	1	2	1
1,2	Left	2	0	2	2	1	1	1	1	0	0	2	1	1	1	1	0
3,4	Right	2	0	1	1	2	2	0	0	1	1	0	1	1	1	1	2
1,4	Left	2	0	1	2	2	1	1	0	0	1	1	1	2	0	1	1
2,3	Right	2	0	2	1	1	2	0	1	1	0	1	1	0	2	1	1
Pairs	Column																
1,3	Left	2	0	2	1	2	1	1	0	1	0	1	2	1	1	0	1
2,4	Right	2	0	1	2	1	2	0	1	0	1	1	0	1	1	2	1
	SUM	4	0	3	3	3	3	1	1	1	1	2	2	2	2	2	2
Pairs	Column																
1,3	Left	1	-1	1	0	1	0	0	-1	0	-1	0	1	0	0	-1	0
2,4	Right	1	-1	0	1	0	1	-1	0	-1	0	0	-1	0	0	1	0
	MEAN	1	-1	0.5	0.5	0.5	0.5	-0.5	-0.5	-0.5	-0.5	0	0	0	0	0	0
	ABS_MEAN	1	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0	0	0	0	0	0

This spreadsheet is intended to outline a potential problem in calculating the reliability of triad responses. The issue is that the value assigned to the pairs changes based on how the pairs are selected, and the problem area is highlighted in black.

For the sake of the example, please consider the possible situations with the pair "AB". In rows 2-5, columns A-B all of the possible triads with these options are listed. Rows 2-5, columns C-T represent all of the possible response combinations.

They are grouped as follows:

C – "A" is always ranked higher.

D – "A" is always ranked lower.

F-I – "A" is ranked higher exactly three times.

J-M – "A" is ranked lower exactly three times.

O-T – "A" is ranked higher exactly two times, and ranked lower exactly two times.

In rows 8-9 the value of each pair for the given response column is listed. The pairs selected are the same as those used in the current version of the study.

Rows 11-12 and 14-15 show the other two possible ways to select pairs for comparison, with the resulting values. For response patterns C-M there is no difference given which pairs are selected. But for columns O-T the values change based on what pairs are used. The same responses by the user can result in values of either 1,1 or 2,0 (or 0,2). This would potentially lead to differing assumptions as regards reliability and consistency based not upon the responses, but upon the way that the pairs were selected. A potential bias would be towards values of 1,1 which occur in 2/3 of the pairing scenarios.

One potential solution is presented in rows 18-20. If the values for the two pairs are summed, the two consistent responses (columns C-D) result in 4 and 0. The eight columns (F-M) that have either one or three "A" responses result in sums of 3 and 1. All of the problem responses (when there are two of each order) results in a sum of 2. This basically counts the total number of times that "A" is ranked higher than "B". The result is that the similar response patterns have similar sums. And it can be seen that sums of 0 or 4 are the most reliable, followed by 3 and 1 and finally 2.

Another potential solution is shown in rows 24-27. Instead of summing the values on a 0, 1, 2 rubric, the rubric is shifted by -1 (so -1, 0, 1). The resulting values for each set of pairs is averaged and then the absolute value is taken. As far as reliability is concerned, the resulting response patterns with a value of 1 are the most consistent, 0.5 has one response differing from the group and a value of 0 would mean there was an equal number of responses for each option.

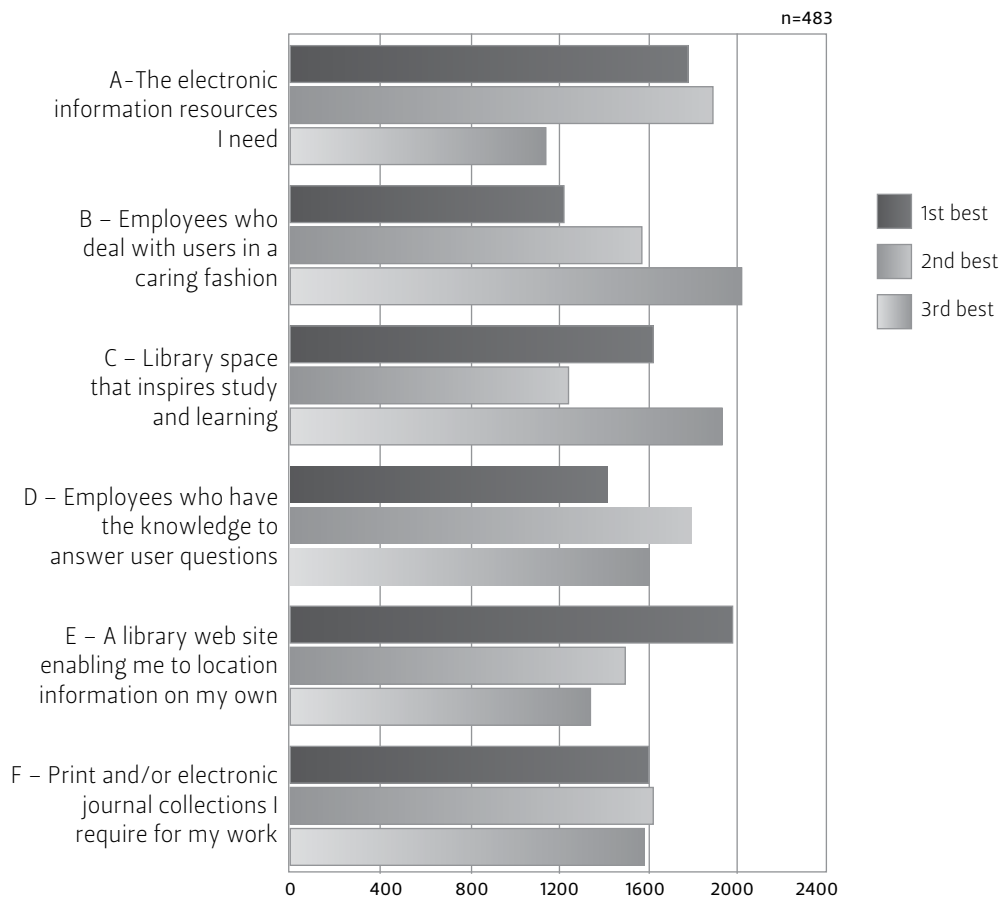
## Practical implications

The libraries have been offered reports describing the data for all the responses and found the approach very useful. Below we show a table and a graph from the reports libraries received that describe the distribution of the responses that they got on the complete set of data including incomplete and inconsistent responses. Presentations by the participating libraries indicate that they can use these data to develop actions and move forward their organizational improvement agenda<sup>3</sup>.

1.2.1 Triad-level Summary

n = 1,005	A - The electronic information resources I need			B - Employees who deal with users in a caring fashion			C - Library space that inspires study and learning			D - Employees who have the knowledge to answer their questions			E - A library Web site enabling me to locate information on my own			F - Print and/or electronic journal collections I require for my work		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
	1st Best	2nd Best	3rd Best	1st Best	2nd Best	3rd Best	1st Best	2nd Best	3rd Best	1st Best	2nd Best	3rd Best	1st Best	2nd Best	3rd Best	1st Best	2nd Best	3rd Best
	1st Best	2nd Best	3rd Best	1st Best	2nd Best	3rd Best	1st Best	2nd Best	3rd Best	1st Best	2nd Best	3rd Best	1st Best	2nd Best	3rd Best	1st Best	2nd Best	3rd Best
Triad 1				204	452	349	385	152	468	416	401	188						
Triad 2	277	414	314							238	329	438	490	262	253			
Triad 3				167	346	492				337	442	226				501	217	287

<sup>3</sup> Lisa Kammerlocher, *LibQUAL+® Triads Pilot at Arizona State University*, Presentation, American Library Association Midwinter Meeting, Seattle, Washington, January 28, 2013; Norice Lee, *LibQUAL+® Triads Pilot -- Fall 2011 at New Mexico State University*, Presentation, American Library Association Midwinter Meeting, Seattle, Washington, January 28, 2013; Marie Speare, *LibQUAL+® Triads Pilot: Results from the University of Manitoba Libraries*, Presentation, Library Assessment Conference, University of Virginia, Charlottesville, VA, October 29-31, 2012; Eric Ackermann, *Protocols and Priorities, Comparing Radford University Users' Priorities using LibQUAL+® Long and Triads Survey Data: A Preliminary Study*, Poster, Library Assessment Conference, University of Virginia, Charlottesville, VA, October 29-31, 2012; Dany Savard, Marcia Salmon, and Aaron Lupton, *York University Libraries Implementation of LibQUAL+® Triads*, Presentation, Library Assessment Conference, University of Virginia, Charlottesville, VA, October 29-31, 2012. The conference proceedings from the Library Assessment Conference in 2012 are forthcoming and to be found at [www.libraryassessment.org](http://www.libraryassessment.org).



This method is a useful exploration in determining priorities for specific elements of service important locally to the library in addition to determining priorities for the three LibQUAL+ dimensions. Determining priorities is a useful complement to the standard LibQUAL+ survey in at least a couple of different ways. Firstly, by determining priorities among the three LibQUAL+ dimensions. Secondly, by determining priorities among service alternatives that relate to specific targeted improvements related to the LibQUAL+ dimensions. Furthermore, it can be used for other items and priorities beyond LibQUAL+.

In general, more research in the area of setting priorities and measuring different priority models may be needed. For example, a more traditional dyadic model of selecting between two alternatives may offer a simpler and easier to respond survey format (for example, this is the survey format used by some strength inventory tools for career coaching purposes).

## Conclusions

We recommend that libraries consider using a method for priority setting. Further research on LibQUAL+ Triads for actionable improvements is needed and we also recommend further research into the protocol looks into desired expectations in addition to the perceived scales. We also recommend further research by exploring dyadic models of selecting priorities and alternative scoring rubrics to the intra-individual reliability coefficient.

This paper is describing a unique protocol enhancement that attempts to offer a clear picture of how library users can help us inform our priorities for service improvements based on reliable data.

## Acknowledgement

We would like to thank Gregory Tucker, David Green, Gary Roebuck, and Henry Gross for their work on the LibQUAL+ Triads protocol development.





# Flexible Loans: a Lean approach to customer engagement and service improvement at the University of York Library

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## Abstract

This paper will outline how the University of York is striving to improve both satisfaction with library loans and customer engagement, via the work undertaken by a recent loans review project. Radical changes have been made to the circulation of library stock at York with the introduction of “Flexible Loans” from October 2012 – this new loans model has created a simpler, fairer and more consistent approach to loans and aims to make items work harder and circulate in a more responsive manner. In particular the paper will highlight the Lean project management methodologies that were used, allowing a fast-track approach to making changes. The project team went from idea to implementation within seven months; the paper will also explore the impact of the ongoing shift of culture to one of continuous improvement and how the approach is inspiring other service developments within the Library.

## Background and context

The loans model at the University of York had been in existence for many years and, due to the number of rules and exceptions, had become difficult to apply consistently and complex to explain to users. Users had told us that they were dissatisfied with the current loans system and as higher student fees led to higher expectations it became a priority to address the situation.

Like many UK HE libraries we used to have different fixed loan periods for different copies and formats: loan periods depended on user category and there were a lot of policies based on “just because we always did it that way”. The fixed returns dates after vacations caused significant shelving backlogs. The policies had never been particularly fair or efficient: for example we used to allow borrowing through the long vacations and then do a goodwill free interlending requests service.

We were aware of good practice elsewhere, particularly the work done at Sheffield University Library (Thrift & Sykes, 2012). Sheffield’s ‘Dynamic Variable Loans’ provided initial inspiration for the approach chosen at York, but we also built on the innovative approach to library circulation emerging across the Higher Education sector within the UK.

## Key principles

Our key principles were to:

- develop a loans model that encapsulated the University values of excellence and inclusivity by emphasising the concept of “community responsibility”
- provide a simple and responsive service to users

- stop taking money from students unless there was a clear purpose in doing so
- use the information we have in order to respond to demand.

We also knew from the outset that we wanted to achieve this by working in collaboration with our users, rather than deliver a model that did not take user feedback into consideration.

## Applying a Lean methodology

Lean as a concept emerged in our institution at around the same time we were beginning the project and fitted nicely with the principles of what we wanted to achieve. We therefore decided to use Lean as a framework for the entire project.

The core principle of Lean is to maximise customer value while minimising wasteful processes. The various stages of a Lean process are identified as:

1. Project identification
2. Scoping to ensure goals are identified and the right people are involved
3. Planning
4. Testing
5. Review and redesign
6. Implementation
7. Feedback
8. Continuous review.

## The process at York

We set up a Loans Review Project Team which included 13 library staff ranging from Library Assistants to an Assistant Director and from all sections of the library, including Library Systems. The team was supported by the University Strategic Systems Programme Manager, who advised on the Lean methodology as this was a new approach to running projects internally.

We encouraged creative thinking and engagement from the start. Our initial proposition was that users could borrow as much as they liked for as long as they liked and our objective was to get as close to this as outcome as possible. This helped staff think differently and come up with all sorts of new ideas which in turn created enthusiasm and engagement.

We also created and shared a lot of circulation metrics to provide evidence of the current situation. Project team members reviewed these and we produced new data in response to their requests.

The formal project began with a two day blitz in March 2012. The blitz was an intensive brainstorming meeting during which the team analysed the circulation metrics, scoped current practices, considered different stakeholder perspectives and debated a wide range of possibilities. As a result we had the draft of a radical new loans model within 48 hours.

After the two day session, momentum was maintained through weekly action-based meetings and a range of other activities:

- set-up subgroups to explore specific issues in depth and carry out process reviews
- consulted users and refined the model
- tested our systems
- used metrics to inform everything

- created simple headline messages used in all communications (internal and external).

Throughout the process we were boiling down our thinking to the key elements of what we wanted to do and how to keep things simple so that they could be explained to users.

The communications work was crucial to the success of the project.

*"I have just seen the new Flexible Loans promotion and website with embedded video etc – it all looks absolutely fab!"*

## Flexible Loans explained

The key elements of the Flexible Loans model are:

- four-week loans for all items regardless of format and for all borrowers throughout the year unless items are requested
- no fines are payable on any items unless they have been requested by someone else and are not returned on time
- the length of a loan adjusts automatically depending on the circumstances of the borrower (full time or part time attendance on campus) and depends on demand: requested items are issued for less time
- fast-track acquisition of items in demand
- a transparent fines exceptions policy
- a proactive approach to customer engagement actively encouraging borrowers to communicate with the Library.

## Consultation and feedback

The Flexible Loans model evolved as we worked. New ideas from staff sprang up, including from staff not in the core project team. We also carried out a lot of consultation with users, much of it designed to get quick responses so that we could make changes before and during implementation.

Our consultation included:

- grab and go surveys on specific issues (the new Library Cafe helped with these!)
- online survey
- drop in sessions for different user groups
- targeted liaison with student representatives
- briefings at Department Boards of Studies and other meetings
- close consultation with York Students Union and Graduate Students Association
- consultation with our own staff.

An important example of how we revised the model before implementation was the level of fine charged for overdue requested items. We initially proposed £5 a day; student feedback led to a reduction to £2 a day. The benefits of this process included:

- the initially higher fine provoked a response, leading to engagement with the process from users
- students were able to claim a moral victory
- the Library was seen as responsive, which facilitated later discussions; we had face to face meetings wherever possible which enabled us to explain our thinking while demonstrating that we had an open mind.

## Ethos

Another important element which helped us with communication and persuasion was the ethos that we developed.

The key points which we always came back to were:

- positive
- pro-active
- personalised
- simple
- clear
- consistent.

We continue to return to these points when developing other new policies and services and in our interactions with users.



Figure 1: Word cloud of key concepts that encapsulate the Flexible Loans ethos

## Measuring success and gathering feedback

Flexible Loans has contributed to a picture of overall improvement in the perception of library services at the University of York. National Student Survey (NSS) scores have increased from 74% in 2011 to 82% in 2012 and 87% in 2013. In addition our LibQUAL+ survey results have also seen an upward trend in satisfaction.

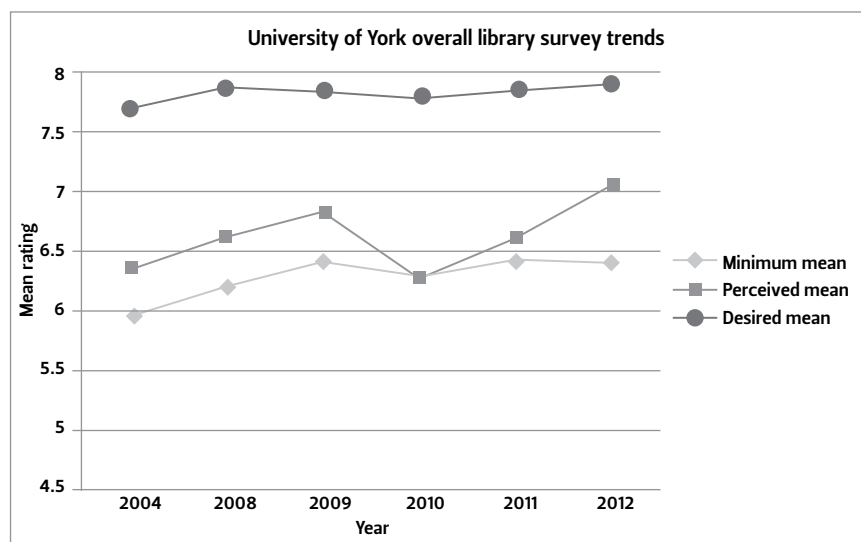


Figure 2: University of York LibQual survey results 2004–2012 showing trends in overall satisfaction

It is also worth noting that we have seen some significant improvement in NSS scores from students in departments where satisfaction with the Library has bumped along at a low level for many years. The following example demonstrates the difference that can result from engaging with users. We received consistent negative feedback from one humanities department (staff and students) before and after implementation of Flexible Loans. We spent a lot of time responding by email and face to face, engaging in wider discussions and developing other initiatives. This effort has been rewarded with the library satisfaction score for this department rising from 70% in 2012 to 90% in 2013.

In addition to monitoring the top level measures of success we have carefully analysed and responded to a wide range of specific feedback since the introduction of the new model.

*"changes to the loan system are wonderful, a huge improvement"*

Common negative themes included some embedded issues such as the status of academic staff and questions surrounding our motivations for making changes.

*"... it would be a good idea ... to ensure that the Library's policies towards academic staff reflect their status as professionals..."*

*"I believe that the main objective of this new policy is to raise funds from the student and staff fines – which I view as unacceptable"*

Our Flexible Loans model relied on creating a 'community spirit' but some of the negative feedback we received missed this point.

*"... academic staff do not have time, during term, to go to the Library at short notice. The Library is poorly located. It's a 10-15 minute return walk..."*

*"... which I believe is discriminatory against PhD students who do not live close to the campus, particularly if they have other responsibilities (as I do), such as caring for a small child, making regular attendance difficult or impossible ..."*

Pointing out why the changes were needed and how the overall model benefited everyone resulted in most people having a moment of enlightenment. They began to understand the challenges facing libraries in making resources available for a large community of users and that we were trying to be as fair as possible. It was heartening to find that the policy made sense.

*"I'd like to compliment you and all the library staff for the job you're doing as the system has worked very well for my module. I've been through the feedback forms and have asked within class and can report that no-one has commented on problems accessing materials, so many thanks"*

## Metrics

Detailed circulation metrics formed an important element of the work on Flexible Loans. Our primary aim was for our metrics to tell us stories and add to the feedback picture of how things were working for our users.

The key metrics which indicate the impact of our model are as follows.

Our fines income proves we have enabled a dramatic decrease in the amount of fines being paid by our users since the introduction of Flexible Loans in October 2012.

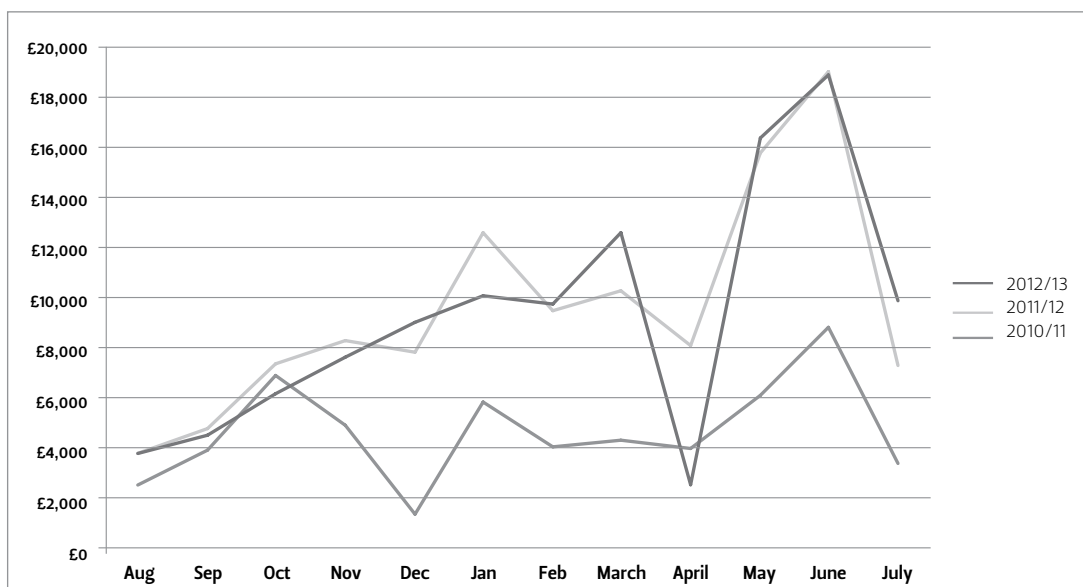


Figure 3: University of York Library fine income by month and year

Percentage of stock on loan has proved that allowing users to borrow books for as long as they want has not led to empty library shelves and we've seen only a slight increase in the amount of stock out on loan at any one time. We do not see any trends that are a cause for concern.

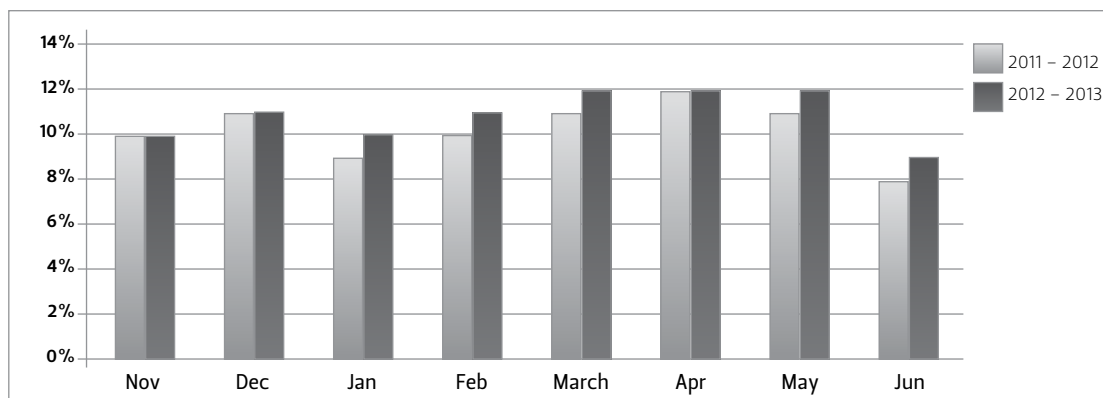


Figure 4: Percentage of University of York Library ordinary collection out on loan at any point

Critically the £2 a day fine on requested items (reduced from the proposed £5 in response to user feedback) appears to be working as an incentive for users to return items on time. Users are placing an average of 152 requests per day and 80% of those items are returned on time. The most common overdue period for the remaining 20% is only one day.

## Lessons learned

Working on Flexible Loans has engaged and energised staff in all sections across the Library; we have developed a different way of working together and learned we can be radical! There is no doubt that it was also hard work and challenging; there are no similar loan models out there to refer to and no colleagues on hand to offer advice. However, everyone involved learned new things as the project progressed and many of the project group gained confidence from taking part in the decision-making process.

The engagement with users embedded in our approach has built relationships both internal and external to the department. The opportunity for users to come on board with us, helping refine the model, problem solve, guide and criticise us has been very welcome on both sides and our approach has provided inspiration for a new way of working which is now permeating all our activity.



The speed with which we completed the work took everyone out of their comfort zone and in particular we found the University governance structure was not set up to travel with us at that speed – we took only seven months to move from idea to implementation. However, we did not allow bureaucracy to hold us back and we have demonstrated that it is both possible and productive to move more quickly.

In the early stages we lost focus on documenting our discussions, findings and decisions, and got carried away with being innovative.

There were also periods of doubt which we named locally as our “Hold our nerve moments”. The immediate easy option would have been to concede to the demands of the vocal few (mostly academic staff), but this would not have been in the interest of the majority student population and would have made the model as complex and misunderstood as our previous loans system. Having the backing and support of senior management was critical during these moments.

## It was worth it!

Flexible Loans at York has made a notable impact on our student experience, in particular leading to improved stock circulation and increased user engagement. We have also received positive feedback from academic staff with the majority understanding the rationale and the benefits.

It has provided us with an internal best practice case study which demonstrates how the release of staff creativity can lead to innovative service improvement. This has been acknowledged by the University with the project team being recognised in two internal rewards schemes: we hold a University of York Vice-Chancellor’s Gold Award for Excellence and all the project staff received a ‘Making the Difference’ award.

Finally, we have had lots of interest in our model from across the sector, including invitations to present at the Northern Collaboration Conference and the national Lean Management Conference. Several institutions have visited us in person or arranged telephone conference calls to obtain more detail about our approach.

*“@UoYLibrary: Always good to see my old home library pressing ahead with excellent ideas :)”*

## Conclusion

As a response to higher student fees leading to higher expectations and library customer dissatisfaction with library loans, the University of York has developed and implemented a loans model that encapsulates the University values of excellence and inclusivity. By developing the concept of “community responsibility” and by providing an innovative and responsive service to customers, the University has seen improved NSS results. Other quality measures are already indicating improvement, with the 2012 Library Survey results demonstrating a 7% increase in satisfaction on average.

### Find out more:

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## REFERENCE

Thrift, H. & Sykes, L., 2012. Plan, implement, review and improve: developing a culture of continuous improvement at the University of Sheffield Library. *Proving value in challenging times: proceedings of the 9th Northumbria International Conference on Performance Measurement in Libraries and Information Services*. University of York, York. August 22–25, 2011. pp. 407–414



# Time-driven activity-based costing of the Library Cataloging Process: A case study in Estonian University Libraries

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## Introduction

For a long time, the management of libraries had not paid attention to such areas of librarianship as the development of effective management of book collections, classification, cataloguing, and the like. This inattention was not important; the small size of collections, staff, buildings, and clientele made for simplicity of operation and did not demand very sophisticated approaches to the ways of doing things (Coney, 1952, p. 83). With the expansion and growth of libraries by the end of the nineteenth century, they had become service-providing institutions and their work processes had become more routine. Needs arose for the standardisation of various different library tasks to improve productivity, and to make more effective use of the human labour involved.

Early studies and reports of library cost accounting (Cutter, 1877; Whitney, 1885) indicate that one of the main reasons why cost accounting was used was the need of library managers to justify their costs to the public, as well as to their parent organizations. However, this was seldom easy. Critics seemed to think that investment in the cataloguing system was wasteful. In addition to cataloguing costs, the work which did not seem to involve costs in the eyes of the public, such as helping readers to find necessary books, keeping shelves in order so that every book could be found at its designated spot, and replying to written enquiries, had to be justified.

In the current socio-economic situation, efficiency and performance have become very important in libraries. The challenge is to cope with reduced resources for managing the same processes and activities, so that the overall quality of the services would not be affected. The need of library managers to justify their costs to their parent organizations has become particularly important, perhaps even more important than ever in our history. Libraries know precisely into which categories the costs belong, but there is a lack of a specific overview of those activities between which these costs are divided. Even if libraries have had precise knowledge of how much money was spent, for example, on each acquired publication, it has been very difficult to determine the entire cost of acquisition, cataloguing, circulation, etc.

The purpose of the present paper is to analyse the cost of activities related to cataloguing process in Estonian university libraries based on the example of the time-driven activity-based costing (TDABC) method. More specifically, the study concerned both the cataloguing process of foreign as well as domestic documents. Two hypotheses were posed: 1) it is cheaper to catalogue a domestic document than to catalogue a foreign document; and 2) the cataloguing process is cheaper in a small-sized library than in a medium-sized library.

## Research methodology and data collection

The data used in this paper is based on reviewing of relevant literature to provide an overview of the concept of different cost accounting methods suitable for the measurement of the cataloging process. Through a case study, conducted by the paper's author, held in 2012/2013 in Estonian university libraries governed by public law in Estonia, the TDABC approach was used to analyse the activities of cataloguing process in those libraries. The analysis of the results is interpreted on the basis of the literature and the authors' opinions, based on long-term working experience in Estonian academic libraries.

Time-driven activity-based costing (TDABC) method was designed and developed in the USA in the 2000s by Robert Kaplan and Steve Anderson (Kaplan & Anderson, 2003, 2004, 2007). TDABC is a logical approach to the management of the organization, which enables management to assess the organization's processes and to identify their costs. The idea behind time-driven activity-based costing is simple and logical – costs and expenses do not arise automatically; charges and expenses are incurred as a result of management activities. There is no cost inside the organization; there are only activities carried out for customer service, which in turn lead to charges.

A few case studies have been documented on TDABC in libraries, all of them carried out in university libraries and oriented towards analyzing specific library activities such as:

- inter-library loan (Pernot, Roodhooft, & Van den Abbeele, 2007);
- acquisition (Stouthuysen, Swiggers, Reheul & Roodhooft, 2010);
- circulation (Siguenza-Guzman, Van den Abbeele, Vandewalle, Verhaaren & Cattryse, 2013) processes, and
- cataloguing (Siguenza-Guzman, Van den Abbeele & Cattryse, 2013).

Based on these studies and, because the words “efficiency” and “productivity” are not culturally accepted in the context of library work, the TDABC seemed to be an appropriate method for the evaluation of library work. The reasons for such conjecture were following:

- in the case of the TDABC, the question is not about the percentage of time an employee spends doing an activity (as it is in the case some other performance measurement methods), but how long it takes to complete one unit of that activity;
- the TDABC model can be tested and implemented by departmental managers for each separate library department.
- the TDABC model already considers those aspects that affect employees’ efficiency and performance, eg, rest periods, personal time for breaks, arrival and departure, and communication and reading unrelated to actual work performance.

The case studies were conducted in a Tallinn University of Technology Library and in the Estonian Academy of Music and Theatre Library. Both selected libraries are university libraries governed by public law. These libraries were chosen because they are funded on a similar basis, they perform the same functions and their main aim is to support high quality education and increase the state’s potential for ongoing scientific discovery and development. However, these selected university libraries are quite different from each other. As Tallinn University of Technology Library is an extremely book-oriented library, the documents included in the survey were solely books. The collection of the Estonian Academy of Music and Theatre Library largely consists of printed music documents and audiovisual documents. Fifty documents in foreign languages and thirty domestic documents from both libraries (160 documents in total) were included in the case study.

In accordance with the analysis of the previously conducted research, the study was divided into the following stages: identification of key activities, identification of all resources involved in the process, identification of the capacity cost rate and determination of time spent on activities.

In the first phase, all the staff members involved in this work process, their general duties as well as those specifically related to cataloguing were mapped. On the basis of the descriptions of the staff duties and interviews conducted with them, together with the analysis of the documents, all the activities that have to be done with a book during the cataloguing process were determined and recorded. In TUT Library the number of activities involved in cataloguing foreign documents was different compared to those of domestic documents, with nine activities for domestic documents and six activities in the case of the foreign documents. EAMT Library recorded ten activities for both foreign and domestic documents. As a result of this stage, filled questionnaires of participant observations were prepared.

The next step was the study of library statistics to identify resources used. The statistical analyses of 2012 were used to determine the numerical data on the staff, expenditure, working days and working minutes in each month, the size of the collection, and the number of additions.

Nine staff members are involved in cataloguing documents in foreign languages at TUT Library, with eight at EAMT Library. Eight and four staff members respectively, catalogue domestic documents in Estonian.

Most libraries are aware of both the cost of every document, as well as the average cost of all acquired documents. The operating expenditure of libraries are divided according to the Standard of International Library Statistics as follows: salaries and wages, acquisition costs, administrative costs, collection maintenance costs, interlibrary loan costs and other expenses (heating, lighting, electricity, etc). However, because the goal of the survey was to calculate, the cataloguing costs of the documents, then the acquisition costs were not included. TUT Library does not need to defray collection maintenance costs, and its administrative expenditure is low too; that is not reflected in the budget of the Library. It also seemed impossible to determine the specific amount of wages for every staff member involved in the

cataloguing process, as many of them have other duties to perform. Thus, the general labour costs of the library were selected as the basis of the present survey. The costs of the interlibrary loan service were not separately highlighted either. Operating expenditure (excluding acquisition expenditure) were €139,069 in EAMT Library and €912,260 in TUT Library. There were 257 working days (21.42 day per month or 10,272 min per month) in 2012 in EAMT Library and 256 working days (21.33 day per month or 10,224 min per month) in TUT Library. The total number of library staff were 10 in EAMT Library and 71 in TUT Library.

For the identification of the capacity cost rate, the practical capacity of resources (employees) was calculated, based on the number of staff members involved in the work process and the working minutes in month per employee of the library in the financial year prior to the study. The fact that 22 percent of working time is spent on non-productive activities that fall within the limits suggested by the authors of the TDABC method was also factored in.

### **The capacity cost rate of foreign documents in TUT Library:**

$$76,022 / 71 = 1071.73$$

$$\text{Cost of capacity} = 9 * 1,071.73 = 9,645.57$$

$$\text{Practical capacity} = 9 * 10,224 * (1-22\%) = 71,772 \text{ min per month}$$

$$\text{Capacity cost rate} = 9645.57 / 71,772 = €0.13 \text{ per min}$$

### **The capacity cost rate of domestic documents in TUT Library:**

$$\text{Cost of capacity} = 8 * 1,071.73 = 8,573.84$$

$$\text{Practical capacity} = 8 * 10,224 * (1-22\%) = 63,798 \text{ min per month}$$

$$\text{Capacity cost rate} = 8,573.84 / 63,798 = €0.13 \text{ per min}$$

### **The capacity cost rate of foreign documents in EAMT Library:**

$$11,589 / 10 = 1,158.90$$

$$\text{Cost of capacity} = 8 * 1,158.90 = 9,271.20$$

$$\text{Practical capacity} = 8 * 10,272 * (1-22\%) = 64,097 \text{ min per month}$$

$$\text{Capacity cost rate} = 9,271.20 / 64,097 = €0.14 / \text{min}$$

### **The capacity cost rate of domestic documents in EAMT Library:**

$$\text{Cost of capacity} = 4 * 1,158.90 = 4,635.60$$

$$\text{Practical capacity} = 4 * 10,272 * (1-22\%) = 32,048 \text{ min per month}$$

$$\text{Capacity cost rate} = 4,635.60 / 32,048 = €0.14 / \text{min}$$

In the filled questionnaires, prepared on the basis of job descriptions, the staff members were asked to undertake self-observation, and to record the time spent on a specific activity in the observation report. The questionnaire also enabled to add notes. Using a stopwatch was recommended to measure the time as exactly as possible.

Finally, the cost of every activity and the cost of the whole work process in total were calculated. The time spent on the activity was multiplied by the capacity cost rate to reach the cost of the activity.

## Results

The most time-consuming activity was compiling and complementing bibliographic records. Classifying takes different amounts of time in each libraries. For instance, the EAMT Library does not classify its audiovisual documents, but shelves them according to their call number. TUT Library does not consider the preparation of a document for the recent additions display to be a part of the cataloguing process. It ends the acquisition process there.

Activities	The time consumed on the activity (min)		The average time consumed on the activity (min)		The average cost of the activity (€)		% of the cost of all activities	
	FD (50)	DD (30)	FD	DD	FD	DD	FD	DD
Accession and bar-coding	59	14,38	1,18	0,47	0,15	0,06	2,82%	6,18%
Compiling a short bibliographic record	125	-	2,5	-	0,32	-	6,01%	-
Compiling an item record	47	20,35	1,34	1,08	0,17	0,14	3,19%	14,43%
Delivering the document to the Cataloguing Department	26,5	58	0,53	2,33	0,07	0,3	1,31%	30,93%
Complementing the bibliographic description	763	-	15,26	-	1,98	-	37,22%	-
Subject indexing	328	-	6,56	-	0,85	-	15,99%	-
Classifying and allotting the call number	379	34,5	7,58	1,15	0,98	0,15	18,42%	15,46%
Technical processing (gluing call number label and security trip)	78,23	37	1,56	1,23	0,2	0,16	3,76%	16,50%
Editing the description and checking the final presentation	230	37	5	1,23	0,6	0,16	11,28%	16,50%
<b>TOTAL</b>	<b>2035,73</b>	<b>200,83</b>	<b>41,51</b>	<b>6,69</b>	<b>5,32</b>	<b>0,87</b>	<b>100%</b>	<b>100%</b>

Table 1: The time consumed on all the activities related to cataloguing in TUT Library (min), the average time consumption (min), the cost of the activity, and the percentage of the cost of all the activities

As a rule, the National Library of Estonia has already created bibliographic descriptions for documents in Estonian. EAMT Library has to compile almost all the bibliographic descriptions for printed music and audiovisual documents because these are often not included in the National Library's collection as legal deposit copies due to their small production runs (less than fifty copies) or are only available after an excessive delay. So, the university libraries have obtained a permit from the National Library that, in special cases, they can produce bibliographic descriptions for themselves.

Activities	The time consumed on the activity (min)		The average time consumed on the activity (min)		The average cost of the activity (€)		% of the cost of all activities	
	FD (50)	DD (30)	FD	DD	FD	DD	FD	DD
Accession and bar-coding	124,37	90,01	2,49	3	0,35	0,42	6%	14,33%
Classifying	51	6,36	1,01	0,21	0,14	0,03	2,70%	1,02%
Converting the CDs into mp3 format	101,2	55,35	2	1,84	0,28	0,26	5,33%	8,90%
Technical processing I (preparing and gluing call number labels)	91,29	81,23	2,22	2,71	0,31	0,38	60%	12,96%
Technical processing II (lamination and gluing security strip)	139,5	68,13	3,19	2,27	0,44	0,32	8,4%	10,92%
Compiling a bibliographic record	1031,31	251,42	21,02	8,38	2,94	1,17	56%	39,93%
Subject indexing	146,2	30,22	3,32	1	0,46	0,14	8,80%	4,78%
Compiling an item record	25,2	21,25	0,5	0,71	0,07	0,1	1,33%	3,41%
Editing the description and checking the final presentation	26,45	2	0,53	0,07	0,07	0,01	1,33%	0,34%
Preparing the document for the recent additions display	47,36	19,45	1,35	0,65	0,19	0,1	3,62%	3,41%
<b>TOTAL</b>	<b>1783,88</b>	<b>625,42</b>	<b>37,63</b>	<b>20,84</b>	<b>5,25</b>	<b>2,93</b>	<b>100%</b>	<b>100%</b>

Table 2: The time consumed on all the activities related to cataloguing in EAMT Library (min), the average time consumption (min), the cost of the activity, and the percentage of the cost of all the activities

The compiling of bibliographic records of documents in the Estonian language at the EAMT Library is apparently a time-consuming activity, although there is no time spent on the equivalent activity at the TUT Library. It is also apparent that the delivery time for the document to the TUT Library's Cataloguing Department is too time-consuming – 58 minutes in the case of thirty documents, an average of 2.33 minutes. The reasons for this time consumption need to be clarified and better solutions found and implemented (see also Table 1 and Table 2).

On the average, cataloguing of documents in foreign languages at TUT Library is approximately 84 percent more time-consuming than cataloguing domestic documents. The large difference in the time taken is conditioned by the fact that the bibliographic records of domestic books have already been created by the National Library of Estonia, and the only effort required from the staff of TUT Library is to add, where necessary, copy descriptions and classes and subject headings inherent in the profile of TUT, though adding the latter is only in the case of necessity. However, a recently added book in the foreign language frequently turns out to be the only copy in Estonia due to the profile of TUT. Then it needs the creation of a bibliographic record in addition to compilation of an item record, as well as thorough classifying and subject indexing. The large difference in time taken means that the difference in the financial cost is proportionately higher – while the average cost of cataloguing a document in the foreign language is €5.26, that of a domestic document is just €0.87.

At EAMT Library, the difference between the time taken is not so marked, with the cataloguing of documents in foreign languages taking only about 40 percent more time than the cataloguing of domestic documents. The cataloguing of Estonian printed music documents and audiovisual documents is, on the other hand, time-consuming and, therefore, expensive, because almost all bibliographic descriptions have to be created from scratch at the Library. As the table shows, the cataloguing of documents in foreign languages costs less at the EAMT, an average of €4.25. However, the cataloguing of domestic documents turns out to be significantly more than at the EAMT Library, costing €2.92 per item.



## Conclusions

The TDABC is well suited for the library setting, and can be applied to many activities with complex time drivers. The TDABC seems to be one of the best tools for understanding cost behavior and for refining the cost system for university libraries. It is also a great method for mapping the organizations' activities and processes.

Although documenting the activity flows and data collection to gather the time duration can be time-consuming for researcher, as well as uncomfortable for the staff being observed, it does enable the identification of ways to reduce the time taken for certain activities and thus make the process for cost-efficient without damaging the work quality. While integrating the TDABC method with the analysis of library performance indicators, more valuable data becomes available to inform managerial decisions.

Library personnel willingly participated in the time measurements. Identifying the staff members involved in the cataloguing process and seeking out the activities they were engaged in was swift and the course of the study understandable to all its participants.

The hypotheses posed were not totally confirmed. It is more expensive to catalogue a foreign document than a domestic document in a small-sized as well as in a medium-sized library. But it is more expensive to catalogue domestic document in a small-sized specialized university library than in a medium-sized library.

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# Usefulness as applied to digital library evaluation

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The San Diego State University (SDSU) is located in southern California, a US state which has had financial difficulties the past few years. Higher education funding has decreased and the University library, like many others, must make difficult decisions on how to best allocate diminished financial and human resources. In difficult budgetary times a digital library of cultural and historical resources may appear to be an extravagance. Those who work with digital libraries (DLs), or have utilized resources from digital libraries, understand their value for preservation, access, outreach and more. Administrations and granting agencies, however, need to see value demonstrated in measurable terms. They want to see a return on investment. In addition, the SDSU library holds rich archival collections; collections unique and specific to SDSU and the city of San Diego. These materials are well preserved, but relatively hidden in the special collections department at the library and in offices around the University. With a large number of deserving projects awaiting digitization and limited resources, prioritization becomes crucial. These two issues: demonstration of value and prioritization, are fundamentally linked. Well-prioritized digitization projects will result in higher usage and return greater value for the investment. One means of measuring the value of the DL could be usefulness. If users are accessing and locating digital resources within the DL then they must be finding useful resources. Likewise, an analysis of the resources accessed will help inform the direction of future digitization; presumably more of the same or complimentary resources would also be found useful and valuable. Tracking the use of currently digitized materials will provide only part of the picture, though. Users who do not find useful materials will not use the DL and will not be included in the measurement. Non-users may have information needs that the DL does not meet, but could be met by further digitization. The insights of non-users could also help inform prioritization considerations, by determining the resources they would find valuable.

An examination of current research on measurements for DLs and online business services suggests that the concept of usefulness has not been widely applied to the measurement of digital libraries. Fuhr, et.al. (2007) address usefulness more specifically than usual in the literature. They describe usefulness as “reflecting how users perceive the relevance of a DL with their needs, the width, the breadth, the quality, as well as the validity of its collection, and the ability to serve their goals.” (Fuhr 2007, p. 28) They continue noting that usefulness can be evaluated through user studies, information behavior and content-related studies. Warwick, et.al. (2008) also queried users concerning the usefulness of digital resources.

Usefulness has been much less addressed than usability, in part because usefulness is more difficult to define. A useful digital resource meets an information need efficiently. Users simply know a useful resource when they find it, and they may not consider a resource useful until they have a specific need. Marchionini wrote: “Needs assessment research in information science recognizes that there are different levels of needs that users may not be able to articulate.” (Marchionini 2003, p. 120) Usefulness is also difficult to isolate from usability. An unusable DL will be a useless DL. Thus, interface is an important factor in the users’ perceptions of the usefulness of the DL.

This research set about to determine whether the concept of usefulness could be applied to DLs. The digital library examined is the SDSU Digital Collections site located at <http://ibase.sdsu.edu>. The site utilizes iBase digital asset management software. The collections available are diverse and somewhat disparate. Some of the resources included are: the student newspapers, the university’s archival photograph collection, a Chicano poster collection, alternative student newspapers and a collection of 19th and early 20th century trading cards.

Research literature on both usefulness and usability advocates the use of multiple measurements in any evaluation to give the clearest picture. To determine how best to measure usefulness; to determine which measurements would yield the most actionable data, data was gathered from several sources both qualitative and quantitative.

1. Database reports collected by the digital asset management software
2. Google analytics data
3. Flickr analytics data
4. Interviews
5. Expert evaluation

## Database reports

The digital asset management software assembles several tables of statistics. The data presented here are from 2010, the year the DL went live, to June of 2013. Analysis of the *Most Popular Searches* table shows that the great majority of searches were conducted on personal names, over 82%. In a distant second place, the names of organizations made up only 4% of the searches. Place name searches occurred in 3% of the searches, as did searches for buildings. Users searched for the names of companies, objects, and for concepts even less often.

The most searched name was a sheet music illustrator named Starmer and former university president Thomas Day. The free text term most often searched was Homecoming. Users searched for a large number of musical groups including Frank Zappa, Mothers of Invention, Led Zepellin and Vienna Teng. Concepts searched included: leadership; black is beautiful; and G.I. bill. Users searched for common university organizations, fraternities and sororities, sports teams, campus clubs and social groups.

A second database report relating directly to usefulness is the *No Result Searches* table. As with the *Most popular searches*, users searched for personal names, which constitute approximately 35% of the unsuccessful searches. Surprisingly, users searched for the DL's file identifiers. 17% of the unsuccessful searches were on identifiers, the file names of the digital assets. The identifiers are unmemorable and do not communicate any information, thus it is interesting that users even attempted those searches. Mostly the identifiers referred to materials in the University Archives Photograph Collection.

The great majority of searches failed because the DL did not hold any matching resources; 84%. Only 3% of searches failed because of typographical errors. A number of searches failed because of a misunderstanding of fielded database searching.

## Google analytics

Google collects a plethora of data and for usefulness the most pertinent are the *Traffic Source- Keyword* table. This table lists those words searched via Google, which resulted in a link and click through to the SDSU DL. The data from 2013 reiterate the findings from the database reports. Most users clicked through to the SDSU DL from a personal name search, 51%. Searches for sheet music brought in traffic from Google, but at a much lower rate, 17%. Searches on place names accounted for 12% of the results.

## Flickr analytics

To promote the digital collections and reach a wider audience a number of the most visually compelling collections were duplicated in Flickr, including the Chicano poster collection, the sheet music collection, the California murals collection, the trading cards and selections from the university's archival photographs. Of these collections the most viewed is the Chicano poster collection and the most viewed item is an anti-drug abuse poster located in the collection. The archival photographs were the second most consulted collection.

## Interviews

The various analytics track the searches of users who have found the digital library, either by navigating there directly or through a search engine. Other potential users have either not been aware of the digital library or the database does not contain resources useful to them. In order to obtain data from non-users brief interviews were conducted. The interviews attempted to discover what digitized resources would bring these non-users to the DL. Interviews were chosen as opposed to focus groups or observations for the purpose of gathering a diversity of volunteers who had no previous experience with the DL. The interviews also encouraged more volunteers because of the short time commitment necessary to participate. Research on effective survey techniques notes that brevity and specificity yield the most viable results (Hubbard 2007). Thus, aside from asking the volunteer's affiliation with the university (faculty, student, staff or community), the interview consisted of just two questions with several variations:

- A. Do you think that digital libraries hold useful resources? Or, Are these resources of value? Or, should the library be putting money and resources into digital libraries like this?
- B. What would you add to these collections? Or, if you could have anything digitized, what would it be? Or, have you noted anything lately that was not online and you wished that it were online? Or, do you know of any resources for your classes or your personal interests that are not available online?

Understanding that most users have never thought about digital libraries or how resources are placed on the Internet interviewers first showed the volunteers the DL site and suggested that the volunteer conduct a search or two. Usually volunteers performed several searches and often asked questions about the resources and the interface. The interviewer then asked for the volunteer's opinions. By approaching library users and pedestrians near the library the interviewers obtained a random sample of 35 non-users.

Although none of the volunteers had previously considered digital libraries, the brief interaction with the interviewer and the introduction of the DL were enough to generate comments. Most volunteers were able to discuss their ideas for digital libraries. All but two volunteers believed the DL was valuable. One noted that he did not have a need for any of the resources, nor did he know of anyone who would. The other volunteer said that he "supposed this digital stuff was important", but he would much rather have the original. Most of the volunteers wanted to express why they thought that digital libraries and this library in particular are valuable. They mentioned historical research and preservation of the resources most often. Providing increased access to these resources was also repeatedly mentioned. Several volunteers simply thought the DL was fun. Interestingly, a number of volunteers expressed the opinion that, of course, the library should be digitizing resources, that the service was expected; as one volunteer stated: "That's what libraries are supposed to do."

When asked what resources they thought should be digitized, the volunteers made some predictable digitization suggestions such as all theses and dissertations, all textbooks, non-English books and journals and one volunteer wanted all the answers to math and science problems. Other suggestions, however, were more substantive. Resources pertaining to SDSU or San Diego history were proposed most often. Several volunteers suggested oral histories with important faculty and alumni. San Diego is home to a large popular culture convention called ComicCon and several volunteers suggested graphic novels and comics. Neighborhood newspapers and newsletter from local organizations were mentioned. Playbills, photographs and video from student performances and student and faculty works of art were also frequently mentioned. The volunteers made relatively few suggestions for interactivity. Two suggested allowing users the ability to upload resources. Another suggested an online interactive university yearbook.

A few volunteers did not offer suggestions for digital resources, but overall direction for the digitization program. A businessman browsed through the database and said he could offer no suggestions on what to digitize, but he questioned how this work could be sustained. He advocated prioritizing collections that could be leveraged for additional funding. He noted: You may be able to sustain some digitization projects out of your operating budget, but you'll need outside funding to keep this going. Users also stated the need to more fully promote the DL. Many volunteers did not know that SDSU had a digital library.

## Expert evaluations

A librarian with a background in digital technologies and a library school class at the University of Buffalo reviewed the digital library as expert evaluators. The ideas of the expert reviewer and the library school class included digitizing the annual reports of local companies, especially those with SDSU connections, and oral histories with notable alumni. They also recommended digitizing and preserving neighborhood newspapers, especially those from immigrant neighborhoods as well as radio broadcasts from local stations and of local interest. They noted that any resources concerning tourism should take a high priority.

Evaluation of the data gathered continues, but a few points stand out. Users are searching for personal names, perhaps because names are easy to search or perhaps because of our social media oriented society. Both the random volunteers and the experts agreed that resources of local interest to the SDSU and the San Diego area are important and should be prioritized. They were in agreement that digitized collections of cultural and historical materials are valuable. As might be expected users searched Flickr for graphic materials. Digital collection developers may want to take advantage of the different audiences for Flickr and digital libraries and target resources toward them. One of the flaws with the research is that the data show what users looked for but not whether the resources located actually fulfilled the information need. An online survey was linked to the main page of the DL in an attempt to gather data about the usefulness of the resources consulted, unfortunately, few responses were obtained. Generally, the survey responders supported the current digital resources and included more comments upon issues with the interface. A follow-on survey of users with the goal of obtaining a more usable response is now in the planning stages. Since usefulness and usability are so difficult to untangle, the comments from the volunteers and experts as well as the analysis of the failed searches is resulting in a redesign of the DL site.

In short, these preliminary data demonstrate that usefulness as a context for measuring digitized collections is possible. The data gathered may inform prioritization and communicate value to administrators and granting agencies. Digital collections of archival and historical resources are expensive propositions and channeling funds into projects that faculty, students and the community will use and value is essential.

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# You said, we did... So what?

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### Introduction

This case study looks at the differing patterns of response in terms of satisfaction rates with library services as expressed in internal user surveys and the National Student Survey and how libraries can respond to what can often appear to be conflicting messages.

### Background

The National Student Survey (NSS) began in the United Kingdom in 2005. It was designed to measure the satisfaction of students with the learning, teaching, administration and facilities provided during their University degree course. Covering a range of topics within 23 questions in total, it is sent to all final year students and is independently administered by the market research company Ipsos MORI. The overall scores for each university contribute towards ranking in a variety of leagues tables published in the press and, more recently, scores for individual subject areas within each institution have been included in the Key Information Set (KIS) designed to enable prospective students to make a choice of university course based on quality and reputation. With the introduction and subsequent increase in tuition fee rates, the data is seen as increasingly important in demonstrating that students are receiving value for money.

Since its inception in 2005, three questions have been included in the survey pertaining to Learning Resources:

Question 16: The library resources and services are good enough for my needs

Question 17: I have been able to access general IT resources when I needed to

Question 18: I have been able to access specialised equipment, facilities, or rooms when I needed to

Many UK university libraries also run their own satisfaction surveys, either using LibQUAL or locally created surveys, to measure the success of their services and to feed into future planning. What has been observed, however, is that internal satisfaction and trends can often differ significantly compared to feedback within the NSS.

### User Surveys at Kingston University

Kingston University is based in South West London on four teaching campuses. There is a Learning Resource Centre (LRC) on each of these campuses with stock and services reflecting the requirements of the subjects taught at that site.

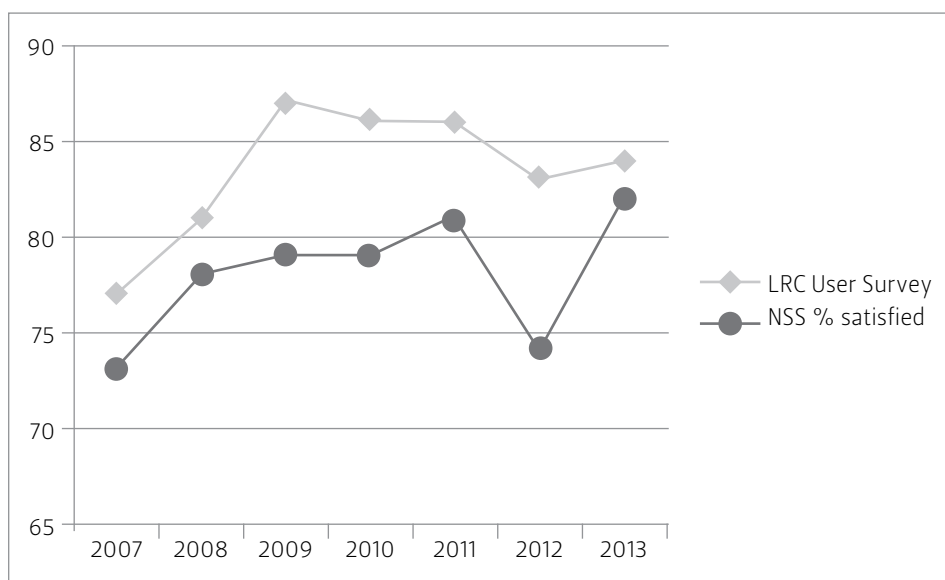
In 2003, Kingston launched its first annual LRC User Survey. Occasional surveys had been carried out previously but a number of key changes to the department at this time provided the impetus for running the surveys on an annual basis and building a set of trend data. During a period of change and restructuring, the surveys were seen as a key tool for measuring the success of the change programme in ensuring that services were student focused.

Until 2010, the methodology used was that of Priority Research, a specialist survey company who had devised an algorithm which enabled priorities for change to be established using paired statements. The paired statements were derived from focus groups run with students. The survey was then distributed, initially on paper but later online, and all students from all years of study were encouraged to respond.

In 2010, Priority Research went into liquidation and so the survey was replicated as closely as possible using the Survey Monkey software. LRC staff continue to run focus groups to identify key themes for the survey and they also carry out the analysis. Usually there are 22 questions in total with a mix of core questions being asked each year to provide historical trend data with an additional set of questions focussing on an annual theme.

## Comparing NSS library scores and LRC User Survey scores

When the NSS launched, LRC staff were optimistic as evidence from the User Surveys demonstrated a reasonable level of satisfaction with services (with room for improvement). Staff were therefore disappointed to see the satisfaction rate lower than the internal survey. However, as the years progressed, the gap became wider and that began to give greater cause for concern. A variety of initiatives to improve services were having an impact on the internal survey but little impact in terms of the NSS and national reputation (see graph below).



What this graph also reveals is the lack of predictability of results. For example, in 2009 a substantial improvement in satisfaction expressed within the LRC User Survey was not reflected in the NSS, whilst in 2012 and 2013 both the dip and recovery in NSS scores was significantly more pronounced than within the LRC User Survey.

## Why the difference?

As a result of this analysis, staff began to research potential reasons for the disparity in these results. The areas of enquiry included:

- Respondent profile
- Question clarity
- Availability of the survey
- Resources and services
- Geographical location

### Respondent profile

This is the area where the NSS and the LRC User Survey differ significantly. The NSS is distributed to final year students only and is compulsory whereas the LRC User Survey is available to all students and is voluntary. This posed a number of key questions:

- Was the LRC Survey skewed by a lack of final year responses?
- Were final year students more negative than other years?
- Did more non-users complete the NSS?



- Does the compulsory nature of NSS affect responses?
- Are there key differences between responses from students at different campuses that could also skew results?

Staff running the LRC User Survey endeavour to engage students across all years including postgraduate study and analysis shows a very even spread of respondents. Further analysis did not reveal any specific negativity amongst final year students compared to other years. It was not possible to find out whether either survey had a particularly high completion rate amongst non-users. LRC staff head out and about around the campus endeavouring to collect responses from non-users or potentially users of electronic resources only. However, this data is not available at all for the NSS.

In terms of a 'campus effect', our analysis revealed some distinct differences and would appear to support anecdotal evidence from across the UK higher education sector that new library buildings do have an impact on satisfaction levels. Kingston University is mid-way through a long term series of building projects which includes two LRC refurbishments and two new LRC buildings. The Kingston Hill LRC was significantly extended and refurbished approximately five years ago and is regarded as being a good fit in terms of the study space required by students studying at that campus. By contrast, the LRC at the Penrhyn Road campus has only received minor refurbishment and is frequently overcrowded with demand for computers significantly exceeding availability. Analysis of the 2012 NSS results showed that the average score for the library question from students studying at Kingston Hill based subjects was 86%, exceeding the sector average for those subjects of 82%. By contrast, the average score for Penrhyn Road based subjects was 70% compared to a sector average for those subjects of 83%. During the 2012/13 academic year, the new LRC at the Knights Park campus was in full use for the first time and initial analysis of the 2013 NSS results (just published) indicates that satisfaction with the library for the subjects taught at that campus has also seen a substantial increase since the opening of the new building. As a result of this analysis, it has been possible to use NSS data alongside LRC User Survey data to support the business case for a new LRC at the Penrhyn Road campus.

## Question clarity

Do students understand what they are being asked? There has been criticism since the introduction of the National Student Survey that the questions are too broad to be meaningful to institutions. From an LRC point of view, both the library and IT questions are relevant in terms of the range of services on offer:

- The library resources and services are good enough for my needs
- I have been able to access general IT resources when I needed to

Resources and services offered within libraries and LRCs across the sector are many and varied and so it can be argued that less emphasis should be placed on making direct comparisons between institutions which then have so much bearing on league tables and reputation. The LRC User Survey has the obvious advantage in that it can drill down into the more specific needs of students. Although some questions are carried through the survey year on year to provide trend data, other thematic questions are reviewed each year and these are formed from holding focus groups with students in advance of the survey so that staff are confident that questions being asked are related to the issues of most concern to the students.

## Availability of the survey

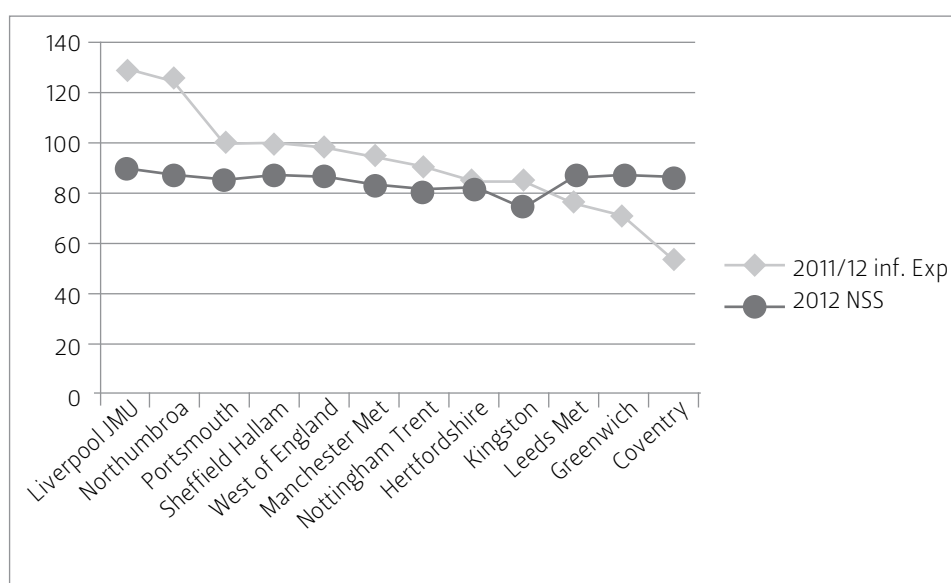
Both the NSS and LRC User Survey are available online. Until 2013, both ran at similar times of year. Both are widely advertised on campus and both offer incentives for completion. The offer of chocolate as an incentive to answer the LRC User Survey has always been effective! However, the key difference is that the NSS is compulsory and the body appointed to administer it (Ipsos MORI) are very persistent in chasing non-responders and this is a recognised irritant by the student body across the UK and is often cited for one of the reasons for responses being more negative.

## Resources and services

Having established that the quality of study space appeared to be an influential factor in survey responses, we turned our attention to whether overall spend was a factor although it was acknowledged that this did not necessarily explain differences between internal and external survey results. Using SCONUL (Sconul, 2013) benchmarking data, analysis was carried out against two of the financial metrics:

- Total spend on libraries (including staff and buildings)
- Information provision expenditure per FTE student

Like many universities, Kingston has benchmark institutions that it measures itself against. These are broken down into national and regional comparators. For the purposes of this case study the national comparator dataset was used. This revealed significant differences in overall investment in library services between the highest and lowest spending institutions. However, it did not reveal any significant impact on their NSS scores. In terms of information provision expenditure, covering both print and digital resources, again there appears to be no correlation between expenditure and student satisfaction. In fact, as can be seen in the graph below, some of the lower spending institutions appear to obtain a higher satisfaction level.



## Geographical factors

The final area investigated as part of this case study was the impact of geographical location on satisfaction rates. Within the NSS there has often been reference to the 'London effect'. Satisfaction rates at universities based in London and the South East of England have generally been lower than in other parts of the UK. This is sometimes attributed to the fact that many are multi-campus institutions which naturally create less of a sense of identity than single site institutions with a strong community campus feel.

Based in South West London with easy access to the capital, Kingston is often seen as offering the best of both worlds – the opportunity to live in and around an attractive market town with the option to take advantage of London's cultural and social highlights within a train journey of approximately thirty minutes. However, it is still a multi-campus university and in the suburbs it is difficult to create the strong community feel offered by a single campus university. The overall satisfaction rate for libraries in the UK in 2012 was 83%. Looking at the overall scores from Kingston's national comparator set, this was an average of 84% compared to just 81% within the regional comparator set. This would appear to support the view that external factors are influencing the results and may be more pronounced in the NSS compared to the locally run survey.

## So what?

Having analysed the NSS and LRC User Survey data, the question remains, 'So what?'

The National Union of Students (2013) has generally welcomed the NSS seeing it as a tool to enable change. Others are less certain. Adam Child, assistant registrar at Lancaster University, expressed concern at too much emphasis being put on the results. "If you put in place a measure and call it a 'performance indicator', people will feel the need to improve those scores even at the expense of other activities that will have a larger impact on student experience." (Grove and Gibney, 2012) The funding council has indicated that there will be a review in 2015 and library directors will need to decide whether it is appropriate to lobby for an improved question.

Rightly or wrongly, the NSS remains a key factor in building a university's reputation and, as such, is embedded in institutional Key Performance Indicators (KPIs). For example, Kingston has a KPI within its Education Strategy:

- % of students taught at Kingston University expressing overall satisfaction with their course – to exceed the sector median by 2015/16.

To align with this, the LRC has a performance indicator based on Question 16 of the NSS which aspires to be within 1% of the sector average or greater by 2016. Underpinning this, the LRC User Survey remains a key tool in identifying the strengths and weaknesses of the service and ensuring that future services meet the needs of the student body.

## Taking action

The aspiration of staff at Kingston University is close the gap between the LRC User Survey results and the National Student Survey scores to ensure excellent rates of satisfaction with our services from the whole student cohort. A number of actions are being followed through which have been influenced by the lessons learned from the survey experience.

## Feedback analysis

As well as the annual LRC User Survey, the LRCs receive a wide range of feedback from students through a variety of mechanisms including staff/student consultative committees and other formal meetings as well as direct comments received either by email or in person. This information is collated by the Customer Services team and is used to enable the continuous improvement of services with actions being monitored for effectiveness.

## Communicating successes

Both the LRC User Survey and NSS free text comments have enabled staff to influence significant changes to a range of services including the implementation of a new printing solution, a reduction in printing charges to students and building refurbishments. Most significantly the data was incorporated successfully into the business case for a new LRC at the Penrhyn Road campus where the lowest scores were received. As plans evolve for this building, the survey data will also influence the shaping of the space and the location of services within it.

Communicating these successes is important for both staff and students. For a number of years staff have produced a 'You said, we did' style leaflet highlighting changes as students return for the new academic year. The student intranet and information skills sessions are also used regularly to highlight new services and to improve understanding of the services available. Finally, a stronger working relationship is being built with the student union. Regular meetings ensure both sides understand the current priorities and there are increasing opportunities for working with students on specific projects.

## They said!

Whilst the focus of both the LRC User Survey and the National Student Survey is on improving satisfaction, it is easy to forget that many students have a very positive experience of their university and its library service. So the last word needs to go to the students:

*"Well stocked libraries. Plenty of computers in the LRCs. Relevant software on the PCs."*

*"Another positive note is the library resources, excellent opening times, extensive selection of books and staff availability provides student with the tools to make the most of their studies."*

*"The library at Kingston has been an amazing place to work, the facilities available have been great."*

**(Higher Education Funding Council, 2012)**

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# Are we leaving them lost in the woods with no breadcrumbs to follow?

## Assessing signage systems in school libraries

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### Introduction

The school library is an important element in supporting the learning process. It plays a key role as a place for access to information, knowledge building, and problem solving. The nature and quality of the environment in the school library are also influential on how and what young students learn and the goal of access to information for learning. A good school library is characterized by well-designed, sufficient and flexible space, equipped with an appropriate collection to support curriculum goals, considers the unique and diverse needs of the learners it serves, and utilizes a good management system to ensure optimum utilization by the school learning community.

The school library should be a place where children can find things easily and can learn to be independent library users (Johnston and Bishop, 2011). This requires that the school library be designed so that students are directed and can navigate easily and independently – especially as students are learning library organization and how to find information they need for learning and pleasure. Wayfinding refers to the ability of users of the built environment (ie, a facility) to navigate through that environment to find specific destinations (Mandel, 2010). In the school library environment this means that student users can find and access the information they need for school related tasks and assignments.

Often, the school provides a child's first experience independently navigating spaces, yet there is limited research on assessment of the usability of school library spaces. This research aims to contribute to this gap in knowledge by providing an assessment of school library signage as it pertains to wayfinding usability of the space. This paper reports the results of a pilot study using an expert review of signage in three school libraries—one each in an elementary, middle, and high school. Signage was reviewed for its utility for children's wayfinding in the school library facility, not for its promotional or other values.

### Literature review

Wayfinding necessitates spatial knowledge that contains one's current location, destination and the spatial relation between them. Without this knowledge, people may get lost or feel disoriented, which are very frustrating experiences for people who are trying to reach a specific destination (Arthur and Passini, 1992; Cubukcu and Nasar, 2005; Passini, 1984). In the case of students seeking information this can result in helplessness, confusion, disorientation, and frustration (Eaton, 1991), which can lead to students simply giving up on their information seeking tasks (Kuhlthau, 1991). Therefore school libraries must consider the wayfinding practices of their users and devise strategies to facilitate access to resources and information.

Yet, minimal research has addressed library patron wayfinding (Cf. Eaton, 1991; Hassanain and Mudhei, 2006; Mandel, 2010, 2012), and even less in the school library context. Searches of School Libraries Worldwide, School Library Research, and School Library Media Research for wayfinding-related terms (sign\*, map\*, and navigat\*) returned few results, and no research papers actually about wayfinding. There is some associated research on children's or teens' wayfinding that is briefly reviewed here.

Research indicates there is concern about planning for children's wayfinding in a different context from adults' wayfinding. Cornell, Heth, and Rowat (1992) compared wayfinding of 6-year-olds, 12-year-olds, and 22-year-

olds. While the 12- and 22-year-olds' wayfinding behaviors did not vary significantly, 6-year-olds had the poorest wayfinding performance suggesting younger children need more and different kinds of wayfinding aids. Another study comparing the wayfinding abilities of 8-year-olds, 12-year-olds, and 25-year-olds found similar results (Cornell *et al.*, 1994). Here, 8-year-olds were found to be less accurate in place recognition than 12- or 25-year-olds, with the 12- and 25-year-olds exhibiting similar levels of accuracy in place recognition. Jansen-Osmann and Wiedenbauer (2004) also found children's wayfinding performance levels to differ from adults, with children requiring more learning trials than adults to achieve the same level of wayfinding proficiency in the setting.

Larken-Lieffers (2001) found that inappropriate language in signage inhibited children's (and parents') use of juvenile nonfiction. In this case, inappropriate language means language that was not specific enough, with signs saying "nonfiction" but not "juvenile." Larkin-Lieffers specifically recommends the use of signage to draw patrons' attention to specific materials. This might include directional signage that indicates physical directionality, rather than rules (regulatory signage) or other information (informational signage). Stempler and Polger (2013) identify the navigational value of signage and divide the signs in their audit of an academic library's signage into the three main categories: directional, policy, and informational. Like Mandel (2012), they found directional signs to comprise the smallest group of signs in their library, 12% (Stempler and Polger, 2013).

While research on user wayfinding in all library types is beginning to emerge, school library design manuals pay little attention to this topic. In a handbook on designing school libraries for the future, the purpose of signage in school libraries is described as "to help users navigate and make it easier for them to find what they need; this removes psychological barriers and makes the library more inviting to the user" (Erikson and Markuson, 2007, p. 75). However, the focus is on aesthetics of signage and the overall signage system, not on directional signage that actually helps users navigate. And the overall focus in facilities planning guides is not about wayfinding, navigation, or signage. Signage is covered on one or two pages of manuals by Baule (2007), Erikson and Markuson (2007), and Hart (2006). The few recommendations include suggestions such as using color-coding to designate areas of the library and to ensure ADA (Americans with Disabilities Act) compliance (Erikson and Markuson, 2007). School library designers are, however, cautioned to use high contrast between the text and background of signs (Baule, 2007).

## Methodology

This paper reports on the pilot study portion of a larger study; the purpose of the larger study is to explore how to improve the efficiency of wayfinding and spatial awareness in a school library environment. The pilot study focuses on an expert review of the signage systems in a selection of school libraries with a goal to engender interest in a full-fledged project that would explore the contribution of signage to children's ability to complete wayfinding tasks in school libraries.

One research question guides the pilot study:

*RQ1: How effective are the existing wayfinding aids in communicating spatial information to the user?*

To address this question, the expert review employed a two-expert system in which both experts reviewed all signage in a sample of school libraries, noting elements such as signage type, location, and errors (misinformation, typos, etc).

For purposes of the pilot study, the researchers deemed it appropriate to utilize a purposive sample of schools (Babbie, 2012). One of the researchers had access to and contacts in the chosen community and was given the names of several schools that would be accessible during the time period in which the researchers planned to conduct the study. The research was conducted in a metropolitan area in the southern United States, using an elementary, middle, and high school library in a suburban school district. In the U.S., elementary school generally refers to kindergarten through 5th grade (5-10-year-olds), middle school to grades 6-8 (11-13-year-olds), and high school to grades 9-12 (14-18-year-olds).

The two researchers served as the expert reviewers of the school libraries' signage. One researcher is an expert in school libraries and the other is an expert in wayfinding, so the two were able to work with each other to develop an appropriate assessment of signage in school libraries. The researchers conducted the assessments in May 2013, visiting each of the schools during the same week to conduct the expert review.

The researchers adapted a signage coding worksheet used in a prior study in a public library (Mandel, 2012). Adaptations included changing the category "appropriate language," used in a library serving bilingual patrons, to the category "appropriate grade level language" for school libraries. See Figure 1 for a copy of the signage review worksheet. During the school site visits, the experts independently reviewed all signage in each school library, taking photographs of exemplar signs that illustrated good use of signage to guide children's wayfinding and others that

illustrated issues. Reviewing all the signage in the library is necessary for an effective signage audit (Stempler and Polger, 2013).

[illegible]

Figure 1: Expert Signage Review Worksheet

Inter-coder reliability testing occurred after data collection was complete. First, the researchers discussed the discrepancy in the total number of signs each had coded, engaging in negotiation and ultimately agreeing to use the total generated by the reviewer with more experience with the method (n=432). To calculate inter-code reliability, the researchers decided to utilize percent agreement as this is a pilot study and that is acceptable measure. Percent agreement is calculated by totaling the number of agreements and dividing that by the total number of times a decision was made by the coders (Neuendorf, 2002). This was done for a sample of 10% of the total coded signs, with overall percent agreement on all analyses of the sample signs equaling 82.6%, which is acceptable for a pilot study. After ascertaining an acceptable level of reliability had been achieved, the researchers utilized descriptive statistics to compare the total signs in various categories and identify specific areas of focus for further study.

This research is limited in that it is a pilot study and relies on a small, purposive sample of school libraries. As the findings are not meant to be generalized, but are meant to provide a starting point for a larger, more comprehensive study, this limitation is acceptable to the purposes of the pilot study. It is offset by the potential implications of the research for the design, evaluation, and improvement of wayfinding systems in school libraries such that learners are more easily able to locate and utilize library materials to solve their information problems.

## Results

The expert signage review identified 435 signs in all three libraries (n=203 for the elementary school, n=93 for the middle school, and n=139 for the high school). The vast majority of signs were informational (n=361; 83.0%) versus regulatory (n=64; 14.7%) and directional (n=10; 2.3%). All but three signs were assessed as age appropriate (n=432; 99.3%). Eight issues were identified (See Figure 2), six of which had been identified in the prior study using the assessment instrument (Mandel, 2012): unclear signs, signs in the wrong location, outdated signs, damage to signs



damage to sign holders, and other. The two new issues identified in this study are poor placement of signs and poor use of color. Wrong location refers to signs that identify a particular section but are located in a different section whereas placement issues refer to signs in locations that make them hard to see or read, such as pushed back on high shelves or at odd angles.

		Elementary school		Middle school		High school		Total	
		%	n	%	n	%	n	%	n
total signs by issue	Other	0.0%	0.0	11.8%	11.0	0.0%	0.0	2.5%	11.0
	Wrong location	7.9%	16.0	4.3%	4.0	0.7%	1.0	4.8%	21.0
	Unclear	7.9%	16.0	15.1%	14.0	4.3%	6.0	8.3%	36.0
	Poor use of color	11.3%	23.0	2.2%	2.0	0.0%	0.0	5.7%	25.0
	Placement issues	3.4%	7.0	14.0%	13.0	5.8%	8.0	6.4%	28.0
	Not current	0.0%	0.0	0.0%	0.0	0.7%	1.0	0.2%	1.0
	Damage to sign holder	2.5%	5.0	0.0%	0.0	0.0%	0.0	1.1%	5.0
	Damage to sign	5.9%	12.0	6.5%	6.0	0.0%	0.0	4.1%	18.0

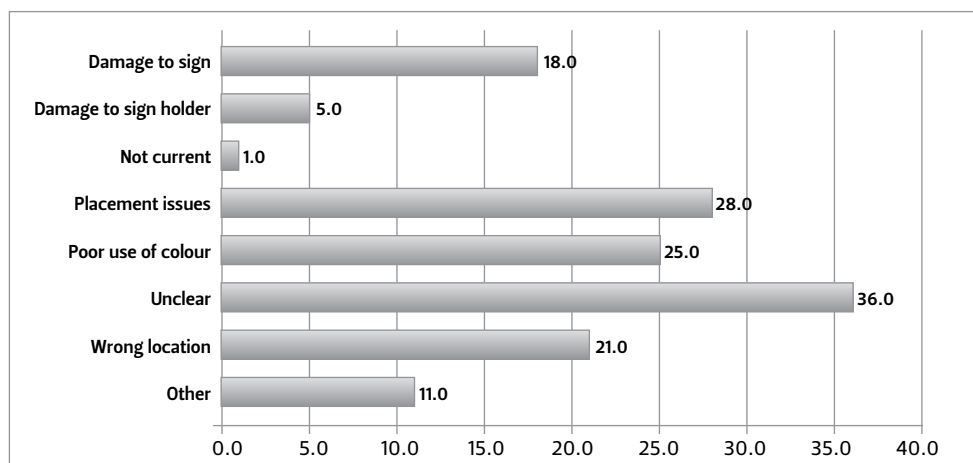


Figure 2: Total Signs with Issues by Issue

## Findings

Three key findings emerged from the pilot study. First, despite the researchers' assumption at the outset of the research that age appropriateness would be a significant issue, the findings show there are not many issues with age appropriateness of signage in the sample school libraries. Second, while use of color in signage was not an issue in the public library (Mandel, 2012), color usage was a fairly large issue in the sample school libraries. Third, as with the public library, there was a severe lack of directional signage in the sample school libraries.

The previous study in public libraries had considered language appropriateness of signage in a library serving a bilingual community (Mandel, 2012). For this study, language appropriateness was modified to age appropriateness. Based on the school library expert's experience in school libraries, the researchers presumed there would be a fairly large number of age inappropriate signs in the sample school libraries. In reality, 1.0% of signs in the elementary school library, 1.1% in the middle school library, and 0.0% in the high school library were age inappropriate. There were far more good examples of age appropriate signage in the school libraries, such as a sign using text speak in the high school library, which would appeal to teens and signs utilizing characters from children's book series in the elementary school library.

Color-coding and color usage are more prevalent in school libraries than public libraries. Color is a useful design element for spatial orientation and space definition for creating environmental information that supports children's wayfinding abilities including helping children orient themselves in a new environment (Jansen-Osmann and Wiedenbauer, 2004), especially for younger children who may have limited reading skills. In the elementary school

library, the librarian had the four segments of the library strictly color-coded with all subject heading and Dewey Decimal signage in each section appearing in the designated color. This was a good use of color to create a system.

However, out of 435 total signs reviewed in all three libraries, 5.7% (n=25) exhibited poor use of color. While it might seem that 5.7% is a small percentage, only 145 issues were recorded for all signs, meaning color issues comprise 17.2% of all issues. These issues were not about color-coding, but were about use of color that is inappropriate, such as using yellow on a white background which provides insufficient contrast to render the signs legible and using red on signage that is not regulatory, when red is strongly associated with regulatory signage (Gibson, 2009).

Three main categories of signs are directional, regulatory, and informational. Directional signs indicate physical direction through use of maps, arrows, and language such as “here” and “there.” Regulatory signs define rules, including external regulations, such as fire and emergency exit signs, and internal regulations, such as library and institutional rules. Information signs are comprised of all other signs. The wayfinding literature stresses usage of directional signs (Arthur and Passini, 1992), but only 2.3% of all signs in the three school libraries were directional while 14.7% were regulatory and 83.0% were informational.

## Implications and future research

This research has implications for a variety of school library stakeholders. One of the roles of school librarians is that of program administrators. This includes designing and organizing a school library, including the purchase, and or designing of signage. Knowing this type of information can be helpful when making such decisions. This can also be helpful in preparing future school librarians. Wayfinding, signage, and spatial literacy and the importance of these concepts need to be integrated into school librarian preparation curriculum. This information is also useful to interior architects and manufacturers of signage materials for school libraries, as well as educators and school librarians who sometimes have input on the design of library environments with appropriate wayfinding cues to children.

There is very limited research in the areas of school libraries and wayfinding and school library facility evaluation methods. This research, both the pilot study reported here and the larger study of which the pilot is a part will provide great contributions in both areas. Next steps for the larger study include developing a the full study using an experimental design and children as subjects who are asked to complete wayfinding tasks in a variety of school library facilities, expanding the scale of the study, and modifying the signage assessment instrument to include the newly identified issues with signage that emerged from this study. The researchers also are adding signage review methodology to a school library program administration course.

## Conclusions

The school library should be an equitable community access point for rich and diverse resources that provides intellectual and physical access to information in all formats, at all levels, and to all members of the learning community. While the physical location of the library may not be ideal for supporting maximum access to learning resources, accommodations and changes can be made that will benefit the school library’s student users. Providing text- and graphics-based signage can assist students with differing needs, help improve access, and add visual appeal to the overall design plan of the library, creating an environment that is learner-centered and considers the unique and diverse needs of the school community.

Improving access to learning resources through the use of signs is an important general strategy for all libraries, but is all the more important at the school library when students are still learning about the organizational scheme of the library. With younger students who are just beginning to be exposed to library organization systems and are not yet fluent readers, it is particularly helpful that shelf signs include not only text, but also graphics and pictures that represent subjects. The use of color and graphics in signage to aid wayfinding is a particularly important design element that can be utilized used to improve children’s wayfinding and spatial orientation abilities in their environment.

Color usage and directional signage require additional attention in school library facilities planning literature. People develop their sense of spatial learning over a period of years, and this process begins in childhood. By the age of six, children start to understand their environment, and at eight they remember events and places at the beginning and end of a route. Therefore, children need more support than adults for navigating themselves in an environment and color can help to provide this. Young children make associations with color and therefore, using color in their environment can provide visual interest to supply maximum efficiency in navigation. Because people develop their sense of spatial learning over a period of time, children need more support in navigating their environment. Directional signs can provide this support. When spatial literacy is still developing children tend to get lost and

frustrated when trying to find information so provision of strategically placed directional signage can support children's wayfinding efforts.

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# Going up a level: assessing the performance of learning spaces in university libraries. A case study from Loughborough University.

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### Introduction

The paper reflects on the recent development of 'new' uses of space in university libraries, their impact and effectiveness. It focuses on a case study of Loughborough University's Pilkington Library building, designed by Faulkner-Brown, Hendy, Watkinson and Stonor architects. The paper incorporates experience of seven years of various methods of developing and monitoring changing uses of space in the Pilkington Library. Whilst undertaken locally, these have embraced the wider context and drawn on experience from elsewhere, through literature reviews and external networks. Why changes in the use of space have come about, the factors that are driving this, and why evaluation is important in universities elsewhere (in the UK and internationally) have thus been considered alongside local circumstances. The case study demonstrates ways in which performance measurement of physical space and its changing use can be undertaken, what can be done with the results, and how they can feed into future planning. It also considers what librarians can contribute to their institutions' development and assessment of learning spaces beyond the library.

### Context

#### Pilkington Library, Loughborough University

Building work began on the Pilkington Library in the late 1970s. It was opened officially on 19th December 1980 and was purposely designed for shared occupancy, with the Library occupying levels 1 – 3 and some of level 4, and the Department of Library and Information Studies on level 4. It owed much to the vision of the then Head of Department and Professor of Library Studies, P. Havard-Williams, and the University Librarian, Dr A.J Evans.

Lionel Durbridge, a lecturer in the Department, commented in 1981:

*Readers of the LAR Jan. 1981 p.29 may have seen Roger Walter's brief note on the new Loughborough University library, on the top of which "perches" the University's Department of Library and Information Studies penthouse in what Roger Walter chose to call a 'squashed octagon' ... The 'teaching library' comparable to a 'teaching hospital' became a realisable dream ...*

(Department of Library and Information Studies, 1981, 167)

Incidentally, a few years later, the Library building was referred to by Pevsner as:

*'The University's only spectacular piece of architecture. The steep site has been hollowed out and the library set diamond-wise, moored against the slope like a ship... An alien top story, octagonal and walled in black patent glazing*

(Pevsner et al, 1984, 290)

In the summer of 2012, after previous proposed moves over the years had not materialised (the University Library Annual report for 2002/03 notes for example, '... it is very disappointing that at the end of the year it was still not known when the opportunity to extend Library services to Level 4 would be available'), the Department of

Information Science moved out of the Pilkington Library building into newly refurbished accommodation in the Bridgeman building in the centre of campus.

Over the years, changes to the original Departmental layout (c.900 sq metres) have taken place, for example, the library services moved out, a Printing Lab went, IT labs were installed, and new administrative space was incorporated. Likewise in the Library, changes took place, particularly on Level 3. (Review of this space was one of author Walton's first tasks after he took up his post at Loughborough.) This major change in the use of space is noted in the Library's Annual Report for 2005/06:

*At the start of the academic year Library users colonised with enthusiasm the new 150-seat group learning area Open3. Students returning in October found that in place of serried ranks of shelves containing little-used abstracting journals and reference books, much of Level 3 of the Library had become a large, light and open space for group learning. The area is branded Open3 thanks to John Jerrams who won a Library staff competition to name it. The area is wireless networked and contains PC workstations, large tables, casual seating and mobile whiteboards. Together with a revamped current serials area, housing more study places and exhibition space, Open3 is an informal, attractive and comfortable space primarily for students working in groups. Food, drink and noise (including mobile phones) are tolerated, within reason. The facility was an immediate success. Students found the group learning environment, and its proximity to expert staff, other learning resources – and Café 641 – attractive and congenial. Most seats were occupied throughout the day; noise remained at an acceptable level; and observation suggested that Open3 was indeed used for study purposes.*

The 2006/07 report notes:

*The popularity of the Open3 group learning environment and 24/7 was responsible for a significant increase in visits to the Library, and the self-issue machines located on each floor of the Library were heavily used throughout opening hours (2)*

The 'new' Level [4], scheduled to open for the start of the academic year 2013/14 will be used to provide state-of-the-art learning spaces that will support silent study, group use and enhanced access to Information and Communication Technologies. There will be a new stairway directly linking Level 4 with Level 3 (Loughborough University Library, 2013a).

## Beyond Loughborough

In recent years, there has been considerable activity in developing university library space in the UK and worldwide (for recent examples in the UK, see SCONUL Focus (57), 2013, an issue devoted to new and refurbished library buildings; for the UK and elsewhere see chapters and references in Matthews and Walton (eds), 2013). Major drivers in the change of use of existing space, which those participating in this conference will be well aware of, include technological developments – the wireless environment, the growth of e-resources, the increasing use of mobile devices; changes in the student population and student expectations; innovations in learning and teaching; financial constraints, encouragement to move to 'greener', more sustainable buildings and service delivery; and, a general questioning of the role of the physical library. The authors have looked at examples of different uses of space in libraries around the world and considered various methods employed to assess their use.

## Methods

A variety of approaches have thus been implemented to gather data and evidence on how the Library's physical space performs. This has been done in a strategic manner and has been embedded in Library procedures and working practices. The various approaches are detailed below:

### Surveys focussing specifically on physical space:

In 2006, a major survey (Walton, 2006a) was completed exploring different aspects of space use including 'preferred' spaces, time spent in the spaces and also establishing why people used the Library space. This survey was presented as a conference paper (2006b) and also published (2006c). In 2011, another user survey on space (unpublished) was undertaken to explore how people responded to different ways the Library could be refurbished.

## General surveys that include aspects of space use:

The Library undertakes a general user survey every three years (Walton, 2010; Walton and Leahy, 2013). The design is based upon the survey developed by SCONUL (West, 2004) and has been seen as providing more cost effective return than other methods. (It should be noted that the Library has not used LibQUAL since 2002 but it is acknowledged that other libraries find it useful.) Satisfaction and importance levels of Library physical space are included as an area of questioning. The qualitative comments have also been analysed for the views expressed about the University Library space. The surveys have asked specifically for views on how the new space (Level 4) should be used.

## Using visual data

Great emphasis has been placed upon capturing visual, digital, informative data that can be used for evaluation. This includes both photographs and video. Some of the visual data is only available in-house with some photographs being accessible via Flickr (Loughborough University Library, 2013b) and video by YouTube (Loughborough University Library, 2013c). A particular focus is given to capturing visual data longitudinally of the same physical area. This has proved powerful in evidencing how the Library has changed and adapted its space.

## Ethnographic study

The Library has explored using an ethnographic approach to evaluating its social learning space (Bryant, 2007; Bryant, Matthews and Walton, 2009). This did provide a rich seam of evaluative data but was very time intensive in terms of data collection and data evaluation. Undertaking this form of evaluation has not been repeated because of the resource requirements.

## Opportunistic approaches

Evaluation data is available from external sources and these are monitored by the Library. For example, some qualitative data was located on the Which? University site specifically about the Library (Which?University, 2013). There was also a Facebook Group set up by students specifically to allow them to express their views on the Library space. This generated a large amount of qualitative data which was analysed by the Library. E-mails, written comments, written suggestions, tweets, are monitored for data about the Library building.

## Benchmarking

UK university libraries collect data on a regular basis that is collated by SCONUL. Loughborough University Library has used this data to compare its space provision with university libraries in both the same geographical area as well as with similar universities across the UK. (See SCONUL statistics, 2013.) The main comparator has been the number of study spaces provided per f.t.e student.

## Findings and use

University libraries have continually to evaluate and change space – this is not a one-off activity. Space in the library and its use need to reflect developments in IT and other changes in HE – but ‘traditional’ study space still needs to be provided too.

Assessment and a range of data, quantitative & qualitative, relating to space and its use, are essential if the university library is to meet user needs, make strong, informed business cases, achieve continuous improvement, and manage change.

## Business case

Such data are essential for advocacy, for example, they were used to underpin the business case for developing Level 4 of the Pilkington Building at a cost of over £4.5 million. Keeping up to date with developments elsewhere must also be achieved. Gathering data from competitors about physical space and use is vital for internal and external benchmarking



As the HE sector becomes more business focused and resources become more restricted, universities are requiring evidence before committing to large scale projects. Loughborough University is no different and the Library had to produce a strong business case at a time when there are many other demands on University income. The Library also had to contend with the argument that there is no need to invest in developing the Library building when there is so much digital information available. Using data gathered from approaches described above, the following arguments were proposed:

Business case	Data source used to provide evidence
Library users are dissatisfied with the number, range and quality of the study spaces provided.	Library user satisfaction surveys undertaken every 3 years
Students experience difficulties in accessing a networked PC in the Library.	Library user satisfaction surveys undertaken every 3 years
In terms of study spaces per student, Loughborough University Library compares very poorly with other university libraries in terms of number of study spaces per f.t.e. undergraduate.	SCONUL annual statistics
The Library has increased its study spaces on a regular basis and there is no remaining space to further develop.	Internal figures collected annually on number of study spaces provided
The costs to increase the number of study spaces compare very favourably to other similar refurbishments in other university libraries.	Review of other university libraries' publicised total building costs and number of increased study spaces
The Library needs to develop and provide more silent study spaces.	Library user satisfaction surveys undertaken every three years
The number of people using the Library is increasing on a yearly basis.	Automatic gate counts
The Library building is used by a very large percentage of university students	Figures in survey completed by Students Union.

Table 1: Business case and data sources

## Lessons

There were some clear messages and lessons learned when reflecting on the business case and the processes needed to gather the data. In the competitive world where universities function, using benchmarking data is very powerful. Bringing to the attention of the University that the student experience offered to Loughborough University Library in terms of study spaces compared unfavourably to other similar Universities had a major impact.

It also became apparent that relevant data generated from outside the University is particularly influential. The Library was able to use the Facebook student generated evidence as well as the results from a Students Union survey to great effect. Consideration also is needed for whom the data is intended. Mixing qualitative and quantitative data according to the specific audience in a planned and managed manner ensures maximum impact. Specific attention is needed to ensure that the data triangulates. Data visualisation was also perceived as being crucial. Various approaches were adopted to present the data in different ways for maximum impact.

An obvious driver in presenting the data for the business case is that it has to support and enhance the University's strategic direction. The Library was able to convince the University that the refurbishment would attract students, improve and enhance quality and also provide a high Return on Investment (ROI). Business cases very often have to be produced at short notice – which can prove challenging if longitudinal data is needed. For this business case, comparative data that reflected changes over a period of time was important. The Library had been collecting data in a systematic and planned manner over many years so was well positioned to present the data in an effective and timely way.

Another lesson that emerged was the need to use digital data strategically. On-line systems produce masses of data quickly on usage of systems and digital library services. The challenge is to know how to interpret and present this data so it supports the business case and is also understandable by the wider University. Google Analytics provides great potential in showing how university library's web sites are performing but analytics are not used extensively in



UK university libraries (Manuel, Dearnley and Walton, 2010). This is in contrast to the commercial sector where great emphasis is placed upon them. Another challenge posed in the business case was establishing how far down to drill when identifying the data to use. The Library uses online questionnaires and this does enable extensive and in-depth cross tabulation. When bringing together the evidence for the business case, the Library had to decide to what level of detail to go. The spectrum ranged, for example, from establishing how frequently 2nd year female undergraduate Civil Engineering students visited the Library to how often users in general come to the building.

In addition to the lessons above another thought occurred to the authors. The university library, through its experience and expertise has a potentially significant role in the evaluation and development of informal learning spaces across the university. Following on from their work with regard to libraries and through conversations with 'space planners' in the University, the authors began to wonder about a wider role within the institution for library managers that would benefit both the institution and the library:

*University libraries have massive experience in providing and developing different learning spaces and, at the same time, have the skills and expertise in their evaluation. There are a range of debates and discussions going on across the globe as libraries establish their role in the changing university. One role that is waiting for the university library would be to extend its influence and responsibilities to evaluate learning spaces with others in the university. This intelligence can be used to integrate the management of the different spaces and make them more attractive, successful, and popular (Walton and Matthews, 2013, 3)*

## Conclusion

So is it all worth doing? It takes up resources – money and time; and there may be additional factors such as training and dissemination to take into account. There are other issues, too, such as questionnaire fatigue, developing new performance measures, finding time in the academic year to compete with other surveys; and, it should be noted that institutions are increasingly prohibiting any surveys other than the National Student Survey or their own University ones (ie departmental ones not permitted). But, it plays a key role in library performance management, and with a managed approach, can input effectively into library operations and strategy. So, from Loughborough – the answer is yes, assessing the performance of learning spaces has supported the library going up a level.

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# How libraries can add (even more) value

**Joseph R Matthews**

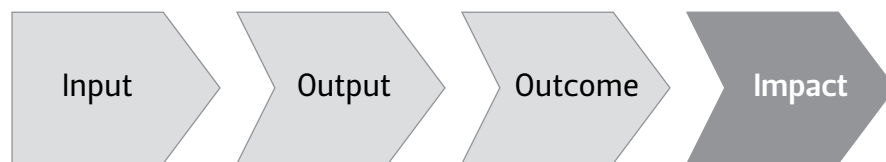
**T**he notion of “adding value” is at once intuitively appealing and intellectually challenging. How does an organization add value? Why should we be concerned about adding value? And while the majority of the literature pertaining to adding value relates to the for-profit sector, clearly any organization must provide value to its members or customers in order to continue to exist. Thus, it would seem prudent to explore in greater detail the concept of “adding value.”

In general terms, adding value is accomplished by using the talents, skills and expertise of staff members using a set of processes to produce a product or service. Note that technology may or may not be involved in the process of adding value. In the profit-making sector, a majority of effort is devoted to adding value that will maximize the gap between the revenues generated by sales and the costs to produce the product or service. Determining how value is added from the work of library and information professionals is a bit more complex as library-related products and services are rarely sold (even if it was possible to determine a price that would yield a profit).

Any business or organization that is competing with one another will likely use many of the same processes and activities that add value. The key for long-term success is to identify one or more processes that are unique and differentiate the organization from its competitors. One of the key concepts of the management and marketing literature is that the successful organization has found a way to create value for customers that its competitors have not been able to do. This notion of creating or adding value has been called a “value proposition,” a “customer value proposition,” a “unique value proposition,” and/or a “sustainable value proposition.” To my mind a successful unique value proposition has three ingredients: the value can be easily determined in the mind of the customer, the value is relevant in the life of the customer, and some aspect that uniquely differentiates the offering from all offerings from other organizations.

In order to better understand how an organization such as a library adds value it is important to consider the goals or outcomes from using the library’s collections and services or as Stephen Covey has suggested, “start with the end in mind.” To that end, it is recommended that a library should use a logic model for designing service interactions that lead to the hoped for outcomes. In simple terms, a logic model is an “if ... then” model that predicts a cause and effect relationship as shown in Figure 1. A logic model makes an explicit statement of the activities that will bring about the change and results you expect to see for a particular group of customers. A logic model can also be thought of as a road map, a conceptual map, a blueprint, a framework for action, or a mental model. The use of the word “logic” refers to the logic of how things work rather the logic embraced by philosophy, mathematics, or computer programming. Logic models were popularized in the non-profit sector, for example United Way in the U.S., and are being increasingly used in libraries.<sup>1</sup>

It’s logical that:



Impact: What changed for the customer and/or the organization.

Figure 1: The Logic Model

## How libraries traditionally added value

Robert Taylor, former Dean of the library school at Syracuse University, wrote *Value-Added Processes in Information Systems* in 1986.<sup>2</sup> This wonderful book was destined to become one of the most highly cited<sup>3</sup> and influential works in

<sup>1</sup> Moe Hosseini-Ara and Rebecca Jones. Overcoming Our Habits and Learning to Measure Impact. *Computers in Libraries*, June 2013, 3-7.

<sup>2</sup> Robert Taylor. *Value-Added Processes in Information Systems*. Norwood, NJ: Ablex, 1986.

<sup>3</sup> A search in March 2013 in Google Scholar identified 597 citations.

the field of library and information science. Taylor's unique contribution was to focus on the user and the *information use environment* in an attempt to better understand how librarians and libraries add value. The Value-Added Model developed by Taylor is based on the premise that people interact with systems within a context called the information use environment as shown in Figure 2.

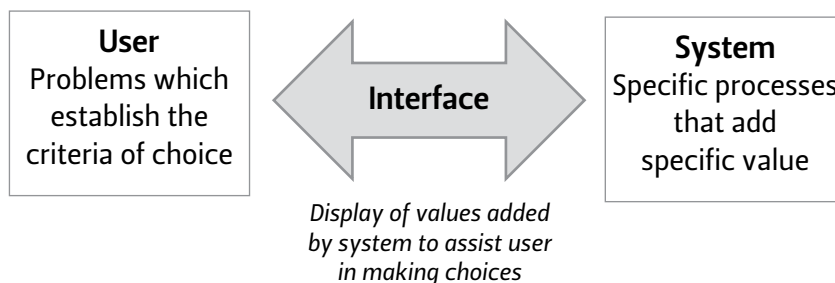


Figure 2: Taylor's Simplistic Value Added Model

This figure illustrates the three parts of the information process: the *user*, client or customer; the *interface* between the system and the customer (Taylor called this the "negotiating space"); and the *system* that are a series of value-added processes producing varying outputs. The user can be further defined as an individual who actively seeks (or receives) information from a formal information system in order to achieve some objective, either personal or work-related. The user's primary criterion for judging the usefulness of the system will vary depending upon need.

Taylor first suggests that information use involves a progression that moves from data to information to knowledge and finally to action. This progression Taylor called the Value-Added Spectrum, as shown in Figure 3, and involves four groups of processes stacked one on top of another. At the base are the Organizing processes, then the Analyzing processes, the Judgmental processes and finally the Decision processes. The Organizing processes should be familiar to all librarians as this has been the primary locus of value-added activities of libraries for decades. Some librarians, especially those that work in the special library environments, have been involved in some of the Analyzing processes.



Figure 3: Taylor's Data – Information – Knowledge Hierarchy

The terms data, information and knowledge are difficult to define and carry a fair amount of semantic baggage.<sup>4</sup> One of the pioneers in information management, Russell Ackoff, came up with definitions that have been widely used and cited:<sup>5</sup>

- **Data** are symbols (numbers, letters, and other specialized shapes)

<sup>4</sup> Joseph Matthews. Valuing Information, Information Services, and the Library. *portal: Libraries and the Academy*, 13 (1), 2013, 91–112.

<sup>5</sup> Russell Ackoff. From Data to Wisdom. *Journal of Applied Systems Analysis*, 16, 1989, 3–9.

- **Information** is data that are processed to be useful and provide answers to “who, what, where, and when” questions
- **Knowledge** is the application of data and information, providing answers to “how” questions.

Data can be considered as the state or condition that characterize an entity at some point in time and which are labeled in ways that are appropriate to the context, intent or type of information system. In information technology terms, each label or attribute is a field, a collection of fields is a record, and a collection of records is a file. Data alone is fairly valueless without further processing in some way that adds value. Data becomes information when relationships among and between data elements are established. Information adds structure and relationships among the data.

Information becomes informing knowledge as synthesizing processes (selecting, analyzing, validating and so forth as shown in Figure 3) are employed. Judgmental processes (options are presented and advantages and disadvantages considered) are then used to present information in order that people can move to productive knowledge. And from productive knowledge, action is taken when decision processes are applied.

The origins of the data-information-knowledge-wisdom (DIKW) hierarchy can be traced to the poet T.S. Eliot from his 1934 poem “The Rock.”<sup>6</sup>

*Where is the Life we have lost in living?  
Where is the wisdom we have lost in knowledge?  
Where is the knowledge that we have lost in the information?*

However, the notion that the DIKW hierarchy is a clean, clear step-by-step movement upwards towards wisdom is fallacious since we all know that wisdom (and knowledge) is messier, hard to come by and far more discontinuous. And still others have suggested that the model should be circular and new knowledge, once published and accessible, becomes data for someone else to start the cycle all over again.

However, Taylor’s primary contribution was the development of his Value-Added Model as shown in Figure 4 with the explication of six user criteria and the 23 corresponding values added. The six broad user criteria – ease of use, noise reduction, quality, adaptability, time saving, and cost saving – represent aspects of the benefits a user receives when using an information system. At any point in time, the relative priority of one value criterion over another will depend on the person, situation, information needs and other user-centered concerns. Today a customer might be interested in the noise reduction and quality contributions of the library and tomorrow they might be concerned about speed (time savings) and ease of use value contributions.

6 T.S. Eliot. The Rock, in T. S. Eliot: *The Contemporary Reviews*, edited by Jewel Spears Brooker. Cambridge: Cambridge University Press, 2004, 297.

User Criteria of Choice	Interface (Value Added)	System (Value-Added Processes)
Ease of Use	Browsing Formatting Interfacing I (Mediation) Interfacing II (Orientation) Ordering Physical Accessibility	Alphabetizing Highlighting important terms
Noise Reduction	Access I (Item Identification) Access II (Subject description) Access III (Subject summary) Linkage Precision Selectivity	Indexing Vocabulary control Filtering
Quality	Accuracy Comprehensiveness Currency Reliability Validity	Quality control Editing Updating Analyzing and comparing data
Adaptability	Closeness to problem Flexibility Simplicity Stimulatory	Provision of data manipulation capabilities Ranking output for relevance
Time Savings	Response speed	Reduction of processing time
Cost Savings	Cost savings	Lower connect-time price

Figure 4: Taylor's Value-Added Model  
Adapted from Robert Taylor. Value-Added Processes in Information Systems, p. 50.

Each of these activities is briefly defined below.

**Ease of Use** – system elements that reduce the difficulty in using a system.

**Browsing** – System capabilities that allows a user to scan an information neighborhood.

**Formatting** – The presentation and arrangement of data/information that facilitates more efficient scanning.

**Interfacing** – The capability of a system to illuminate itself to the user.

**Interfacing I (Mediation)** – The means to assist the user in getting answers from the system.

**Interfacing II (Orientation)** – The means to help the user understand and gain experience with the system.

**Ordering** – The initial method used to organize information content (for example, presenting names in alphabetical order).

**Physical Accessibility** – Processes used to make access to information resources easier.

**Noise Reduction** – Providing the optimum amount of information. This can involve three processes: 1) Exclusion (withholding information), 2) Inclusion (supplying additional information), and 3) Precision (supplying the best information).

**Access** – Providing information that is likely to contain material that is wanted or needed.

**Access I** – Identification of information by a physical description and location.

**Access II** – Provides subject description through the use of index terms, descriptors, and names.

**Access III** – Reduces large amounts of information through the use of summaries, abstracts, graphs, charts and formulas.

**Linkage** – Provides pointers and links to items, sources and stems external to the system in use.

**Precision** – The capability to assist users in finding exactly what they want.

**Selectivity** – Choices made by a user to limit what is retrieved based on the needs of the user.

### **Quality** – Reliability of the information or service.

**Accuracy** – The system provides error-free transfer of information as it flows through the system.

**Comprehensiveness** – Value added by the completeness of coverage of a particular subject or form or information.

**Currency** – Providing timely information as well as the system itself reflect up-to-date capabilities in terms of its structure, organization, and access vocabularies.

**Reliability** – Value a system instills in its users by consistency of quality performance over time.

**Validity** – Manner in which information is presented allows the user to make a judgment as to its soundness.

### **Adaptability** – System capabilities that respond to the users needs and requests.

**Closeness to the problem** – System capabilities that meet specific user needs facing a particular problem.

**Flexibility** – Capabilities that provide a variety of ways of working dynamically with information.

**Simplicity** – Providing the clearest and most lucid information within quality and validity limits.

**Stimulatory** – Provides the means to provide context to encourage use of a system or the staff of an organization.

### **Time Savings** – Speed of the response time of an automated or manual system.

### **Cost Savings** – System design and capabilities that save money for the user.

Not surprisingly, many librarians will assert that the organization and cataloging of a library's, archive's, gallery's or museum's collection is the primary added value activity that they engage in on a daily basis. Yet this inward-looking perspective about the value of the library and its services is completely backwards as the only perspective about value that counts is that of the customer. As Eleanor Jo Rodger has argued:

*Being valuable is not about our professional values; in the paradigm of the value of ... libraries we are the producers, not the consumers of our services. Our personal sense of what is value doesn't matter unless it matches that of our customers.<sup>7</sup>*

Clearly there are some in our profession who see themselves as personal custodians and institutional guardians of library values and others who believe librarians should be working to create value for library customers. And as Gary Deane has noted,

*It is customers, one at a time, who defines a library's value. This value is realized in the usefulness, the quality, and the availability of the library's products and services, as well as in the customer support that accompanies them.*

7 Eleanor Jo Rodger. Value and Vision. *American Libraries*, 33 (10), November 2002, 50.



*It is also found in the image that the library presents to the customer, an image that must be carefully defined and managed by the library.<sup>8</sup>*

Recently, Judith Broady-Preston and Wendy Swain explored the difference between core business and value added services using a case study methodology.<sup>9</sup>

The authors suggested that it is difficult to be definitive as to what constitutes core business from value added services due to changing customer demands and expectations, rapidly changing technologies, and a dynamic service-providing environment. However, while interesting, such an approach ignores the customer's perspective. That is, unless the customer receives value – whether from a core service or a “value added service” then the service really has no value at all.

In times past, resources were scarce so library collections were created. Services were developed to provide improved access to collections. The uses of controlled vocabularies were introduced as a part of providing the library catalog and everything had its place due to physical limitations (an item could not be in two places at once). The results from the customer's perspective were some fairly complex systems with the result that a collective wealth has been held hostage by redundant operations and collections in academic libraries. In effect the library was the center of the universe (the hub of the wagon wheel) rather than interacting with other nodes in a large and complex network.

Yet, the information environment has and continues to undergo significant transformation as immortalized in the words of Bob Dylan, “the times they are a changing.” We know that the nature of information is changing from controlled access to being all around us; from expensive to fairly inexpensive or free; shaped by elites to shaped by everyone; from one-way mass consumption to designed for participation and sharing; from slow moving to always immediately accessible using our mobile devices; and from external to our worlds to being embedded in it.

So today, according to Lorcan Dempsey, our libraries are operating at the institutional level while our users are operating at the network.<sup>10</sup> Libraries continue to manage local infrastructure that creates little distinctive value. Low network-related transaction costs means that activities are being distributed across the network so that the traditional tightly coupled library processes are being torn apart. And given the short attention span of people in this information deluge called the Internet, libraries must build their value proposition around the user's workflow. It is also important to recognize that the tools that the users are using today probably will not be used and be of little value to the user in 3-5 years (they will be using new cool tools not yet invented that make their lives more productive and meaningful).

And so it would seem to be reasonable to ask two important questions:

- Do the added value tools and techniques identified by Taylor in his original model still add the same level of value or has the value been diminished or eliminated in some way?
- Are there new added value activities and techniques that librarians can embrace that are perceived to be valuable in the eyes of library customers?

The answer to the first question seems quite clear – people are finding less of value in the traditional library and thus are using the library less frequently. And the answer to the second question is yes there are some emerging tools and techniques that librarians can embrace to add real value in the lives of their customers. The five most important ways to add new value include: community, content, context, collaboration or co-creation and connection.

## Community

Libraries really only serve a subset of their total community. Individuals who use library services, known as users, customers, clients, patrons among a host of other names, represent some portion of the total number of possible customers (for example, the students, faculty and staff on a campus) – including both physical and virtual visitors to the library. As libraries move increasingly into the digital world, the library has an opportunity to become more engaged with a larger proportion of the total community.

8 Gary Deane. Bridging the Value Gap: Getting Past Professional Values to Customer Value in the Public Library. *Public Libraries*, September/October 2003, 315.

9 Judith Broady-Preston and Wendy Swain. What Business Are We In? Value Added Services, Core Business and National Library Performance. *Performance Measurement and Metrics*, 13 (2), 2012, 107-120.

10 Lorcan Dempsey. Reconfiguring the Library Systems Environment. *portal: Libraries and the Academy*, 8 (2), April 2008.

Michael Stephens in his blog “Tame the Web” talks about the importance of moving to the “Hyperlinked Library” so that the library impacts more of the community. And David Lankes has talked and written about the need for “participatory networks and the library as conversation.” And as more and more information becomes digital then the library’s Web site must become more user-centered. Matthew Reidsma has a wonderful blog posting that suggests that: “Your Library Website Stinks and It’s Your Fault.”<sup>11</sup> Improving your library’s Web site can do much to significantly increase the reach of your library.

And even more important, the library in the digital environment has the potential to engage a worldwide community – in short, the library can increase the size of the pie way beyond the “official” population of those they have traditionally served. That is, as we have moved to the “always on” world of mobile devices, the library can engage a much larger audience if they change the way they view the world and the way in which they provide services.

## Content

Increasingly libraries are moving to digitize and catalog all of the unique materials found in a library’s special collections. Many libraries around the world have received grants to digitize some portions of their special collections with the result that several tens of millions of pages of content is now accessible via the World Wide Web. Yet, much remains to be done and the digitization projects that have been completed have revealed at least three significant problems. First, the digitized content that has been created is located in information silos – called library Web sites or sometimes digital libraries. Second, while access to this content is somewhat accessible using a search engine, most libraries have organized their special collections into a series of sub-collections organized around the name of the individual that donated the content to the library. And third, the digitization efforts in most libraries are costly and time-consuming.

For many, the solution to the first problem of information silos is to develop an aggregation site that will provide some content but mostly it contains links to other gallery, library, museum, and archive Web sites. Examples of this approach are the development of the Europeana Web site in Europe ([www.europeana.eu](http://www.europeana.eu)) and the Digital Public Library of America ([www.dp.la](http://www.dp.la)). And while helpful, these aggregation sites have just scratched the surface in terms of developing new and helpful ways to assist users in understanding and navigating this plethora of resources.

The second problem requires that both the aggregation sites plus individual galleries, libraries, archives and museums do a much better job of using search engine optimization techniques to ensure that their resources are visible in the first page or two of Google search results.

And the third problem of high costs can be reduced somewhat if libraries consider outsourcing the scanning of resources to commercial firms. As the Google Books project and the successful scanning of large numbers of historical newspapers (with their fragile nature and yellowing and fading text) by commercial firms for libraries have demonstrated that any concerns about scanning quality and preservation of the materials during scanning can be ameliorated.

## Context

In the information environment, context has a huge impact. As illustrated by the writings of Edward Tufte<sup>12</sup> and Richard Saul Wurman,<sup>13</sup> context can really help people gain a better understanding of information. Wurman has suggested that there are five ways to provide context using the mnemonic LATCH: Location, Alphabetical, time, Category, and Hierarchy.

**Location** is helpful when trying to compare and contrast information that comes from different locales or sources. Location is also a useful way of organizing data with important connections or relationships with other data as attested to by the popularity of Google maps being embedded in Web sites and blogs.

**Alphabetical order** is perhaps the most frequently used method for organizing information, especially in libraries. Consider the alphabetical organization of the fiction collection in most public libraries, words in a dictionary, a

<sup>11</sup> Matthew Reidsma’s blog may be found at <http://matthew.reidsrow.com/articles/16>

<sup>12</sup> Edward Tufte. *Envisioning Information*. New York: Graphics Press, 1990; *The Visual Display of Quantitative Information*. New York: Graphics Press, 2001; *Visual Explanations: Images and Quantities, Evidence and Narrative*. New York: Graphics Press, 1997; *Beautiful Evidence*. New York: Graphics Press, 2006.

<sup>13</sup> Richard Saul Wurman. *Information Anxiety*. New York: Doubleday, 1989; *Information Architects*. New York: Graphics Press, 1997; *Information Design*. Cambridge, MA: MIT Press, 2000; 33: *Understanding Change & the Change in Understanding*. New York: Greenway, 2009.

telephone book, a book index, and so forth. While the alphabet is an arbitrary sequence of symbols, alphabetical order works well since the vast majority of people learn an alphabetical sequence from an early age.

*Time* works especially well when a series of events happen over time. Thus, exhibitions, museums, and archives will often utilize timelines to help orient the visitor. Time is a well-recognized framework from which to observe and compare changes.

*Category* is another effective means of organizing information or physical objects based on their similarities or common attributes. Types of materials usually organize retail stores and libraries. Category is often reinforced by the use of colors. It is important to communicate the basis for organizing information by categories.

*Hierarchy* facilitates organizing items any number of ways – for example, from least expensive to most expensive, by order of importance, by magnitude from small to large, and numerical order. A synonym for hierarchy is continuum when comparing things across a common measure – highest to lowest, best to worst, first to last.

Other ways to organize information to provide context is through the use of:

- **Icons** or an image can be used to represent a place, thing, concept, philosophy or idea.
- **Links** provide a rich method to encourage people to explore on their own. The link can lead to other pertinent documents, images, audio or video files, and other relevant material regardless of its location. As conceived by Tim Berners-Lee, the Internet was to be a series of documents and Web sites that would be linked together. And of course, the **links** from one site to another allowed Google to develop its Page Rank algorithm that displays the most relevant Web sites first (based on the links from multiple Web sites to a specific Web site).
- The **random** or **arbitrary** organization of information is another method of providing access to information. Rather than relying on a pre-determined method for organizing information such as the use of pre-coordinated subject headings, the user can rely on a computer to organize the available information using some method (such as Google's relevance ranking) only when asked.
- A **tag** is a non-hierarchical term or keyword assigned to a digital image, a computer file, Internet bookmark, a blog posting, and so forth. The process of adding a tag is known as tagging or sometimes labeling. Tags are chosen by the item's creator or added by a viewer, depending on what the software or Web site will allow. Tags can assist in organizing things, aiding in classification, indicating ownership, noting boundaries and so forth. Tags are another form of *metadata* – information about information. Folksonomies or user-defined tags complement the controlled vocabularies used by libraries as "folk" use vocabulary that reflects their natural language when they create tags. This results in a flexible and dynamic approach to adding value to content. The primary benefit of tagging is that the searchability of content is improved, as additional descriptive text is included in the index.
- Adding a **review** to a Web site is also quite a popular activity. A review, an evaluation of a publication, service, product, company or individual, can have a big impact as people decide whether to purchase something, read a book, watch a movie, or attend an event.
- And almost every blog in the world encourages a discussion by asking for feedback from its readers. These **comments** made by readers can lead to some interesting and stimulating conversations, which others will also find of value.

Information content or access to information is not the Holy Grail. Insight is. Insight allows us to see more clearly into complex situations. Insight allows us to move on to action. So information is the means to an end – insight. And while we live in a world that is overwhelmed in the deluge of information that is available 24/7 from so many sources, we find that context helps us to cope and to find insight. Context determines where and when an information resource or a recommendation to content is appropriate.

The end result is contextualization – adding contextual knowledge to digital objects by telling stories, adding tags to identify the names of people and places, using timelines among other methods.

## Collaboration

Libraries can also encourage the participation of talented individuals to accomplish a wide variety of goals. It is possible to think of a group of people, oftentimes called a crowd, as a club of experts, a crowd of people, a coalition of parties, or a community of kindred spirits. Perhaps the first crowdsourcing project was the development of the first

edition of the Oxford English Dictionary.<sup>14</sup> Crowdsourcing has been used to raise money, find talented individuals to work on short-term projects, solve problems, reduce spam, and assist scientists among many other activities.

Those that get involved in a crowdsourcing activity seem to do it for a variety of reasons: satisfying curiosity, seeking a challenge, earning status and recognition within a community, intellectual enrichment, working for the public good, or simply having fun. Many crowdsourcing projects get more than 1 million hours of volunteer effort each year!

Some libraries, such as the National Library of Australia, the National Library of the Netherlands, the National Library of Finland, the New York Public Library, the University of Iowa and others, are using volunteers for transcribing newspapers, restaurant menus, manuscripts, oral histories, and many other materials. For example, since 2008, volunteers from around the world have transcribed almost 100 million lines of historical Australian newspaper text.

Other libraries such as the British Library and the New York Public Library have used the assistance of volunteers to “anchor” historical maps using a process called Georeferencing.

Other libraries and museums are using volunteers to create or correct descriptive metadata related to objects and materials in a collection using social tagging or folksonomies. The Library of Congress is asking for help in identifying people and photographers in a collection of tintype photographs from the Civil War.

**Why Engage Our Communities?** There are a number of reasons why libraries should become more engaged with their communities. Among these are:

- achieve goals the library would never have the time, money or staff resources to complete on its own
- achieve goals in a much faster timeframe than if it worked on its own
- tap into the knowledge, expertise and interest of the community
- add value to existing content through the addition of comments, tags, reviews and ratings
- improve the quality of existing content by correcting text or transcribing content that can’t be converted to digital format using OCR software
- making library resources discoverable in new and different ways
- gaining insights about what is valuable from the customer’s perspective
- the high level of community involvement is another way to demonstrate the value of the library
- but perhaps the most important reason for engagement is that the community that is involved with the library becomes much larger and is a more active participant.

## Connection

Many librarians have suggested that it is important to develop a deeper understanding of customers and their needs. The literature is replete with stories of librarians becoming much more deeply involved in the day-to-day lives of their users. Some have called this the embedded librarian, the wandering librarian, the virtual librarian, the roving librarian, the personal librarian, the consulting librarian or simply the “team member.” For example:

- At Ziba Design in Portland, Oregon, Reece Dano’s involvement in a project to design a new transit station led to roles above and beyond the traditional idea of a librarian’s work.
- At American University in Washington, DC, Nobue Matsuoka-Motley became an embedded librarian in the Katzen Center for the Performing Arts. She is a performer as well as a librarian.
- At Johnson & Wales University in Miami, Florida, Mia Lamm and Nicole Covone began collaborating with teaching faculty and offering embedded information literacy instruction in kitchens to students in Culinary Arts.

<sup>14</sup> Simon Winchester. *The Meaning of Everything: The Story of the Oxford English Dictionary*. Oxford, England: Oxford University Press, 2004.

In general, deeper connections will occur as we move from transactions to building relationships. The goal for any library wishing to engage with its community more deeply is to foster the act of continued and ongoing engagement rather than looking for a “crowd” to complete a labor-intensive act such as transcription.

## Recommendations

Perhaps the most important aspect of value is that the customer creates value through use and that the library is facilitating value creation by providing access to its collections and services. Remember that ultimately that the basis for any library is value creation. Rick Andersen, in a recent blog posting, suggested that libraries provide “surplus” value – a service that is not used or a service level is provided that is not needed or desired.<sup>15</sup>

Given all of the change occurring in our environment and the call for libraries to become more relevant to the communities that they serve, it seems prudent to ask three questions:

1. What is the added value (in the eyes of our customers) for what we currently do?
2. What can we stop doing (that has little value) and our customers probably will not notice?
3. What should we be doing (that we are not currently doing) that will add real value?

Once your library has considered and answered these questions then the library should:

- simplify (or eliminate) existing processes
- cooperate with one another to reduce costs and deliver more value
- provide tools that will engage our communities
- connect more closely with our customers by moving up Taylor’s Value Spectrum
- let go of traditional activities and embrace the crowd.

<sup>15</sup> Rick Anderson. Confronting the Problem of Surplus Value. *Library Journal, Peer to Peer Review* blog, May 2, 2013. Available at <http://lj.libraryjournal.com/2013/05/opinion/peer-to-peer-review/confronting-the-problem-of-surplus-value/>

# Towards a Workload Co-efficient

**Stephen Mossop**

University of Exeter

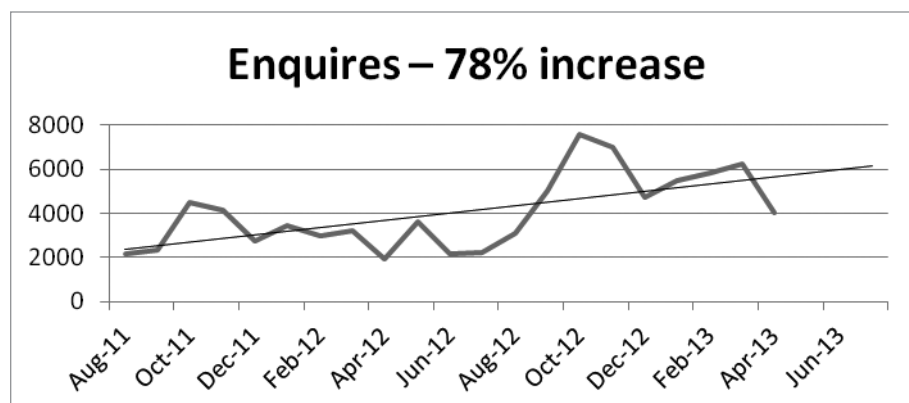
It started with the Forum, a £41m development which was designed to offer a recognisable, distinctive and inspirational mix of inside and outside space at the heart of the campus which would provide:

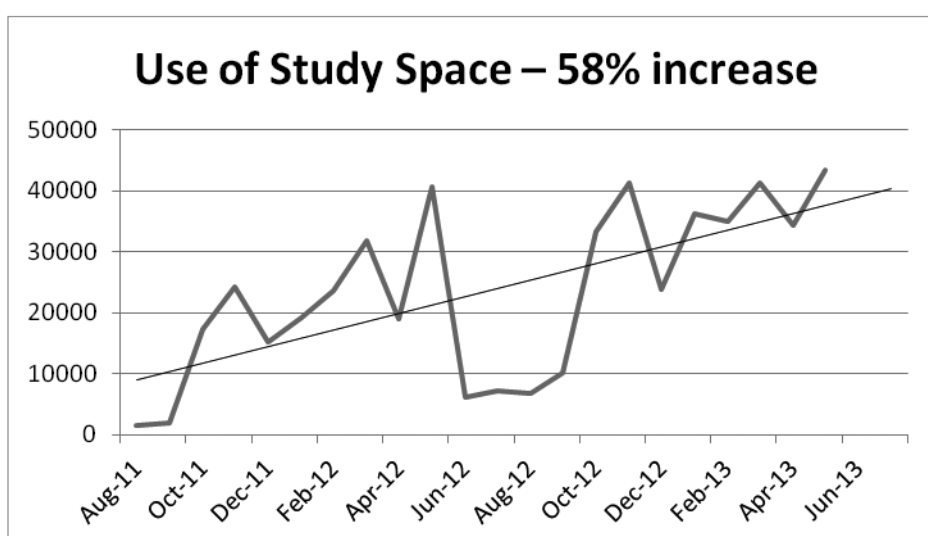
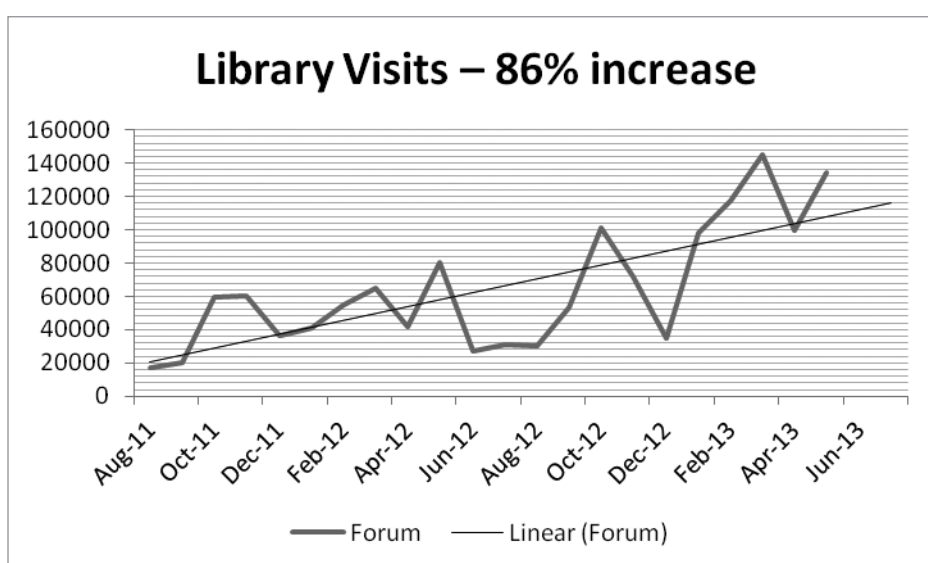
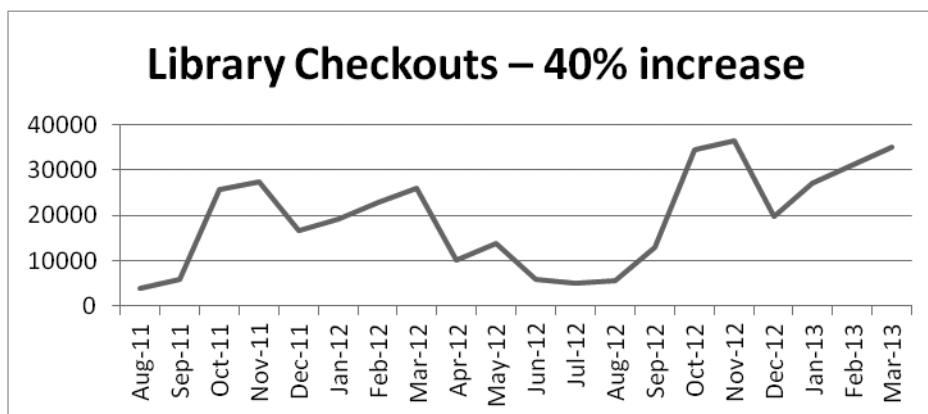
- a variety of new formal and informal learning spaces
- an extended and refurbished library
- centralised and improved student services facilities
- a centre for arts and cultural activities
- improved, mixed, catering and retail provision
- combining inside and outside space to create a beating heart for the campus.

The Forum Library would form the largest and most prominent element of the overall complex, and one which was as integrated into the whole as it was possible to be.

We took full advantage of the opportunity to influence the design of the Library, to make sure that the physical layout and facilities would both deliver the range of services we needed it to, and be flexible enough to facilitate change in the future if need be – and we used the opportunity of the 3-year building programme to design and implement a range of innovative new services, and to practice and refine our new ways of working. We were determined that both we, and the building, would deliver the highest quality student experience possible.

Given the spectacular look and feel of the building, and of course the hype and excitement surrounding the grand opening in May 2012, we fully expected to be busy – and we were....in fact the Forum Library was used to pretty near full capacity well into the summer. Anticipating high numbers again in the new academic year, we made operational changes to ensure that staff could be deployed flexibly and swiftly to maintain effectiveness and we made physical changes to increase seating capacity, improve traffic flows and enhance our range of self-service facilities even further. We experienced high numbers right from the start of the new year, and from Freshers Week onwards I was reminded of that line in the film – ‘If you build it, they will come’. Well, we had designed it, and built it, and indeed they did come.... in their droves – and they kept on coming. The strange thing was, when we checked usage stats across all three of our libraries it became obvious that the Forum Library wasn’t bleeding business away from the others much at all – so we can only assume that the new environment was attracting students who would normally have been non or light users previously. Wherever they came from, it was great to see them – and as you’ll see from the stats, the impact was tremendous.





As usage continued to grow throughout the year, we began to observe signs that our frontline staff were beginning to feel the strain. Individuals, of course, react to 'busyness' in different ways. Nearly all are able to step up and cope well with bursts of activity, and frontline staff are well used to the peaks and troughs of life in a busy academic library. What we were beginning to experience now though was an environment in which the troughs were shallow and few, and the peaks mountainous. Colleagues in increasing numbers were reporting feelings of being overwhelmed



with work, and even the steadier and sturdier were beginning to show signs of extreme fatigue. Sickness absence began to increase, along with requests to work – even if just for a short time – in quieter environments. We employed contingencies to cover absence and to reduce the strain, but of course such contingencies as offering overtime and bolstering frontline numbers from other areas could not be permanent solutions. Eventually and inevitably they would result in reduced services elsewhere.

Following a brief but very welcome respite over the Christmas vacation, we were once again facing a tsunami of bodies hunting for study seats, and borrowing, enquiries and reservations numbers were quickly running at record highs. Inevitably, the impact of such high volumes of use began to affect services: staff delivering our carefully designed and much applauded ‘roving’ enquiries service, for example, needed to be diverted to queue-bust at the Library Reception Desk – which of course resulted in those enquiries which would have been handled quickly and effectively on the floors were brought to the Reception Desk, further lengthening the queues and lowering the overall standard of service further...

Using the experience gathered through this first year of the Forum Library, I began campaigning for the additional staffing resources which would enable us to both handle the traffic volumes and to maintain and perhaps even improve the service delivery models which had won such approval and applause from the student body early on in the exercise – to regain our slightly dented reputation for excellence – and, of course, to reduce the pressure on my staff to levels at which they would be able to maintain the high levels of focus, energy and commitment that our service model demands.

Around this time I began, also, to look for a tool which might help me to model performance over time, and in particular to show where the borders were between efficiency and inefficiency – ie the points at which sheer workload began to diminish staff and service performance. Although I found some models that looked like they might approximate to what I needed, I couldn’t find one that would suit a library environment. So I began to work on a formula myself, based loosely on the format of the Retail Price Index.

To save putting further pressure on my staff, I needed to work with the evidence we were already gathering and, like most libraries, we keep quite a wide range of very useful stats. I began with the theory that the problem we faced was one of cause and effect – effectively, that the increasing volume of work was affecting both the services we provided, and the staff’s ability to deliver them. I considered how these might be balanced against each other. In terms of ‘volume of work’, we had a range of factors that impacted on the service and on staff time and energy – numbers of enquiries made; numbers of items issued and returned; numbers of Reservations handled, numbers of people visiting or studying in the library etc.

My inclusion of these factors was based on their likelihood of having a direct impact on frontline staff and services: handling enquiries demands immediate staff time and attention; whilst book issues are predominantly handled on a self-service basis, returned books need to be re-shelved quickly, so again having a direct impact on staff (either handling the items themselves, or in handling enquiries about books not yet re-shelved). Visitor numbers and study seat usage might not be regarded as necessarily having an immediate impact on staff, but are included on the grounds that they do have impact in terms of their potential for staff interaction with students – operating at near-full capacity for long periods requires careful traffic management, along with complaints handling (when people can’t find a seat); handling behavior management in large crowds of people takes a great deal of skill and judgment, and of course necessarily involves having staff ‘on the ground’. Importantly, especially in terms of staff wellbeing, is the fact that large crowds have a major impact on the sense of being overwhelmed by sheer numbers, and therefore have a direct impact on stress levels etc.

I have not at this stage included some other important factors, such as Inter-Library Loans traffic, etc, but fully intend to do so as the model develops. I hope that the current range of ‘impacts’ might suffice at this stage to judge the model’s overall viability.

Balanced against these ‘impacts’, there must be ‘offsets’ – factors that mitigate against the impacts in the context of service delivery. In a library setting, these might include things like the number of items issued via self-service; the number of enquiries handled automatically via FAQs, self-help instruction sheets etc; or averted by the delivery of good quality induction courses and library training regimes. My primary focus in creating this early draft of the model was upon staff-delivered frontline services, so although I will be including other factors in future iterations, for this exercise I have concentrated on my most valuable frontline commodity – staff time.

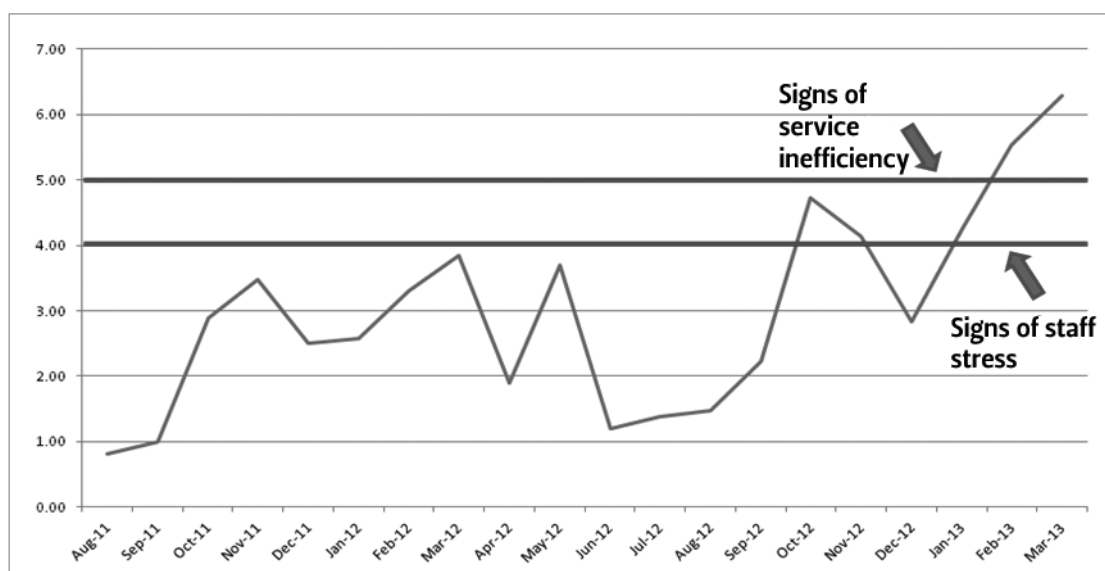
So, we have an assembly of ‘impacts’ lined up against the amount of staff time available to deal with them. A simple calculation results in what I’ve described as a ‘workload factor’. This is then used to create a graph to illustrate the increasing or decreasing levels of workload across a period of time – I’ve used monthly statistics to build the factor

(utilizing the data we already gathered), and tracked them across sections two different academic years – to illustrate the workload levels realized pre and post Forum opening.

The next, and probably the most important, exercise was to understand at what levels staff began to show signs of wear and tear, and again the levels at which service delivery performance began to fall below what I felt was an acceptable standard.

We used a range of methods to assess staff reaction, including absence monitoring; feedback through 1:1, PDR and team meetings exercises, and on-the-ground monitoring by supervisory staff, who were able to use their skills of observation to carefully judge the performance of individuals, in real-life situations, over time. This accumulation of evidence was analysed, and it was decided that noticeable signs of a reduction in staff performance correlated approximately to 'workload factor 4'.

Similar exercises were conducted in terms of service delivery performance, where we analysed traffic through our comments cards scheme; the number and type of enquiries received, with attention to where and how these were handled (which illustrated the transfer of traffic from Rovers to Reception, telephone and email); re-shelving performance logs, and the number of 'lost book' search requests made (balanced with the results of staff searches, which indicated a lowering of re-shelving and shelf-tidying performance), etc. This accumulation of evidence was analysed, and it was decided that noticeable signs of a reduction in service-delivery performance correlated approximately to 'workload factor 5'.



By mapping these border-lines onto our 'workload factor' graph, we now had a tool which would clearly illustrate where and when we were likely to encounter performance issues, and we used this then to model the likely effects of, for example, increases in student numbers, and increases and decreases in staffing numbers. Now, rather than vague intimations and 'educated guesswork', we now had a very useful bargaining tool – which has already helped us to negotiate the formation of a new team of temporary staff who can work flexibly, when required, to reinforce Library frontline staffing at key points of the year (ie when our growing 'workload factor' graph for next year indicates a need), and who will then help us to mitigate against acute staff stress and, importantly, help us to guard against workload-related service performance issues in the future.

We envisage that future developments of this model will need to include several additional 'impact' and 'offset' factors, weighted to reflect their comparative importance in terms of effect on workload, in order to gain as full a picture as possible; and will need to be based on statistics gathered at a much finer level than we do currently, ie weekly, or perhaps even daily, circulation, enquiries and traffic stats would enable a much more accurate reflection of reality – our estimation is that this would reveal much higher spikes of activity for certain periods, which again would enable us to better anticipate when additional offsetting measures need to be activated.

# Performance evaluation dynamics in Lisbon Municipal Libraries Network (1989-2009): a meta-evaluative approach

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## Introduction

Evaluation can be considered an autonomous scientific field. In fact, it is a “transdiscipline” whose subject matter is the study and improvement of tools for other disciplines (Scriven, 1991, pp.365). Decades of Evaluation Research applied to Library and Information Science have resulted in a multiplicity of theoretical and empirical studies, from the pioneer work of S. C. Bradford (1948) to the publication of the first international standard on library performance indicators (ISO 11620 – 1998) and recent developments in the emergent area of library impact evaluation (Markless & Streatfield, 2006; Imholz & Weil, 2007; Streatfield & Markless, 2009; Mays *et al*, 2010; Stone & Ramsden, 2013; among others). Within the library evaluation research corpus, meta-evaluation is still an underexplored area (White, 2002; Calvert, 2008; Pinto, 2012).

Performance evaluation can be defined as the process of determining the results of actions undertaken and their assessment. Meta-evaluation is the evaluation of an evaluation or cluster of interconnected evaluations (Scriven, 1991; United Nations Development Programme). A review and analysis of the international literature subset in which library performance evaluation is the subject itself led to the identification of three main types of approaches to meta-evaluation research: *Historical and critical review*, *Construction, analysis and/or application of models* and *Performance evaluation impact* (Pinto, 2012). Often these approaches intersect like, for instance, when an historical and critical review is included in a study on performance evaluation models or impacts. The meta-evaluation corpus is composed of documents (mostly bibliographies, reviews, scientific articles and thesis) that are focused either on performance evaluation in general or on a specific theme and whose evaluation objects might be a specific type of library or system or a particular library function.

Evaluation research and specifically meta-evaluation provided the general theoretical framework for a doctoral study on the *Strategic and emerging dimensions of performance evaluation: models, dynamics and impacts on Lisbon Municipal Libraries Network* (1989-2009) (Pinto, 2012). This paper only addresses the topic of performance evaluation dynamics, that is, the diachronic study of evaluative processes: the performance evaluation progress made between 1989 and 2009 in Lisbon Municipal Libraries Network (LMLN) (vid. Figure 1). Performance evaluation dynamics correspond<sup>1</sup>, in fact, to a fourth type of meta-evaluative approach, which might be connected to an organizational research strategy known as Process Research.

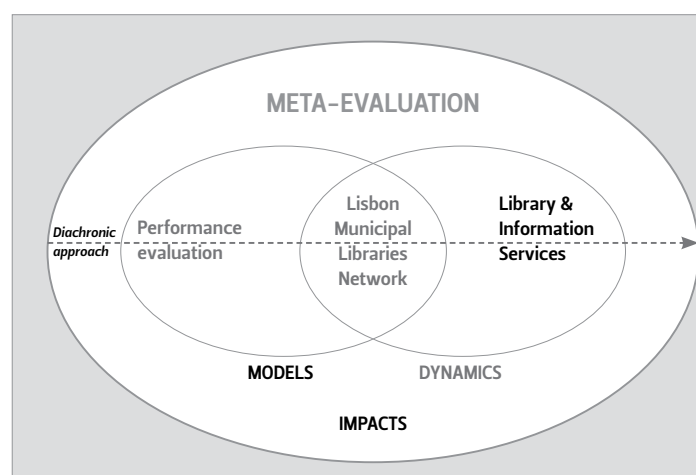
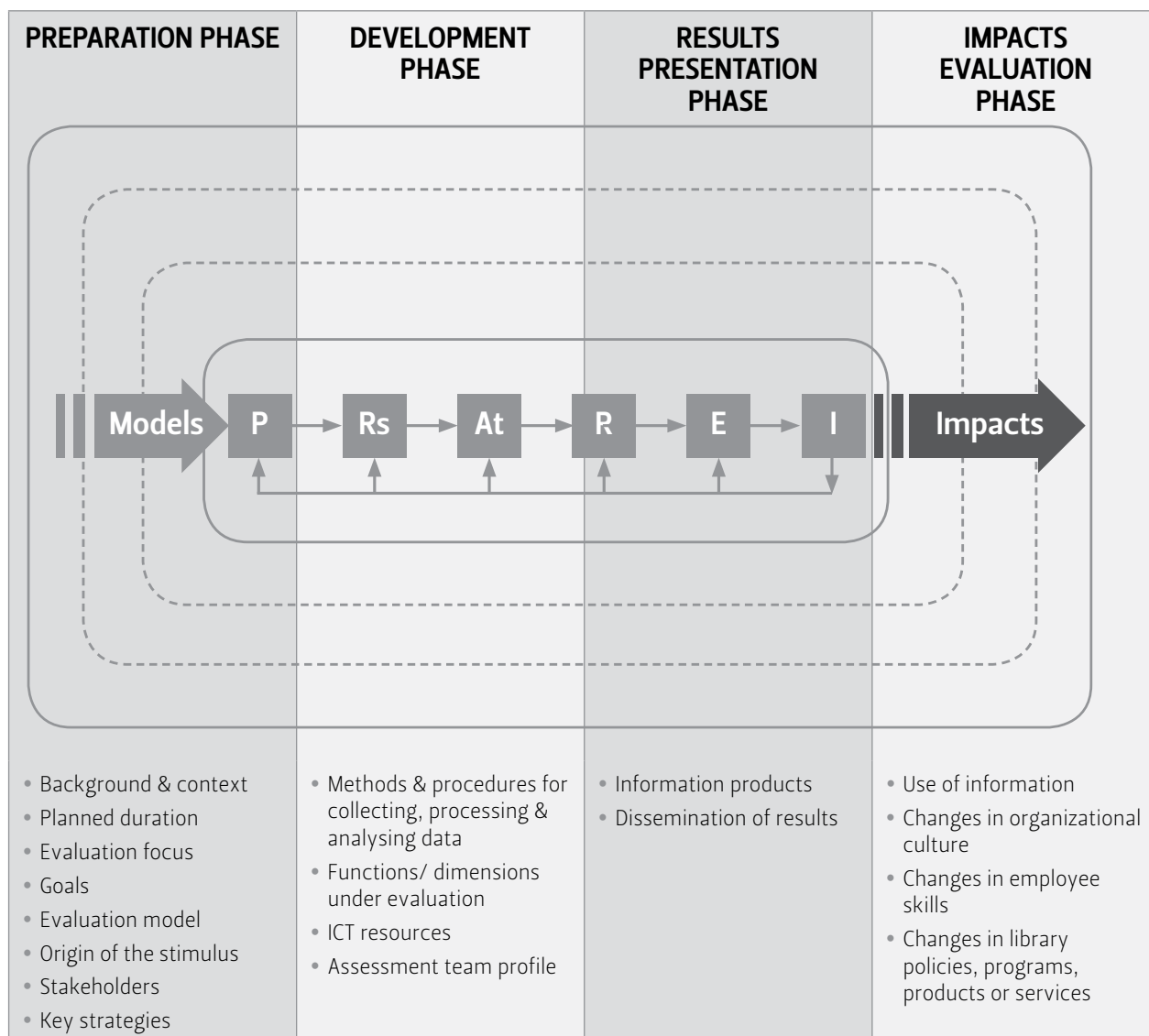


Figure 1: The study's conceptual universe

1 According to A. Langley (2009, pp.409), Process Research "... addresses dynamics questions about temporally evolving phenomena".

## Methodological aspects

The study was based on a methodology eminently qualitative supported by a combination of research methods (literature review, construction and application of conceptual models for analysis and case study). Apart from the role that it normally plays in most investigations, in this study literature review also served as the basis for developing conceptual models that supported the analysis phase of the case study. Anchored in a systemic and meta-evaluative perspective, the *Model of Analysis DI<sup>LPE</sup>* (Dynamics and Impacts of Library Performance Evaluation) was built to help examining performance evaluation dynamics and its impacts registered in LMLN during two decades. As shown in Figure 2, in the heart of this is exploratory model, there is a representation of the library performance evaluation process, which is an adaptation of L. N. White's *Performance Measurement Process Model* (2002).



© L. G. Pinto, 2012 (adap. White, 2002)

Legend: P – Planning At – Activities E – Evaluation Rs – Resources R – Results I – Information

Figure 2: *Model of Analysis DI<sup>LPE</sup>* (Dynamics and Impacts of Library Performance Evaluation)

Data gathered from primary sources (administrative documents, reports, e-mail archives, web documents, Excel spread sheets, personal records, interviews), as well as secondary sources (articles, project reports, papers, oral presentations) were examined in the light of the *Model of Analysis DI<sup>LPE</sup>*. Additionally, several analytical tools were created to help decomposing and characterizing the performance evaluation dynamics identified, namely in terms of the following evaluative process phases and components (*vid.* Figure 2): *Preparation phase* (Background and context; Planned duration; Evaluation focus; Goals; Evaluation model; Origin of the stimulus; Stakeholders; Key strategies); *Development phase* (Methods and procedures for collecting, processing and analysing data; Functions/ dimensions

under evaluation; ICT resources; and Assessment team profile) and *Results presentation phase* (Information products; and Dissemination of results). It should be noted that *visual mapping*, or the representation processes (or its elements) using the diagrams, pictures or other visual devices is one of the seven strategies for constructing meaning from process data (Langley, 2009, pp.417).

In Table 1, these tools (named *DI<sup>LPE</sup>* Tools) are identified and related to the respective phase of the meta-evaluative process, with an emphasis on the focus of analysis.

Tools	Phases	Focus of analysis
DI <sup>LPE</sup> 1	Preparation	Constituent elements of the Preparation phase of the performance evaluation dynamic
DI <sup>ADB</sup> 2	Development	Profile of the assessment team that ensures the development of the performance evaluation dynamic
DI <sup>ADB</sup> 3	Development	Profile of the assessment team managers
DI <sup>ADB</sup> 4	Preparation Development Results presentation	Evaluation objects
DI <sup>ADB</sup> 5	Development	Performance evaluation methods
DI <sup>ADB</sup> 6	Results presentation	Information products on performance
DI <sup>ADB</sup> 6.1	Results presentation	Information products on performance – methods of dissemination

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Table 1: Support tools for analysing library performance evaluation dynamics

## Performance evaluation dynamics in Lisbon Municipal Libraries Network (1989–2009)

In Portugal, the first libraries presenting similarities with the Anglo-Saxon model of public library – the *bibliotecas populares* – began to emerge in the 70s of the 19th century. Lisbon Municipality created its first biblioteca popular in February 2, 1883; they were the embryos of a municipal library network that saw numerous advances, setbacks and misconceptions over 130 years of existence. At the end of the first decade of the 21st century, LMLN was composed of 1 central public library (with an autonomous periodical section), 9 public libraries, 2 mobile libraries, 1 public garden service point and 3 specialized libraries.

Between 1989 and 2009, LMLN developed four main performance evaluation dynamics:

- D1 – *Statistics* (until the end 1991): collecting data and filling in “statistical maps” is a practice that can be traced back to the creation of the first municipal library in Lisbon; for decades, it was a self-focused routine, aimed at the manual filling of monthly and annual “statistical maps”.
- D2 – *Collecting and making available performance information* (from 1991 last trimester till 2002): as a result of the modernization policy initiated by the Department of Culture of Lisbon Municipality in the early 90s of the last century, LMLN’s *bibliotecas populares* were gradually remodelled in the light of UNESCO’s concept of public library. This modernization effort was accompanied by the selection of performance measures appropriate to the new concept of the public library and the design of a computerized system for collecting decision support data. LMLN’s results and processes were the main evaluation focus of Dynamic 2.
- D3 – *PAD-BLX* (2003– ): in may 2003, the Department of Libraries and Archives launch PAD-BLX, the LMLN Performance Evaluation Programme aimed at the creation of an organizational culture of assessment<sup>2</sup>; Dynamic 3 hosted five sub-dynamics.

<sup>2</sup> This experience was presented at the 2006 IFLA M&M Shanghai pre-conference (Pinto & Ochôa, 2006).

- D4 – *Impacts of libraries* (2007-2009): this dynamic was the result of LMLN manager's increased attention to impact assessment, especially in Lifelong Learning context, combined with Lisbon Municipality participation in an European Union founded project – ENTITLE – and the subsequent testing of an Impact Assessment Framework<sup>3</sup>.

## Results

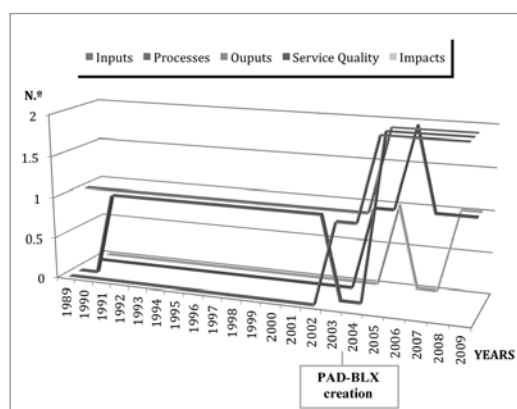
After a thorough individual exam, the eight (sub-)dynamics were subject to a global longitudinal analysis, giving particular attention to the *evaluation objects and methods* (Development phase), *Organization of assessment activities* (Development phase) and *Information products on performance*, as well as the associated *dissemination methods* (Results presentation phase). During this global analysis, some DI<sup>LPE</sup> tools were used and, whenever possible, LMLN results were compared with the results of the application of the *SPEC Survey on library assessment* to seventy-three ARL – Association of Research Libraries member libraries (White & Wright, 2007; Wright & White, 2007) and seventy-seven British and Irish SCONUL – Society of College, National and University Libraries member libraries (Stanley & Killick, 2009). It should be noted that since the focus of comparison were the evaluation practices per se, the fact that most of the libraries surveyed, both in the United States and in the UK, were university libraries was not seen as an obstacle.

### Evaluation objects and methods

In library performance evaluation, one might consider five main types of evaluation objects: *inputs* (resources), *processes* (activities), *outputs* (direct results), *service quality* (the degree to which users find services/resources satisfactory)<sup>4</sup>, and *impacts* (covering high order effects, but also the direct effects – frequently called *outcomes*). Built on this typology, DI<sup>LPE4</sup> Tool allowed us to identify the evaluation objects that were central to each LMLN dynamic. In fact, mapping the focus (objects) of these dynamics gave visibility to the preponderance of an *Internal perspective on performance evaluation*, centred on resources, processes and, above all, results, in spite of initiatives valuing the user point of view in the evaluative process (Dynamics D3b, D3e, D3d and D4).

The analysis of the evaluation objects evolution over time also showed a positive relationship between the implementation of PAD-BLX, a library evaluation programme targeted at building a culture of assessment in LMLN, and the diversification of evaluation objects that occurred after 2003, covering the entire object typology – resources, processes, outputs, service quality and impacts (Graphic 1).

The conceptual tool designed to study the methods of performance evaluation used in libraries – DI<sup>LPE5</sup> – was applied to the examination of the (sub-)dynamics developed in the network between 1989 and 2009. The longitudinal analysis pinpointed statistics gathering as the most used evaluation method in LMLN during two decades, which is in accordance with the internal perspective predominance, but also with the diagnosis of North American, British and Irish libraries made by the SPEC survey (Wright & White, 2007; Stanley & Killick, 2009). It also showed that 44% of the 27 methods listed were not used in the context of these dynamics, as in the case of methods for measuring usability or the financial component (ROI analysis or cost centres).



Graphic 1: Evolution of the typology of evaluation objects in LMLN (1989-2009)

- ENTITLE – Europe's New libraries Together In Transversal Learning Environments was a project designed to support and extend the progress made to date by Europe's public libraries in supporting learning for all age groups and sections of society, by disseminating, consolidating and enhancing the work of key existing networks, projects and initiatives in this area (<http://entitle.mdrpartners.com/leng>). One of its outcomes was the development of an Impact Assessment Framework, which was inspired by MLA's GLO-Generic Learning Outcomes.
- Like Bertot & McClure (2003), we considered service quality as a distinct evaluation object, different from outcomes and impacts.



## Organization of assessment activities

In the late 80s, statistics (D1) were seen as a routine activity performed by assistants or librarians in charge of each municipal library. It was only after the last quarter of 1991 that LMLN performance evaluation was handed over to a permanent team (albeit with partial time dedication) devoted to the development and implementation of performance evaluation initiatives. Even so, the continuity and longevity of LMLN performance evaluation dynamics was mainly achieved through the permanent existence of one or two performance evaluation coordinators.

Other factors were also considered crucial to the sustainability of an organizational performance evaluation dynamic:

- Level of hierarchical proximity between the performance evaluation coordinator and the Head of Library Services: the library performance evaluation coordinator should be positioned at the level immediately below the steering level.
- Team key-competences: performance evaluation teams should be skilled in four key-areas – *Information Science*; *Performance evaluation*; *Statistical analysis*; and *Information Systems Management*.
- Coordinator profile: the coordinators competences profile should enable him/her to perform four nuclear evaluative functions – *Analyse, interpret and report on data collected in assessment activities*, *Perform assessment activities*, *Coordinating data collection* and *Design / adapt evaluation models*.

Table 2 shows the functions carried out by LMLN performance evaluation coordinators from 1989 to 2009. The first three more representative tasks are coincident with the top functions performed by assessment staff in North American, British and Irish libraries surveyed (Wright & White, 2007; Stanley & Killick, 2009); the Design/adapt evaluation models function was added to the original SPEC survey in order to reflect the specificity of LMLN performance evaluation dynamics, as well as the level of technical competences possessed by assessment teams.

Evaluative functions of coordinators	No.	%
Analyse interpret and report on data collected in assessment activities	8	14%
Perform assessment activities	8	14%
Coordinate collection of data across the library/network	7	13%
Design / adapt evaluation models	7	13%
Consult with staff in assessment methods and needs	6	11%
Coordinate the reporting/archiving of library/network's statistical data	6	11%
Monitor/coordinate assessment projects throughout the library/network	5	9%
Provides training on assessment topics	4	7%
Fill requests for library/network data	2	4%
Submit external surveys	2	4%
Approve assessment projects throughout the library / network	1	2%
Other	0	0%
<b>Total</b>	<b>56</b>	<b>100%</b>

Table 2: Functions of the coordinators of LMLN performance evaluation dynamics (1989–2009)  
[Based on the SPEC Survey list of assessment functions (Wright & White, 2007; Stanley & Killick, 2009)]

## Dissemination of performance evaluation results

The development of performance evaluation dynamics during twenty years generated significant amounts of data that were organized and transformed in meaningful information about LMLN performance. By mapping the types of information product associated with each dynamic, we were able to identify the main types used to disseminate information about performance (Graphic 2): *statistics* (21%) and *reports* (21%). The emphasis on the use of these two products is in accordance with the predominance of an *Internal Perspective* on performance evaluation within the LMLN.





Graphic 2: Typology of LMLN's performance information products (1989-2009)

In general, the information products were mainly targeted at LMNL staff – performance evaluation team and local facilitators, library coordinators, other library staff and the Head of Library Services. Secondary dissemination of performance results was directed at upper hierarchical levels of the parent organization, but also at the professional LIS community at local, national and international levels.

The preponderance of the internal focus on the selection of the target audience for performance evaluation information products also justifies the fact the intranet (since its implementation in Lisbon Municipality) constituted the primary dissemination channel. The absence of external strategies to disseminate LMLN performance results to the general public contrasted, for instance, with the situation of U.S. libraries reported by the SPEC survey where information about their performance were frequently available on websites rather than on intranets (Wright & White, 2007).

## Final remarks

The longitudinal and retrospective study of performance evaluation processes developed in a wide municipal library network emphasised the relevance of some factors to dynamics sustainability: the presence of a permanent coordination team, in the direct dependency of the head of library services, with the right competences. Other factors like the existence of a culture of assessment and the commitment of leadership with performance evaluation also proved to be of particular importance (Pinto, 2012).

The meta-evaluative approach and particularly the focus on the long-term development of evaluative theories and practices contribute to the enlargement of the international *corpus* on library performance evaluation. On the other hand, the analytical model and conceptual tools created (DI<sup>LPE</sup>) might be useful to other researchers / practitioners willing to meta-evaluate library performance evaluation dynamics.

It is our believe that taking a meta-evaluative approach will lead library performance evaluation research to new frontiers, namely by valuing the longitudinal dimension and the study of performance evaluation models and increasing the research on the impacts of performance evaluation itself. The intersection of meta-evaluation approaches can also enhance the development of new research topics like, for instance, the study of the impact of library performance evaluation models.

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# Perceptions of individual and societal value of public libraries in the Netherlands: findings from a quantitative study

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## Introduction

This paper presented the findings of a quantitative study on the outcomes of the public library as perceived by the Dutch population. The following is an abstract of the paper, which is presented in full in the Performance Measurement and Metrics journal.

## Purpose

This study is the third stage in a methodological research program that aims to develop a valid and reliable (set of) research instrument(s) for demonstrating the societal value of public libraries. The purpose of this stage is to verify a reference framework for the societal outcomes of libraries that evolved from the previous research stages. In this framework five domains of (possible) impact are distinguished: the educational, cultural, social, economical and affective domains.

## Methodology

In September 2012 a questionnaire was administered among a representative sample of 1,500 Dutch citizens ranging in age from 13 to 87. The questionnaire covered all five domains of possible library impact from the outcome framework.

Findings show to what extent Dutch citizens recognise the public library's contribution to societal welfare in the benefits they themselves (could) derive from this institution in these fields.

## Originality and value

This is, to our knowledge, the first study in The Netherlands to try to empirically determine, on a nationwide scale, a broad range of benefits people derive from the public library.



# Did you enjoy the library? Impact surveys in diverse settings

**Roswitha Poll**

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## Abstract

### Purpose

The paper examines the adequacy of impact surveys for identifying library influence on highly diverse populations.

### Design / methodology / approach

Projects calculating an economic value of library services have become nearly familiar in the last decades, while attempts to identify an influence of library use on people's lives and on society are still somewhat rare. Probably the most suitable and manageable instrument for impact assessment is the survey, whether print or online, used separately or combined with interview techniques. The paper describes recent projects using impact surveys for diverse populations and compares their goals, target groups and results. The focus is on impact in the sense of changes in people resulting from the contact with library services, not on economic value of libraries.

### Findings

The impact projects that are analyzed, though differing strongly in outer conditions, populations and goals, show the applicability of the survey method for impact assessment, but also the need for adapting the method to the specific conditions.

### Research limitations

Studies on library impact are ongoing, and methods are still developing. The paper shows a snapshot of the present situation.

### Originality / value

The paper concentrates on the most-used instrument of impact assessment; surveys. Based on practical examples it shows advantages and challenges of the method and gives recommendations for format and content of surveys in different settings.

### Keywords

libraries, impact, surveys

## Survey enjoyment

Nowadays, if you use any kind of service, whether commercial, public, or private, you will not escape being questioned about your experience of happiness or well-being connected with that use. You will probably not be astonished that hotels, airlines, camping places or your hairdresser are concerned about your feelings during or after a visit. You might also get used to be questioned by your tax office or your dentist ("How can we make your stay still more pleasurable?"). But the following title of a press item will take the most hardened survey respondent by surprise:

*"Did you enjoy your stay Sir?  
Prisoners handed hotel-style questionnaires asking if cell conditions were up to scratch"*

(Salkeld, 2013)

Such abundance of surveys seems to prove that researchers are right when they speak of "survey enjoyment" (Rogelberg et al., 2001). Libraries, museums and archives should of course not be absent in this broad assortment of benefactors. In the blog of a marketing firm that works for non-profit institutions, there are under "10 reasons to visit a museum" statements such as these:

- museums make you feel good
- museums make you smarter
- museums inspire
- museums help bring change and development to communities.

Libraries doubtless are no less qualified to make people happy. The statements might look like this:

- libraries make you feel clever (new skills, new knowledge)
- libraries make you self-confident (eg in information seeking)
- libraries inspire (by collections, by technology)
- libraries make you feel accepted in a society
- libraries give you a feeling of safety and comfort.

But how do libraries prove that?

## Impact surveys

For determining whether individuals (or the society at large) have profited from the existence of libraries, the best way will be to question people:

- those that actually had library contacts and might have benefited
- and those that, though no library users, might appreciate the potential benefits that a library can deliver.

Such questioning can be done in different ways: in one-to-one interviews, in focus groups and discussion groups, and of course in surveys of all types and formats. Surveys are the most-used instrument for assessing library impact on skills, attitudes and behaviour of individual users and on a society or community.

Libraries have been familiar with the use of surveys for decades, whether exploring user activities during library visits, testing the degree of satisfaction, or asking for desired changes in library services. The questionnaires can be submitted in various ways:

- questionnaires in print can be handed out to people inside or outside libraries or can be sent by mail
- the questions can be read out in a telephone survey
- online questionnaires can be sent by email or are presented on the library's website, often in connection with the use of specified services (online catalogue, electronic journals).

Surveys meant to assess library impact can address the actual library users, the potential users of a library (member of the population that the library should serve), and even people who never entered a library but maybe have a decided opinion about the usefulness of libraries. Surveying a sample of all potential users will also help to identify reasons for non-use (long distances, inconvenient opening hours, etc).



Impact surveys ask the users what benefits they experienced when using library services, either by physically visiting a library or by accessing the library's online services. The questionnaire can ask for a one-time experience ("your last visit") or for the user's general experience of libraries.

Like other user surveys, impact surveys will generally include questions about the users' background, such as age and gender, ethnic group, language, educational level or occupation. Most surveys also ask for the type and quantity of library use (working in reading-rooms, loans, reference service), sometimes also whether that use has changed recently (Chiesi, 2011, p.24). The answers will help to interpret what respondents say about perceived impact.

The main questions of an impact survey pertain of course to possible library benefits. Such benefits may concern:

- users' acquirement of information, skills and knowledge
- support in study, research and learning or in the respondent's profession
- saving of time and effort
- the experience of the library as safe, quiet and comfortable place
- the experience of the library as centre for contacts and communication.

Another way of identifying the respondent's estimate of a specified library will be to show a scenario where the library is closed and to ask where – if at all – the respondent could find the same help and information:

- from another library
- via the Internet
- from teachers, colleagues, friends etc
- via the media (newspapers, radio, television)
- perhaps, but it would take more time and effort
- not at all.

The questions usually have pre-defined options for answers, but additional comments should be possible, as they give much more detailed information about users' experiences and notions.

## The surveys: public libraries

Impact surveys have as yet been more often applied in public libraries than in other library types. This is probably due to the fact that public libraries are less sure of their funding than other types of libraries and must therefore show evidence of their value. Projects calculating an economic value of library services became familiar in public libraries in the last decades. Since some years, they also engage in identifying an influence of library use on people's lives and on society.

Populations of public libraries are defined by territorial boundaries, often not strictly demarcated, and only part of the potential users will actually use the public library. The populations can differ strongly in age, social status, language, or information needs, which of course influences the services offered by each library. The public library in a community has many more roles beside supplying leisure reading and non-fiction materials. It can act as cultural centre and general information point for citizens, can be the preferred place for meeting and communicating, but also a refuge for quiet work and reading. The library can be a main player in furthering social and digital inclusion and local identity.

Given this broad spectre of roles and services, the public library's influence will be manifold and can affect the social and educational conditions in a community or region, which of course is relevant for the local or regional politics. Public library funding greatly depends on funders believing in the positive influence of libraries, and surveys can best prove that.

Ten examples of public library impact surveys of the last ten years were considered for this paper. Several of them collected nationwide samples, others concentrated on specific libraries. The topics can be general or focussing on a specific topic or group (health, Internet access, older people).

1. **Croatia:** 2 small islands in Zadar county (Ivanovic et al., 2013)<sup>1</sup>  
**Years:** 2011/12  
**Topic:** impact of libraries in isolated rural communities  
**Method:** interviews, focus groups, surveys
2. **Finland:** nationwide sample (Vakkari and Serola, 2012)  
**Year:** 2010  
**Topic:** impact on everyday life ( benefits in everyday activities, cultural interests, and career)  
**Method:** mailed questionnaires, random sample of 6,000  
**Respondents:** 1,000 (aged from 15 to 79 years)
3. **Germany:** Berlin-Mitte, 3 public libraries (Blanck, 2006)  
**Year:** 2005  
**Topic:** general value, economic value  
**Method:** print survey combined with interviews (visitors); additional online survey  
**Respondents:** 931
4. **Italy:** Bologna, 4 public libraries (Chiesi, 2011)  
**Year:** 2011  
**Topic:** general value  
**Method:** print survey combined with interview  
**Respondents:** 81
5. **Latvia, Lithuania:** nationwide samples (Rutkauskiene, 2009; Paberza and Rutkauskiene, 2010)  
**Year:** 2008-2011  
**Topic:** public access computing  
**Method:** surveys, interviews, focus groups
6. **Netherlands:** (Oomes, 2013)  
**Year:** 2012  
**Topic:** value for the community and the individual  
**Method:** online panel  
**Respondents:** 1502 (of which 477 non-users)
7. **South Africa:** Harare, suburb of Khayelitsha, Cape Town<sup>2</sup>  
**Year:** planned for end of 2013  
**Topic:** impact of a newly opened library  
**Method:** print survey combined with structured interview (because of low literacy)
8. **UK and Ireland:** (Macdonald, 2012)  
**Year:** 2011  
**Topic:** value for the community and the individual  
**Method:** omnibus survey  
**Respondents:** 5,330
9. **UK:** Gateshead and Newham Library Services (Laser Foundation, 2005, Annex C)  
**Year:** 2004  
**Topic:** health  
**Method:** print survey together with loan statistics  
**Respondents:** 196
10. **UK:** Bournemouth and Lancashire (Laser Foundation, 2005, Annex D)  
**Year:** 2004  
**Topic:** older people  
**Method:** print survey together with loan statistics  
**Respondents:** 40 plus 150 users of home-bound services

<sup>1</sup> Full paper not yet published

<sup>2</sup> Unpublished survey draft

## Public library impact surveys: the questions

In a sample survey of a large population, including both library users and non-users, the main issue is probably the *overall value of libraries for a community or society*. The survey might ask whether – from the respondents' view – public libraries

- enhance the quality of life in a community
- play a part in alleviating unemployment, poverty and disadvantage, crime and feeling unsafe
- contribute to lifelong learning
- support local identity.

There is evidently a general consensus about the value of libraries, even though the individual experience of that value is lower. In the Berlin survey, 93.8% of respondents fully agreed that public libraries enhance the quality of life in a community, but only 80.3% said the same for their personal quality of life. In the omnibus survey in UK and Ireland, more than two thirds of respondents said that libraries are either essential or very important to the community, while only less than half said that libraries were essential or very important to them personally. In Berlin the questions were put to public library visitors, in the omnibus survey to a sample of passengers.

More frequently, the surveys try to assess the impact on individuals. The benefits mentioned in the questions refer to

- improved skills (eg in information literacy, computer literacy)
- information for school and learning
- health information
- help in job-seeking
- cultural enrichment
- community information
- contacts, communication
- leisure, recreation
- a safe and quiet place for study and reading
- a sense of belonging, of being accepted.

In some projects, the questions have been grouped in *areas of life* where persons may benefit from library use. A Finnish project identified 22 such areas which by factor analysis were condensed into three major impact types: benefits in everyday activities, cultural interests, and career (Vakkari and Serola, 2012). A research project in the Netherlands used five domains: economic / educational / social / cultural / affective (Oomes, 2013). Statements in the domain "economic" testified for instance that the library helped to

- save money
- save time
- doing one's work better.

In order to interpret the answers, surveys can also, after the questions as to personal benefits, ask for *the most important of those benefits*. In the Bologna survey two of the most important benefits concerned the library as place (Chiesi, 201, p.21):

- safe and quiet place for study and reading
- enjoyable place where I like to spend some of my time.

Two of the projects named above consider a *library's impact in specific surroundings*. The Croatian study surveyed the library's role in small, isolated communities on two islands (Ivanovic et al., 2013). The results show, that in such locations the library is usually the only cultural institution. As it serves as meeting place for the various social groups, where people drop in while passing by, the library is primarily perceived as a place, not as a service.

The survey in a suburb near Cape Town is as yet only a plan. It is mentioned here because it adds a new aspect: The impact of a newly founded library in a poor town quarter that had little or no access to library facilities before the library was built. The survey will stress the library's role as an access point to computer facilities, as a safe and quiet place, and as a place where to go with children. The most interesting question will certainly be:

- before the library was built, where did you spend your time that you now spend at the library?

The two last surveys in the list were conducted within a study of the Laser Foundation and consider the impact of two *specific library services*: health information and services for home-bound older people. Both surveys are short and to the point. For health information the questions/statements are:

- Do you use the library to find information about your health?
- The information gives me a better understanding of the condition/subject.
- The information has a positive impact on my health.
- The library service contributes positively to my health or wellbeing.

For homebound people receiving library services the main questions are:

- Does the service from the library improve your life in any way?
- Do you feel that this service better enables you to live independently?

The survey allowed for free answers, of which one of the most convincing was: "I am 93 years old; the library is 25 minutes' walk away, need I say more?"

## The surveys: academic libraries

Academic libraries generally offer well defined services to an equally well defined population that is bound to use that specific library for study and research. This clear delineation of tasks and population to be served might be the reason that, though user satisfaction surveys are popular since decades, impact surveys have as yet not been considered crucial in academic libraries.

Three projects have been consulted for comparing academic and public library impact surveys:

1. **University library:** University of Salamanca, Spain<sup>3</sup>  
**Year:** 2011  
**Topic:** value for study and research  
**Method:** print survey  
**Respondents:** 81 postgraduates
2. **University library:** University of Illinois at Urbana-Champaign, US ( Jacoby and O'Brien, 2005)  
**Year:** 2004  
**Topic:** impact of reference services  
**Method:** print surveys with follow-up interviews  
**Respondents:** 69 undergraduates
3. **Research library:** Bavarian State Library, Munich, Germany<sup>4</sup>  
**Year:** 2009

3 Unpublished survey. The questionnaire was tested within the work of ISO TC 46 SC 8 Working Group 10 "Methods and procedures for assessing the impact of libraries".

4 The results of the project were reported during the German Librarians' Conference 2009, but not published.

**Topic:** value for research

**Method:** Internet survey of a sample of active users

**Respondents:** 837

The Salamanca survey shows that questions concerning university libraries need not differ greatly from questions in public library impact surveys, though of course the focus is on learning and research. But the responses show differences in the weighting, eg in the listing of the most important benefits. While the public library users in Bologna named leisure and recreation and the library as enjoyable place among the first three, in Salamanca the main benefits were support in studying (56.8%) and support in research (42%). In both surveys the library as quiet place for reading and studying belongs to the three most important benefits.

A similar difference appears in the answers to the possible substitution of a specific library: If this library were closed, where would you find the same information and service? While in the Bologna respondents saw as main alternative “another library”, the students in the Salamanca survey named the Internet as first place to go.

The project in the University of Illinois is mentioned here because it concentrates on one specific library activity, showing how to assess the impact of reference services on skills and confidence of users. Directly after the reference transaction, the students were asked

- whether they had got to know new information resources
- whether they had gained more confidence in information seeking
- whether they had found the reference staff friendly and approachable.

The results showed a correlation between staff friendliness and students’ confidence.

The third example for academic libraries shows the project of a research library with outstanding rare collections. The survey respondents named as benefits the library’s support in research and studying and the time saved via this support. The answers emphasized the value of the library’s large specialised and often unique collections:

- to get current information for their research
- to find special collections for their specific research subjects
- to get essential information that could be found nowhere else.

## Options and limitations of impact surveys

Depending on the type of interviewees and the structure of the survey, two different perspectives can be assessed:

- the respondents’ overall perception of the role and value of libraries,
- actual users’ estimate of the benefits they received by using libraries or a specific library.

But the surveys (or focus groups/interviews) cannot identify

- whether the respondents actually profited in the way they report,
- whether the gain in skills, knowledge, etc that respondents report was indeed due to library support, not to various other influences.

Moreover, it should be kept in mind that the answers can be affected by issues quite outside the library’s influence, for instance:

- the notion that the interviewee is expected to appreciate libraries (“I see libraries as an on-going representation of our culture”, statement of a local politician);

- the respondent's more or less rose-coloured view of libraries depending on very personal experiences in a library ("25 years ago I met my husband in a library").

Survey results should therefore, if possible, be endorsed by methods that rely more on data than on opinions, for instance user observation and data mining, usage statistics or tests of user skills.

In spite of such limitations, impact surveys can demonstrate the positive influence of libraries, especially when free comments illustrate the respondents' statements (eg Chiesi 2011, p.19):

- Question: Did the library help you to save time?
- Answer: No
- Comment: The library doesn't help me to save time, quite the reverse! **But it's always well spent time.**

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# Assessing the impact of workshops run by the Consortium of Ugandan University Libraries – measuring performance through effectiveness of training activities

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## Abstract

This paper describes INASP support to the Consortium of Ugandan University Libraries (CUUL) and summarises the impact assessment carried out to evaluate the effectiveness of training workshops delivered for CUUL library staff between 2008 and 2012. The impact assessment was carried out through using a survey administered online to four different target groups (participants to training workshops, the heads of libraries, the participants' co-workers and the trainers). The findings suggest that the main elements having an impact on effectiveness of training were the selection of participants to training workshops, the sharing with participants of preliminary materials and designing the training in line with institutional needs. Limitations of the methodology, such as low survey response rates, selection bias and technical barriers due to limited internet connectivity and low bandwidth, are also discussed and the strategies employed to overcome them. This study is a contribution towards defining a rigorous methodology to assess training activities designed to support the capacity of library staff from low and middle income countries and which aim to improve services offered to library users.

## Background and context

### INASP

The International Network for the Availability of Scientific Publications, INASP, is an international development charity which works with a global network of partners to improve access, production and use of research information and knowledge, so that countries are equipped to solve their development challenges. Our strapline is "Putting research at the heart of development", which encapsulates our intention to embed the value of research, and of those supplying and producing it, in development work.

INASP is a relatively small organisation with 20 permanent staff based in Oxford and London. An International Board of Trustees and coordinating teams in each of our partner countries guide the programme. In planning and implementing all our activities, we aim to ensure that all the work we engage in to support research is sustainable and thrives beyond our involvement. In each of the 21 countries in Africa, Asia and Latin America where we work<sup>1</sup>, we partner with a country coordinator who is often a key figure in the academic library or research community. The country coordinator usually represents a consortium or develops a coordinating team, which will consult and plan activities on behalf of research and tertiary education institutions in the country.

Through the coordinator, consortium or team, we are able to cooperate with a range of local people, institutions and organisations, allowing them to develop the capacity and local and global relationships needed for library development and research support. INASP's cooperation is offered through structures which are already in place, so as not to duplicate systems or add to workloads. Training, and an opportunity to share experiences nationally and

1 1 INASP website [www.inasp.info](http://www.inasp.info) (accessed 30 September 2013)



internationally, often gives people the confidence and skills and connections to put their plans into action. Over the 21 years of its existence, INASP has developed a network which enables us to make these linkages.

INASP recognises that each country's research community and its needs are different. Therefore, in consultation with in-country partners, we design our work for the individual country's infrastructure, higher education (HE) policies and socio-economic situation to be sure the programme is suitable in each context. The impact assessment described in this paper was carried out under INASP's Programme for the Enhancement of Research Information (PERI). PERI, which ran from 2002 to 2012, worked to support the research communication cycle, through a range of activities designed to develop sustainability and enhance capacity to access, use and produce and communicate research.

Programme elements included provision of electronic research resources at appropriately discounted or negotiated free rates and the related promotional, access, troubleshooting and monitoring and evaluation (M&E) support; capacity development of librarians through short workshops and peer exchanges which built partnerships and enabled experience to be shared, for example in the formation of consortia, and support to researchers in writing and publishing their research and encouraging the use of research to inform both practice and future research.

Working in partnership with local facilitators and institutions, INASP supports several training workshops a year in each of our partner countries in a number of ways, including: the provision of training materials; financial support; the revision of existing training materials, and the development and support of fixed-term capacity building plans.

While INASP has designed a core set of workshops, these are unique in terms of context, types of participants and facilitators. Despite these differences, each intervention aims to facilitate learning with the goal of change – in the knowledge, skills and behaviour of trainees – with a resulting beneficial effect on the institutions. However, as both INASP and our partners are aware, the impact of these training workshops varies.

Sustainability is an important consideration in all of our work. Following the completion of PERI in 2013, we have now embarked on a new programme: Strengthening Research and Knowledge Systems (SRKS). During the course of this five year programme, our ultimate aim is that the activities we currently support will become embedded in institutions and systems in each country and continue without external support.

A European librarian who was attached to INASP during a recent sabbatical wrote:

*“real knowledge mobilisation depends on the human factor and their determination to take part in their own development...INASP's new programme SRKS emphasises the need to promote local leadership in supporting the creation and use of scientific information. It is a strategy based on strengthening academic and research library consortia, but including a variety of actors involved in scientific research systems, those responsible for university policies, and the political authorities of each country.” (Bailey, 2013)*

In preparation for sustainability, INASP has been working with country teams to develop or strengthen library consortia for the past 12 years. As would be expected, each consortium has developed in different ways, with different strengths to serve different purposes; this has ensured that the consortium is country-owned and appropriate for that country's needs and context. Consortia are at different stages: in some countries they are still embryonic, in others they are growing or well established.

In most of the countries that INASP works with, the idea of libraries working together as a consortium is a relatively new concept. Consortia have grown organically and the founder members, with INASP support, have needed to convince other libraries to join by demonstrating that working collaboratively enables libraries to:

- share resources, expand services and programmes
- avoid duplication of effort or activity
- share talent and expertise
- provide superior quality services
- accomplish more than any single organization could do alone.

Much of this is achieved through allowing individuals to develop their expertise and then share it.

## Consortium of Uganda University Libraries

The Consortium of Uganda University Libraries (CUUL) is one of the older African library consortia but was only founded in December 2001. Their membership consists of the majority of the public and private academic libraries in licensed and accredited institutions of higher education in Uganda.<sup>2</sup> They also have provision for affiliate members who may be research institutions or government bodies. They have set a mission to ensure the provision of effective library and information services by Uganda University Libraries through cooperation and resource sharing.

CUUL (in common with most of the consortia INASP works with) does not have any paid staff and is reliant on librarians being able to volunteer their time and having the support of institutions to do this. The Executive Committee is responsible for most decisions, in consultation with a General Assembly of all representatives from all member libraries. CUUL has been exemplary for other up-coming consortia through its structure of functional committees<sup>3</sup>. Between them, the functional committees manage the main activities of CUUL which are:

- E-resources access and payment
- Human resource development
- Advice (eg ICT infrastructure, services)
- Cooperative collection development
- Library marketing and advocacy
- Training

Of particular relevance to this paper is the e-resources committee, which coordinates responsibility for access issues; training; licensing and negotiations; new purchases and renewals, and monitoring and evaluation of usage. In 2012 they submitted a small grant application to INASP, outlining plans for an impact assessment: 'Understanding the Barriers to Change and Impact of CUUL and INASP Training Workshops'. The training activities which they wanted to evaluate and which had all taken place in the previous 3 years, were:

- Building capacity in consortium management and sustainability (2010)
- Monitoring and evaluation of electronic resources (2010)
- CUUL workshop to establish functional committees, agree strategy and work plans (2011)
- Information literacy (2011)
- Implementation of library management systems (2012)
- Marketing and advocacy (2012)

## Study design and implementation

### The target groups

The impact assessment 'Understanding the Barriers to Change and Impact of CUUL and INASP Training Workshops' was targeted at a population of 164 individuals coming from four key stakeholder groups: the participants in training workshops organised for CUUL between 2010 and 2012 (98 individuals); the heads of libraries (who were expected to be, in the majority of the cases, the participants' line managers; 38 individuals); co-workers of the participants, who could potentially be beneficiaries of similar capacity building initiatives in the future (20 individuals), and the trainers who facilitated the workshops (8 individuals).

The entire target group was reached through email and asked to complete an online survey within one month of receipt of the email. Overall, a 48% average response rate within the groups was achieved with 78 individuals

<sup>2</sup> CUUL website available at <http://cuul.or.ug/> (accessed 24 September 2013)

<sup>3</sup> CUUL website page on committees: <http://cuul.or.ug/functional-committees/> (accessed 24 September 2013)

completing the survey. We considered this a satisfactory response rate, considering that the average response rate for similar studies ranges between 20% and 47% (Nulty, 2008). A higher response rate was reached among the trainers (63%), followed by participants (59%) and heads of libraries (47%). As might be expected, the lowest response rate was among co-workers (25%).

It is only possible to draw a demographic, educational and professional background profile of the respondents to the survey as no preliminary data were available on the demographic composition of the population.

Among the respondents, just under 60% were females. Assuming our sample is representative of the population, positions in academic libraries in Uganda are mainly occupied by women. This result is in line with research finding that the academic library profession is female-dominated (Charmichael, 1992; Piper and Collamer, 2001; Gordon, 2004; Wiebie, 2004). The strongest evidence of this was among heads of libraries, with more than 70% of respondents being female. On the other hand, an almost perfect gender balance was shown among the participants in training workshops.

Target group	Males	Females	Totals	Percentage of women between groups
Participants	24	26	50	52.0%
Heads of Libraries	5	13	18	72.2%
Co-workers	2	3	5	60.0%
Trainers	1	4	5	80.0%
<b>Totals</b>	<b>32</b>	<b>46</b>	<b>78</b>	<b>N/A</b>
<b>Totals (%)</b>	<b>41.0%</b>	<b>59.0%</b>	<b>100.0%</b>	<b>N/A</b>

Table 1: Gender breakdown on the entire sample and within groups

The majority of the population had a Bachelor's degree; almost 40% of respondents had a Master's degree or a PhD. Almost 90% of respondents reporting higher levels of education (Master's or higher) were females. This is not surprising considering that the majority of heads of libraries in our sample were women and we would expect them to hold, on average, a higher title compared to other roles in the library. To reinforce this, the fact that the training workshops were targeted at library staff and not to heads of libraries, helped to explain why an almost equal gender balance was instead achieved among the participants' group.

Level of education	Overall	Total	Male	Female
PhD	2.6%	2	0	2
Master's	37.2%	29	6	23
Bachelor's	55.1%	43	23	20
Diploma	3.8%	3	3	0
High School	1.3%	1	0	1
<b>Total</b>	<b>100%</b>	<b>78</b>	<b>32</b>	<b>46</b>

Table 2: Level of education (overall and broken down by gender)

## Evaluation questions and methods

One main evaluation question underpinned the rationale of this research:

- Were the training workshops delivered by INASP and CUUL successful in reaching the expected capacity development objectives?

This question has been broken down in three sub-questions to investigate different aspects on which elements contribute to successful training workshops:

- Did the training workshops have a direct impact on increasing the knowledge, skills and behaviours of the participants?
- Did the training workshops have direct impact on the knowledge, skills and behaviours of participants' co-workers?
- Did the training workshops have a direct impact on practices of the participants' organisations or institutions?

The survey tool was developed to collect evidence to answer the above questions and ensure that the main factors that contribute to successful training were identified. The approach used was a triangulation of online questionnaires administered to the four target groups of the population. The questionnaires were designed in order to explore the same evaluation questions within the target groups and allow for cross-referencing of information – for example all the target groups were asked a set of questions on participants' selection processes (Capillo et al., 2013). The online questionnaires asked questions on the background of the respondents and required participants to recall specific information on and assess the training workshops, to identify weaknesses of the training design and implementation and suggest how to improve future training delivered by INASP and CUUL. The questionnaire took on average between 10 and 15 minutes to be completed and submitted.

### Limitations of the study design and mitigation strategies

It is crucial, in any empirical study design, to identify its weaknesses and challenges and develop mitigation strategies that will be implemented to overcome them.

A set of challenges was identified in administering the questionnaire remotely through an online questionnaire designed with Survey Monkey. Three main barriers were identified as potential obstacles to a rigorous analysis.

Firstly, there is compelling evidence that response rates to online or remotely administered surveys are significantly lower than to paper-based surveys. Nulty (2008) reviews the literature on the topic and estimates an average positive difference in response rates measuring circa 20 percentage points in favour of paper-based surveys. Based on empirical research and INASP best practices, the risk of low response rates was mitigated through including a material incentive for the respondents<sup>4</sup>, preparing an individual and personalised email to invite to participate in the study, sending a reminder email near the deadline of the scheduled closure of the survey (Deutskens et al., 2004; Misra et al., 2011)<sup>5</sup>, and extending the survey administration to multiple target groups to generate peer pressure among different groups to complete the survey – for example, through some informal communication among co-workers and top-down pressure from the heads of libraries towards their staff to complete the survey.

A second challenge is represented by the risk of selection bias (Baker 2000; Prennushi et al, 2002), ie the possibility that individuals with specific characteristics and background were more likely to submit the survey, thus providing a non-representative sample of the whole population. For example it could be argued that individuals who submitted the survey were the most enthusiastic and dynamic, while individuals who did not benefit from the workshop were ex ante less likely to benefit from it and implement change and equally less likely provide information ex post by answering the survey (Capillo et al, 2013). If this were the case, it could be postulated that the estimated impact of the training workshops was subject to upward selection bias. Similarly, the case for a downward selection bias could also be made if individuals whose expectations were not met by the workshops were more likely to answer the survey. The empirical literature on rigorous impact evaluation usually identifies the use of control groups of individuals who did not benefit from the programme to compare with the treatment group (in our case, the participants in training workshops). In this case, practical barriers together with methodological caveats did not allow the survey to be administered to a control group

Several approaches were used to mitigate the risk of selection bias:

- Making it explicit that the scope of the survey was not to assess the capacity of the individuals but to receive objective feedback on how to improve similar training activities in the future;
- The triangulation between four different target groups that ensured that common trends and contradictions were identified within and between groups, and
- Discussing the main findings of the study during a validation meeting with key stakeholders working within CUUL.

<sup>4</sup> Being entered into a prize draw for a tablet computer

<sup>5</sup> After the reminder was sent, an additional 19% of participants and 13% of head of libraries submitted the survey; the estimate was not computed for the other target groups

The third challenge identified in carrying out this evaluation was related to technical barriers in administering online surveys, due to poor connectivity and low bandwidth in Uganda, in common with many low and middle income countries (LMICs). For example Jackson (2009) estimates that between 2004 and 2008 the size of an average web page has increased by 300%, whilst the average bandwidth available to an individual user in a LMIC increased by no more than 60% in the same period. Secondly, it has been observed that some of the email addresses to which the survey was sent were no longer active so the email bounced back; the available tools did not allow tracking of invitation emails which were filtered and treated as junk by the recipient's account. Developing a "light" survey tool, with the requirement to download multiple pages kept to a minimum, and a careful choice of the subject line of the invitation email that, for example, did not include "junk-sensitive" terms such as 'prize' and 'drawing' were the mitigation strategies respectively used to deal with internet connectivity and mail filtering.

## Validation workshop

Following a preliminary analysis of the findings by INASP, a one day validation workshop was held, facilitated by INASP and attended by 28 representatives of CUUL member institutions. The objective of this workshop was to review the findings of the survey and discuss the implications for future CUUL training activity design and institutional level participation in such training. As a result of this day, a set of recommendations was prepared to guide CUUL (and INASP) training design, selection of participants and post training support processes. These recommendations were presented to all CUUL members at their following Annual General Meeting. The INASP facilitators of this meeting reported good participation and commitment.

## Findings

The impact assessment process established that the training workshops delivered by INASP and CUUL were generally successful in reaching the expected capacity development objectives and that as a result of the workshops change did take place in the participants' organisations. It also raised some suggestions which could make the workshops more effective in increasing the knowledge, skills and behaviours of the participants and their co-workers and thus altering practices in their workplaces.

## Change did take place

Co-workers were the group which identified specific changes that took place following their colleagues' participation in a training workshop. One co-worker commented: "Things have changed. Colleagues who have been training in CUUL workshops have been training us too....this has indeed changed our performance and attitudes towards our work." Another commented "Library services now include the e-resource component. Readers are now able to access the e-resources, such as the online journals, which are essential for the post-graduate students. Furthermore, the staff who have received the training have improved their service delivery. Also, CUUL staff visit institutions, and that kind of interaction is good and should be promoted."

Barriers to change were also identified:

- The workplace was not ready to apply the changes
- The employee was too busy and had other priorities
- The workshop did not give the employees the necessary skills/knowledge/understanding to apply the changes
- Trained staff left their post following the training workshop. As one commented: "Quite often we get disappointed when a particular staff undergoes the training and soon after resigns. This creates a vacuum in the institution."
- Lack of financial resources to implement the changes

## Information was shared after the workshop

Participants did report back to colleagues and make efforts to share what they had learnt during the training workshop. Participants shared what they have learnt by producing a written report on the workshop for sharing with colleagues (70%) or preparing a plan of what changes should be considered and implemented (53%). In almost three-quarters of cases the participants followed standard practice within their institution in sharing of information post-attendance at a workshop. Only 6% of participants did not take any particular follow-up action.

## Selection of participants

As also hypothesised by CUUL and the impact evaluation design, the selection of people for participation in training was an area that potentially impacted the effectiveness of that training. The most appropriate people were not always selected to be trained, calling into question the selection processes used within institutions/CUUL and whether more advance information is required to support the most robust selection processes possible. All respondent groups – facilitators, heads of libraries, participants and co-workers were concerned about the selection of participants.

A range of selection methods were used, which included balancing opportunities for individuals with matching who was best suited to participate considering their roles and responsibilities and the specific aims of the training. The survey found that the selection processes did not always result in the most appropriate person being trained. While only three participants stated that they were not in the right position to have attended the training, almost 50% of those that answered the relevant questions thought that the selection process needed to be improved.

## Workshop preparation and content

Improvements in advance information, or better timing of the sharing of advance information were identified as ways to make the workshops more effective. Almost 70% of participants wanted more information in advance of the workshop and 60% of the facilitators recommended providing more information in advance.

The content of the workshop and its length were areas of concern. More than 70% of participants wanted improvement in the content of the workshops. On nine occasions, the heads of libraries believed that the workshop did not give the employee all the necessary skills and knowledge to make changes on return to the workplace. The facilitators also judged that workshop content and/or the length of the workshop was not sufficient to bring about the changes that facilitators envisaged would result from the training.

The preparedness and techniques of the trainers was identified as an area to improve. Almost half of the participants suggested having more prepared trainers would be an improvement, and 60% recommended using different training techniques.

## Open questions

Several questions emerged from the research that would be useful in supporting INASP, consortia and libraries in deciding what policies and approaches could be in place to try to ensure consistently more effective training workshops being undertaken in the future.

- How can the selection of people for training be improved to try to ensure a better match between participants and the training activity aims and objectives?
- What kind of advance information sent to participating institutions about a training opportunity would improve the effectiveness of that training? How far in advance should that information be sent and to whom?
- How can training workshop content and design be improved? Would longer workshops help, and if so what does this imply?
- How can it be ensured that facilitators are better prepared for their role?
- How can it be ensured that institutions participating in training activities are in a position to make changes following that training?

- On-going support is clearly an important issue in the ability of participants to affect change, what kind of support is needed and from whom?

## Conclusion and application

This impact assessment has provided INASP with a methodology with which to help other consortia in its network evaluate the effectiveness of their workshops. It has also fed into the training policies INASP is developing as it moves into its new programme, Strengthening Research and Knowledge Systems. As a result of this study, INASP has drawn up three recommendations which we are now applying to our training (Deans 2013).

### Apply a rigorous selection process of participants

- Establish a standardised and approved process for identification of trainees to be circulated and adopted by all institutions wishing to participate in future training events.
- Staff should only be sent to the training if they meet the participant profile and are in a position to follow-up post-training as outlined in the advance information.
- Information about the training should be sent well in advance (three months in advance was decided as appropriate by one library consortium in the South) to allow for an accurate selection of participants.

### Provide pre- and post-training activities

- Design training workshops with both pre- and post- workshop tasks for participants to complete. Ensure that such tasks are proportional to the training being provided and that they relate directly to the application of learning from the training in question.
- Ensure that staff selected for training is aware of any post workshop tasks and follow up that is required and that support is provided to ensure such follow-up is completed appropriately.
- Advance material, including details of post workshop tasks (to help prepare participants and ensure they understand workshop follow-up requirements), to be sent to selected trainees at least one month in advance of the training.

### Align the training objectives with the needs of the institution

- Conduct a training needs assessment of the involved institutions to identify common training needs
- Depending on the findings of the training needs assessment, a two tier approach to training (advanced and basic) should be adopted for future training; to ensure that training is available to all members but that they are only participating in the training that they are in a position to benefit from.
- Adopt a multi-year approach to training and skills development for members so that successive training activities build on each other.

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# Looking for links: do universities produce more scholarship when their libraries invest more in electronic resources?

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## Introduction

Do universities produce more scholarly publications when their research communities are better resourced with electronic library materials? According to the findings of two correlational studies summarized in this paper, the answer is “yes”. Both studies detected a positive and statistically significant relationship between electronic libraries material expenditures and the number of journal articles produced at each US doctoral institution, while controlling for such relevant institutional factors as the number of faculty members, research funding, and other characteristics presumed to influence scholarly output at each university. Perhaps the most intriguing finding, however, is that both studies observed a decrease in number of journal articles being produced as expenditures for non-electronic library materials increased. This negative correlation between investment in traditional library materials and scholarly output was also statistically significant in each instance. This paper describes the catalyst for both studies, the research designs employed, and explores why scholarly productivity may be positively linked to one type of library resource while negatively linked to another. The conclusion is that the efficiencies of electronic resources offer such advantages over the use of traditional library materials in support of research that productivity suffers as institutions dedicate a greater portion of their library collections budgets to print materials at the expense of electronic materials.

A 2009 membership survey conducted by the Association of College and Research Libraries (ACRL 2010) identified “concern about demonstrating library value and effectiveness” as one of the most important considerations on the minds of responding library directors. According to Michael Germano (2010), “the ultimate goal is a demonstrable strengthening of support from user populations that will translate into the avoidance of deeper or ongoing cuts during the current economic climate.” Yet, the call to demonstrate library value can be a gauntlet cast down more often than picked up, due to the difficulty in linking a library’s contributions to campus-wide outcomes that are more manifold than manifest. Both studies explored in this paper are designed to overcome this challenge by incorporating representative measures of as many of the drivers of scholarly productivity as practicable for more than 200 institutions, thus allowing for the examination of how library characteristics relate to scholarly output while accounting for other relevant campus factors that are likely influences. By using this type of approach, both studies can offer insight into how libraries contribute to scholarly productivity in an empirical sense – something that cannot be achieved by examining any single institution. While finding a linkage between library investment and scholarly productivity can only imply a return on investment to the institution (no research design can prove causality so long as we are unable to confine libraries and universities to a laboratory) an empirically established relationship is preferable to the absence of evidence. Furthermore, if a reasonable theory can establish a context for the interpreting correlation, it can provide a reasonable basis for the claim that the correlation being measured represents an actual impact of libraries services.

## First study

The earlier of the two studies began life with no particular interest in electronic library materials. Rather the goal was to search for more general evidence suggesting that libraries confer value to their host institutions when properly resourced. As such, a wide variety of library measures were drawn from ACRL’s *Annual Trends and Statistics Survey* (eg total expenditures, library material expenditures, volume counts, staffing levels, etc) using Counting Opinion’s *ACRLMetrics service* ([www.acrlmetrics.com](http://www.acrlmetrics.com)). These library measures were compared to journal article output data from Thomson Reuter’s ISI Web of Knowledge to determine if a linkage was detectable. The study also incorporated a broad array of institutional characteristics unrelated to libraries such as research expenditures, PhDs awarded, grant dollars, faculty count, university revenue, year-end value of the endowment, etc, which were collected from the United States Department of Education’s Integrated Post-Secondary Education Data System (IPEDS). All told, more than 25 different library and non-library institutional measures were represented in the study as totals for the

years 2005 to 2009. The journal article output was staggered by comparison, representing totals for the years 2006 to 2010 based on the assumption that the inputs must necessarily precede the outputs. The choice to examine a span of years, rather than a particular year, was based on the logic that it is too imprecise to tie a specific year's inputs with a specific year's output. The Carnegie Classifications (2010) were used as the basis for identifying doctoral institutions, though several were excluded due to a lack of reported data. Ultimately, 234 institutions were included in the study. For a fuller discussion of this study, including an exhaustive list of the variables, data limitations, and iterative details, please see the proceedings of the 2012 Library Assessment Conference (Rawls TBA).

Potential correlations were explored using ordinary-least-squares regression analysis, where the number of journal articles served as the dependent variable and the institutional characteristics served as the independent variables. After exploring several different combinations of independent variables in a number of iterations, the factors deemed to be most strongly, consistently, and significantly related to journal article output were as follows: total university revenue, number of faculty members, research expenditures, the number of professional librarians, electronic library material expenditures, and non-electronic library material expenditures. Other variables were also significant, but were so highly related to the variables represented in the final model that they were essentially surrogates for one another and, therefore, had to be excluded due to the issue of multicollinearity. Level and consistency of statistical significance as well as size of standardized coefficients were used as a basis for which significant variables were excluded or retained. Finally, it was necessary to include an indicator variable for Harvard University to control for the outlier effects that their unparalleled library expenditures and staffing levels were exerting on the rest of the dataset.

Independent Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-1401.94136	303.274		-4.623	.000
Total University Revenue	0.00000	.000	.21251	3.961	.000
Faculty FTE	0.78292	.355	.10485	2.203	.029
Research Expenditures	0.00002	.000	.33949	8.250	.000
Number of Professional Librarians	30.98683	7.519	.21828	4.121	.000
Electronic Library Material Expenditures	0.00052	.000	.18403	4.661	.000
Non-Electronic Library Material Expenditures	-0.00026	.000	-.09610	-2.739	.007
Harvard	21924.60497	3282.390	.17972	6.679	.000

Table 1. "Best fit" model from first study.

*Dependent variable: total number of articles published by faculty and other researchers associated with each US doctoral institution from 2006 to 2010 according to ISI Web of Knowledge.*

The model produced an adjusted r-squared value of .925, which was roughly consistent with other iterations. Among the library-related measures, the number of professional librarians had the largest standardized coefficient, suggesting that this measure was more strongly associated with increased scholarly productivity than electronic material expenditures (.218 to .184). While this finding is encouraging and deserving of further investigation, the dual results of the electronic and non-electronic library materials were even more intriguing. So, for reasons discussed below, this aspect of the findings became the primary focus of both studies.

The inverse correlation between non-electronic material expenditures and journal article output was unforeseen – in that the expectation for independent variables was that each one would have a relationship that was either significantly positive or one that was non-significant. But these results suggest that for each additional dollar invested in traditional library materials, scholarly productivity decreases. How could this be? It is not as though print materials have no use to researchers, let alone serve as some sort of hindrance. Furthermore, volume counts and other measures of the physical collections did not register a significant or negative correlation. Instead, a plausible interpretation is that electronic library resources are more efficient in supporting research needs than print materials. To illustrate the obvious, think of a researcher in her office conducting a single, well-worded search on the library's website and gaining instant access to a dozen relevant titles for her literature search. Contrastingly, think of her at a poorly resourced institution, finding only some of her needed articles and having to work through interlibrary loan or make a trip to the library to wade through the bound periodicals in order to access the remaining portion of the same titles. The time difference between these two scenarios is likely measured in hours or days. Likewise, access to

digital archives, databases, and secondary datasets may preclude a trip to far-flung archives or the need to collect data, potentially speeding up a research project by days, weeks, months, or even allowing the research project to take place at all. When all of these time savings, however great or small, are multiplied by each member of the institution's research community, it is not surprising that those institutions that are better endowed with electronic materials are able to produce more scholarship over a given period of time than those that are not.

Yet, the efficiency alone does not entirely explain why print expenditures would be significantly negative. To illustrate why this is the case, it is important to point out that non-electronic library materials expenditures is a not measure collected in the ACRL survey. Rather the variable was derived by subtracting each institution's reported electronic library material expenditures from their total library material expenditures. This means that the non-electronic and electronic materials variables serve as two components that comprise the library's overall materials budget. Therefore, as electronic material expenditures grew as a total portion of the budget from one institution to the next, the non-electronic material expenditures necessarily shrank. Conversely, as the ratio of non-electronic library materials grew, it was at the expense of electronic materials. The suggestion is that those institutions deciding to invest more in non-electronic materials – or perhaps those who experienced a slower transition from print to electronic during the span of this study – paid an opportunity cost in terms of journal article production. Thus those universities that spent more on non-electronic library materials experienced a loss in scholarly productivity instead of realizing a potential gain.

The nature of the relationship between non-electronic materials and scholarly output offers unique evidence in support of the study's original hypothesis. Recalling that the initial intent was to demonstrate empirically whether well-supported libraries are generally associated with higher levels of scholarly production, the strong positive correlations that both electronic library materials and the number of professional librarians exhibited with journal articles arguably achieved that goal (total library material expenditures and total library expenditures were also strongly related to journal articles, but again, were removed for multicollinearity). While realizing the original objective of detecting linkages between library inputs and scholarly output, however, the results cannot prove causality – as is ever the case with a quasi-scientific research design. In fact, were it not for the negative coefficient associated with the print materials, it would be simple to challenge these results with the argument that the findings prove only that well-off doctoral institutions have more of everything than less well-to-do universities. It follows that those institutions of greater prestige and deeper funding are simultaneously in a better position to support research, to spend more lavishly support their libraries, and to produce more scholarship. That all are strongly correlated could be interpreted as a rising tide that lifts all boats. The print material expenditure results, however, confounds this notion of a rising tide by going in the opposite direction of every other statistically significant measure associated with scholarly productivity. When coupled with the theory that print material expenditures represent an opportunity cost to scholarly productivity, a basis is provided for contending that some degree of dependency is being measured between library materials expenditures and scholarly output in this model. This contention could be further strengthened if the results were to be replicated.

## Second study

Concurrent with the completion of the first study – and quite fortuitously for its next steps – my institution, Virginia Commonwealth University, entered into a subscription to Academic Analytics (AA). This is a sort of business intelligence tool for the academic world that measures faculty scholarly productivity. It attempts to do this by attributing scholarly works, citations, grants awards, and honorific awards to individual faculty members and then aggregating that information at the PhD program level and again at the institutional level. This allows university administrators to analyze the faculty scholarly productivity of each PhD program or the overall university within the context of other programs and institutions around the nation.

Access to the AA system afforded the opportunity to replicate the first study using a different source of dependent variable data (CrossRef), a slightly different time frame (2008-2011), and by drawing on a subpopulation of researchers at each institution (only those faculty members associated with PhD programs) instead of the entire research community. Just as attractively, it also afforded an opportunity to demonstrate that library investment is strongly correlated to research productivity using the very tool that administrators use to measure that productivity. Given that “demonstrating library value” means generally “demonstrating library value to university administrators,” this aspect was almost as important a motivation for the second study as the replication aspect.

The second study also necessitated changes in the independent variable data. The IPEDS and ACRL data used to represent library and other institutional characteristics were re-collected for the years 2007 to 2010 synchronize with the new time frame of the dependent variable data. Additional independent variable data from AA was also introduced to the dataset as well. AA data for the number of faculty members as well as the number of grants and grant dollars awarded were included alongside similar measures collected from IPEDS. The idea was that it may be better to use AA measures in place of similar IPEDS measures, where possible, because the AA independent variable

data was proportionally related to the dependent variable data. In other words, given that only journal articles published by faculty members associated with a PhD program were being counted at each institution, it would make better sense to count only those faculty members associated with such programs, instead of the entire faculty, when measuring how faculty size relates this study's measure of scholarly output. Likewise, the same logic follows for the grant-related measures collected from AA over IPEDS grant and research expenditures data. In this way, variations in the size of each university's PhD enterprise relative to the overall institution's size would be kept from skewing the results.

Again, OLS regression analysis was used to test the relationship between journal output and the variety of institutional and library characteristics represented in the dataset. The results of the final model bore a resemblance to those of the first study, particularly where electronic and non-electronic material expenditures were concerned, though some notable difference occurred as well. The combination of independent variables observed most strongly to correlate with journal article output were: grant dollars, number of PhD faculty, number of PhDs awarded in research fields, electronic library material expenditures and non-electronic library material expenditures. The model produced an adjusted r-squared value of .969.

Independent Variables	Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
(Constant)	-317.09038	89.028		-3.562	.000
PhD Faculty Count	2.32040	.287	.29340	8.077	.000
Grant Dollars	.00002	.000	.57484	23.070	.000
PhDs Awarded – Research Fields	2.40900	.669	.11100	3.598	.000
Electronic Library Material Expenditures	.00011	.000	.07997	3.210	.002
Non-Electronic Library Material Expenditures	-.00005	.000	-.03317	-1.983	.049

Table 2. "Best fit" model from Academic Analytics study.

Dependent variable: total number of journal articles published by faculty members associated a PhD program at US doctoral institutions from 2008 to 2011, according to CrossRef.

The grant dollars and PhD faculty count variables in this model can be seen as more relevant surrogates for the research expenditure and faculty count variables found the first study. The variables for total university revenue and the number of professional librarians were not statistically significant. Both revenue and number of librarians are more realistically driven by overall institution size than by the number of PhD programs, suggesting that these measures could simply be out synch with the dependent variable data used in the study. Likewise, once professional librarians were no longer included in the model, the indicator variable for Harvard proved unnecessary.

Electronic and non-electronic materials expenditures each had a similar relationship to journal articles as in the first study, with the former being positively and the latter being negatively correlated, with both relationships being statistically significant. The coefficients were lower, but this too could be a result of scale produced by comparing overall material expenditures to a subset of each institution's scholarly output, as opposed to all scholarly output in the first study.

## Conclusion

There are few in the academic library world that need be told that electronic resources offer advantages over traditional materials. Otherwise, we would not find ourselves so far advanced into the sea-change from print to digital. So what purpose is served by these two empirical studies that tell us what we already intuitively know? The answer is that it provides a credible argument that universities can realize a detectable return on their investment in libraries, depending on how that investment is spent. This argument would be less plausible if print materials had not proven to be so spectacularly less productive than electronic resources. But because scholarly productivity seems to ebb and flow so significantly based on how an institution comprises its collections budget, the contention that scholarly output is responsive to changes in library characteristics is much more persuasive.

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# The Impact of providing Information Resources on end-users' satisfaction

## Case study: The Library of Arab International University in Syria

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### **Abstract**

#### **Purpose**

The purpose of this paper is to measure end-users' satisfaction with information resources (IRs) provided in the Arab International University Library (AIUL) in Syria. It attempts to investigate to what extent the provision of IRs can affect the end-users satisfaction.

#### **Design / methodology / approach**

This study was conducted using a printed questionnaire for undergraduate students, and a Smart-Survey for academic staff.

#### **Findings**

Results reflected that the end-users were satisfied with the IRs provided. Furthermore, the results showed that providing sufficient quality and quantity of the IRs increases the satisfactory level. In addition, a relationship between the end-users' satisfaction and demographic variables is articulated.

#### **Limitations**

This study limited to one private academic library in Syria which is the AIUL. This paper concentrates on a part of results collected in terms of understanding end-users' needs. The emphasis was made to assess the satisfaction of undergraduate students and academic staff, while other stakeholders (Librarians and Administrators) were excluded in this research.

#### **Originality / value**

The significance of this research is to shed light on the academic libraries of Syrian private universities which is recently founded. It is important to understand the end-users' needs by assessing their satisfaction of the library performance, in addition to exploring the relationship between the satisfaction and the demographic variables.

#### **Keywords**

End-users, Satisfaction, AIUL, demographic variables, Information Resources.

## Introduction

Academic libraries (ALs) are considered the “heart” of academic institutions. They are an appropriate place to obtain information and deliver information services. The role of ALs has changed as a result of adopting information technology that affected ALs and education systems in general. However, this adoption has positively influenced ALs, it made ALs more complex and challengeable for users (Cullen, 2001; Kassim, 2009). Although the technology facilitates the access to the IRs and provide new format of the library services, end-users require to develop their skills in order to deal with a new ALs’ environment.

Assessing the value of the IRs and their satisfactory level has been considered essential to enhance the library performance. Traditionally, measuring the library performance has been accomplished based on the numbers of the IRs offered and physical visits. Many years later, the emphasis has been made for marketing, meeting users’ needs, and increasing the end-user satisfaction (Adeniran, 2011; Kiran, 2010; D.A Nitecki, 1996).

This paper discusses a part of the results of a PhD project which aims to meet the end-users’ expectations and requirements of the AIUL in Syria. The following section presents an overview of the literature in users’ satisfaction, followed by an explanation of the research methods used. Then, the results are untaken and discussed relating to the research objective. Finally, the research concludes on the findings.

## Literature review

End-users’ satisfaction in ALs has been significantly articulated in the literature review since the late of 1990s. It has been considered an indicator to assess the quality of the IRs and library services perceived (Bergman & Holden, 2010; Cullen, 2001; Jayasundara, 2008). Furthermore, several studies have been addressed the relationship between the end-users’ satisfaction and the quality of library services and IRs provided (Pitt et al., 1995; Yu, 2006; Reilly and Westbrook; 1989 and Ankeny, 1991). Critically, measuring the level of the library performance has been shifted from traditional measurement; based on the number of the IRs and the library staff, frequencies of attendance, and budget; to be focused more on social and commercial issues of a service quality such as marketing, end-users’ needs and satisfaction (Brophy, 2006; Kassim, 2009; D. A Nitecki & Hernon, 2000). It is a result of adopting the technology in the ALs and educational process.

Several authors (Adeniran, 2011; Dadzie, 2005; Kassim, 2009; Kassim & Zakaria, 2006; Majid, Anwar, & Esienschitz, 2001; Martensen & Grønholdt, 2003) have indicated the main features that lead to increase the end-users’ satisfaction as demonstrated in table 1.

	E/IRs	Library Services	Staff	Convenient Environment	Technical Facilities	Equipment
(Majid et al., 2001)	√	√				√
(Martensen and Grønholdt, 2003)	√		√	√	√	
(Dadzie, 2005)	√					
(Kassim and Zakaria, 2006)	√					
(Kassim, 2009)	√	√		√		
(Adeniran, 2011)	√			√		

Table 1 features of end-users’ satisfaction

Table 1 presents that providing e/IRs (which means providing various types of information materials such as books, journals and reference in a printed or electronic format) is an essential feature in increasing the level of the end-users’ satisfaction. Hence, enhancing the library performance is based on a set of features which should be combined for a better achievement. Providing an adequate collection of e/IRs is an important feature to increase the end-users’ satisfaction.

## Users' satisfaction and demographic variables

Demographic variables have been considered substantial characteristics that influenced end-users' satisfactions with the IRs. Several studies have been conducted to investigate the demographic characteristics of the end-users and the relationships between them and other variables (Arishee, 2000; X Shi, 2003; Xi Shi, Holahan, & Jurkat, 2004; Yu, 2006). However, Sandore (1990) points out that there is no difference recorded between students' profile and students' satisfaction, whereas Allen (1989) indicates that 'gender' has an extreme effect on students' satisfaction. He states that females hold a more positive attitude to the CD-ROM system. Furthermore, Arishee (2000) determined an essential relationship of end-users' satisfaction on the quality of library services, IRs and other variables, such as length of stay, native language and English language proficiency, and academic levels of study. However, another study by him shows that no statistically significant relationship with user satisfaction in terms of other demographic variables, such as gender, age, and undergraduate major field. Furthermore, Kassim (2009) concludes significant differences in the satisfaction level between participants and their faculties in respect to a structure, IRs, and high quality of service. Therefore, demographic variables should be taken into consideration as important variables that can affect the end-users' satisfaction when ALs seek to assess their library performance.

## Case study: AIUL

The AIUL was established in 2005. It seeks to support its users in terms of providing a high quality of service, copious and highly appreciated collections of IRs and high academic standards. The library consists of a central library and five branches (Computer & Communication Engineering, Business Administration, Pharmacy, Civil Engineering, Architecture and Fine Arts) established to cover the end-users' needs.

All library branches work under the umbrella of the Information Resource Department. The library provides a set of essential services such as circulation, book reservation, and free access to online services, in addition to a collection of the IRs which are available online. It contains of 22000 printed books, 14000 e-Books, 60 printed periodical titles and 22890 e-journals. Moreover, these collections cover a wide range of general and specific subjects related to the institutions specialization domains at AIU (AIU, 2011). Open shelves and the OPAC are being adopted in order to serve patrons. They are all fully automated and up-to-standard regarding MARC, DDC, AACR2, and hosted using HORIZON 8.0.

## Research methods

A printed questionnaire was distributed to undergraduate students (USs) in order to measure their satisfaction with the library performance, while Smart-Survey was implemented to the academic staff (AS) for the same purpose. The decision to use different formats of the questionnaire for different stakeholders was taken by AIUL's. In this paper, a part of the data collected from both formats of questionnaires has been presented to determine the satisfactory level of the end-users with the provision of IRs.

The questionnaires were piloted to assess the validity and the reliability of the data collected. It is hoped that this investigation will assist to increasing the level of satisfaction and meet the users' needs in order to support them in their educational environment.

## Key findings

SPSS version 18.0 has been conducted to code and analyse gathered data. Moreover, Excel was used as well in terms of drawing the outputs used diagrams. Data from 228 out of 252 printed questionnaires of the USs were gathered responded from the six faculties, while a total of 30 out of 205 Smart-Survey of the AS from the same faculties were returned. Demographic data for both end-users were taken into consideration as an important aspect of data collection. (See table 2)

USs			ASs		
Statistic Data	Categories	Percent	Statistic Data	Categories	Percent
Gender	Male Female	58.3% 40.8%	Gender	Male Female	51.72% 48.28%
Age	18-22 23-27 28-32 33+	65.8% 26.3% 5.3% 1.2%	Age	Less than 30 30-39 40-49 50-59 60+	6.90% 27.59% 44.83% 13.79% 6.90%
Users' status	1st year 2nd year 3rd year 4th year 5th year	14.0% 21.5% 27.2% 21.5% 14.5%	Teaching experience	1-5 years 6-10 years 11-15 years 16-20 years More than 20 years	25.00% 21.43% 32.14% 14.29% 7.14%
Faculties	Business Fine Arts Pharmacy Civil Engineering Architecture Informatics and Communication Engineering	22.8% 8.3% 26.3% 9.2% 11.8% 21.5%	Faculties	Business Fine Arts Pharmacy Civil Engineering Architecture Informatics and Communication Engineering	21.43% 14.29% 14.29% 14.29% 14.29% 21.43%

Table 2: demographic data of the end-users of the AIUL

As seen in table 2, the concern was made for gender, age, end-users' status/work experience and faculties. For the USs, the data demonstrate that approximately 60% of the participants were male and more than 65% were between 18 and 22. Additionally, in terms of users' status, over 27% of USs were in the third year. For the faculties, 5% of each faculty have been taken as a research population. Thus, the number of participants of each faculty was based on the whole number of users. In contrast with the AS, approximately 52% were males, less than 45% were belonging to the age group (40-49) and more than 32% of them had (11-15) years as experiences of teaching. Over 20% of them were equally from faculties of Business and Informatics and Communication Engineering.

### End-users satisfaction: Accessing the AIUL

Participants were asked to indicate to what extent they used to interact with the AIUL. Figure 1 illustrates the frequency of end-users access.

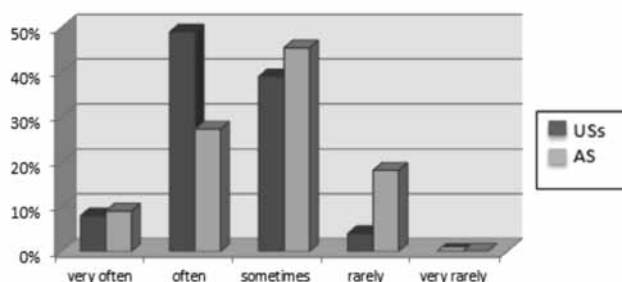


Figure 1: Frequency of users access

As demonstrated in figure 2, approximately 49% of the USs "often" accessed the AIUL, while less than 30% for the AS. Furthermore, approximately 39% of the USs, and more than 45% of the AS accessed the AIUL "sometimes" according to

their needs. Conversely, less than 5% of the USs and over 18% of the AS accessed the library rarely. The frequent access reflects the end-users satisfaction on the AIUL, and indicates that their access to the library was based on their needs.

Furthermore, the participants were asked to identify how many hours spend in the AIUL per week. (See Figure 2).

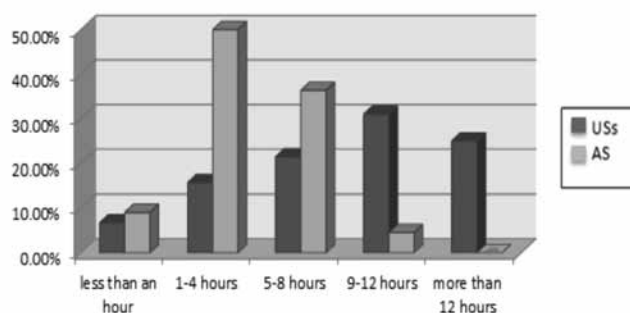


Figure 2: Time spent weekly in term of accessing AIULs

According to figure 2, a distinct difference between the USs and AS. Approximately 50% of the AS attended the AIUL between (1-4 hours) per week. Additionally, 30% of the USs visited the AIUL between (9-12 hours) weekly, while less than 5% for the AS. On the other hand, approximately 25% of USs visited the libraries for more than 12 hours. That might be because the USs used the library as a place and to use the library services and the IRs, while the AS may access the AIUL for just borrowing printed IR due to their time being taken up by teaching and research, while they might access e-IRs from their offices or houses.

### End-users' satisfaction with finding information

Since ALs have considered an essential place in which IRs are collected for the purposes of using and meeting the end-users' needs of information, the end-users were expected to show interest in terms of finding the IRs. Thus, they asked to rate their satisfaction with finding the information required. (See figure 3).

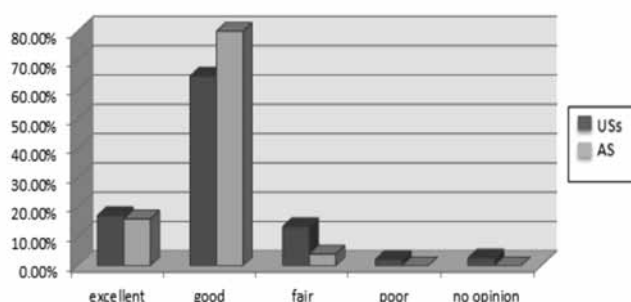


Figure 3: The end-users' satisfaction with finding information

According to figure 3, the majority of the participants believed that the AIUL offered a valuable collection supporting them in terms of finding the information. Approximately 65% of USs deemed that the library was "good" for finding information, and in the same trend, 80% of AS were rated the library "good". In contrast, approximately 2% of the USs deemed that it was "poor" in terms of finding information. That indicates that the IRs were systematically organised in which it was easy to find the information.

### End-users' satisfaction with using information

Since the questionnaires were investigating the end-users' ability to find the required information, it was crucial to diagnose to what extent they were able to use it. Figure 4 demonstrates the end-users' satisfaction in terms of using the discovered information.

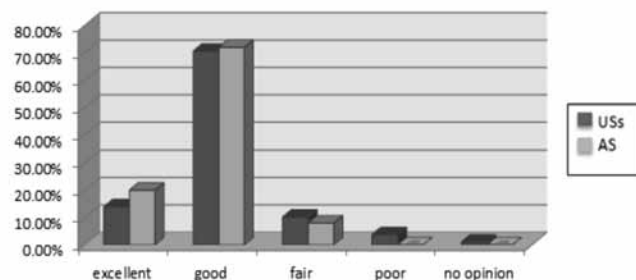


Figure 4: the end-users' satisfaction with using information

Figure 4 presents that the majority of end-users for both the USs and ASs were satisfied in terms of using information. More than 70% of them rated their ability to user information to be "good". Moreover, less than 20% of them deemed that it was "excellent", while less than 5% of the USs rated using information to be "poor". That reveals that they had a tolerable level of skills required to use the information

### Elements affecting the selection of Information Resources

Critically, investigating the importance of a number of elements, which might affect the end-users decision in terms of selecting IRs, were taken into consideration. The elements were accuracy, accessibility, cost, understandability, and year of publication. (See figure 5)

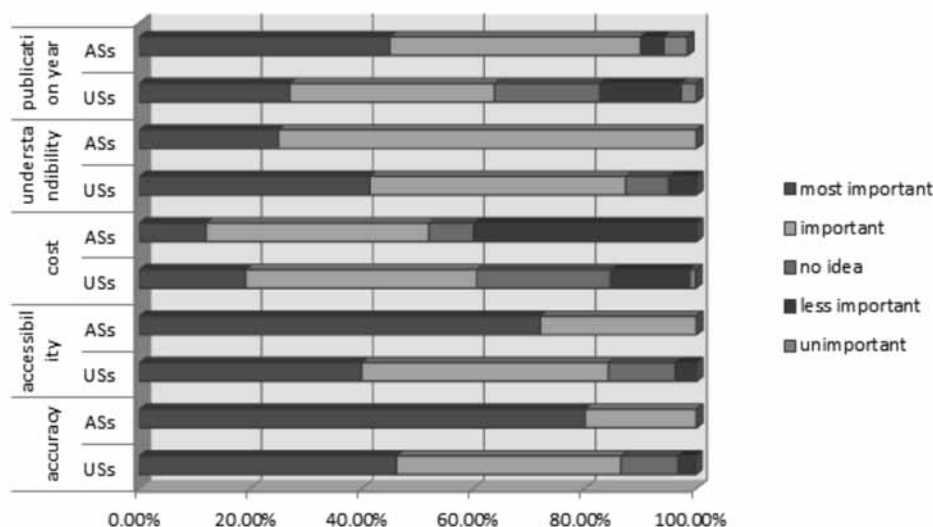


Figure 5: rating of the elements affecting the selection information resources

Figure 5 reveals that the end-users' decision of selecting the IRs was affected by a number of elements. The majority of the participants; more than 45% of the USs and 80% of the AS considered that the accuracy was the "most important" component influenced their selection of IRs. In contrast, the cost was a "less important" element in selecting IRs for both end-users; it was more than 15%. Obviously, publication year was addressed to be "most important" element of the AS (40%) more than the USs (25%). Hence, to improve the effectiveness of the ALs in terms of providing IRs and satisfying its end-users, all the mentioned elements should be looked into further.

### Comparing end-users' attitude in terms of accessing the AIUL

Since demographic data can give an indication of how questions may vary from one demographic variable group to another. Therefore, the differences in the responses due to the demographic variables were tested by: [1] the Mann-



Whitney test to compare two independent groups of samples, and [2] The Kruskal-Wallis for more than two groups. (See table 3).

Independent Variable	Test	USs P-value	ASs P-value
Gender	Mann-Whitney	.369	.440
Age	Kruskal-Wallis	.253	.004
Level of study	Kruskal-Wallis	.082	.008
Faculty	Kruskal-Wallis	.132	.303

Note: \*significant at the 0.05 level of significance  
 \*\* Highly significant at the 0.01 level of significance  
 \*\*\* Very highly significant at the 0.0001 level of significance

Table 3: Statistical tests for comparing accessing of library in terms of demographic variables

Critically, the tests show that no significant differences were found between the USs and the AS in terms of gender, age, level of study/teaching experience and faculties. Hence, the motivation to access the AIUL might be similar for all participants regardless their interest or specializations.

### Comparing end-users' attitude in terms of finding and using information

Mann-Whitney and Kruskal-Wallis tests were conducted to compare the difference between the rate of finding and using information and demographic variables of the participants. (See table 4).

Variable		Test	P-value	P-value
Gender	Find information	Mann-Whitney	.227	.347
	Use Information		.348	.347
Age	Find information	Kruskal-Wallis	.067	.005**
	Use Information		.340	.014
Level of study/ teaching Experience	Find information	Kruskal-Wallis	.043	.079
	Use Information		.590	.006**
Faculty	Find information	Kruskal-Wallis	.003**	.331
	Use Information		<.001***	.605

Note: Significant at the 0.05 level of significance  
 \*\*Highly significant at the 0.01 level of significance  
 \*\*\* Very highly significant at the 0.001 level of significance

Table 4: Statistical tests for comparing the rate of finding and using information in terms of demographic variables

Table 4 did not reveal any significant difference in finding and using information in terms of gender for both the USs and AS. However, Kruskal-Wallis test for age groups of the AS resulted in a highly significant difference in term of finding information (p-value= .005). Furthermore, it discovered a highly significant difference of teaching experience in terms of using information (p-values are .006). That indicates that the AS's ability of finding and using information might well increase with greater age and the experience. In contrast, Kruskal-Wallis test discovered a highly significant difference in terms of using and finding information for the USs due to the results of faculty groups where the (p-values= .003 and <.001) respectively; these results looked as interesting since the library may give different attention in terms of providing the IRs with the faculties according to their specializations.

### Comparing end-users' attitude in terms of elements affecting the selection of information resources

Mann Whitney and Kruskal-Wallis tests were performed to explore the significant differences in the end-users in terms of determining the elements of IRs. See table 5.

Variable	Response	Test	USs P-value	ASs P-value
Gender	Accuracy	Mann Whitney	.072	.686
	Accessibility		.004**	.810
	Cost		<.001***	.574
	Understandability		.120	.178
	Publication Year		.110	.052
Age	Accuracy	Kruskal-Wallis	.007**	.372
	Accessibility		<.001***	.847
	Cost		.203	.104
	Understandability		.018**	.305
	Publication Year		<.001***	.207
Level of study / Teaching experience	Accuracy	Kruskal-Wallis	.012**	.162
	Accessibility		.031**	.619
	Cost		.043**	.566
	Understandability		.373	.306
	Publication Year		<.001***	.338
Faculty	Accuracy	Kruskal-Wallis	.053	.633
	Accessibility		.008**	.457
	Cost		.669	.908
	Understandability		.010**	.256
	Publication Year		.717	.189

Note: \* Significant at the 0.05 level of significance  
 \*\* Highly significant at the 0.01 level of significance  
 \*\*\* Very highly significant at the 0.001 level of significance

Table 5: Statistical tests for comparing the rate of important elements in terms of demographic variables

As revealed in table 5, demographic variables show no significant difference for the AS in terms of accuracy, accessibility, cost, understandability and publication years. In contrast, the level of significance provided by Mann Whitney and Kruskal-Wallis was different from one demographic variable to another based on the USs' needs of the information required. For the USs they showed a significant difference (p-value= .004, <.001, .031 and .008) in interpretation with respect the accessibility. While for accuracy, the significant difference was noted due to the age and level of study (p-value= .007 and .012). In addition, gender and level of study groups resulted in a significant difference (<.001 and .043) for cost, while age and faculty groups led to a significant difference (p-value= .018 and .010) for understandability. Finally, with respect to publication, age and level of study groups resulted in a significant difference (p-value=<.001). That indicates that the USs might require greater interaction with the IRs due to the fact that they need further information for their paper assignments and exams.

## Discussion and conclusion

The aim of this study is to assess the impact of the IRs on the level of end-users satisfaction. The findings showed that the USs tended to access the AIUL and spend time more than the AS. Critically, the current findings affirm that providing a large and valuable collection of the IRs will increase the level of the end-users' satisfaction. These findings also confirm the finding of Martensen and Gronholdt (2003), Majid et al (2001) and Nitecki and Hernon (2000) who indicated that providing efficient collections of e/IRs is an important principle to increase the library performance and the end-users' satisfaction.

Furthermore, the findings show that the accuracy is the most important element affected the end-users' decision in terms of selecting the IRs. In addition to other important elements which are accessibility, understandability, and publication year. These findings partially support the finding of Kassim (2009) who highlights that students are satisfied with library service quality in terms of the accessibility to IRs. Hence, establishing appropriate channels to access and deliver the information is crucial in the ALs context.

Seemingly, the current findings show that no significant difference between the end-users' satisfaction and demographic variables in terms of accessing the AIUL. Furthermore, they present no significant difference in finding and using information in terms of gender for both the USs and AS. This finding supports Sandore (1990) findings who suggested that no difference recorded between end-users' profile and students' satisfaction. In contrast, the current finding differs from Arishee's (2000) findings who found a significant relationship between demographic variables, IRs and satisfaction; however, the current findings are in agreement with Arishee's (2000) findings in the same context. The current findings demonstrate that the age of the ALs affects their ability of finding information, while teaching experience influences them in terms of using information. Contrary, there is a highly significant difference in terms of using and finding information for the USs due to the results of faculty groups. Therefore, demographic variables influence the end-users' satisfaction on IRs diversely regarding their category of the end-users, as well as according to their personal variables. Thus, demographic variables should be taken into consideration when ALs seek to assess the users' satisfaction.

Based on the finding of this study, it was concluded that the users of the AIUL were satisfied with the IRs provided, however, there is a need to enhance these IRs for further satisfaction. Adopting a strategy to control the processes of acquisition, and standards regarding the number of potential end-users are recommended to promote the library performance in terms of providing the IRs. Furthermore, providing subject librarians and marketing the IRs efficiently were suggested as well to increase the end-users level of satisfaction. Further research will be conducted to compare end-users' satisfaction between the AIUL in Syria and University of Huddersfield in the UK.

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# The analysis of LibQUAL comments with the assistance of a SharePoint list

**Marié Roux**

## Introduction

In recent times there have been numerous discussions on the LibQUAL list serve regarding the analysis of LibQUAL comments, as well as on the appropriate analysis software. All contributors to these discussions agreed that the coding and analysis of comments is a very time consuming process, and that most of these software programmes usually demand intensive training in and/or knowledge of the programme.

The aim of this study is to share with you how Stellenbosch University Library and Information Service currently conduct the qualitative analysis of their LibQUAL comments. The first part consists of a brief literature review to provide an overview of what other libraries do in this regard. An overview about LibQUAL at Stellenbosch University follows, and then a description of the method used at Stellenbosch University to analyse the 2012 LibQUAL survey comments. The paper concludes with a short summary of how the quantitative and qualitative results of LibQUAL feed into the Library's strategic planning process.

## What do libraries do with their LibQUAL comments?

In reviewing the comments on the LibQUAL list serve as well as literature on this topic, it became clear that libraries have been mainly using five different programmes to analyse their LibQUAL comments, including software programmes and Microsoft Office products.

According to Karin Neurohr (Neurohr, Ackermann, O'Mahony, & White 2013:102) qualitative analysis in LibQUAL can be described as any process that organised or categorised or coded the free text comments of LibQUAL in order to be used by library staff to assess and improve library services where necessary. Libraries who did not previously conduct this analysis of LibQUAL comments mentioned in a survey that a lack of staff time was the main reason for not conducting this in-depth analysis. In a survey undertaken by Karen Neurohr and others (2013:103), 73% of library responses indicated that they used Microsoft Excel for their analysis. Atlas.ti is the most commonly used qualitative data analysis software (18%), with NVivo in second place (7.9%). According to the Neurohr survey, most libraries have only one or two staff members coding the comments.

It was therefore surprising to see that at Brown University a group of 20+ subject librarians and other staff coded their LibQUAL comments in 2008. According to Daniel O'Mahony (2010) the following are advantages of a group approach to coding: It assists with the distribution of the workload; it exposes more staff to the comments; it gives a broader perspective to staff; it involves more staff in the formulation of action steps; and it helps to build a wider understanding of the results.

The following is a brief overview of the main software programmes and Microsoft Office products libraries use to analyse LibQUAL comments:

- **Microsoft Access**

David Nolfi of Duquesne University described a few challenges they experienced with the analysis of comments in a poster presented at the Library Assessment Conference in 2010. The volume and varied depth of comments; only two staff members tasked to the project; no budget available for data analysis software and no experience using qualitative data software. Some of the reasons provided by Nolfi for their decision to use Microsoft Access for the analysis process included: one of their staff had experience with MS Access; its ready availability; the ability to group respondents' demographic data with the comments; the ability to assign codes to comments; and, lastly, the ability to create queries and reports (Nolfi 2010).

Lorraine Haricombe and Bonna Boettcher (2004) of Bowling Green State University also reported on using Microsoft Access for their qualitative analysis of LibQUAL comments. They described how this analysis helped them in their strategic planning process.

- **Microsoft Excel**

Elizabeth Habich presented a paper (2008:417) on the use of Microsoft Excel for the analysis of LibQUAL comments at Northeastern University. They felt that acquiring and learning a specific software package could be expensive and time consuming and at the end turn out to be a barrier to the proper analysis of LibQUAL comments. The core dimensions and questions of LibQUAL were used for the assignment of categories. This was followed by the sorting of the comments according to dimension, question and theme. The problem with Excel, however, is that the 'database' is flat. It is a spreadsheet that can be sorted. With a true relational database such as Access, one can directly associate a comment with multiple dimensions. LibQUAL comments mostly contain more than one idea and Habich decided to copy comments and its associated demographics, and then highlighted the idea that she was in the process of coding.

Jones and Kayongo (2008:499) also reported that they had used Microsoft Excel at University of Notre Dame for their analysis. It was coded according to user group and discipline. Two researchers reviewed all comments independently. Each comment was analysed and then mapped to the 22 core questions or five local questions of LibQUAL. Many comments were mapped to more than one question. Comments that were too broad were discarded, as they were not specific enough to map to a specific LibQUAL question.

- **Atlas.ti**

The literature reviewed showed that Atlas.ti is the most popular software tool for LibQUAL comments analysis. Dennis and Bower (2008:425) from Western Michigan University stated some of the advantages of using Atlas.ti as follows: it "provides quick access to the quotations of a particular code; it provides search features that let the researcher find patterns or strings within the primary document; it allows the researcher to assign more than one code to a quotation; and it allows the researcher to assign more than one quotation to the same piece of text." Easy editorial changes, easy access and the variety of reports that is easy to retrieve, are all advantages of using this software.

Margaret Friesen (2008:449) also indicated that they had used Atlas.ti for University of British Columbia's qualitative analysis of their LibQUAL comments. They used the open-ended method to do the coding: "As we entered more codes, we discovered connections between codes, eliminated repetitious codes and substituted better terms" (Friesen 2008:450). Tools such as the code manager, the network editor and the query tool in Atlas.ti were found very helpful to analyse the results.

- **NVivo**

Sarah Dahlen of California State University (2012) described in a poster presented at the Library Assessment Conference how they had used NVivo for the analysis of their comments. According to Dahlen the benefits of NVivo are the following: It generates reports; it collates and disseminates comments by topic or user group; and it illuminates trends. The drawbacks are costs, intensive training required, licensing limitations, and the difficulty to sharing the coding workload.

- **N6 (QSR)**

Begay (2004:112) reported on using text analysis software N6 (from QSR) to enter the coded comments and organised these according to categories and demographics. The reason for selecting this software was that one of their staff had already been trained in the use of this specific software. According to Begay (2004:114), "N6 provides a range of simple reports such as the number of comments in a category, to viewing all the comments in a particular category, to more sophisticated reports ..."

Lindsay McNiff (2013) from Dalhousie University recently conducted a survey on the LibQUAL list serve on the types of software other universities are using for the analysis of their LibQUAL comments. The results were much the same as the above, but a few other software programmes were mentioned as well, such as Nudist and Weft QDA. Kim Leonard (2013) of Marylhurst University mentioned an interesting software programme, **Dedoose**, with a user-friendly web interface. This is a more affordable option than other qualitative analysis software programmes as it operates on a pay-as-you-use model. It seems likely that some libraries will be exploring this software in view of future comments analysis and we trust that they will report on this in the near future.

## An overview of LibQUAL at Stellenbosch University

Stellenbosch University Library and Information Service conducted LibQUAL surveys in 2005, 2008 and 2012. The results of all three surveys were helpful to gauge how clients have been experiencing their services since the first survey was conducted and subsequently determined growth patterns in library services and facilities. The research population, however, changes continually and with this, the expectations and associated responses of clients to survey

questions. There is also sufficient evidence to determine certain growth and/or decline patterns in specific areas of the services and facilities offering at Stellenbosch University Library.

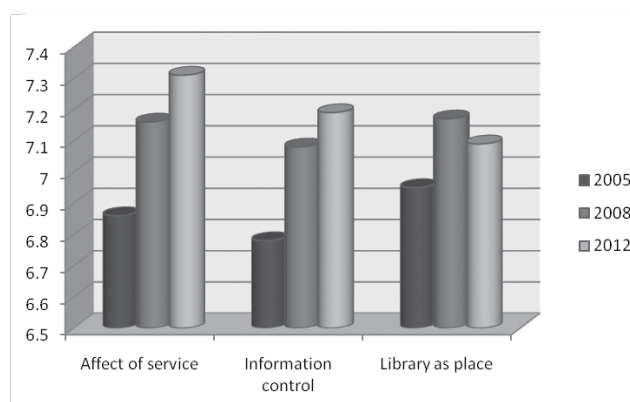


Figure 1: LibQUAL perceived scores 2005, 2008, 2012

In Figure 1 you will note how the perception of services and facilities improved over the last few years. It was nonetheless surprising that the total for “Library as place” decreased since millions of South African Rands were spent during the last three years to improve a number of physical spaces at the Library and Information Service. Two state of the art facilities – the Learning Commons and the Carnegie Research Commons – were established as well as a brand new Engineering Library. However, on closer examination of survey questions associated with ‘Library as place’, the reasons for the overall decrease were related to some of the questions pertaining to, ‘quiet space’ whereas other space-related questions had solicited higher ratings. The negative responses to the former, however, influenced the overall total.

## Qualitative analysis of LibQUAL comments before 2012

Before 2012 Stellenbosch coded their comments with Microsoft Access. This had been a very time-consuming process to set up correctly. After that, it was fairly easy to do the coding and to link these to the specific comments. The setup of reports to retrieve the required information was, however, again a tedious process and required more in-depth knowledge of Access.

All the comments were printed, sorted according to category, for each divisional head to enable them to work through the comments applicable to their division or service. This was important, especially for strategic planning, but also to address smaller issues that could be corrected immediately on an operational level. This process amounted to a lot of unnecessary paper work and was a time-consuming job providing printed and bound booklets to approximately 15 middle and senior managers with each survey.

## Microsoft SharePoint at Stellenbosch

Microsoft SharePoint is being used intensively at Stellenbosch University for the building of websites and for document management in the SharePoint Team Sites. The Library’s team site was developed to contain more qualities of an intranet for the Library and Information Service. Some items on this SharePoint site are set up as a list and others as a document library, a calendar, a meeting workspace, a blog, a wiki or a photograph gallery. The Library had extensive experience with the setting up of some of these lists and they realised that a Sharepoint list could be used as a tool to code the LibQUAL comments.

## SharePoint list

A SharePoint list could look very similar to an Excel spreadsheet. It is, however, available in a web browser and has easy sorting functions and filters. “Sharepoint 2010 provides many kind of lists that you can use to track information. A list is similar to an Excel spreadsheet or a table in Access database” (*Sharepoint 2010 list types*, 2012). For this reason it works just as well as a database that has been set up with Microsoft Access. Each column of a list is customisable exactly to the way in which you may wish to enter the data. The category column for example may contain more



than one category assigned to each comment, and it is easy to filter. With a SharePoint list one can also filter firstly according to a specific branch library and then according to categories, which will not be possible in Excel.

## Creating categories

After importing the list from Excel into SharePoint, all the columns available on the original file are added automatically, such as branch library, discipline, etc. The column for assigning the categories had to be created. When creating this column one can add all categories with which one needs to analyse the data. It is best to choose a check box method as one would normally prefer to mark more than one category per comment. The open coding method was used, entering the categories as they were discovered. The only disadvantage was that the categories were not in alphabetical order when filtered, but in the order that they had been added.

## Edit each entry to add categories to each comment

The next step was to spend many hours categorising each of the 1,231 comments received from fifty percent of the respondents to the 2012 survey. To ensure comprehensive analysis results we included all the comments in the analysis, even those of a very general nature (positive and negative).

## How to use / browse

Any column can be sorted and/or filtered, for example, you may wish to filter comments from only postgraduate students. Following this, one can apply another filter according to category. A further example is to filter according to a branch library, displaying all the comments received for a particular branch library and then applying the category filter as necessary. One could also filter the total number of comments according to a category, for example, "noise" and retrieve all comments pertaining to noise.

## Advantages and disadvantages of a SharePoint list

According to Miller and Salkind (2002) certain criteria are helpful to assess different software programmes for qualitative analysis.

If we look at these criteria, a SharePoint list fares relatively well, although it is not really a qualitative analysis software programme:

- **Ease of integration** – It was not a long process to set up the list and have it ready to start the coding, but experience in using SharePoint was a positive point.
- **Type of data** – The Excel file received from LibQUAL was imported into SharePoint without any changes required.
- **Read and review text** – The entire text of the comment can be read in the display and edit fields. The search function on SharePoint is also excellent. It is possible to retrieve comments on a single word search, if required.
- **Memo writing** – Should a memo of some sort be required a new column for text can be inserted. This is very easy to set up and the required information equally easy to retrieve. A text search is also possible.
- **Categorization** – The assignment of categories is very easy and flexible and the categories can be changed midway, if necessary. Categories can also be added and deleted where needed.
- **Analysis inventory and assessment** – Data sorting takes place at the click of a button and for filtering one only needs to click on a category and apply. All staff who have access to this list are able to browse the data online. This is one of the greatest advantages of using the SharePoint list. It does not, however, create formal reports.
- **Merging projects** – The list is appendable and it is therefore easy to add or merge data.

Using SharePoint for LibQUAL comments analysis may be expensive if your university/library does not already have a SharePoint site licence. It was an advantage to have access to Sharepoint at Stellenbosch University together with some years extensive working experience in the product.

## Using the results in strategic planning

For the Library's annual strategic planning process at the end of 2012, all middle and senior management staff had access to the comments list on SharePoint, to use and filter as they wish in order to explore the comments themselves. The divisional managers dig deeper into the results, looking at the topics related to their particular sections, and trying to act on these as soon as possible. Some of the action plans could be addressed very soon after the results were available, however, some of these will have to be addressed in due course. The refurbishment of the rest of the main library as well as some of the branch libraries is part of a long-term plan for these libraries and will be addressed over a longer period. It was disheartening that the recent changes to the website were not experienced as very user-friendly but this also need to be addressed in the near future. Other issues to be addressed are library hours and noise levels in some of the libraries. Comments pertaining to the need for electronic books and online training were also valuable. These are only some examples of how the results of the comments analysis influenced our strategic planning for the next few years.

Even though the Library received only nearly a 10% response rate with this recent survey, more than enough data were gathered, both in the quantitative and qualitative results, to have a good idea where and how services and facilities will have to be improved.

The data accumulated have been very valuable in pointing out problem areas, but also those areas in which the Library excels (such as the high score in "affect of service"), all of which assisted greatly in documenting a self-evaluation report for an upcoming external review.

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# Five years in – the impact of customer selection of electronic books

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## Abstract

Following a York conference presentation in 2011 concerning patron selection and use of electronic books at the University of Texas at Dallas, this paper assesses the continued usage and selection of eBooks by customers. The demand for all selection models is considered.

The paper analyzes the usage of materials selected and used at a medium-sized academic library. The library has provided patron driven eBook acquisitions since 2008. The dataset provides further analysis of usage across patron driven acquisitions, purchasing of publisher eBook collections, as well as selections made by a team of selectors.

## Introduction

Librarians continue to research the impact of how electronic resources are acquired and used within library collections. Presentations at conferences and the published literature provide snapshots of how the development of collections by customers is changing the resources available within academic libraries. More often than not the literature compares customer selections with librarian selections or approval plans. Findings tend to relate the experiences of one library or a regional consortium. Given the workflows for library acquisitions, these comparisons are biased. Depending on how bibliographic records are loaded (brand new titles, bulk loading, etc) as compared to librarian selections and approval plans (selection of the eBook as it is published simultaneously with the print, selecting a new book published months after the print, purchasing upon recommendation of a customer, or any other variety of timing), it is difficult to compare selection and usage. That being stated, the PDA model enables the customer, whether they are aware of the process or not, to select an eBook that will be purchased. Sometimes it is the only format available, sometimes the library could own two or more types of formats, and other times the library might have two or more versions of the same book in the same format.

The collection building at the University of Texas at Dallas remains a hybrid model of purchasing print, acquiring electronic books selected by subject librarians, buying items selected by customers, and licensing databases of eBooks. In addition, the collection includes the purchase of eBook collections produced by one publisher. Rather than rely on any vendor, the models of licensing and purchasing together offers a variety of types of monographs across disciplines. The workflow of maintaining the variety of selection models is often overwhelming but remains the best alternative to developing a library to meet the demands of a growing technologically adept student body.

A relatively succinct literature review of eBook research was conducted by McClure and Hoseth (2012) who surveyed students and faculty at Colorado State University in 2010. Additionally, the eBook experiences at Ohio State University Libraries are documented by Hodges, Preston, and Hamilton (2010). Their conclusions illustrate a shift in collection development strategies of collecting for extended long-term use versus the immediate needs of many students. In general, the eBook research includes comparisons to print readership, repeat demand for PDA purchases, and the importance of various eBook features including convenience and manipulation of pages.

Integrating the eBook format into standardized collection development practices is important for the future of academic libraries. Space concerns, budgetary issues, preference of the customer, and technological innovations of searching within a book or set of books outside of a traditional library facility are all relevant in deciding upon the format selected. Having to select the format for each title further confuses the acquisition process. A recent conversation with the library's student advisory group revealed that most students believe that we should have all formats of a title. Price was not considered.

As library customers continue to access eBooks, librarians should focus on how the electronic books are being used. This type of research is contingent on how the vendor reports statistics on the usage as well as conducting surveys of all users about their use of the library and its collections. With the alternatives to libraries, customer input is more important than ever for the continued development of the organization.

## Data analysis

Since the initial presentation of statistics on the University of Texas at Dallas libraries at the 9th Northumbria Conference, the demand for electronic books has continued to increase. An average increase of 10% growth in the student body places greater demands on the library and its collections. Approximately 85% of the 2013 materials budget (over \$5,000,000) was spent on electronic materials (eBooks, ejournals, databases, and datasets). Patron driven acquisitions provides a small part of the overall selection of materials. The library relies on EBL as its principle vendor for PDA materials. The success of the patron driven acquisitions model boosted the expansion of the profile with EBL. While the annual fund was originally set aside at \$50,000 per year, the budget was being underspent by nearly half of anticipated levels. During 2012, the profile was expanded to include more subjects (specifically all science and technology classification areas), more publishers, and a higher threshold on the maximum purchase (from \$200 to \$250 per title). The profile was developed in all areas outside of arts and humanities. The comparison of the first half of 2012 to 2013 showed that usage expanded by 54% while book purchases increased by 42%. At present, the level of PDA purchasing is matching the budget allocation.

Aggregated eBook providers manage the digital rights of each item by restricting the downloading and printing functions thereby making the licensing of content directly from a publisher more advantageous for customers. However, publishers often limit the licensing of titles to a subject-related collection rather than provide a method of ordering one title at a time. In the intervening years since the 9th Northumbria Conference, the library migrated acquisitions to collection models for a few publishers including Springer, the American Psychological Association, and the Royal Society of Chemistry. When evaluating the usage of eBooks, libraries must rely on the statistical package adopted by the vendor. Most eBook vendors provide COUNTER compliant statistics on usage. These statistical reports are very limited and include sessions and searches as well as turnaways. Numbers of searches and sessions give librarians information about the level of usage but no details beyond this elementary set of statistics. While the standardization of gathering usage statistics is important and valued, librarians need additional statistics to observe customer behavior with the format.

Besides a prior history with EBL and the ease of using the content, the company provides a more robust statistical module which is unlike some other eBook vendors. The module provides the time of day the item was used enabling research on preference for materials when the traditional library of print is not available. Secondly, the module provides statistics on the number of pages accessed as well as the exact pages viewed, downloaded, or printed. This information demonstrates how the customer interacted with the item. The module provides the call number of most books enabling research on the subject areas most used or, reversely, not used. eBook selectors could gain information on what subjects are most frequently used. Publisher statistics are also provided which could lead the library to experiment with expanded purchasing models with any specific vendor or acquiring collections of eBooks directly from a publisher. Repeated use of books after the item is triggered for purchase is a more difficult statistic to gain from the module: EBL can provide this data for the library. Use after the purchase confirms the importance of the book selected by the customer to more than one person. Demand for the aging eBook over time is unclear.

The EBL statistics module provides the librarian with a growing picture of how the item is used. It can confirm if customers click in and out of books or show that they are spending hundreds of minutes reading or moving through the item. One element that can be added by EBL is a quick 5-question survey. The survey is asked only the first time a user enters the EBL system and allows for the person to opt out. The survey enables the library to collect another set of information about the user's preferences and experiences; for example, the survey could include questions about the level of the user and degree program. The survey could improve how collection development funds are spent by discipline. While the University of Texas at Dallas is not currently utilizing this survey, it will be implementing it later in 2013.

When analyzing the use of the PDA materials, the University of Texas at Dallas library determined that more than 50% of the eBooks are used after the purchase was triggered by the system. Many of the books have been used multiple times including one on project management accessed over 600 times. It would be useful to study usage patterns over time to determine if a correlation exists between course scheduling, demand for eBook and print in the same discipline, or other possibilities. As with print, eBook copies of specific titles can become dated and outside the trends in research within a subject. The weeding or deselection of eBooks is another element of collection management.

The subject analysis of the usage shows that PDA demand is highest in engineering/technology and management/economic areas. The reconfiguration of the profile in 2012 expanded the demand for science materials including microbiology, chemistry, and physics. Profiling was based on historical usage in these areas with more bibliographic records loaded into the catalog each month. Coincidentally, the largest degree programs in the University are concentrated in these disciplines. Initiating a survey for library users could determine if the eBook format meets their needs, if they want more materials available 24 hours a day, or for those that can be used on a computer. The usage could correlate with the discipline or the total population size of the degree program. Unfortunately, the library has

not studied the bibliographic records loaded into the catalog as compared to those that were browsed one time or those that were purchased. The lack of selection of tens of thousands of PDA records residing in the catalog could correspond to librarian selections of print titles that are never used.

Advisory groups and personal communication with students indicate a split in their book preferences. Some students are searching for information within books to support an idea for a paper or project. Others are reading a text. While this information is not statistically significant, it would be easier for librarians to get a view of the usage if more detailed statistics were provided on eBooks. The use of print cannot be studied in this manner and analysis of customer practices relies largely on assumption. Short Term Loans (STL) are EBL titles which are used once for over 10 minutes but have not met the selection for purchase. In the case of the University of Texas at Dallas, the book is purchased after the second use. The STL function charges the library a percentage of the purchase cost for the use. Many more books are used one time than those that are triggered for purchase. Since 2009, the cost of purchases has risen from \$11,703 to \$35,371 or 200% while the Short Term Loan costs have risen from \$5,384 to \$12,675 or 100%. The STL feature saves the library the funds of purchasing books. At present, the Short Term Loan costs are 35% of the purchasing costs. Raising the purchase target would further limit the budget required to provide a PDA program depending on the overall price of each book. The EBL system has the ability for the librarian to mediate the purchase thereby restricting an immediate purchase. This function can assist the library in controlling funds but limits an immediate access to the content. In the case of a budget crisis, the library can control the program.

At present, the library is experiencing a rise in theft of print materials. While efforts are being undertaken to control the problem, the library is concerned about the loss of any book but particularly those priced in excess of \$100. As items are sent through a replacement process, the demand for eBooks as replacements is growing.

As mentioned previously, the library has begun purchasing a few subject collections of eBooks from publishers to gain better digital rights. While the library would often prefer to purchase titles from the publisher, few offer a PDA model. Whether it is the cost of operating a PDA model or some other factor, many libraries would be interested in loading titles into a catalog and purchasing them by PDA. University of Texas at Dallas would supplement this PDA activity with librarian selectors: currently librarians use the GOBI interface from YBP to purchase eBooks from aggregators (EBSCOhost, EBL, ebrary) and can purchase individual titles from Sage, Wiley, and Cambridge thereby gaining better digital rights, but these purchases are not a customer selection model.

In that the acquisition of publisher collections is new, the library continues to evaluate this aspect of collection development. The strength of the usage of subject collections of eBooks has varied by the publisher. One concern is that some books produced by a publisher in a given year are not included in any collection. Making the determination that a new title is not going to be received requires direct communication with the publisher and is often very time consuming. Secondly, the library commits to purchasing a collection before the exact titles are known. Purchasing unknown titles within a broad subject based collection is a concern as they might not correspond to the needs of the university. Most academic libraries are acquiring specific titles from a variety of publishers rather than the complete collection because of budget concerns. The need for digital rights is often in conflict with purchasing models. Finally, collection development budgets are stretched to pay for ejournal packages making the purchasing decisions for any books more limited each year. The library's experience with eBook collections usage statistics gathered by publishers equates to the limited COUNTER model.

Weeding of non-selected PDA records, weeding of older eBooks, and weeding print because of eBook archives are also a concern. The potential costs of maintaining non-selected PDA records could result in items that have already been updated with a current edition of the book. While a portion of those selections could be deliberate, others might result in purchases which might not be optimal for current research. A process of eliminating records after a set of years is being created.

## Conclusion

The customer selection of eBooks continues to grow at the University of Texas at Dallas. The various models available for the selection of eBooks is expanding and making the development of the collections more complicated. An evaluation of the PDA profile resulted in an expansion of the title browsed and purchased. The demand of a PDA model for specific publishers would be welcomed. The expansion of statistical modules for all eBook providers would help to meet the need for information on how the use of eBook is evolving.

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# New statistic needs for a new era: Revising the national library statistics for academic and special libraries in Norway

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## Introduction

The purpose of the paper is to present the most important changes implemented in the newly revised Norwegian national library statistics for academic and special libraries in Norway.

In the autumn of 2012, The National Library of Norway launched a new form for collecting national library statistics from academic and special libraries in Norway. The existing form had been used more or less unchanged since 2000. Some changes were introduced for the reporting year 2012, the rest will be introduced in connection with the reporting year 2013.

A working group set down by The National Library has developed the new solution.

We will further outline the work in the group and in particular look at the work that was done by the two representatives from the university and university college sector.

## Background

In 2010, The Norwegian Archive, Library and Museum Authority (ABM-U) published the «*National indicators for academic libraries in Norway*» (own translation) (Indikatorer for norske universitets- og høyskolebibliotek, 2010). In 2011 ABM-U was reorganized and the responsibility for the indicators was transferred to The National Library. The indicators were developed by a project group and contained a recommended set of library indicators tailored to the sector. As work on these progressed it became clear that there was a great need for improved user statistics. It was important to get better quality statistics, both from the systems suppliers, and from the institutions. It was also desirable to get figures in connection with new services and in areas where there had not previously been any documentation. This meant a complete revision of which figures the libraries themselves needed and what The National Library wanted to collect.

In June 2011, The National Library of Norway formed the group «Working group for revising the form used for collecting statistics: method of academic and special libraries». It was led by Torill Redse from The National Library. The group also consisted of one representative from the special libraries, two more from The National Library, one of them from the Department of Legal Deposit, two from Statistics Norway, where the numbers are deposited, and two representatives from the university and university college sector. The group had seven meetings.

The group's mandate was:

*"Using today's form for collecting statistical data from the academic and special libraries starting point, and on the basis of activity, services and tasks in the special libraries, the working group will come up with a revised form for collecting statistics from academic and special libraries."*

*The necessary definitions will be discussed and developed. A revised statistics form will be drawn up and adjusted for today's and tomorrow's activities, tasks and services in the academic and special libraries, in order that the collected data may be used effectively and actively in managing libraries and improving their visibility. The work should be adapted to international statistics collection and standards as much as possible. Nordic practice in the area should be given particular weight."*

## Approach and working method

We will look more closely at the methods the group used to come up with today's solution and we will present the changes which were made in the new form. The work was completed in June 2013.

The group's members represented a broad competence and experience from years of using and developing statistics and data in their own institutions.

We started out by looking through the existing form (Nasjonalbiblioteket, 2011) and accompanying guide (Nasjonalbiblioteket, n.d.). We read up on reporting forms from Sweden (Kungliga biblioteket, 2011), Denmark (Danmarks statistik, 2011) and England (SCONUL, 2011) among other countries in order to learn what statistics these countries submitted to their national authorities.

We actively used the publications *"ISO 2789:2006 Information and Documentation – International Library Statistics"* (International Organization for Standardization, 2006), *"COUNTER: code of practice for e-resources: release 4"* (COUNTER, 2012) which replaced *"COUNTER: code of practice for journals and databases: release 3"* (COUNTER, 2008) and *"COUNTER: code of practice for books and reference works: release 1"* (COUNTER, 2006) during the working period. These four publications were very important throughout the process and helped decide which figures are collected and how the figures should be calculated.

We used experiences from our own institutions. During the working period we consulted our own colleagues in the different subject fields.

We used the former project group for the national indicators as a reference and discussion forum, and informed them of our planned changes. We got useful feedback and new suggestions from the group.

We also consulted each other between the meetings. Our task was to take care of the interests of the university and university college sector, and it was important to us that we were coordinated and in agreement before every project meeting.

Up until now, the libraries have found the reports to be cumbersome and no longer very relevant. The statistics from the library systems supplier did not give enough background information and didn't necessarily include the figures the institutions needed the most. The biggest and most important library systems supplier was therefore invited to take part in two meetings. This proved to be necessary to ensure that the desired data was obtained.

The National Library had not planned an official hearing in connection with the finished form. It was however decided to send the proposition to the affected institutions, and invite them to make comments and suggestions before the form was finally set. We received feedback from 19 affected institutions. These 19 were overall satisfied with the new solution: Summarized we got 14 positive, 1 negative and 6 neutral feedback. We received comments on structure and a need for accuracy in the guide and the definition list. Several changes were suggested, and some of these were implemented while others had been considered and rejected earlier in the process.

In June 2013 the working group met to evaluate the first phase and the 2012-collecting. The working group went through forms and guides, experiences and feedback to see whether any adjustments were needed before the second and final phase will be implemented for the 2013 reporting.

The working group realised that it had been a successful accomplishment with few negative responses and only some minor adjustments were needed, based on feedback from the libraries. However, we decided to cut out additions of electronic newspapers as it proved too difficult to find an accurate method to count this properly.

## Result

The working group submitted three documents to The National Library: a revised form (Nasjonalbiblioteket, 2013a) to be launched in two rounds (the last edition is yet not published), a revised guide (Nasjonalbiblioteket, 2013c) and a new definition list (Nasjonalbiblioteket, 2013b). The guide was revised according to the changes in the form. The all new definition list should make it easier for the libraries to understand terms and expressions used in the form. The definitions are largely based on ISO 2789 (International Organization for Standardization, 2006).

We chose to introduce the form in two stages, primarily because the system suppliers needed time to reprogram and implement the new statistics. Twelve months of data collection was needed to be able to report on areas where there were no data before. It was also necessary for the institutions themselves to know the new requirements early enough

to collect data for a full year. It was therefore only the simplest types of changes, such as those the system suppliers already were able to report figures on which was implemented in first phase.

An important point in statistical collection is to compare figures over time. By changing the content for many fields we lose this opportunity. This was thoroughly discussed and all fields where it is possible to draw lines from old to new statistics are tagged and given the same field numbers in the old and new form. However, it was considered so important to get new data that we still chose to change this in some areas. This will be carefully emphasized in the guide.

## The form

The form got a new layout and structure of topics. We have added three new areas and revised most of the others. Furthermore, in this section we will present the main changes in the form.

Library Collections has been simplified. We have merged some document types and split others. We have also connected document types independent of material form. For example, the fields for physical and electronic document types are gathered. Withdrawals of different collection types are removed. These figures are no longer interesting on a national level, and it is not easy to get the numbers of electronic withdrawals.

Library collection	
Stock	
Books	
Journals - number of annual volumes	
Newspapers - number of annual volumes	
Other periodicals - number of annual volumes	
Manuscripts	
Graphic and cartographic documents	
Musicals	
AV-documents	
Other library material	
Journals	
Only in printed version	
Only in electronic version	
In both printed and electronic version	

Figure 1: Library collections

Institutional repositories is a new area. It is important to emphasize this activity, because it is central for most of the research libraries to show the increasing working time the libraries are spending on this task. We want to highlight the content and the different levels the repositories held.

We will report stock and additions for theses, PhD theses, peer review and other materials from the institutions staff members. We also state the number of downloads and streaming sessions.

Library collection	
Institutional repository	
Students thesis	
PHD thesis	
Scientific publications	
Other material	
Usage	
Own institutional repository	

Figure 2: Library collections; Institutional repository

User statistics have been significantly revised. The fields covering Loan have been greatly reduced and we are now reporting in 12 fields compared to 26 before. For instance it was important to get more figures for how both our internal users and our external users use our own collections. We have also merged interlibrary loan inside the country and interlibrary loan at an international level, and we no longer report interlibrary loans to/from the public library sector.

These figures are central and strategic information to the libraries and they are useful for benchmarking between libraries.

LOAN	
<b>Loan from own collection</b>	
Loan from own collection to internal users	Primary loan
Loan from own collection to external users (not libraries)	Renewals
<b>Interlibrary loan</b>	
Received requests from other libraries	
Loan from own collection to other libraries	
Delivered copies to other libraries	
<b>Requests to other libraries</b>	
Received loans from other libraries	
Received copies from other libraries	

Figure 3: Loan

Teaching and guidance are major topics to the university and university college libraries especially. It is therefore important to make this more visible. More staff are involved in user training and the libraries also offer more lessons than before. We want to highlight the user orientation and training and also the effort and time spent on this. This topic has therefore been expanded from one single field to nine. We specify library user orientation and training separately for bachelor and lower grade users and for master and higher level users. Beside the number of lessons, we also report number of hours and number of people attending the courses and we report the number of pre-ordered guidance sessions.

A new topic is digital learning objects. We specify the number of films and e-learning objects developed by the library itself. We have not counted this before, but it is an important area. These are instruction available independent of time and locations and will complement the guidance from the library staff.

Teaching activity and guidance	
User orientation and training - bachelor	Lessons
User orientation and training - master and higher	Hours
	People attended
<b>Pre-ordered guidance - (session)</b>	
	Lessons
<b>Digital learning resources (e-learning)</b>	
	Number
	Visits

Figure 4: Teaching activity and guidance

We have only made some small changes on Opening hours and Library staff. Opening hours are expanded to include more details about access with or without staff and we no longer report the numbers of part time employees nor split into librarians and other staff.

Another new topic is Library staff's professional development. The institutions will now report how many credits with relevance to work are achieved by the library staff and how many days work are spent to delegate at relevant courses and conferences. They will also report how many professional articles or presentations are published or held by the institutions library staff. This will show how much time and how many resources the libraries have spent on staff development and will hopefully inspire employees to update themselves and to participate in conferences and contribute with professional publications and presentations.

Library staff: professional development	Number
Credits relevant to work	
Course activity - days	
Publications and presentations held	

Figure 5: Library staff; professional development

Digitalization is the third new topic in the form. It is included due to increasing digitalizing of documents for online access and preservation for posterity in some of the special and university libraries. The number of objects digitized during the period is reported.

There were only made some small changes in the Fundings and expenditures-part of the form. Some of the fields were adjusted and simplified.

## Still missing

Some topics are still missing in the form, like social media, research support and reference questions. We would very much like to propose a form that also included these areas, but it was impossible to find satisfactory and quality controlled ways to effectively count in these subjects. These are important areas for the libraries, and we hope it will be possible to find good quantitative figures on these topics in a later revision.

## Conclusion

The purpose was to get an updated and topical form that gave figures for both The National Library and the reporting institutions. The figures should also be comparable with other countries' statistics and they should be of better quality than the existing figures. We have developed a new form and a corresponding revised guide. We have also developed a new definition list. This has never been offered before, and we think this will be an important tool to ensure better quality of the figures, and make them more fit for benchmarking.

The first phase, which includes the reporting for 2012 has been completed. The second and final phase will be completed by the planned reporting for 2013. When the new statistics are fully implemented we are hoping to get automatic calculation of the national indicators based on the reported figures. The goal is to get these posted in DBH (Database for Statistics on Higher Education) and make the results available for everyone in the academic and research library sector.

In addition, all submitted figures (the raw material) will be published on The National Library's webpages for academic and research libraries statistics. The National Library also publishes an opinion piece (Nasjonalbiblioteket, 2012a), in which they analyze and comment the year's figures posted.

We have emphasized the institutions' need for data used for decision making, The National Library's need for figures at a national level and figures the libraries can use directly in the calculation of joint library indicators.

It has been very helpful to look at other countries' processes and results. It is important to have as similar statistical foundation as possible, in regards to eg benchmarking. We hope that in presenting our work, we may in turn be helpful to other countries who are about to embark on the same process, or have already started.

We hope this will be a useful tool for the institutions. It is however important to have regular reviews and to have the most updated figures possible. On the other hand one must also ensure stability and comparable figures for a longer period.

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# Evaluating the intellectual assets in the Scholarship and Collections directorate at the British Library

**Alice Schofield**

## Intellectual assets in libraries

Intellectual assets (IAs) are assets that belong to an organisation, and benefit the organisation, but are intangible and have no direct financial worth. For example, the number of people employed by an organisation is a tangible asset which can be measured. The knowledge and expertise those staff members possess is an intangible, intellectual asset. Due to their intangible nature, they cannot be assessed using traditional quantitative methods. Nevertheless, these assets need to be optimised in order for an organisation to run as efficiently and effectively as possible.

Edvinsson and Malone (1997) divide intellectual assets into three key areas: human assets, structural assets, and relational assets. Human assets refer to elements like staff expertise and the quality of training, structural assets to the organisational infrastructure and value added by intellectual property, and relational assets to the quality of the relationships the organisation has with internal and external stakeholders. Corral and Sriborisutsakul (2010) add a fourth category specifically for libraries: collections and services assets. This takes into consideration the value added by the ways collections are used and the services offered by the library, and this category has been incorporated into this investigation. Creating these categories allows for IAs to be identified more easily, although it should be noted that some IAs can be applied to more than one category and these groupings should perhaps only be used for the data collection process and discarded for the final report.

This study focuses on the IAs within the Scholarship and Collections directorate at the British Library. The main aim of the directorate is to interpret and care for the Library's collections. As a non-profit organisation and one which has a primary function of sharing knowledge and maintaining cultural heritage, intellectual assets are key to the Library's success, and so an evaluation of the IAs attached to the directorate would be of great value. The intention of this study is to determine how effectively the directorate is using its intellectual assets, indicating its strengths as well as areas for improvement, to enable the Library to improve the services it provides.

This research focuses on one sector of the British Library: the Scholarship and Collections directorate. Scholarship and Collections (S&C) are responsible for the care, interpretation and development of the BL's collections of over 150 million items (Hay Group, 2008). The directorate has just over 200 members of staff, comprised of curators, archivists, restoration specialists, as well as individuals who have no direct contact with the collections at all. Without the collections, the Library could not exist. However, the collections as tangible assets are without value unless they are accessible, well utilised, and supported by human expertise. Therefore, capitalising on the directorate's intellectual assets is essential in order to improve the Library's services.

An evaluation of the IAs in Scholarship and Collections is of especial value at this time because the directorate underwent a major restructuring in 2009-2010. The final report of the review (Director of Operations and Services, 2010: 6) states that this change was prompted by a new emphasis on digital scholarship, as well as the 'changing external landscape in information provision and communications'. The report indicates that the Library wished to demonstrate its change of priorities from the collections to access, and felt the need to be more recognisable in structure to users who were used to an academic library structure (Director of Operations and Services, 2010: 11). Figure 1 demonstrates the directorate's new infrastructure: a thematic division rather than the previous structure which focused on the format of the collections.

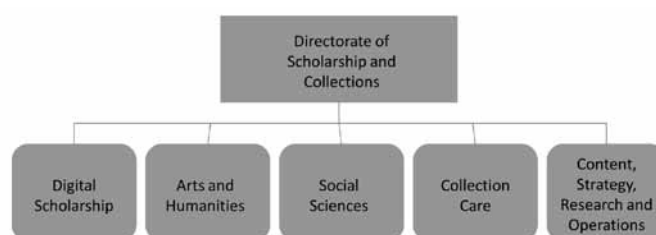


Figure 1: New Structure of Scholarship and Collections



The restructure has inevitably caused disruption in certain areas and this, coupled with the diverse professional knowledge within the directorate, has meant that employees would benefit from a means of capitalising on their strengths, identifying where the directorate could be improved, and learning where certain areas of expertise can be found, all of which this investigation is expected to provide.

## Methodology

Corrall and Sriborisutsakul (2010: 5) suggest that using a mixed methodology is best for assessing the IAs in academic libraries in order to fulfil 'both theoretical and practical aims'. That is, a library should seek to analyse both the qualitative data provided by employees and external stakeholders, they should also attempt to provide some quantitative data and benchmarking in order to fully understand the strengths and weaknesses of their IAs.

One of the main shortcomings of existing intellectual evaluation tools is the over-reliance on quantitative methods. While the aim is to 'measure' IAs, the idea of measurement is somewhat misleading, as it implies a numerative value can be placed on IAs, which simply isn't the case. It was determined that this investigation would be comprised of mostly qualitative data, only using quantitative methods as a support mechanism. In addition, this project is a case study which involves the input of BL staff members, making qualitative methods a natural choice.

A phenomenographical approach was used. Phenomenography is a philosophy developed in the 1970s by Ferenc Marton and other researchers at Gotenborg University in Sweden, intended originally as a means of studying education and the ways that individuals learn. The approach is similar in many ways to phenomenology, except that rather than focusing on the phenomenon itself, Ashworth and Lucas (2000: 295) state that it 'seeks to identify the qualitatively different ways in which individuals experience such aspects of their world'. It focuses on individual experience of a phenomenon, based on the assumption that everyone experiences the world differently (Ashworth and Lucas, 2000). The aim of phenomenography is to reveal variation in experience in the human world; the variation between qualitatively different ways of seeing, experiencing and understanding the same phenomena (Martona & Fai, 1999). Therefore, while phenomenography and phenomenology are alike in that both are concerned with a particular phenomenon within a particular environment, there are key differences. While the former tends to focus on the researcher's perception of a phenomenon, the latter focuses on the research subjects' experience of the phenomenon in order to formulate categories and find patterns of collective experience (Andretta, 2007). Also, while phenomenology emphasises individual experience, phenomenography attempts to reveal a collective experience by highlighting different facets of the phenomenon as experienced by different individuals (Trigwell, 2000). This is more useful for this particular project, which deals with a diverse set of individuals within Scholarship and Collections who may experience the phenomenon of intellectual assets in very different ways. While objective results (eg the management of IAs) can be documented from a first order perspective, phenomenography allows the researcher to investigate the second order perspective which focuses on the participants' internal understanding of the phenomenon and document how this relates to the ways they manage IAs.

The primary method of data collection was a series of 25 in-depth interviews with S&C staff members, as well as a selection of key stakeholders. The interviewees were taken from diverse areas of the directorate and had varying levels of responsibility so as to obtain as wide a field of results as possible. Open-ended questions and prompts were used, as this allowed the subject to lead the discussion and bring up elements that the researcher, as an outsider to the directorate, may not otherwise have been aware of. The interviews were structured around the four areas of intellectual assets that have been identified: human, structural, relational, and collections and services, and interviewees were encouraged to give their personal opinions, allowing the researcher to gauge their feelings and beliefs about the strengths and weaknesses of intellectual assets in the directorate. The interviews were then transcribed and closely analysed with the purpose of finding key themes in the data, and divergences of opinion between interview subjects. This data was then followed by a questionnaire which was distributed to all staff in S&C. The purpose of this was to allow everyone the opportunity to participate, fill data gaps, and to allow for a small amount of statistical data collection by asking participants to rate certain elements of their experiences at the BL from 1 to 5, with one being very poor and five being excellent. All the data was supported by reviewing BL documents in order to ascertain what the Library is doing it and how they are doing it, and to compare the official and unofficial accounts of working at the BL.

## Findings

The following are some of the most interesting outcomes of the data.

### Defining the Library

Participants were asked to define the British Library, and it was pertinent that they found it much easier to state what the library is not. The most frequent statement was that the library is not a museum. While the motivation behind this (that the collections are there to be used and not kept behind glass cases) is understandable, it also limits the interpretation of the library. One of the BL's roles is to preserve and share the country's cultural heritage, and a large number of people who come to the library are not there to use the reading rooms. They are there to see the exhibitions and the precious objects. These are using the library in the same way that they would use a museum, and they are a valuable source of revenue. It is also interesting to note that many of the interviewees praised the ways that museums such as the Victoria & Albert and the British Museum promoted their collections and made them accessible. Employees also pointed out that the library is not a university. Again, in the strictest sense, this is true. However, the BL is an internationally vital seat of learning, and home to world-class academic experts who should be promoted. University websites have easily accessible web pages for their academic staff outlining their areas of expertise and their publications, which is something the BL would benefit from. It is very difficult to find the experts in S&C despite their academic prestige. One S&C employee even stated that the BL is not a library which, in the traditional sense of libraries as a place to find a book on a shelf to borrow, is accurate. However, rather than defining itself by what it is not, it is suggested that the Library adopts a more inclusive matrix approach to the way it sees itself. National libraries are unique even amongst themselves, but the BL has aspects of museum, university, library and many other types of institution. Rather than rejecting these comparisons, staff should embrace these aspects in order to enhance the Library's assets and make all staff feel that their work is valued by the BL.

### Untapped resources

It is obvious that S&C holds a great wealth in professional expertise, and that staff are passionate about what they do. However, many of these resources are untapped and obscured. Several participants discussed how they found valuable contacts within the directorate through word-of-mouth, and around 70% stated that they did not believe the rest of S&C were really aware what they do. Many staff members stated that the directorate would benefit from more comprehensive profiles on the intranet system. At present, intranet profiles include job titles and extension numbers, whereas many participants felt that they could also include information about what their jobs involve, including areas of expertise and special interest. This would enable a more matrix culture where employees could utilise their skills, and inter-departmental links could be made within the directorate.

### Digital scholarship

There is also a large degree of confusion about digital scholarship. While all research participants agreed that it is a priority for the Library, many professed confusion concerning what it actually means, or wariness over getting involved with it. The directorate would benefit from a clearer definition of digital scholarship and a greater degree of collaboration and understanding between those working with physical and digital media. It became clear throughout the research process that there is very little difference between the two. For example, staff working in Collection Care have largely the same aims as those working in Digital Scholarship: to ensure that collections are preserved and accessible. However, there is a divergence between the two departments, with many employees feeling there is an 'either/or' situation, which is not the case.

### Annual reports

The BL produces an annual report detailing its progress. However, it largely focuses on curatorial staff within S&C, leaving other employees unable to show what they have been doing. Some sectors within the directorate are forming their own annual reports to enable them to demonstrate the intellectual value of the work they are doing. The directorate would benefit from acknowledging that departmental success cannot necessarily be determined by, for example, the percentage of collections that are digitally available, as not all departments are directly responsible for a collection.

## The impact of tangible assets

While this project set out to evaluate only intellectual assets, it was quickly determined that it is impossible to completely separate intangible and tangible assets. Budget cuts and the restrictions on staff employment have understandably limited what S&C are able to do. It would therefore be unfair to criticise the directorate for something like not having collections extensively digitised, when the BL has no internal budget for digitisation and relies on external funding which is not always available. Lack of money and reduced staff numbers have a negative impact on IAs, and any evaluation should always be conducted alongside a financial review in order to form a fair judgement on what the directorate is able to do.

## Discussion

Several attempts have been made over the past two decades to put a tangible value on IAs. Kaplan and Norton (1992) developed the Balanced Scorecard (Figure 2) to allow intellectual assets to be considered alongside financial evaluations, and Sveiby (1997) and Edvinsson (1997) have also produced notable IA evaluation tools.

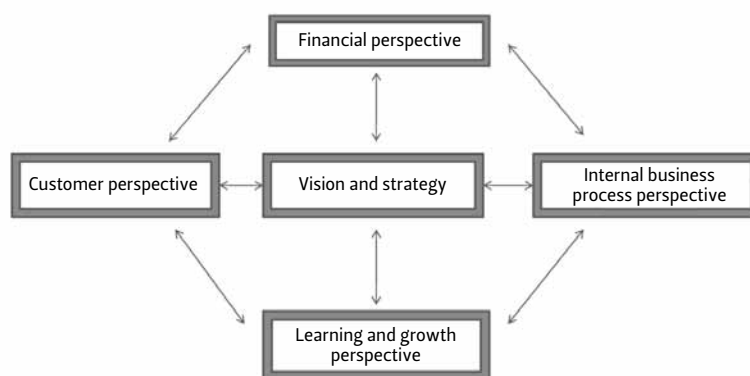


Figure 2: The Balanced Scorecard (Kaplan & Norton: 1992)

However, these models were not developed with non-profit organisations such as libraries in mind.

White (2004) has suggested that the BSC can be adapted for the measurement of IAs in libraries. The scorecard could be adapted specifically for IAs to measure the four library IA components posited by Corral and Sriborisutsakul (2010), and would allow a library to think laterally, make decisions about where their IA priorities lie, and track their progress. This, and the fact that the BL have used the scorecard in the past so staff will be familiar with it, suggested that it could be adapted for the purpose of this evaluation. The four aspects of intellectual assets fit neatly into the four scorecard areas, and it would allow the directorate to consider their IAs laterally. Having a limit of five or six key performance indicators allotted to each scorecard component allows S&C to identify and prioritise their IAs.

The original aim was to create one evaluation tool for the directorate, but it soon became apparent that this was not practical. The expertise and responsibilities of the various departments within Scholarship and Collections are very diverse, and an intellectual asset that is vital to one department would be meaningless to another. For example, the accessibility of collection catalogues would be very important to someone in Arts and Humanities, but would mean very little to someone in Research and Operations who has no direct responsibility for the collections. One theme that emerged from the data is that some employees felt that the work they do is not fully acknowledged, and this evaluation needs to incorporate all aspects of what the directorate does.

The solution was to create a scorecard for each of the five departments in S&C which would feed into a universal directorate-wide scorecard. This would allow individual key performance indicators (KPIs) to be tailored to suit each department's needs and ensure equal representation, an example of which can be seen in Figure 3. The general S&C scorecard would take into account all the results from each department, and would also evaluate how cohesively the directorate works together within the four components of intellectual assets (Figure 4).

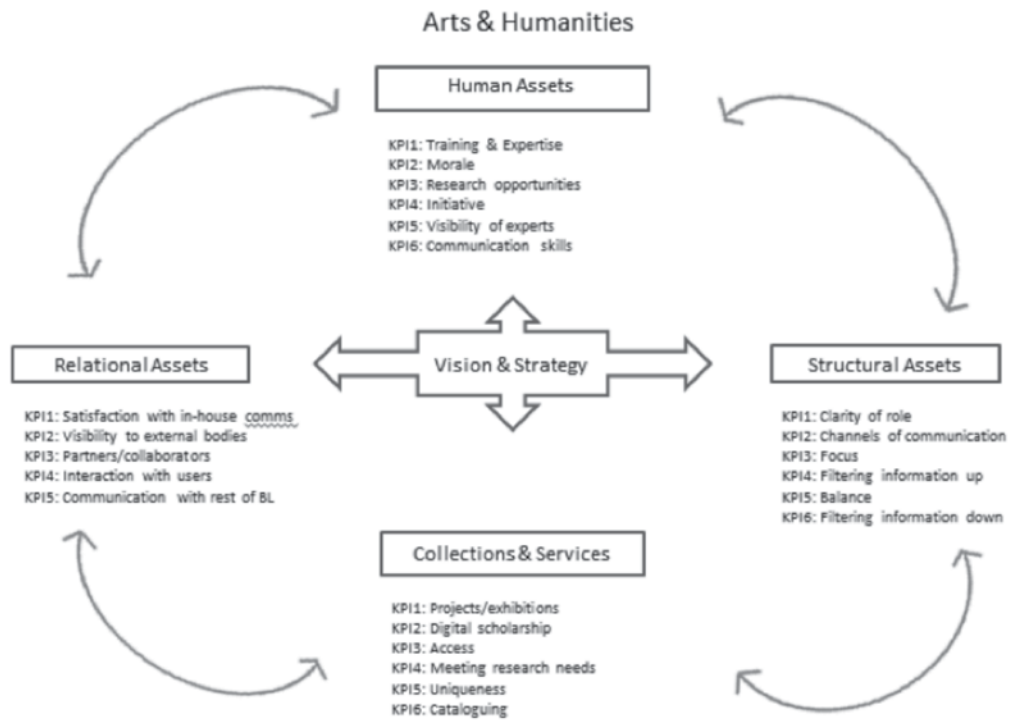


Figure 3: Scorecard adapted for the Arts and Humanities department in Scholarship and Collections

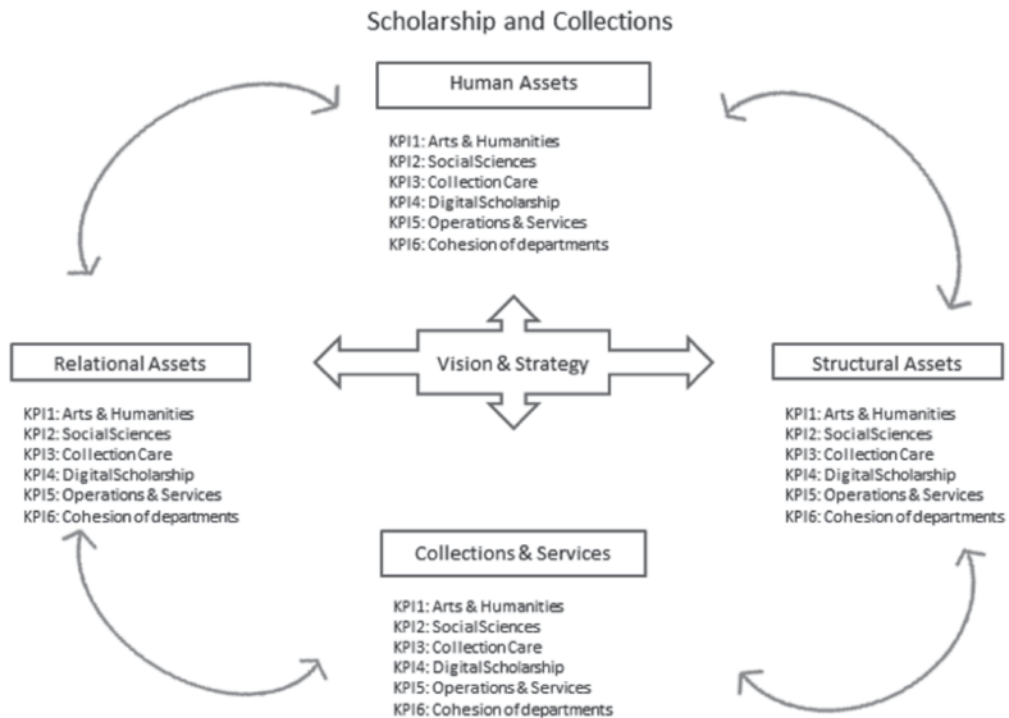


Figure 4: General scorecard for Scholarship and Collections

This scorecard can be updated over time as the directorate's priorities change to add different KPIs, and would allow the directorate to clearly see where its strengths and weaknesses lie. It is suggested that all staff members participate in the evaluation by rating how well they think the directorate is achieving each KPI on a scale of one to ten. The mean score could then be calculated for the departments and the directorate. This is a way of quantifying qualitative data.

It is also suggested that staff should be encouraged to comment on how well they think the directorate is achieving its goals and suggest improvements, perhaps through an anonymous messaging board.

## Conclusion

This tool for evaluating intellectual assets can not only be adapted for other libraries, but for any public sector organisation by altering the KPIs. It considers all aspects of intellectual assets and allows them to be considered alongside one another. It also allows the organisation to benchmark their IAs over time and prove the value of libraries in an increasingly challenging climate, and ensure that intellectual assets are used in the most effective ways. Moving forward, it would be interesting to incorporate the views of BL users into the study, something which the limits of this research project did not allow for. Similarly, it would be useful to get the input of a wider number of external stakeholders. Overall, this study has allowed for the gap to be filled in research concerning the intellectual assets of libraries. The value of libraries lies in their capacity for knowledge dissemination powered in the vast majority by IAs, and this tool will allow those assets to be identified, strengthened and demonstrated at a time when the financial climate has meant that libraries need to prove their value more than ever.

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# Strategic orientation, performance and success in a public library service: A case study of Cumbria Libraries

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## Introduction

This paper reports partial findings from a case study exploring the strategic orientations adopted by a public library service in relation to performance and success. Noble, Sinha and Kumar (2002: 25) state that, 'Strategic orientations are the guiding principles that influence an organisation's strategy making plans and activities.' The strategic orientation taken by an organisation has been reported to influence success (Narver and Slater, 1990).

The findings focus on a single case study, Cumbria Libraries, following a period of review and strategic change. The Library Service Review was commenced to address declining use, a trend not confined to Cumbria (Department of Culture Media and Sport, 2010). As a result of the review, a new model of provision was developed. This was achieved through a process of public and stakeholder engagement. The new strategy, a community orientation, focuses on community libraries providing for community needs, and aiming to improve access. This period of strategic change provided an excellent opportunity for analysis of the situation beyond the standard performance statistics collected by the library service, through the extensive community engagement undertaken in the service review, and by this case study. A number of successes have been reported as a result of the changes, and issues were explored in the case study that explore and seek to understand the nature of that success.

In this paper we present a model of critical success factors (hereafter CSFs) that emerged during the data analysis. This model is specific to this library service, however it may have resonance for other services undergoing review and strategic change. CSFs are those things that an organisation or service must prioritise, and must get right in order to succeed (Rockart, 1979). Once the CSFs are established, they are linked to performance indicators to provide a framework for planning.

The following section describes the data collection methods, and analysis. The results are then summarised, with a presentation of the CSF model. The paper concludes by recommending the validation of the model.

## Data collection

A case study approach was used to explore the situation of enquiry. The case study gave the opportunity to explore how the strategic orientation impacts on activities and performance within service, and to consider the situation from multiple perspectives – managers, staff, users, and politicians. The strength of the case study approach 'is its ability to deal with a full variety of evidence – documents, artifacts, interview, and observations...' (Yin, 2003: 8), posited to be a 'comprehensive research strategy' when used appropriately (Yin: 2003: 14). The data were gathered over a three day visit to service points across the county in April 2012, and a two day follow-up visit in November 2012. The data consisted of a series of conversations, interviews, photographs, documents, and observations (Table 1). In addition, access was given to 116 documents from the library service review. These documents included feedback from a community consultation exercise including the customer perspective. The data was analysed using Situational Analysis, a qualitative approach to data analysis. The approach is not widely used in information studies, but is one that is flexible, holistic and suited to exploring complex situations (Clarke, 2005). The approach involves a series of mapping techniques, memos, and reflective notes that aid the elucidation of the data. Themes that emerged were categorised aided by the mapping techniques.

During the data analysis, the 'critical' nature of certain issues was repeatedly stated in the data, in documents, during interviews, or observations (see Table 2 for examples). Each time participants discussed the critical issues for the



service and its success either explicitly or implicitly, the statement was logged. After logging the statement, the data was reflected on and a model was developed to represent what was noted. This model is presented in the next section.

Date (2012)	Data gathering opportunity	Participants
04.04.2012	Access to documents – Library Service Review	100 documents
18.04.2012	Observation. Meeting of Local Committee Working Group	7 people present: 3 County Level Managers, 1 Area Library Manager, 3 Elected Members
18.04.2012	Group interview	5 people: 1 County Level Manager, 3 Elected Members
18.04.2012	Observation, site visit, interview, conversations. Visit to a central city library. Interview with a senior library manager, conversations with library staff (senior and junior).	1 County Level Manager (interview), 1 Area Library Manager (conversation), 1 Librarian (conversation), 1 Children's Librarian (conversation), 1 Local Studies Librarian (conversation), 1 Volunteer (conversation), 1 Principal Library Assistant (conversation), Documents and photographs
18.04.2012	Individual interview	1 Senior Library Manager
18.04.2012	Site visit to urban Library Link. Observation. Conversations.	1 Area Library Manager (conversation), 1 Community Centre Staff Member (conversation), Documents and photographs
19.04.2012	Site visit to rural Library Link. Conversation with a County Level Manager	1 County Level Manager (conversation) Photographs
19.04.2012	Site visit to a town library service. Observation of area staff meeting. Conversation with County Level Manager	1 County Level Manager (conversation), Observation including: 10 individuals, 1 County Level Manager, 1 Area Library Manager, 8 Library staff, professionals and para-professionals. Photographs
19.04.2012	Group interview	2 Library Managers. Documents
19.04.2012	Site Visit to a rural Library Link	Photographs
20.04.2012	Site visit to a town library service. Observation of area staff meeting. Conversation – Area Library manager	1 Area Library Manager (conversation), 1 Union representative and Librarian (conversation), Observation included 9 individuals: 1 County Level manager, 1 Area Library Manager, 6 Library staff – professionals and para-professionals (inc. union representative), Photographs
20.04.2012	Group interview	1 Senior Council Member, 2 County Level Managers
20.04.2012	Researcher reflections on the visit	1 Researcher
23.04.2012	Telephone interview/conversation	1 County Level Manager
<b>The events below were follow up events mainly to feedback findings to Cumbria Libraries. Reflective notes were made in order to feed into any refinement of the analysis</b>		
21.11.2012	Visit to County administration office. Conversations with staff at different levels.	1 Senior County Level Manager, 1 Newly appointed Community Library Worker, 1 County Level Manager
21.11.2012	Site visit to semi-rural Library Link	1 County Level Manager (conversation)
22.11.2012	Site visit to rural community run library link (Observation)	1 County Level Manager (conversation), 2 Community volunteers (conversation), 3 Library users (conversation)
22.11.2012	Visit to County Archive	1 County Level Manager (conversation)
22.11.2012	Researcher feedback to management and staff	2 County Level Managers, 2 Area Level Managers, 3 Library Managers and staff

*N.B. Some participants appear in more than one conversation, interview or observation.*

*Table 1: The Case study itinerary for data gathering and follow up*



Statement from the data	Data collection	Theme
We know collaboration is going to be critical as the arts adapt to the changes ahead	Observation	<b>Collaboration</b>
Staff are a critical success factor for the service	Interview	<b>Staff</b>
Change-management, – appropriate and effective change-management is a critical success factor	Interview	<b>Change-management</b>
Nice product, positive service – critical aspect of our success	Interview	<b>Products and services</b>

Table 2: Examples of critical issues identified in the data

## Results and discussion

From the data analysis a number of factors emerged that stakeholders perceived as being critical to the success of the library service. These CSFs are derived empirically from the data. These factors were either discussed explicitly as being ‘critical’, or were discussed in terms that were interpreted as such. The norm for CSFs in an organisation is to have between six and eight factors; here ten have been presented. Taking a reductionist approach, does not adequately reflect the complexities of a comprehensive and efficient library service. Therefore, a further set of sub-factors (*in italics* below) have been presented (see also Table 3).

- **Users and demand** – The core CSF. If there is no *demand*, there is no point trying to deliver a service unless demand can be created. Attracting users is essential, without users, and demand there is no service. A sound *knowledge of user groups, and user needs* is required in order to create demand, and develop and target services.
- **Access** – Enabling access to the service points is critical. *Convenience, consistency, increased access, and ease of access* are key issues.
- **Communication** – On-going active *engagement* with community stakeholders, (users, partners, local politicians, and local stakeholders), using appropriate communication, *marketing, and promotion* strategies for tailored messages to *targeted audiences*. Community engagement is increasingly critical and services are required to work more in *collaborative* partnerships with libraries being increasing co-located with other services.
- **Culture** – a *supportive culture* is needed that gets the best from staff. A *positive culture* enables *opportunity, innovation* enables staff to thrive, and can be projected outwards into the community encouraging *participation* through *collaborative partnerships* and growth. *Shared cultural values*, clearly communicated help avoid miscommunication, and shared understanding.
- **Investment** – *Financial investment, committing resources* at a level to *sustain* a comprehensive and efficient service in accordance with statutory duty. That service being a quality, service, value for money, and an equitable service. Investment is important in terms of *commitment* from staff and other stakeholders.
- **Leadership** – with the appropriate *leadership skills*. Having *strong, supportive, opportunistic* leadership for the service to give direction for service developments, and strategic *change management*. A good leader provides *motivation* and fosters a positive culture and attitudes. Leadership needs to be present at all levels, *Government leadership* and support for libraries, leadership from *national and professional bodies, political leadership* giving support at local levels, *leadership skills in library managers, team leadership* from staff to enable projects to be successful, and *community leadership* for co-operation, and collaborative work. It is critical for senior library managers to have strong leadership skills, as they are the linchpin within the service, and for planning succession to ensure an on-going legacy of strong leadership.
- **Presence** – a strong *visible* presence is needed in the community (physical or online). Having *inviting places and spaces (physical and virtual)* that attract users and where people are keen to engage with the resources.
- **Services** – Comprehensive and efficient services *relevant* to the *user community*, with *reading, reader development, and literacy* as core. Encouragement of reading. The ability to read is critical to the *core service* offer. Without *reading and literacy* users cannot make full use of the majority of the range of *expanded services* on offer. Having a range of resources, services, events, activities and information that have *relevance* for users and potential users. The service offer should include an appropriate *mix of services and resources, and diversification*, in line with changing needs and demands. The efficient delivery of services supports quality agendas. Critical to a *sustainable* service.

- **Staff** – Good levels of well trained, motivated, knowledgeable, skilful, customer focused staff. An under-resourced service leads to de-motivated staff, and poor service quality.
- **Strategy** – A strategic approach is needed in order to *monitor the changing environment*, look for opportunities, *awareness of the local context*, *listen to stakeholders*, *monitor and evaluate efficiency, effectiveness, performance and impact*, adopting an *appropriate strategic orientation* to focus service implementation, and *learn from experiences*. *Feeding back learning* into the system to inform decision making. *Aligning services* aids the smooth running of services.

The CSFs have affinity groups, or high level factors. Presence, communication, and culture, can all be grouped as social factors all being related to the visibility of the library within the community and its social visibility. Leadership, investment and strategy are all strategic issues that will drive the direction of the service and decision making. Staff, access and service are all service factors that are enabling factors making the service visible within the community. This analysis of different levels of CSFs provides a framework for planning and analysis. Performance indicators or systems checks could be set at the sub-factor level to support performance assessment against critical areas and to assure attention to critical factors.

Figure 1 illustrates the CSF context, alongside assessment methods for performance and success, a consideration of the local context, and monitoring and awareness of the wider environment that the service operates within.

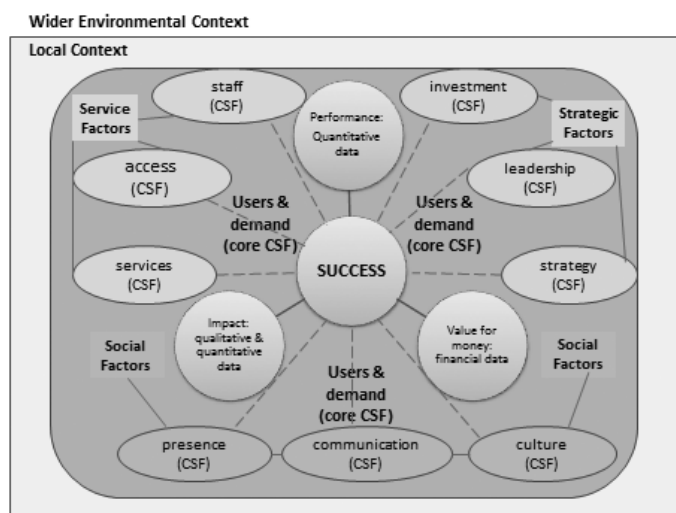


Figure 1: CSFs mapped in relation to assessments of performance and success, and against the backdrop of the local context, and the wider environmental context. The CSFs identify areas for focused attention by service managers

Core CSFs	High Level CSFs	Critical Success Factors	Sub-Factors
<p>Users and demand</p> <p>Knowledge of user groups and user communities</p> <p>Conversion on non-users</p> <p>Creating user demand</p> <p>Focusing services to user needs</p>	Strategic Factors	Investment	Finance Resources Commitment
		Leadership	<p>Skilled Strong Right attitudes, supportive, opportunistic positive etc Change Managers Legacy of leadership – succession planning Levels of leadership</p> <ul style="list-style-type: none"> <li>• Government</li> <li>• National</li> <li>• Professional Bodies</li> <li>• Political</li> <li>• Managers</li> <li>• Teams</li> </ul>
		Strategy	<p>Environmental monitoring Local awareness Stakeholder analysis Monitor and evaluate</p> <ul style="list-style-type: none"> <li>• Efficiency</li> <li>• Effectiveness</li> <li>• Performance</li> <li>• Impact</li> </ul> <p>Learning organisation</p> <ul style="list-style-type: none"> <li>• Feedback learning</li> </ul> <p>Strategic orientation appropriate for context Strategic alignment of values, services communication etc</p>
	Service Factors	Access	<p>Convenience Consistency Increased access Ease of access</p>
		Services	<p>Relevant Community focused Reading, and literacy Service mix</p> <ul style="list-style-type: none"> <li>• Core services</li> <li>• Expanded services – diversification relevant to changing needs</li> </ul> <p>Diverse Sustainable</p>
		Staff	<p>Right numbers Right skills mix – well trained, knowledgeable, skilful Motivated Customer focused Supportive and empathetic</p>
	Social Factors	Culture	<p>Supportive Positive Opportunity Innovation Participation Partnerships Shared values</p>
		Communication	<p>Engagement Marketing &amp; promotion Audiences Collaboration</p>
		Presence	<p>Visible Inviting</p>

Table 3: A framework of CSFs to aid planning and analysis.

CSFs as broad categories as suggested in the management literature (Rockart, 1979), are inadequate and unhelpful in complex library domain. The CSF framework with broad and sub-CSFs is more meaningful to enable the organisation to address specific challenges. The idea is that when attention is needed and given to these areas, performance will increase, having a positive impact on the success of the service.

What emerged from the data was a set of CSFs (Figure 1, Table 3). CSFs are usually presented as statements beginning 'We must have...' or 'We need...' (Oakland, 2004: 66), and have performance outcomes and indicators linked to them. CSFs as a management model were brought into prominence by Daniel (1961) and Rockart (1979). They are usually focussed down to a small number, maybe six, the few areas within an organisation it is critical for the organisation to get right in order to ensure success. The model presented in this study is different from the usual CSF models as it presents a framework of CSFs in order to take into account the complexity within the library environment. The model puts users at the core, which aligns with a community orientation. The high level CSFs, namely service, strategic, and social factors, encompass strategic and operational issues, and multiple stakeholder perspectives. The sub-factors tease out themes within the CSFs that are important in the library context. Key performance indicators can be established at any level in order to assess achievement within those critical areas. This model is data driven, and is grounded in the analysis of the data collected within the case study. The model is specific to Cumbria, and therefore not generalisable to all public libraries: however, the framework approach to CSFs is a model that other libraries may find useful to incorporate into the strategic planning. Libraries could develop their own CSF framework specific to their unique needs and context, just as libraries develop their own versions of other management models eg their own strategic plan, their own performance indicators, or balanced scorecard.

Other work has been done on CSFs in libraries (eg Haycock, 2007; Huotari and Wilson, 2001; Matthews, 2008; Tilley, 2013). Some studies do not refer to the established literature on CSFs, and some are not data driven. The CSF model in this study contributes to the LIS and management literature on CSFs, beginning grounded in primary research, and in the classic management literature (Daniel, 1961; Rockart, 1979).

## Conclusions

The findings of this study address the complexity of the service situation in the public sector library, avoiding an overly reductionist approach. This CSF complex may need further revision and refinement through discussion with library staff. Once confirmed, the critical success factors are the issues that the service must give attention to. Indicators and measures can be established in these areas, and reviewed to ensure continued success.

This study is a single exploratory qualitative case study and as such the results are not generalisable. However, the model and main lessons from this research could be of interest to other libraries and public sector services. The traditional reductionist approach to CSFs is not useful in public libraries that operate in a complex and ever-changing environment of intense competition, challenges, constraints, and multiple stakeholders. A wider set of core, primary and secondary CSFs or CSF framework better reflects the complexity of the service. To take a reductionist approach, and ignore complexity may mean that critical issues are ignored and likely to have severe implications for the success of a service.

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# Benchmarking the publication rate of Canadian health sciences librarians: What constitutes an acceptable level of scholarly contribution?

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**P**ublication rate, as measured from publication proceeding from conference presentations, has become a popular indicator for knowledge translation both in medical librarianship as well as other health disciplines. Conferences provide opportunities to explore current trends, report on research and share new ideas or best practices. Presentation at conferences is viewed as a preliminary step to publication; research presented at conferences that is not published in the formal literature is effectively lost to future professionals. Establishing a benchmark of scholarly contribution through publication is an important measure of evidence production in a particular discipline or field.

A Cochrane systematic review analyzed 79 biomedical research studies that examined publication rates post conference presentation. (Scherer, Langenberg & von Elm 2007) The Cochrane review found 44.5 % of studies initially presented at professional meetings are subsequently published as a journal article. In the library literature two studies of note were found, Fennewald's examination of presentations at an Association of College and Research Libraries (ARCL) conference and Harvey & Wandersee's investigation of abstracts presented at the Medical Library Association annual meetings. (Fennewald 2005, Harvey, Wandersee 2010) Fennewald's research "explores (1) the proportion of conference presentation published in refereed journals, (2) whether the presentation format predicts publication, and (3) the time from presentation to publication." (Fennewald 2005, p. 518) Presentation formats included papers, posters, roundtable discussions and panel presentation. Examining 256 presentations at the 1999 ARCL conference, Fennewald determined that 34 of 256 or 13% of abstracts were fully published in peer review journals post conference. Panels and papers published more often than roundtables and posters. The average time from presentation to publication was 21 months with papers taking 26 months, posters 19 months, panel presentations took 17 months to publish and roundtable discussion took 21 months. The main objective of Harvey & Wandersee's study was to determine a publication rate of abstracts presented at the annual meetings of the Medical Library Association (MLA) for 2002 and 2003 with a secondary objective to establish possible reasons for not publishing. From 442 abstracts of papers and posters presented at the two meetings, a publication rate of 27.6% was found. Harvey & Wandersee report that the greatest barrier to publication as perceived by conference presenters was a lack of time. 'Other' was the second most cited reason, with the majority of responses thematically categorized as "not substantive enough to merit a journal article" or not intended to publish. Harvey & Wandersee suggest "library science posters and papers presented at meeting are often designed to share successful projects and many not always follow strict research design" (Harvey, Wandersee 2010, p. 254) as a reason for the lower publication rate as compared to other biomedical fields.

Scholarly communication is often mentioned as a new and future area of opportunity for academic and bioscience librarianship, which includes supporting researchers in the knowledge of metrics and data, and other areas in the publication lifecycle. (Belzile et al. 2010) Implicit in exploiting this opportunity is that the librarian must be regarded as a peer, a fellow researcher who draws on their own knowledge and experience to act as a consultant. As librarianship assumes this mantle, it is important to develop a composite of comparative research to definitively establish a measure that librarians can compare to other disciplines. To contribute to the comparative evidence, the authors replicated the Harvey & Wandersee study in the Canadian health sciences librarian context. Using Canadian Health Libraries Association/ Association des bibliothèques de la santé du Canada (CHLA/ABSC) conference abstracts presented from 2004-2009, the authors hypothesized that both the publication rate and factors in the determination to publish would be equivalent to that of the Medical Library Association study. As secondary outcomes, the authors conducted a bibliometric and altmetric analysis to determine impact level and factors influencing impact.



## Methods

The cohort was selected using the conference proceedings from the years 2004 to 2009. In order to collect an adequate sample size we used 6 years of conference proceedings. The date range allowed for 3 years to publish from the last conference chosen to the beginning of the study.

A total of 200 paper and poster abstracts were identified from CHLA/ABSC conferences from 2004 to 2009, 105 papers and 95 posters. Some authors had more than one abstract in the years study resulting in 150 unique first authors. Invited speakers were not included in the sample.

Publication rate was calculated using two different methods, a literature search and an author survey. The literature search for publications was conducted in PubMed, CINAHL and LISTA and independently checked (AS) for accuracy by random sample. The publication JCHLA, Journal of the Canadian Health Libraries Association was hand-searched from 2004 to present. Each conference abstract title was searched in each database checking for author's last name and potential title keywords.

A survey was sent to first authors to confirm publication rates and discover reasons that may affect their choice to publish. Author emails were collected from conference programs, university directories and websites, 120 email addresses were found for the 150 first authors 30 email address could not be located. Authors were asked to respond based on the first paper/poster presented chronologically in the year range. Respondents were to provide a citation if they had published as a check against the literature search. Using Fluid Survey in July of 2012 first authors were emailed a survey link to complete, 12 email addresses bounced back leaving 108 surveys successfully sent. Three follow up reminders were sent out every following two weeks. If they choose not to publish, abstract authors were asked to indicate a primary and secondary reason for not publishing. Finally demographic information was collected, including CHLA/ABSC chapter affiliation, years in profession, type of library employed, and highest level of education.

All citations were compiled into a spreadsheet and identified by publication type (ie journal article, book chapter etc). A bibliometric analysis consisting of Bradford's Law of Scatter, impact factor, and times cited was conducted on the sample. The most recent year-available impact factor for each journal title was collected from ISI's Journal Citation Reports (JCR), or a publisher-reported impact factor found on the journal website. For a majority of titles the impact factor was unavailable and the analysis by impact factor was abandoned. Google was used to collect times cited counts as other sources, such as Scopus and Web of Science, did not index a majority of the titles in the sample. Times cited counts were collated by journal title and descriptive statistics performed. In February 2013 an altmetric analysis on the journal citation sample was performed using Altmetrics.com and ImpactStory.

## Results

### Literature search and bibliometrics analysis

The publication rate found by the literature search was calculated as 31.5%, 62 out of 200 abstracts resulting in 1 or more publications; the rate determined by the survey was 32%. In total, there were 80 publications found from the abstract sample: 76 journal articles, 2 journal letters, 1 dissertation and 1 book chapter. In this analysis, all publication types were included in the rate, regardless of the timing of the publication, pre or post conference presentation, so long as the topic of the paper closely paralleled the topic or title of the conference abstract.

The focus for the bibliometric and altmetric analysis was restricted to journal articles and letters only, as other publication types (eg dissertation) did not warrant their inclusion due to their low number. In the Bradford's Law of Scatter analysis, the Journal of the Canadian Health Libraries Association (JCHLA) was the major publication, having published 33% of all journal citations (**Figure 1**) In level 2, the Journal of the Medical Library Association (JMLA) and Health Information & Libraries Journal (HILJ) were the second and third most commonly selected title for publication with 9% and 6% respectively. In Level 3, the "other" category, 54% fell under a "medical" title classification, and includes British Medical Journal and PLOS One.

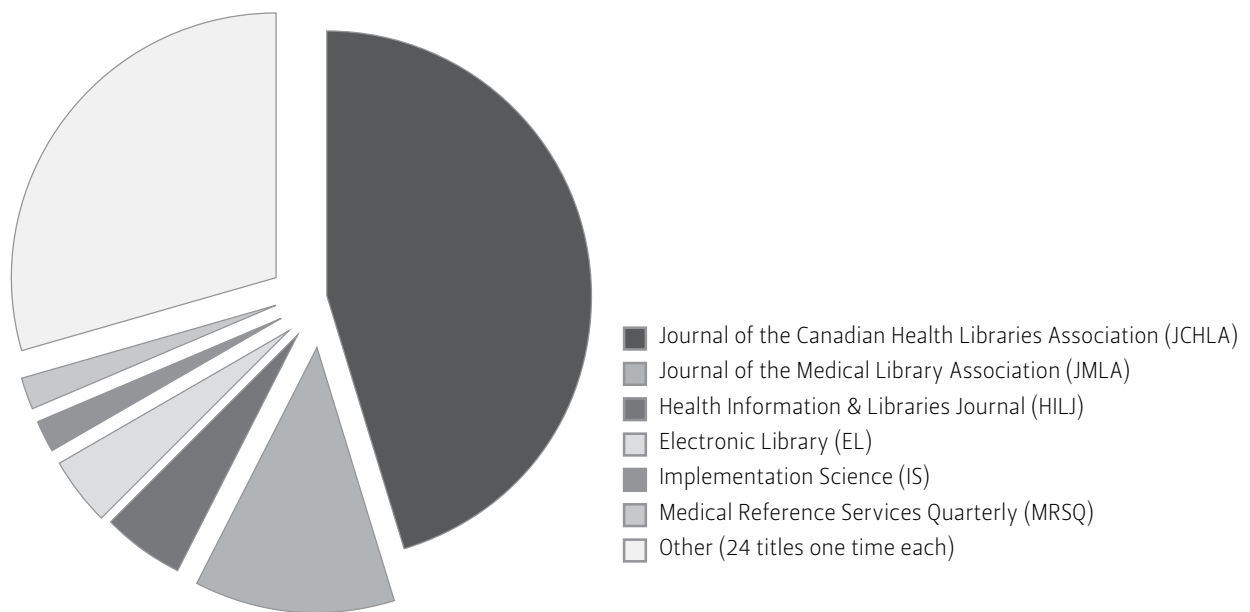


Figure 1: Proportion of publications by journal title from abstracts presented at CHLA/ABSC.

Google Times Cited was sought for all citations whose journal title was represented 2 or more times in the sample. As shown in **Figure 2**, 4 out of the 6 titles had averages within a 2-point spread; there was no statistical variance found between any of the titles ( $F\text{-score}=2.5$ ). For a majority of library science titles in the sample, Google Times Cited was the only consistent available count, although its reliability is debatable at the present time. (Davis 2012) This may have implications for library science professionals when wanting to demonstrate individual scholarly communication impact if reliable traditional metrics like times cited are not available to report.

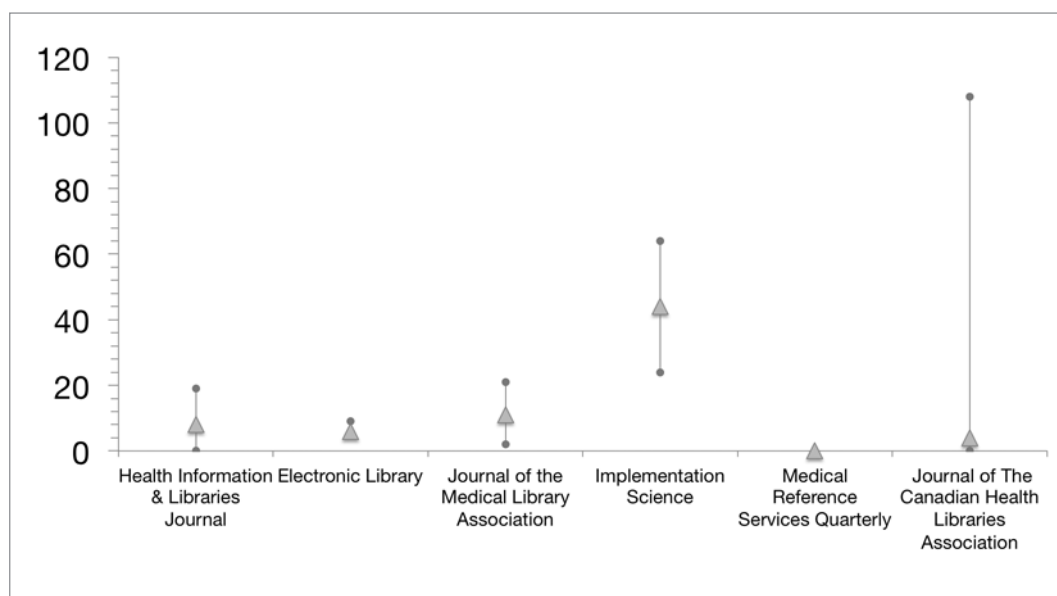


Figure 2: Average Google Times Cited counts by journal title.

Article level metrics (ALMs), using Altmetric.com and ImpactStory, was determined for those citations in which a librarian was an author (71 out of 78). Using the Altmetric.com bookmarklet, as each PDF or web-version of the full-text article was retrieved, the bookmarklet was activated to calculate an Altmetric score and counts in Mendeley, CiteULike, and Twitter (reported as "tweets"), and other social media mediums. ImpactStory has a report-generating tool where a series of citations can be represented at one time with the flexibility of many options of representing each article: DOI, URL, citation, or other recognized identifier systems including PMID. Metrics that ImpactStory reports includes Mendeley, CiteULike, Delicious, Twitter (reported as "Topsy Tweets"), ImpactStory designations of Highly Cited and Highly Saved, and other social media mediums including Facebook and wiki mentions. Of the 71

citations found in the study, almost 75% of the sample had some kind of metric representation in either ImpactStory or Altmetric.com. Metrics using Altmetric.com could be obtained for 23 (32%). Using ImpactStory, 29 of 71 citations had at least 1 kind of metric reporting (41%). Only 14 citations (18%) shared metric representation in both Altmetric.com and ImpactStory. Mendeley counts were used to determine the degree of correlation between the counts provided by Altmetrics.com vs. ImpactStory for a given citation as it was most consistently available. **Figure 3** shows reasonable correlation: 71% of citations had identical counts. Mendeley counts can be used as an indicator of scholarly community uptake of a given publication. (Lin, Fenner 2013, Tananbaum 2013) From these calculations, Canadian health librarian publications have a range of uptake between 25% (18 out of 71 citations have Mendeley count  $\geq 1$  in Altmetrics.com) and 30% (21 out of 71 have Mendeley count  $\geq 1$  in ImpactStory).

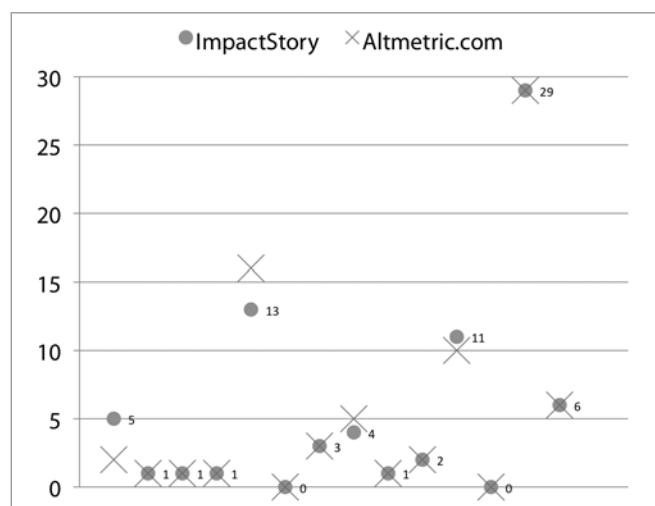


Figure 3: Citations that had Mendeley counts in both ImpactStory and Altmetric.com

## Survey

There was a 51.85% (56 out of 108) survey response rate. In the survey conference presenters were asked to choose the main reason they did not submit their presentation for publication, 43% (15 out of 37) of respondents selected time restriction as the main reason for not publishing. Time restriction was also chosen as the secondary reason for not publishing by 36% of the respondents. The second most common primary reason for not publishing was a belief that the abstract was unworthy of further publication. Comments from survey respondents illustrate this belief *"Not sure there is a paper in it since it was a presentation on a database project; not a research project; Topic did not warrant a full article; it was a 'how I do this' type of abstract – not really 'worthy' of further publication."*

The demographics showed an equal distribution of respondents across the CHLA/ABSC chapters. However the majority of medical librarians publishing are from the academic area with 59% of the respondents from universities or university hospitals, and another 14% in teaching hospitals. Survey respondents showed no difference in publication rate by years in the profession. The largest educational classification was 77% (43 out of 56) with a Masters of Library Science or equivalent qualification, 11% (6 out of 56) had other Masters level degrees, 7% (4 out of 56) had PhDs and 6% (3 out of 56) had Bachelor level or diplomas.

## Discussion

The authors' hypotheses were confirmed with major findings of the study similar to those in the Harvey & Wandersee study. Among the commonalities are similar rates of publication, common publication choices, similar reasons for not publishing and demographics. Harvey & Wandersee established a publication benchmark for librarians presenting at Medical Library Association conferences of 27.6%; in our study we found an equivalent rate of 31.5%. This rate is although comparable to that found by Harvey & Wandersee is significantly less than the 44.5% rate found in the Cochrane review conducted in biomedical sciences. When presenting these findings at both MLA and CHLA/ABSC 2013 conferences, the common opinion was, since the rate is comparable, it is satisfactory. To regard 29% as a "satisfactory" bar would be detrimental to our profession as the majority of new research and ideas presented at conferences is lost to the vast majority of library science professionals. As a discipline we should strive to close the gap between 29% and 44%.

The most common journal choice for MLA conference presenters was the *Journal of the Medical Library Association (JMLA)*, followed by *Journal of Hospital Librarianship and Medical Reference Services Quarterly*. Canadian health sciences librarians chose to publish in *Journal of the Canadian Health Libraries Association* followed by *Journal of the Medical Library Association (JMLA)* and *Health Information & Libraries Journal*. It is not surprising that the official publications of each national health library association are the leading publication for each respective nation. The significance of *JMLA* as a leading health library publication can be seen with both studies having it as prominent choice of publication for both American and Canadian health librarians.

The main reasons for not publishing, including lack of time and confidence in the presentation material, present significant barriers to improving publication rate. The “lack of confidence” reason is a form of self-censorship as it results in a seeming reluctance to engage the publication process, denying peer review its work to determine what is of value to the broader community. There are present efforts by library associations and library administrations to address research knowledge and improve confidence to adopt evidence-based librarianship, including continuing education initiatives such as Canadian Association Research Libraries ‘(CARL) Librarians’ Research Institute. (Canadian Association of Research Libraries, Jacobs, Berg 2013) These initiatives should be evaluated through the examination of publication rate of attendees to determine if these efforts improve upon the publication rate benchmark in this study. Further, to address the issue of time, some academic institutions allow for protected research time and resource support. A national examination and collation of institutional policy around protected research time to raise awareness, and then the development of an official statement of support around such policies, would be an appropriate advocacy of this issue.

The publishing demographics in this study shows a bias in health librarian research toward academic health librarianship practice as academic health sciences librarians do the majority of publishing. This may have implications for the future of the smaller health libraries if the body of knowledge does not reflect the culture, practices and conditions of those libraries and the professionals who practice in them. More research is required to determine what specific advocacy on the part of organizations can be done to assist and encourage non-academic librarians to engage and complete the research lifecycle in their own practice.

The secondary outcomes of this study illuminate issues in publication quality in the library literature. Today’s librarians need to demonstrate the impact of their services and their work just as their research counterparts. Traditional bibliometrics and new altmetrics measurements are methods used by academics to quantify impact in their curriculum vitae and performance reviews. Article-level metrics (ALMs) present exciting opportunities to librarianship to show the impact and uptake of our research as well as address the barriers presented in using traditional metrics. (Lapinski, Piwowar & Priem 2013) Unfortunately, librarianship is hindered in obtaining traditional metrics due to inconsistencies in library journal indexing, and the low use of internationally recognized ID systems (eg PMID, PMCID, DOI etc) in favour of linking to obtain ALMs is problematic. (Lin, Fenner 2013) Librarianship should demand their publications engage in the use of identifier systems and visibly display these metrics so as to exploit this opportunity and show scholarly communication leadership to the research community at large.

## Conclusions

While equivalent to other library disciplines compared to other medical disciplines the publication rate for CHLA/ABSC conference presenters is low. The decision to publish is primarily influenced by two factors, time and author’s confidence. As librarians continue to embrace evidence based librarianship the need for a robust pool of evidence found in the published literature is paramount. If librarians are to demonstrate value to the disciplines they serve, then publication with demonstrated impact through traditional bibliometrics such as times cited and new measures found in altmetrics are methods to be employed.

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# Safety in Numbers: Developing a shared analytics service for academic libraries

**Ben Showers, Graham Stone**

## Abstract

### Purpose

It is clear that libraries consider the use of data to inform decision making is a top priority in the next five years. Jisc's considerable work on activity data has highlighted the lack of tools and services for libraries to exploit this data.

The purpose of this paper is to explore the potential of a shared analytics service for UK academic libraries and introduce the Jisc Library Analytics and Metrics Project (LAMP).

The project aims to help libraries effectively manage collections and services as well as delivering pre-emptive indicators and 'actionable insights' to help identify new trends, personalise services and improve efficiencies, economies and effectiveness (student attainment and satisfaction and institutional reputation, for example). The project builds on the Library Impact Data Project at the University of Huddersfield and the work of the Copac Activity Data and Collections Management tools.

The paper will deliver a case study of the project, its progress to date, the challenges of such an approach and the implications the service has for academic libraries.

### Design, methodology or approach

The paper will be a case study of the project and its institutional partners and early adopters work to date and explore both the technical and cultural challenges of the work as well as its implications for the role of the library within the institution and the services it provides.

Specifically the case study will comprise of the following aspects:

1. A brief history of the work and the context of library analytics services in the UK (and internationally). A description of the approach adopted by the project, and the vision and goals of the project
2. Exploration of the challenges associated with the project. In particular the challenges around accessing and sharing the data, 'warehousing' and data infrastructure considerations and the design challenge of visualising the data sources in a useful and coherent way
3. Outline of the implications of the project and the resultant service. In particular the implications for benchmarking (within the UK and beyond), standards development for library statistics and impact (in particular the development of ISO 16439), service development, the role of the library within the wider institution and skills and expertise of librarians.

### Findings

This paper will report on the initial findings of the project, which will run from January 2013 to December 2013. In particular it will consider the issues surfaced through the close engagement with the academic library community (through the projects community advisory and planning group) and the institutional early-adopters around data gathering and analysis.

## Practical implications

Data accumulated in one context has the potential to inform decisions and interventions elsewhere. While there are a number of recognised and well understood use-cases for library analytics these tend to revolve around usage and collection management. Yet, the potential of a shared analytics service is in uncovering those links and indicators across diverse data sets.

The paper will consider a number of practical impacts:

- Performance: benchmarking, student attainment, research productivity
- Design: fine tuning services, personalised support
- Trends: research landscape, student marketplace, utilisation of resources.

The case study will explore these practical implications for libraries and what they mean for the future of the library within the academy.

## Originality and value of the proposal

The paper will present a case study of a unique service that currently fills an important gap within the library analytics space. The paper will focus on the services potential to transform both the way the library works and how it is perceived by its users, as well as its role and relationship within the broader institution.

## Uncontrolled keywords

Library usage, student attainment, low use, non-use, academic libraries, undergraduate students, achievement

## Background

The 10th Northumbria International Conference on Performance Measurement in Libraries and Information Services is testament that libraries have been collecting and analysing data for many years. The variety and scope of this data has ranged from transactional data, such as catalogue searches, book issues and returns, access to electronic resources and entry through the library gates to the manual collection of statistics on space usage, student satisfaction and external visitors to the library and library spend.

Collection methods are as varied as the data collected, for example, quantitative methods such as the SCONUL (Society of College, National and University Libraries) annual statistics return (SCONUL, 2013) and internal spread sheets or qualitative methods such as LibQual (Association of Research Libraries Statistics and Assessment Program, 2013) or analysis of the National Student Survey (HEFC, 2013). For as long as libraries have been analysing statistics, they have also been benchmarking their data against others either through bespoke work and consultancy or through such services as LAMPOST (Libraries, Archives, Museums and Publishing Online Statistics Tables). (LISU, 2012)

The application of this data is also varied and can include library management functions, demonstration of impact and improvement of service and student experience.

Jisc has been working in this area through the Jisc Activity Data programme (Jisc, 2012), which has provided a significant body of evidence and practical guidance to make a library analytics service feasible. The Library Impact Data Project (LIDP), led by the University of Huddersfield, was one of these projects (University of Huddersfield, 2011). The first phase of LIDP looked at data from over 33,000 undergraduate students across eight universities. The results, announced at the 9th Northumbria conference (Stone et. al., 2012), supported the hypothesis that there was a statistical significance across a number of universities between library activity data, specifically book issues and electronic resource usage, and student attainment, although it is important to note that this relationship is not causal. (Stone and Ramsden, 2013) This work was supported by similar studies in Australia at Wollongong (Cox and Jantti, 2012 and Jantti and Cox, 2013) and the United States at Minnesota. (Nackerud et. al., 2013 and Soria et. al., 2013)

The second stage of LIDP looked at data from 3,000 full time undergraduates from the University of Huddersfield. This phase used continuous rather than categorical data, which allowed the project to do more with the data. The aim of this study was to dig deeper into the data and looked at a number of new data categories, such as demographic



information (Stone and Collins, 2013), discipline, retention, on and off campus use, breadth and depth of e-resource usage and UCAS data. Using students' final grades as a percentage, rather than a class, also allowed phase two to demonstrate a correlation in the phase one hypothesis in addition to the statistical significance found in phase one.

## Library analytics survey

Towards the end of the second phase of LIDP, the project worked alongside the Copac Activity Data (Mimas, 2011) and Copac Collections Management projects (Mimas, 2013) at Mimas. The Copac activity data project analysed libraries' circulation data to provide detailed recommendations for researchers and students. Copac collections management uses Copac data to compare libraries' collections to see which items must be retained and which can be discarded.

Huddersfield and Mimas collaborated on a library analytics survey, which was held in the autumn of 2012. The survey tried to understand any potential demand for a data analytics service, which could enhance business intelligence at an institutional level to support strategic decision-making and whether there was appetite for a shared service approach to process the raw data and to provide analytics tools and data visualisations back to local institutions. The survey received 66 replies from library staff, including many library directors.

96% of those who replied confirmed that they would want automated provision of analytics demonstrating the relationship between student attainment and library usage within in their institution, with 94.6% wanting to benchmark their data with other institutions. Furthermore, 87.7 were interested in the richer data that was used as part of the second phase of LIDP, eg discipline, age, year, nationality and grade.

When asked if, in principle, their institution would be willing to contribute data that could be linked to anonymised individuals, those surveyed showed a significant appetite for an analytics service, however, there was more hesitation over sharing UCAS and student data than other forms of more traditional library focussed usage data. There was also a strong willingness to share a broad range of data, however only 47% wanted to be named. The majority (91%) preferred some kind of anonymisation, eg to be identified by JISC band.

Figure 1 shows the major concerns from participants that would prevent them from sharing library analytics data, these concerns are discussed below.

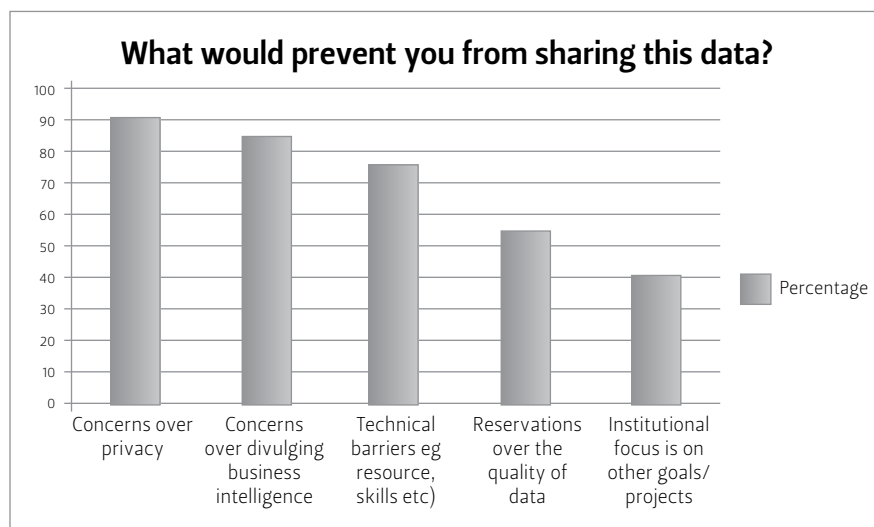


Figure 1: Concerns that would prevent the sharing of library analytics data

Finally, the survey asked specifically about the institutional focus regarding analytics. Figure 1 shows that 41% felt that focus was on other goals, however, figure 2 shows that many did see library analytics as a current strategic priority.

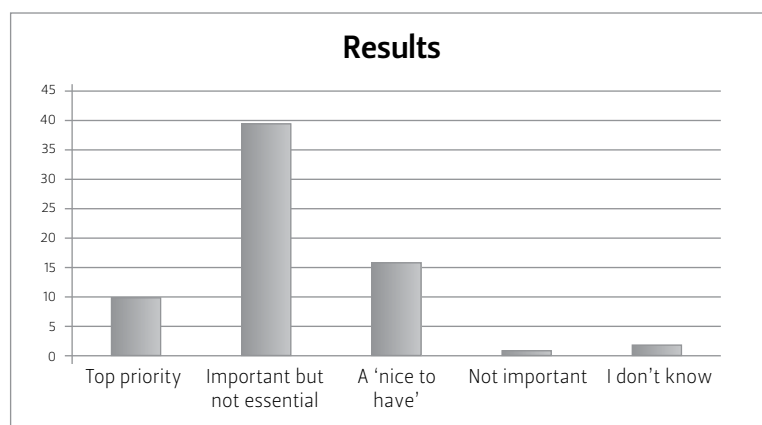


Figure 2: Library analytics as a current strategic priority

When asked if this was likely to become a top priority in the next five years, the evidence from the survey was clear (see Figure 3).

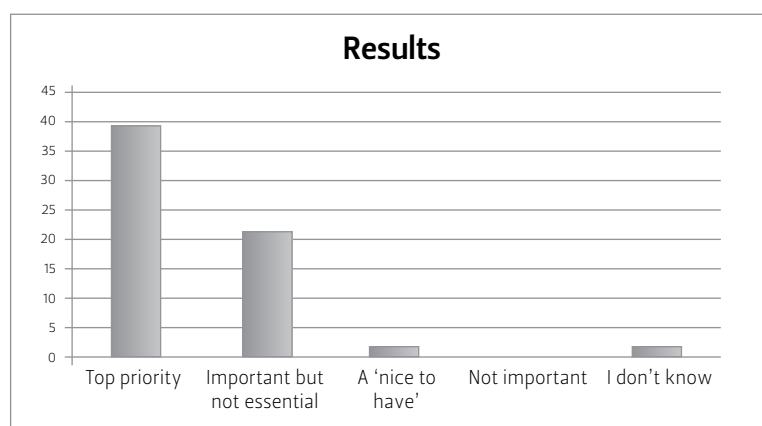


Figure 3: Library analytics as a strategic priority in the next 5 years

## Appetite for a National Analytics Services

The key strategic drivers for the use of library analytics identified by the library survey were, perhaps unsurprisingly:

1. Enhancing the student experience
2. Demonstrating value for money
3. Support research excellence

A subsequent meeting of representatives from the LIDP and Copac projects, Jisc, SCONUL and RLUK decided that there was sufficient evidence demonstrating the need, and desire, for a shared analytics service. This resulted in collaboration between Jisc, Mimas (at the University of Manchester) and the University of Huddersfield and funding for the Library Analytics and Metrics Project (LAMP) (Jisc, 2013).

Running from January to December 2013, LAMP aims to develop a prototype shared library analytics service for, and in collaboration with, UK academic libraries. The LAMP prototype will deliver a data dashboard enabling libraries to capitalise on the many types of data they capture in day-to-day activities, and will support the improvement and development of new services and demonstrate value and impact in new ways across an institution in line with the three strategic drivers highlighted above.

## Technology: Architecture to interface

In developing the LAMP service it is critical that it fits within the wider library, and institutional, systems ecosystem. Libraries already have a range of existing systems that are essential to the delivery of their services, so a new service must be able to happily co-exist within this wider systems environment; both locally in the library itself, and potentially with outside services and vendors to deliver data through existing systems and consume data from them.

The prototype LAMP architecture is therefore built around APIs (application programming interfaces). Adopting the approach described in figure 4 (Jisc, 2013), LAMP will use an API to deliver data to its own user interface (the dashboard), as well as consume external APIs from other data sources (such as JUSP, Copac or other third party services, for example). Such an approach would also allow LAMP users to get the results of the analysis on their own applications, if they preferred.

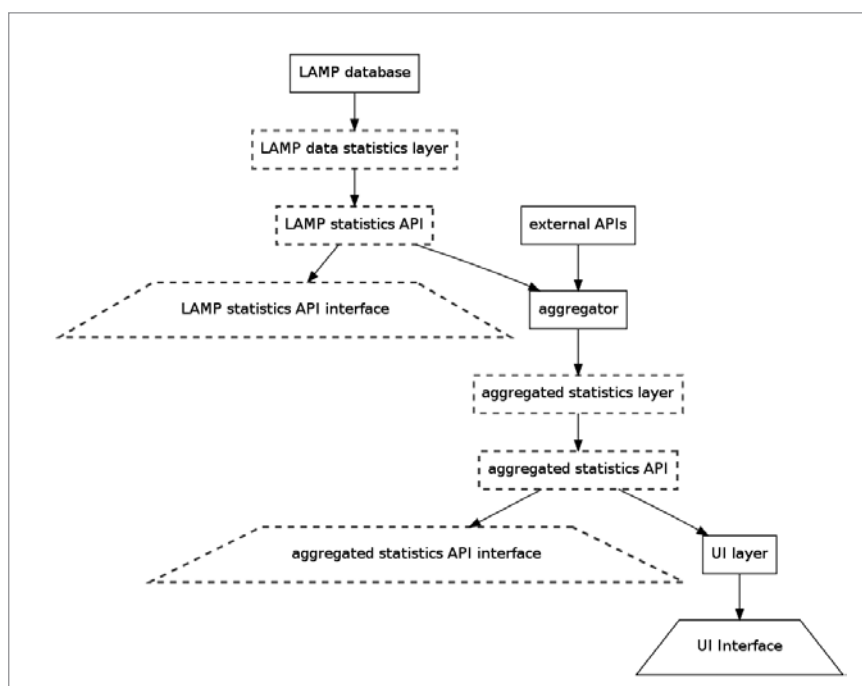


Figure 4: Example of possible structure for LAMP data analysis

In theory, the approach outlined would enable LAMP to analyse data both from the LAMP database and from third party sources and present this as a coherent view across these various data sets. In reality this may not provide any useful – or statistically valid – data, and the project is leaning towards implementing a processing layer and API on the LAMP data for now, and only including data from other APIs in the interface for comparison.

Further statistical analysis across various datasets could then be an option for a future release phase of LAMP.

Initially the LAMP prototype will be exploring the types of visualisations and analysis it can deliver. To begin with the visualisations may place a larger share of interpretation onto the user, but as the prototype is able to undertake more sophisticated analysis and visualisations, the aim is for the service to do the majority of the heavy lifting when it comes to analysis. But, from the outset, a guiding principle of the data visualisations will be that they should provide users with meaningful data, and provide the ability to adapt the types of visualisation depending on the users' requirements and/or needs.

Like the clichéd iceberg, beneath the LAMP user interface are the hidden technologies and architecture that ultimately deliver the data visualisations for the library. The ultimate aim of these visualisations is that the time and resources of the library can be spent on acting upon the data, not collecting it. This also means that, as far as is possible, analysis should be 'baked' into the visualisations being delivered; the service should already have done the majority of the analysis. In the current language of data analytics, the LAMP prototype should provide libraries with 'actionable insights'; it is then left to the library to interpret and act (or choose not to act) upon that data.

## Data and identifiers

For most users of the LAMP prototype it will be the dashboard that is the visible face of the service. Yet, it is the data circulating beneath the surface of this interface that will represent the heart of the service. Without the data, or indeed with the wrong data or incorrect analysis, the service will fail to meet the requirements of its users.

To ensure the data is useful, and the prototype focuses on the right types of data and analysis, the project developed a number of primary use-cases for the service (for more details see Jisc, 2013). These use-cases were grouped under a number of headline areas:

- Demographics: Usage of resources by specific student or researcher groupings, such as age;
- Discipline: Usage of resources by discipline area;
- Student use: e-Resource usage against their final grade, for example;
- Staff use: e-Resource usage against H-Index, for example;
- Collection management: Benchmarking against other institutions;
- Outcomes: Library visits by students who did, and didn't drop out.

This is a high level overview of the use-cases, and these are in a state of constant refinement by the project and its community advisory group, but they ensure the eventual prototype is able to deliver two core objectives: Firstly, that the service is able to meet the needs of libraries in the delivery of their day-to-day services (such as collections management decisions), and secondly; provide the libraries with a way to uncover new narratives about their collections and the usage of their resources, and demonstrate new forms of impact.

In order to deliver these use-cases the project has identified the various data-sets it initially wants to use. For the first phase of the prototype these data sets can be roughly divided into two types:

1. Existing aggregations: Copac, JUSP, IRIS etc;
2. Institutional data: gate counts, circulation records, student records etc

The first category of data is, to a large extent, easier to access (it is an existing aggregation) and helps enable the delivery of those essential services for libraries, such as collection management and resource usage. The second category is harder to access, and places a greater burden on the contributing institution (at least initially) in providing access to this data. But, it is this data that provides the project with an opportunity to deliver new types of insight and opportunities for libraries; from demonstrating impact through to improving student attainment and retention. It offers the potential for entirely new types of library services and how the library supports the wider mission of the institution.

The potential of the institutional data is significant, but it poses two main problems for the prototype LAMP service: The first is that a large proportion of the burden of the service is being shifted onto the institutions providing the data. They have to do the hard work in negotiating access for the project and ensuring LAMP is able to consume the data when it has been made available. While this is a problem for the project phase of the work and initial prototype, the burden on institutions will become less as the prototype service is able to develop ways of migrating that burden over to the service and make the institution's role as straightforward as possible.

More significantly, institutions will, currently, have to apply anonymous identifiers to the data so the project is able to track a student's data across a form. If the service cannot identify data relating to the same individual that may be located in different parts of a form or spreadsheet, then the analysis of that data will be sub-optimal and provide little in the way of interesting information.

Initially the use of identifiers seems to imply the service will be able to identify data relating to specific individuals. This is not the case however: If the anonymisation process which generates the ID is robust, then the ID will tell the project nothing about the person to which it refers. It will simply provide the project with a way to join up separate tables of data. A further valid concern is that once data has been joined together using an anonymous ID, you could identify an individual through the unique data relating to her, for example: There is only one student who is on the Spanish history and computer science courses, originates from Norway and likes the novels of E.M Forster, for example.

This is a completely valid concern. However, this concern is removed due to the level of data the service will allow users to look at. Put simply, the LAMP prototype will not provide access to the data it holds at the granularity described above. The reasons for this are both the issues surrounding anonymity and, more importantly, ensuring the prototype is able to demonstrate statistically significant patterns for its users across the data. If the prototype provided analysis at too granular a level then it would no longer be highlighting patterns and correlations across the data; the analysis would effectively be meaningless.

The development of the LAMP prototype is, to a large extent, an exploration of these legal and ethical questions that the effective use and exploitation of data pose to libraries and institutions. LAMP poses a number of important questions to the libraries which engage with it, including how the service might help the library's role in the wider analytics mission of the institution, and the implications for the library (and institution) of not making use of this data for the benefit of its students and researchers.

## Legal and ethical considerations

When considering the legal and ethical implications of a prototype service like LAMP it is easy to focus on the implications of exploiting the data. This is usually for a very good reason: There are specific legal obligations that the institution has regarding the data of its students, researchers and staff, and the implications of breaching those obligations are substantial. Equally, the institution, and its library, has certain ethical obligations towards its students and staff which cover how it uses the data about its students and researchers.

Yet, it is important to consider the flip side of this argument: The implications of *not* effectively using this data for the benefit of students and researchers. What might be the implications of a student who asks their institution why they didn't exploit the data they had about her to ensure she did better in her final exams, or didn't drop out? There are equally persuasive and compelling ethical imperatives for the effective exploitation of data for the institution and its students and researchers.

In effect the legal obligations and measures can be met by ensuring they are not contravened, but the ethical issues are less clear cut, nor so easily mitigated by specific actions or protocols (Kay et. al. 2012). With these various and complex legal and ethical challenges the LAMP project has adopted a three level approach to addressing the legal and ethical landscape within which it will be operating.

Firstly the project has developed a draft set of terms and conditions for participating institutions that will outline the legal obligations the service has, along with the legal status of the data centre Mimas, which will host the data. These terms and conditions are currently drafted and available on the project website (Jisc, 2013) and provide the basis for a legal relationship between the contributing institution and the service. These terms and conditions will then be complemented with further legal advice and guidance for institutions to ensure institutions are clear about LAMP's legal and ethical commitments.

Secondly, the project has been developing a legal and ethical framework. This will provide the project with a clear understanding of the current legal and ethical requirements it has to its users, and also the best practice it should be adopting in delivering its service. The aim of this framework is to both provide the project with a clear understanding of its role and responsibilities, but also provide the library community with a clear picture of what the current legal and ethical landscape currently looks like for library data.

The final stage of the project's legal and ethical approach is its principles. These principles, made available on the project blog and web presence (Jisc, 2013), provide the 'rules' by which the project intends to undertake its work. These are not legally binding like the service's terms and conditions, nor as comprehensive as the framework, but they lay down the approach of the project and make it clear what it will and won't do. The principles include statements on data protection and confidentiality, licensing and standards, project development and how institutions can get involved.

The ability of the project to resolve these legal and ethical issues and to develop policies, guidance and support that enable institutions to trust and have confidence in the service and its use of institutional data, are critical to the ultimate success of the project.

In many ways LAMP is an experiment exploring the potential of analytics and measurement within libraries and finding out how far the data libraries hold can be used to deliver next generation services and provide enhanced student and researcher experiences. It is an attempt to work with the library community to see what it is possible to do with analytics.

## Looking forward

In his opening keynote at the 10th Northumbria conference, Elliot Shore of the Association of Research Libraries (2013), called for libraries to move from a position of describing what's happening in their spaces and with their collections, to one where they are able to begin predicting need and usage: A shift away from the quantity of data libraries collect, towards one of quality and the ability to impact on student and researcher expectations and experience.

The aims of LAMP are neatly described by Shore's clarion call. The project wants to work with the library community to ensure it is able to deliver the analysis and information for librarians to be able to act upon what really matters to their students, researchers and users. Furthermore, after December 2013 when the prototype service is delivered, the project will work with libraries and institutions to ensure that library analytics are part of the wider enterprise of the institution and of UK academia more broadly.

## Acknowledgements

Many thanks to Jisc, University of Huddersfield and Mimas (University of Manchester) and the LAMP team for their work on the project which includes: Joy Palmer (Mimas), Ross McIntyre (Mimas), Bethan Ruddick (Mimas), Lee Bayliss (Mimas), Siobhan Burke (Mimas), Ellen Collins (RIN) and David Kay (Sero Consulting).

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# Student Usage, Preferences of Emerging Technologies and their Impact on Library Services

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## Abstract

### Purpose

The Internet and the communication technologies trend is a relatively new one and little research has been reported on its acceptance and use in education. Today's challenge is delivering services through smart phones, eBook readers, and tablets to users on the go who now view more content on mobile devices than desktop and laptop computers. The present study is therefore to survey student's utilization and preference of popular Internet and communication technologies at the selected educational institutions in Dakshina Kannada (India).

### Design/ Methodology

The study reported here was designed to gather preliminary evidence of the current adoption of these technologies by the students, as well as their willingness to segue their use of these tools from the social arena to the instructional one. The universe of the study were the 1204 students of three colleges. Structured questionnaires were employed to collect data from a representative sample of 200 students.

### Findings

The researcher made an attempt to study the local relevance of various technology trends reported in library science literature and use the survey data to develop library services through these emerging technologies. Survey results indicated that, while students do not wish to experience an overwhelming library presence on all social networking and Internet media, most do wish to have basic library services easily accessible through a few of the most popular social networking and Internet technologies.

### Practical implications

The investigator identified some unique trends in usage among their local population and has suggested certain library services and plans in accordance with the findings. Libraries cannot adopt popular trends without studying the local population. Therefore, this study's findings are presented with a caveat what is true for one library may not be true for others. The results of this study may not reflect the preferences of the various other libraries' users, but they can serve as a starting point for libraries interested in studying their own populations.

### Conclusions

In the course of the analysis, the investigators were surprised by a number of student responses, since the researcher had assumed that students used social technology but did not wish to interact with their library through these mediums. The survey results indicated this assumption to be invalid; students do welcome a library presence in specific types of social technology.

### Originality and value of the study

The paper may inspire other libraries to study their own users and develop new services based on those users' needs rather than popular trends which may be based on radically different user groups. Awareness of and experimentation

with new technologies should be an important component of professional development in the library. When librarians stay abreast of emerging trends, they will be able to manage these tools in new library service opportunities at the time that makes sense for the library in question.

## Keywords

Emerging technologies, Face-book, India, Social networks

## Introduction

As social networking and Internet technologies make significant strides in innovation and development, technology mediums for individuals to communicate with one another have increased exponentially. New technologies are impacting the daily work of academic libraries and their librarians more and more. Although librarians have been early adopters of many information technologies, attempting to develop and make themselves and their services visible to end users on all available social networking and Internet communication mediums is a costly and inefficient service model for most libraries. Thus, selecting the most effective communication technologies for delivering library services has become a major challenge for many librarians. Rather than blindly adopting the most visible emerging technologies, librarians must tailor library service delivery options to the distinct needs and preferences of their particular user population.

The present study is therefore to survey student's utilization and preference of popular Internet and communication technologies at the selected educational institutions in Dakshina Kannada (India). Also these institutions are imparting distance education through the IGNOU study centers, providing a virtual library presence beyond the physical campus is vital for improving the user experience. A survey was developed to study students' ownership, usage, and perception of popular social networking and Internet technologies, and whether students would like to utilize library services offered through these technologies.

## Literature review

During the past few years college students have been exposed to all types of technologies in many aspects of their lives. On a daily basis they use computers, online social networks, cell phones, text messages, Twitter, RSS feeds, wikis, blogs, online learning tools, and much more. How students integrate these instruments into their lives has been the focus of much attention and research. Today's students, being familiar with second-generation technologies popularly known as Web 2.0, can find and use information; produce content in various formats such as posts, blogs, or videos; and push content to recipients by various media such as phones or computers.<sup>1</sup> However, specific skills, and attitudes, can vary among groups.

Librarians at Kent State University studying Web 2.0 technology usage in undergraduates found heavy use of Web 2.0 applications, which encourage connection, interaction, and sharing. Results revealed that students made a clear distinction between their social and educational locales online.<sup>2</sup> The boundaries between learning technologies and social technologies were more subtle among UK university students in varied disciplines who were organized and efficient at finding and handling information, able to multitask, comfortable with combining tools, adept at studying and learning in various environments at various times, and willing to share resources with peers.<sup>3</sup>

Interaction with peers is a significant factor in students' lives, and much research has been conducted concerning students' social behaviors. Past research concerning the use of instant messaging (IM) tools was compared to results of a study published in 2005. Similarities surfaced, including the implication that face-to-face communication was a preferred and useful form of communication, while cell phones and IM were overtaking other forms of interaction such as land-line phones and e-mail.<sup>4</sup> E-mail also lagged behind in preference for IM in survey results released in 2007 from 545 college students who favored IM technology for personal and social communication.<sup>5</sup>

1 Peter Magolda and Glenn Platt, "Untangling Web 2.0's Influences on Student Learning," *About Campus* 14, no. 3 (July–Aug. 2009): 10–16.

2 Kenneth Burhanna, Jamie Seeholzer, and Joseph Salem Jr., "No Natives Here: A Focus Group Study of Student Perceptions of Web 2.0 and the Academic Library," *Journal of Academic Librarianship* 35, no. 6 (Nov. 2009): 523–32.

3 Grainne Conole, Maarten de Laat, Teresa Dillon, and Jonathan Darby, "'Disruptive Technologies', 'Pedagogical Innovation': What's New? Findings from an In-Depth Study of Students' Use and Perception of Technology," *Computers & Education* 50, no. 2 (2008): 511–24.

4 Andrew Flanagin, "IM Online: Instant Messaging Use Among College Students," *Communication Research Reports* 22, no. 3 (Summer 2005): 175–87.

5 Sean Lancaster, David C. Yen, Albert H. Huang, and Shin-Yuan Hung, "The Selection of Instant Messaging or E-Mail: College Students' Perspective for Computer Communication," *Information Management & Computer Security* 15, no. 1 (2007): 5–22.

As a related topic, student communication and cell phone use have also been the focus of several studies. In a 2005 survey of 383 college-age young adults in four states, the majority of respondents used their cell phones to socialize, remain available, tell time, leave themselves reminders, and use contact list functions.<sup>6</sup> An additional popular function of cellular phones is text messaging (or “texting”). A focus group at the University of Huddersfield showed that students were generally open to the idea of receiving text messages about library news and functions, such as a reminder for an overdue book. However, they emphasized the importance of only receiving messages that were useful in nature.<sup>7</sup>

IM was the most commonly used communication technology in a survey of 268 Canadian university students who were asked how they used IM, mobile phones (talking and texting), and e-mail.<sup>8</sup> In 2004, Kevin Lee and Stephen Perry surveyed 409 college students at a small college about their use of IM. They found that students dedicated a substantial amount of time to communicating regularly through IM, often even more than through face-to-face contact, and friends were the most important communication partners in their everyday lives.<sup>9</sup>

Many students also build social relationships online by using social networking sites such as MySpace and Facebook. Social Networking Sites such as Facebook are one of the latest examples of communications technologies that have been widely-adopted by students and, consequently, have the potential to become a valuable resource to support their educational needs. Student usage of Facebook was the subject of a study in which ninety-two undergraduates kept a diary-like log each day for a week. Results published in 2009 showed that students spent approximately 30 minutes on Facebook throughout the day, mostly reading and observing content.<sup>10</sup> Highlights of the 2010 EDUCAUSE Center for Applied Research (ECAR) Study of Undergraduate Students and Information Technology, which surveyed over 36,950 college freshmen and seniors, indicated 96.6 percent of survey respondents used Facebook and 22.5 percent used MySpace.<sup>11</sup>

At the time this paper was written, limited literature was available on student usage of the popular Twitter technology. Similarly, information on student use of RSS feeds was scant. However, what literature is available suggests that some colleges and universities in US and other developed countries use these technologies to communicate with students. Some institutions use Twitter to dispatch news and information to students, while others use RSS feeds to direct information into course management systems.

Additionally, some libraries are creating Facebook profiles. In 2007, librarians Sarah Miller and Lauren Jensen offered tips for increasing student response to library services and information via Facebook, such as understanding that Facebook is all about connecting with the students. Many libraries across the United States are using MySpace and Facebook to reach students, announce library events, and answer research library-related questions. Farkas (2007)<sup>12</sup> explains this phenomenon, contending, “Many academic libraries have developed a presence in online courseware with links to library services targeted to online learners. Similarly, the Brooklyn College Library has provided a MySpace portal to its services ... that contains links to the catalog and databases, as well as, documentation on how to access library resources off-campus” (p. 27). In fact, in one study<sup>13</sup>, librarians wanted to determine which source students would use more to ask reference and research related questions: email, phone, instant message, Facebook, or in-person (Mack, Behler, Roberts, & Rimland, 2007, p. 5). Students in this study preferred asking their reference and research related questions using Facebook and email even more than face to face. In 2007, librarians Sarah Miller and Lauren Jensen suggest<sup>14</sup>, among other things, keeping the profile active, updated, and current; using the newsfeed feature; replying promptly to student questions; sharing favorite books, interests, and quotes; and promoting new databases and library services. (p.17) However, what literature is available suggests that some colleges and universities in US and other developed countries use these technologies to communicate with students. Some

6 Jeff W. Totten, Thomas J. Lipscomb, Roy A. Cook, and William Lesch, “General Patterns of Cell Phone Usage Among College Students,” *Services Marketing Quarterly* 26, no. 3 (2005): 13–39.

7 Andrew Walsh, “Mobile Phone Services and UK Higher Education Students: What Do They Want from the Library?” *Library and Information Research* 34, no. 106 (2010): 22–36.

8 Anabel Quan-Haase, “University Students’ Local and Distant Social Ties: Using and Integrating Modes of Communication on Campus,” *Information, Communication & Society* 10, no. 5 (Oct. 2007): 671–93.

9 Kevin C. Lee and Stephen D. Perry, “Student Instant Message Use in a Ubiquitous Computing Environment: Effects of Deficient Self-Regulation,” *Journal of Broadcasting & Electronic Media* 48, no. 3 (2004): 399–420.

10 Tiffany A. Pempek, Yevdokiya A. Yermolayeva, and Sandra L. Calvert, “College Students’ Social Networking Experiences on Facebook,” *Journal of Applied Developmental Psychology* 30, no. 3 (May–June 2009): 227–38.

11 EDUCAUSE, *The ECAR Study of Undergraduate Students and Information Technology*, 2010 (N.p.: Educause, 2010), 64 (accessed Oct. 28, 2010).

12 Farkas, M. (2007). Going where patrons are: Outreach in MySpace and Facebook. *American Libraries*, 38(4), 27.

13 Mack, D. M., Behler, A., Roberts, B., & Rimland, E. (2007). Reaching students with Facebook: Data and best practices. *Electronic Journal of Academic and Special Librarianship*, 8(2) Retrieved from [http://southernlibrarianship.icaap.org/content/v08n02/mack\\_do1.html](http://southernlibrarianship.icaap.org/content/v08n02/mack_do1.html).

14 Sarah Miller and Lauren Jensen, “Connecting and Communicating with Students on Facebook,” *Computers in Libraries* 27, no. 8 (2007): 18–22.

institutions use Twitter to dispatch news and information to students, while others use RSS feeds to direct information into course management systems.

Additionally, some libraries are creating Facebook profiles. Most of the studies have been conducted in developed countries. This study provides an insight into the perception and use of emerging technologies by students at the selected educational institutions in Dakshina Kannada (India).

## Method

The population for this survey was the undergraduate and master degree student body of the three autonomous colleges in Dakshina Kannada which have a permanent affiliation from the Mangalore University (Dakshina Kannada) and are also imparting distance education through the IGNOU study centers. St Agnes College and St Aloysius College situated at Mangalore and Sri Dharmasthala Manjunatheswara College, Ujire were selected for the study. The survey included both on-campus and distance-learning students, since the libraries strives to serve the diverse needs of both groups. The investigator personally visited these institutions to collect data from the respondents. The universe of the study was 1,204 students of the above three colleges. Structured questionnaires were employed to collect data from a representative sample of 200 students. The users under both the groups (Master degree and undergraduate students) were randomly selected. The responses received included 162 usable ones, making a response rate of 81%.

The survey questionnaire consisted of twenty-four questions. Demographic questions, including gender, student classification and faculty they belong to, were asked in the first section of the survey. The second section of the survey asked about respondents' access to the Internet, type of Internet access, and computer and laptop ownership to assess levels of technological adaptation. The next section investigated participants' familiarity with and usage of a number of popular technologies, including Twitter, social networking sites, and mobile phones. Participants familiar with a popular technology were also asked to indicate whether they would be interested in library services offered through that specific technology platform.

## Results and discussions

### Demographics

Undergraduate students were the largest group represented in the survey results at over 70 percent of the survey respondents, with 46 percent students pursuing their undergraduate degree through regular courses and 24.6 percent of the undergraduate students studying through distance education. Master's students represented in the survey were 29.4 percent, with 16.6 percent from the regular courses and 12.8 percent were from the continuing education stream. (see *figure 1*).

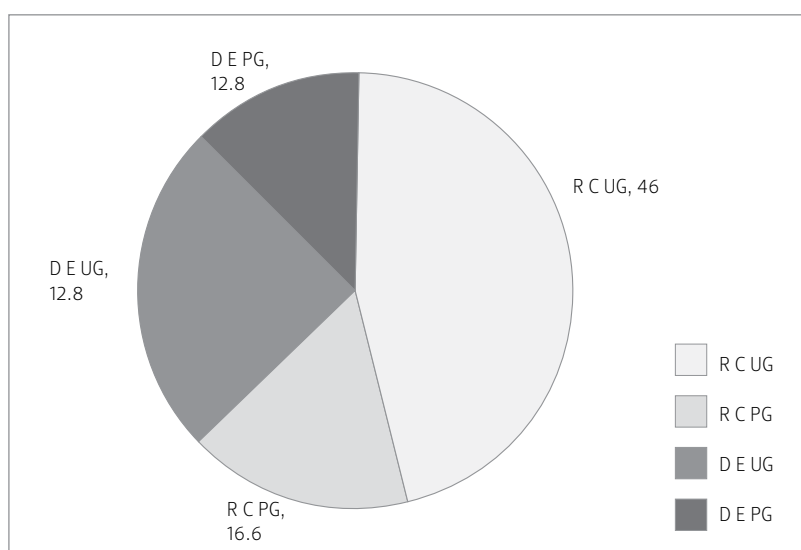


Figure 1: Student classification of survey respondents

It was found that (64.5%) were female respondents and (35.5%) were male; hence this sample can be considered as a female dominated group. The individual areas of study of the respondents were broadly classified into Humanities, Commerce and Science faculties. Almost equal percentages of respondents represented the 3 faculties.

At the time of the survey, about 92 percent of student respondents had Internet access either at the college, Internet center or at their homes, with almost 76 percent of those having high-speed DSL Internet. Almost 54 percent of students used a laptop computer (though the survey did not distinguish between those who personally owned a laptop and those who might borrow one from a family member, roommate, etc). Less than 5 percent of students owned a net book. A little over 61 percent of student laptops had wireless Internet access. Student computers, both desktops and laptops, averaged between 1 and 4 years old, with laptops slightly more likely to be 1–2 years old and desktops slightly more likely to be 2–4 years old.

Students were asked to indicate their familiarity with a list of popular or emerging technologies. Social networks like Facebook were more familiar among the respondents (over 98 percent), while RSS feeds had lower familiarity (less than 12 percent). Figure 2 shows the full list of responses.

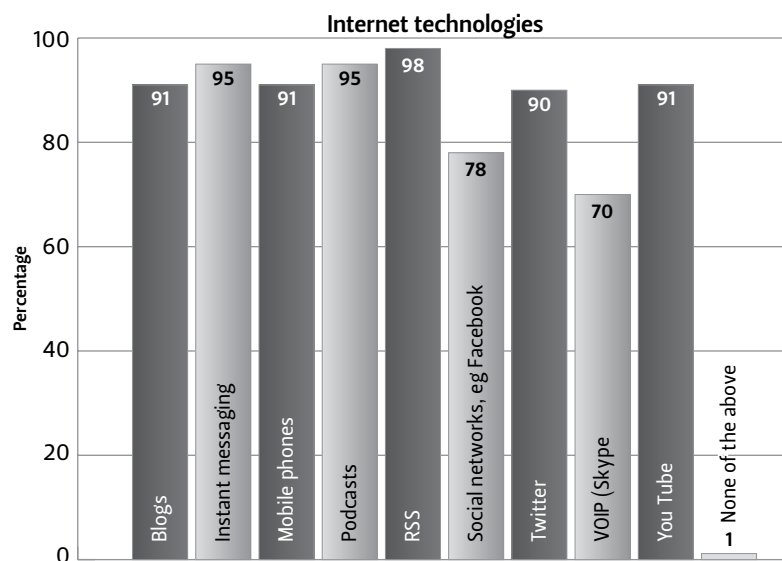


Figure 2: Familiarity with the Internet Technologies

Students were then asked a series of questions about several technologies of particular interest to the library. The following sections investigate the specific responses pertaining to each technology.

### Mobile phone

Mobile phone ownership, although not entirely ubiquitous, was very high: 97 percent of respondents reported ownership of a mobile phone. Another 2.7 percent reported interest in mobile phones despite their lack of one, but two respondents (0.3 percent) indicated that they had no interest in owning a mobile phone.

The largest group of students (27.3 percent) owned phones between 1 and 2 years old. Another 23.9 percent owned phones 7–12 months old, and 32.5 percent owned phones only 1–6 months old. Students also reported owning phones that were less than 1 month old (4.3 percent), 2–4 years old (3.3 percent), or more than 4 years old (8.6 percent).

Brands of mobile phones varied widely, but worth noting is the fact that only 3 percent of students surveyed owned any style of Blackberry.

Text messaging ranked second (94.4 percent) only behind phone calls (98.3 percent) in student usage of mobile phone features, and 90.4 percent of respondents indicated that they used text messages on a daily basis. Other heavily used features included photo/video (82.1 percent), Web browsing (27.4 percent), e-mail (25.5 percent), playing MP3 audio files (43.6 percent), using a touch screen (22.7 percent), downloading and using apps (26.6 percent), and chat/IM (9.4 percent).

Regarding mobile phone services, 66.3 percent of students reported an interest in asking the library questions through text messages, a service which the libraries most desired to introduce. Another 16.5 percent reported an interest in asking the library questions through IM from their mobile phones. The most desirable service, selected by 62.8 percent of students, was the ability to renew books from a mobile phone. Searching for and reading journal articles on a mobile phone were activities of interest to 19.4 percent of students.

Few students specified that any text message interactions should be initiated or requested by the student and some students were of the opinion that the library should send text message alerts when a book is due. However students considered unsolicited text messages from the library undesirable.

## Twitter

The Twitter platform has not been heavily adopted by the respondents, only 11 percent of respondents reported usage and hardly 10 percent reported an interest in usage. Of those few who used it, the majority of use (63.6 percent) was recreational and only 42 percent was educational. Almost 77 percent of students surveyed had no interest in using Twitter, and nearly 85 percent of students surveyed had no interest in library services using Twitter. Less than 15 percent expressed a desire to ask the library questions via Twitter, and just over 15 percent wanted to follow Twitter updates on library news, events, and resources.

## RSS feeds

Only about 11.2 percent of students reported subscribing to any RSS feeds; almost 32 percent reported an interest in them despite not using them, while nearly 56.8 percent stated that they had no interest in RSS feeds.

Although close to 80 percent of respondents reported no interest in library services using RSS feeds, about 24 percent were interested in updates on new library books and resources, and a little over 21 percent were interested in updates on library news and events.

## Chat/instant message

Of the respondents surveyed, 61 percent said they used chat/IM services. Almost 10 percent did not use IM services but were interested in doing so, and 29 percent had no interest in IM. Among those students who used IM services, the most popular tool was Yahoo! Messenger (35.4 percent), with no other IM tools over 15 percent.

Almost 56 percent of students conveyed an interest in asking the library questions through IM, 30 percent were more specifically interested in being able to add the library to a contact list or "buddy list" within their preferred IM program, a mechanism for making it easier to contact the library in the midst of regular IM activities without having to visit the library's website. 51.6 percent of the students had no interest in Library services using IM.

## Podcasts

About 28 percent of students said that they download or listen to podcasts, primarily for recreation.

Most reported using them only occasionally (48 percent), with 23.4 percent reporting monthly use, 20.9 percent reporting weekly use, and only 7.8 percent reporting daily use of podcasts. Podcasts were of interest to but not used by 28.2 percent of students, and 35.7 percent had no interest in working with podcasts.

Of all the library services that use podcasts, the service of most interest to students was in instructional podcasts about using the library. Almost 40 percent of student respondents were not interested in any library services using podcasts. Several students expressed that they would like to see entertainment in a library-produced podcast series.

## Other technologies

Students were given a list of other popular or emerging technologies and asked whether they would be interested in library services using these technologies, though no specific examples of such services were provided. Nearly 39 percent reported an interest in seeing library services in social networking sites especially the Facebook. 45.3 percent



were interested in services using YouTube; and 22 percent were interested in library blogs. The remaining technologies received comparatively low responses, as illustrated in figure 3.

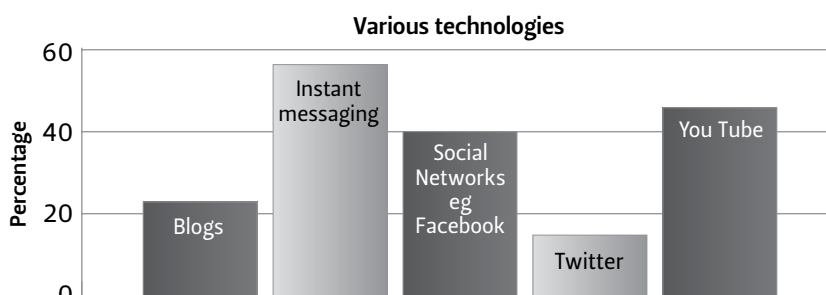


Figure 3: student interest in library services using various technologies

## Discussion

### Mobile phones

According to the survey the high rate of interest expressed regarding SMS text reference service (asking questions through chat/IM) in survey results affirms the need to have this service. As mentioned in the results section, renewing books is the most desirable service for the mobile phone. The libraries can provide an online form for users to request book renewals and create a version designed for the mobile environment and complement the library's endeavors to develop a mobile website.

Some interest was also indicated by the respondents (especially the postgraduate students) in searching for and reading e-books and journal articles on their mobile phones. Unfortunately, the ability to provide this service lies with the database vendors rather than the library. Although many vendors are releasing mobile versions of their database interfaces, the library ideally prefers to endorse mobile websites accessible to many devices, rather than device-specific apps.

It was surprising to note that almost one third of respondents expressed no interest in library services using mobile phones. Some respondents specified that they did not want to pay for more technology and library services. Even if the library service is useful and the tool is free online, costs may go up for data use on their mobile phones.

### Twitter

A low percentage of respondents indicated use of or interest in library services on Twitter. The libraries can think of using Twitter as a newsfeed tool because it is easier to update, especially from remote locations. Comment and response features in Twitter can be turned off because the library's purpose is not to provide a social network. Lesser percentage of respondents opined not to use Twitter as a social network but they would like to have the library on Facebook.

### RSS

A little more than a quarter of respondents indicated recognition of the term RSS. A very high percentage indicated no interest in library services using RSS. It does very strongly indicate that the term RSS itself has little or no meaning for the average student user. Users may subscribe to RSS feeds or use RSS-based services like an iGoogle homepage, but they do not know the official name for the technology they are using.

### Chat/IM

Survey responses indicated an unexpected interest in reference chat using IM and also in adding the library to the student's IM contact list or 'buddy list'. The libraries can establish reference chat using IM, and add users to a buddy list. Survey results also indicate however, buddying the library is likely a shortcut for accessing the library chat service. Some users tend to keep an IM program open while working on a computer, and it may be easier to click on the library in a buddy list than navigate to the library's website. Introducing the ability for users to add the library

to their buddy lists will add value to the existing service. But it will require the time and labor of the library staff to answer the queries of the users as and when received.

## Podcasts

Prior to this study, the investigators assumed that there would be no interest in library podcasts. Although other studies have shown them to be popular in certain contexts, local usage statistics have never reflected that trend, showing little to no use of the podcasts. But, an unexpected 56 percent of respondents expressed an interest in library-created podcasts related specifically to their areas of study. There would be an increase in the use of podcasts, if podcast topics are as per students' desired interests, such as discipline-specific research or instruction topics. Instead of using the technological jargon (podcast) that may be unfamiliar or unappealing to users, libraries may use the terms like *watch audio, video or listen to*.

## Other technologies

Respondents were also questioned on other technologies that could be considered for future library services. The investigator was surprised by the responses concerning social network such as Facebook. The percentage of respondents who indicated interest in library services in Facebook was higher than expected. The expectation was that students would see these sites as recreational social spaces and would not like the idea of libraries intruding these sites also. However, changes to Facebook configuration over the years may have helped to change that attitude.

Facebook could be another possible venue for reference services, though it would require the time and labor of library staff to monitor comments and respond in a timely fashion. Without employing the community conversation aspect, it would largely duplicate the way that the library currently uses Twitter as a newsfeed. To begin with, the libraries could create a simple Facebook page, which includes some links and search widgets, but which cannot be used as a space for asking reference questions. News-feed content can be fed simultaneously to both Twitter and Facebook, thus expanding the number of ways in which a user can subscribe to library news. Many libraries across the United States are using MySpace and Facebook to reach students, announce library events, and answer research library-related questions. These libraries feel positive about the future success of their Facebook presence. Further research investigating what students want from the library in Facebook may lead to additional services on that site in the future.

YouTube received high reported interest for library services. The library has instruction videos which do not get used very often. If these videos were in a channel on YouTube, a site where users are already present, the videos might get used more. A YouTube channel would provide an additional opportunity for making content available and spreading the library's branding beyond its website. As many of the existing library instruction videos were created in formats that are not compatible with YouTube technical considerations do come into play. As the library updates and adds to its online instructional materials over time, the librarians will need to simultaneously discuss the selection of video formats and the use of YouTube as a platform for video distribution.

There was not much indicated interest for library services using VOIP/Skype or location-based social networks. Students indicated high familiarity with VOIP/Skype technology but showed little interest in library services.

As the adoption of new technologies often explodes quite suddenly, the researcher is of the opinion that a lack of student use at this time does not imply any criticism. Awareness of and experimentation with new technologies should be an important component of professional development in the library. When librarians stay abreast of emerging trends, they will be able to manage these tools in new library service opportunities at the time that makes sense for the library in question.

The libraries cannot adopt popular trends without studying the local population. Therefore, this study's findings are presented with a caveat what is true for one library, may not be true for others. The results of this study may not reflect the preferences of the various other libraries' users, but they can serve as a starting point for libraries interested in studying their own populations. This survey included questions that allowed respondents to provide free responses. Information overload was one of the most common comments explaining lack of interest in library services; students reported that they felt unable to keep up with all of today's many tools for receiving and sharing information. Another repeated comment in the survey responses stressed that the library should focus on extending its services into a few popular platforms, most closely related to its core mission instead of attempting to participate in all new technologies.

## Conclusions

The limitations of this study are: due to stratified sampling of students and an unanticipated higher response rate from undergraduate students, they are overrepresented in the survey results. Also in the course of the analysis, the investigator was surprised by a number of student responses, since the researcher had assumed that students used social technology but did not wish to interact with their library through these mediums. The survey results indicated this assumption to be invalid; students do welcome a library presence in specific types of social technology.



# Measures of relationship capital for the value scorecard

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## Introduction and rationale

The purpose of this paper is to reflect on the development of ideas relating to the value of library relationships. The paper is conceptual and provides a framework for the measurement of relationship capital (RC) for academic and research libraries.

This paper is based on a presentation made at the 10th Northumbria International Conference on Performance Measurement in Libraries and Information Services, and forms one of a series of explorations on value measurement commencing with a presentation made at the 8th Northumbria Conference on the foundations of value measurement (Town, 2009), developed further at the 3rd Library Assessment Conference (Town, 2011) and the 9th Northumbria Conference (Town and Kyrillidou, 2012) into the value scorecard for libraries. A further paper on human capital assessment for that framework has also been published (Town, 2014).

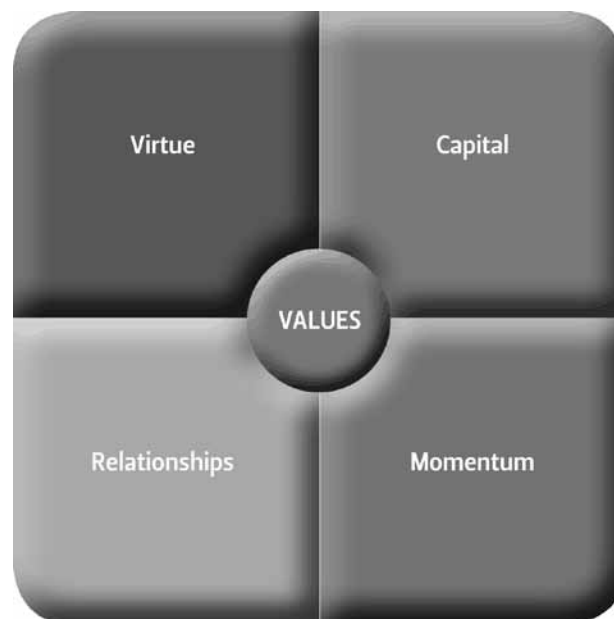


Figure 1: The Value Scorecard

Ranganathan recognized that “the library is a growing organism” (Ranganathan, 1931). Subsequent measurement frameworks developed for libraries have often been focused on the mechanistic and instrumental delivery roles of libraries perhaps at the expense of this particular insight. Organisms develop through their relationship with the environment; human organisations grow through interaction with their social environment; service organisations develop through the relationships they have with their particular web of stakeholders. Relationship measurement might therefore be an expected element of library assessment systems, and because of the fundamental and intrinsic importance of relationships to academic and research libraries, relational capital is elevated to a position as one of the four core dimensions of the value scorecard, rather than being viewed as simply a subset of a general dimension of intellectual capital, as might be the case in the industrial context.

Engagement and understanding of stakeholder requirements and context is also essential for service design and delivery, especially in changing times. This is recognized in many modern quality frameworks (see for example “1.2 Engagement and Understanding” in Customer Service Excellence, 2014). The role of relationships in innovation and new service creation is critical to success, particularly now as research libraries work with academic colleagues and others to develop new services relating to research publications and data. Success is a product of healthy relationships.

Value measurement of all activity is crucial for advocacy in constrained times, and as we shall see in the historic cases, the failure to measure and communicate the benefit of relational roles may result in unfortunate consequences.

## Relational Capital (RC) value

A simple definition is that relationship capital is “the sum of all the relationships of all the people in the organization” (Related Vision, 2010). It should be noted that this encourages a mathematical quantification, and implies that a numerical value can be assigned to each relationship. A second important feature of this definition is the implication that internal relationships between staff are included in the assessment. Other definitions, for example, “the value of relationships that an organisation maintains with different agencies of its environment” imply a more collective view of relationships, but do not rule out the internal perspective (Euroforum, 1998). Another more active definition suggests that creating RC is “the intentional building of a system-wide understanding and capacity to act, which becomes the asset or ‘glue’ for creating the context for achieving goals” (Darling & Russ, 2000). Thus relationship value becomes something more than a passive measure, but a capacity that is the result of command intent, and the measure might be one of both adhesive quality, and also of the flow through these connections towards organizational goals. Later in the discussion it will be apparent that an active approach to management of this area of capital might not only be an important element of creating value, but also avoid the damage of failure to demonstrate and advocate the value of relationship-related staff.

In summary, the attributes of RC might be characterised in the following ways:

- it is individual and personal
- it applies internally (to the library) as well as externally
- it is about markets, power and co-operation
- it results in knowledge sharing and problem solving benefits
- it supports brand and reputation enhancement through connection
- relationships can create or destroy value
- relationships are dependent on behaviour and character

The financial perspective on RC is that in accounting terms it is the quantification of the effect of goodwill as an intangible asset which increases market value. The factors that might be used to calculate RC in an organizational context might include:

- position power and personal influence
- types of relationships
- strengths of relationships
- the number of touch points
- relationships as a source of innovation

From this perspective measurement needs to be outside the institution (or in our sense, the library). This therefore implies exclusion of the value of internal relationships. For the practical application of the value scorecard, it is perhaps simpler to consider internal relationships (between library staff) as a feature of the human capital dimension, but one that should not be forgotten in the overall assessment.

## Trust and transaction costs

The sectoral focus of this paper is academic and research libraries. The arguments made here are therefore based on the assumption that the library is the organization under consideration, and that the immediate customer market is largely the rest of the institution (and for academic libraries therefore the university). In many cases this is likely to be an oversimplification of the relationships that a library may have to manage, and ignores the broader relationships

and partnerships of the institution in which the library may have a role. This limitation is chosen to establish some principles and approaches which can then be used to assess and measure those relationships arising from that other more complex web.

In considering relationships both within and beyond the institution, the importance of trust comes into play when the assessment of full relational value is required. The rationale for this is as follows (Fukuyama, 1995):

*“if people who have to work together in an enterprise trust one another because they are all operating to a common set of ethical norms, **doing business costs less**” (my bold italics)*

In other words, the economic value of the library will be higher if it is trusted by the rest of the institution (and vice versa), because both will achieve their respective and related goals without the additional costs attached to lack of trust. To quote Fukuyama (1995) again:

*“by contrast ... legal apparatus serving as a substitute for trust, entails what economists call ‘transaction costs’”.*

Thus the value of library staff engaged in creating effective relationships based on trust that provide real outcomes are not only creating value, but also reducing transaction costs which would otherwise be necessary. Hence the computation of the value of relational effort should take this into account.

A related point is that these transaction costs are avoided by clarity of ethical norms. One distinctive feature of the value scorecard proposition is that it is based on these shared values. Institutions may fail to capitalize on their shared values by introducing audit or compliance-related management systems and processes based on lack of trust (and in contradiction of the ethics of most academic organisations) which substantially increase internal transaction costs, reducing the overall capital value, and wasting investment which might be put to better use. Libraries themselves may introduce systems and processes which increase transaction costs due to lack of trust between different internal departments.

Transaction cost theory is not new (Coase, 1937) and leads to ideas of the value of social capital, which is a component of relational value that can also be assessed by libraries. If positive social capital is built with users, partners and other stakeholders, then transaction costs can be managed down, providing a tangible benefit to outcomes. This requires a focus on “those costs associated with human interaction” (Fussell et al, 2006). It is hard to find much discussion of these ideas in the library related literature, which is surprising given the historical recognition that research libraries have given to the importance of relationships with their academic communities. “Trust lubricates co-operation” (Putnam, 1993) and this trust is critical as academic and research libraries move beyond their traditional roles to the management of a broader range of institutional data and services.

In simple terms it can be said that social capital and trust are in inverse proportion to transaction costs. It should also be noted that social capital cannot be built on one’s own, therefore positive engagement with stakeholders is not a luxury but an economic necessity. In summary, effective relationships add value and save cost where they build trust; so human interaction measures are a key indicator of value, and hence the allocation of one of the four dimensions of the value scorecard to relationship value. This is also encapsulated in the concept of social intelligence suggested by Anglada (quoting Marina, 2004) and bluntly expressed thus:

*“There are intelligent [libraries] and stupid [libraries] ... intelligent groups gather information better and adapt better to reality ... thus we find ‘social intelligence’” (Anglada, 2007).*

The idea of a socially intelligent library requires a measurement framework to assess and demonstrate this value.

## Relationship strength and marketing frameworks

By now it will be clear that there is a link between library marketing (in its broadest sense) and the relationship value for which measurement is sought. To achieve practical measurement of the web of relationships in which any library is engaged, there needs to be both a way of analysing that web, and a way of quantifying the relationship with each partner or stakeholder group.

To take the latter question first, one way of assessing each relationship is to apply a value to its strength. One option is a strength of relationship index, and a version is reported (McHale, 2006) in which a number of relationship dimensions (such as satisfaction, trust, commitment, advocacy, goodwill, and repeat business) can be combined to provide a numerical RC ‘dashboard’. This might provide a potential route for libraries to take in assessing their relationships.



Relationship marketing concepts similarly provide a way for libraries to begin to analyse the range of relationships in which they are engaged. A foundation idea here is the 'commitment-trust theory of relationship marketing' (Morgan & Hunt, 1994). This concept encompasses relational marketing, working partnerships, and strategic alliances, and internal marketing. It also suggests a framework which might cover all the different types of relationship that an academic or research library might have, which when each is quantified using a strength index might add up to an overall assessment of relationship value. It is also fitting to note that Morgan & Hunt acknowledge the influence of Parasuraman and co-workers, given the subsequent application of Parasuraman's work to library service quality assessment, and his keynote at our 5th Northumbria Conference (Parasuraman, 2004).

Relationship marketing ideas have been further developed in the interim, particularly to take account of more modern theories of forms of organization in the digital environment. In a proposition for 'total relationship management' (Gummesson, 2004) a list of thirty relationships (30 Rs) is provided covering:

- Classic market relationships
- Special market relationships
- Mega relationships
- Nano relationships.

Many of these are relevant to libraries within parent institutions that have complex relationships with a variety of stakeholder groups; and some others reflect important operational service level interactions critical to good relationships. Newly developing value elements may also require inclusion, as libraries form relationships through new social media. The value of consumer interaction as intellectual capital developed via these routes needs to be added to the overall assessment (Susann, 2012).

A final framework proposition is a market model that encompasses all the likely relationships an organisation may have within a simple typology. An example (Payne et al., 2004) is shown in figure 2 below:



Figure 2: The "Six Markets" Model (Payne et al., 2004)

In the final section a development of this model is provided for libraries to use in assessment of their relationship value.

The next section is a historical diversion to strengthen the rationale for libraries to assess their relationship value.

## Dangerous liaisons

Traditionally academic and research libraries have sought to manage their relationships with the academic community in their institution through academic liaison librarians, sometimes called subject librarians or other variants. These staff members focus on one or a number of particular disciplines comprising the library's market. What follows are some application cases in libraries on these people, and their markets and relationships. The intent here is to reveal some evidence from past experience which might highlight the important and specific measures which might be relevant to populating the relationship capital dimension of the value scorecard in the academic and research library context.

The first historical example chosen relates to the author's background in medical libraries, in which the concept of an embedded (subject specialist) librarian was developed and tested, to achieve direct impact on patient care (Lamb, 1976). This link to transcendent value is precisely the aim of the value scorecard. The important aspects of these "clinical librarians" for relationship measurement are the notion of "the clinical librarian as a member of the patient care team" and as "a valuable interface ... the key to better patient care". In other words there is a desired quality of 'membership' relationship, a sense of value to be measured in the interface style, and that together these help generate an impact value in patient care. All of this supports the conclusion that these elements should form part of a measurement framework in which the aim is impact beyond the library. Lamb also suggests that the clinical librarian "... must observe the ways in which health professionals are currently seeking information", and so having an impact on the skills of the clinical team, and be "a working member – not just an observer – of the team". One clinical librarian summed this up as "I can measure my acceptance", so reinforcing the importance of capturing this aspect of relationship capital. This author later developed some of these elements of potential assessment of role value into a vision for the future LIS professional in the UK National Health Service (Town, 2001). This broad picture of the range of relationship-related activity and value of specialist liaison librarians was also used more recently to inform the development of new ideas for the role and structure of these staff across UK White Rose consortium libraries (Town, 2012).

This suggests that there are some enduring and consistent truths about the value of library relationship staff across time and contexts. The 1<sup>st</sup> Northumbria Conference was conceived partly as a reflection on the publication in the same year of 'The Effective Academic Library' (Ellard et al, 1995). One of the dimensions in this measurement framework was 'Integration', and within this dimension was the suggestion to seek "evidence of formal and informal communications between the library service, the senior management of the institution, academics and students ... to assess the degree of effective and dynamic communication to inform service provision" (Indicator P1.4 Liaison). Johnson took up the challenge of deeper consideration of this area in her paper in that 1<sup>st</sup> Conference (Johnson, 1995). A key point in Johnson's argument was that liaison is based primarily on relationships from which beneficial activities may follow. Because liaison is primarily about the former, measurement should start here. Johnson also presciently discussed seven relationship markets, and mused on the question of measuring relationship quality through assessing 'warmth'. She also questioned whether trouble-free and smooth relationships with academic staff were always good in terms of achieving progress in library services.

The period around ten years after Johnson's paper might be labelled the nadir of academic liaison in the UK. The value of liaison librarians had not been measured or advocated effectively enough for some in those intervening years. In 2005 Bangor University (Curtis, 2005a; Tysome, 2005) sought to remove six subject librarians deploying the argument that "the support ... from the qualified subject librarians is *hard to justify in value-for-money terms* at a time when the process of literature searches is substantially de-skilled by online bibliographical resources" (my italics). No specific data on this value assessment appears to have been published openly. Green is quoted as suggesting this implies the plans were "based on a misunderstanding of what librarians do" and McKee that it "ignores academic liaison". This did not prevent posts being lost. In the same year SOAS gave redundancy notices to four subject librarians; in this case some posts were saved because of existing relationships with academic staff, researchers and the Japan Foundation (Curtis, 2005b). East (2007) in a literature review on "The future role of the academic liaison librarian" alludes to the Bangor case, but in his list of tasks does not focus on marketing or relationships, opting instead for a dichotomy of either an active or passive role. These cases demonstrate the need for hard value measure justification of liaison and subject roles, and for these to be in place before threats materialise, rather than offered afterwards. The latter case also demonstrates the power, and therefore value, of good relationships.

Elsewhere perceptive libraries had been focusing on relationships with their customers and users, as evidenced by a range of papers on the capture of customer relationship data within Customer Relationship Management (CRM) systems. Case studies have been published from the UK and Malta (Broady-Preston et al, 2006), China (Wang, 2007), Singapore (Sharma et al., 2009) and the British Library (Chapman, 2009). Anglada (2007) described a typology of alliances and social intelligence, and recently Killick & Daniels (2013) described the creation and use of a liaison tool for recording and analysing customer communications.

We are now in a context, in the UK at least, in which the role of liaison librarians is, if not transformed, then at least under conceptual and practical redevelopment. A group of academic and research libraries have been working

together to consider new approaches and structures for staff in these roles. This encompasses both a stronger sense of the activities associated with the role, reflected in the use of words such as “brokering”, “engagement”, and “selling” services from a “service catalogue”. The relationship angle is also strengthened to creating a two-way voice between academic departments and the library, providing deeper insight both ways, and creating a more equal partnership distinctively different from the traditional ‘subject handmaid’. There are also new functional activities that are breaking the traditional subject specialist model; for example, the creation of research focused support teams to manage new research data and open access publishing roles, alongside the necessary retention of the discipline focussed staff.

The conclusion from these cases is that of a continuing need for relationship management and the building of relational capital by libraries, irrespective of the label on those who carry it out. There is also a need to collect data about these relationships effectively, probably through some type of CRM system. Because the value of these staff might not always be apparent, there is a need for effective data collection and measurement of their contribution, and ultimately to link these activities to the broader impact of the library.

## A framework for RC value measurement for libraries

In introducing this final section a tribute is due to our late colleague and member of the Northumbria Conference Editorial Board for many years, Niels Ole Pors. In a paper given at the 7<sup>th</sup> Conference (Pors, 2007), Pors presciently predicted that attention would turn towards these areas of a library’s activities. The paper “Social capital, trust and organizational effectiveness” lays out the importance of these ideas to our profession. In summary, Pors suggests that:

- Trust is probably a relevant concept in relation to information behavior, thus relating the idea to our core function
- Trust is probably related to fulfillment of information needs, so its strength may be related back to satisfaction with that core dimension of quality
- Trust is probably related to an institution’s degree of effectiveness, efficiency, perception of competencies and positive personal interaction, so the overall performance, culture and climate of a library and its institution are factors which will influence relationship capital
- Trust and social capital are concepts that will be more fashionable in the coming years

Because universities are knowledge organisations, and academic libraries can be the core organisational element for knowledge management in this age, there is an importance in library relationships beyond the instrumental delivery of service. The opportunity for a recognized strategic partnership between the university and its library (Huotari & Iivonen, 2004) is suggested, in which the value of the library’s role in productive knowledge processes is apparent. This would link the intellectual capital of the library to the university’s intellectual capital in a more coherent way.

Guidance on the base components for qualitative and quantitative assessment of library relational capital as intangible assets has been suggested (Kostagiolis & Asonitis, 2009) as:

- Users training
- Collaboration between academics and subject specialists
- Participation in information networks
- Trust and cooperation within staffs
- Lists of users
- Agreements with authorities
- Reputation
- Brand name

This was later elaborated into two categories of indicative relational resource categories (Kostagiolis, 2012) suggested as directly and indirectly related to the library. Kostagiolis also recognized the concept of “goodwill” in providing a diagram of the different perspectives of this potential asset:

- Organizational setting goodwill
- Professional practice goodwill
  - Library staff goodwill
  - Library presence goodwill
- “Celebrity” goodwill

Building on these ideas, and drawing on Payne’s model (Payne *et al*, 2004) the following synthesis of a framework for choice of target relational assessment categories is presented as a Seven Markets Model (figure 3) for academic and research libraries:

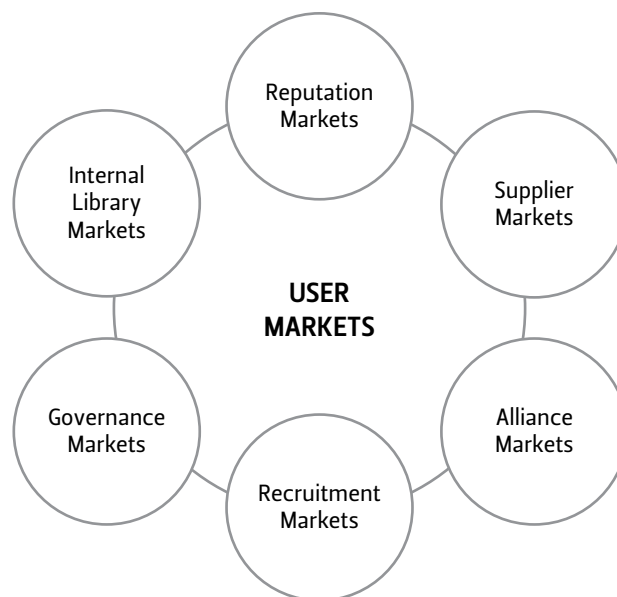


Figure 3: Seven Markets Model

This model can be used to identify the complete web of relationships in which a research library might be engaged and which require maintenance. This is an essential first step to the full assessment of all relationship capital.

## A proposed scorecard framework for relationship measurement

In conclusion and synthesis a full conceptual framework for populating the relationship capital dimension of the value scorecard is presented. Drawing on and partly inspired by the Darling & Russ five ‘Cs’ (Darling & Russ, 2000) and following the pattern of ‘Cs’ used for the Human Capital dimension previously presented (Town, 2014), the chosen elements are:

- Consciousness & Congruence
- Communities & Communication
- Causality & Comeback

The first pair suggests assessment of library awareness and fit. Consciousness is gauged by a general audit of the relational space using the Seven Markets model. This provides one set of the required analytics. The second audit is one of congruence, and requires an assessment of the degree of fit between relationship activity and the parent institution. In this way any particular gaps can be identified.

The second pair requires data about the strength of each relationship listed from the previous audit. In other words every identified relationship must be assessed for strength. Base data for this is likely to come from an effectively designed CRM system. The other data set will come from measures of the processes of communication that are used to develop the relationships within each sphere. This could be as far down as the level of individuals and their contacts, as well as library or service level marketing communications and programmes, including new social media interactions. Breadth, depth, quality and strength of relational and marketing activities are thereby assessed through this process.

This is insufficient to prove the full value and worth of relationship capital. Success in this area can only be shown by a positive impact of the investment in the human and other capital expended on relational roles and activities. What is sought here is some attempt to show correlation and causality between relationship capital and the 'library virtue' dimensions of the value scorecard. These might include specific outcomes and impact of positive relationships on academic process, innovation, finance, quality and staff development. The final element of the assessment is evidence of return on the relationships developed and formed by the library. This might include specific ensuing returns to the library, demonstrating the repeat benefits of relationships. Hence the final pairing of causality and comeback is required to complete a full assessment of the library's relationship capital value, and populate the RC dimension of the value scorecard.

An academic or research library working through the elements of this framework will gain a quantification of their relationship capital, and be able to demonstrate and advocate this component of their value and worth.

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# Ten Northumbria Conferences: A reflection on themes, trends and contributions

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## Introduction

Libraries have been collecting data on their performance for well over a century. The relevance of quantitative data as a response to pressure for the application of management science tools to libraries was noted forty years ago by Orr (1973). Orr offered one of the first measurement frameworks for libraries, and in doing so recognised the critical distinction between measuring 'how good is the service' in contrast to 'how much good does it do'. The dichotomy of quality and value measures remains with us today, and libraries require methods to assess both contributions as part of their management toolkit.

The origins of the Northumbria International Conferences on Performance Measurement in Library and Information Services lay in a similar attempt twenty years ago to present a new framework for measurement. The SCONUL Advisory Committee on Performance Indicators was involved in the development of the "The Effective Academic Library" (Ellard et al., 1995), and some of the members of that group, supported by the British Library Research & Development Department and Northumbria University created the first conference. Ian Winkworth, Geoffrey Ford and Dick Hartley were on that first Board, with Roswitha Poll, who has remained an ever-present and energetic influence, providing a succession of keynotes to the conference.

The Conference has moved its home venue southward over the period of existence, starting in what was ancient Bernicia and lately moving into Deira, but still within the former realm of Northumbria. The first three conferences were at Longhirst Hall, and this helped shape the sociable nature and the positive culture of exchange that has been an enduring feature of the event. The conference has always programmed itself with some reference to the IFLA world gathering, and this led to the 4th Conference being held in Pittsburgh, Pennsylvania, sparking a stronger North American engagement that has grown substantially, and ultimately led to the foundation of the Library Assessment Conference. After forays to South Africa and Florence, the series moved its institutional sponsorship from Northumbria to the University of York for the 9th and 10th Conferences.

This brief review celebrates and reflects on the contribution of the Conference to measurement as an essential feature of library management by considering some of the keynote contributions to the ten conferences.

## Themes, paradigms and frameworks

Does performance and measurement have a relationship with library management? Those attending the conference would probably consider this to be self-evident, at least at the micro level of individual measurement activities or projects. It has however been a possible criticism of library measurement that librarians count everything they can and then apply this back to management questions in an inductive way, rather than seeking data to inform predefined needs. Of course any field of research will contain a mixture of 'no stone unturned', 'fancy that' and 'bandwagon' topics, and library measurement is not immune, but one contribution of the Northumbria series has been to critique ideas and forms of measurement itself as well as its substance. There has been a constant theme of challenging data and measurement collection to be relevant not only to measurement, but to a more existential debate about what libraries are and what they might and should be during times of fundamental change in forms of information and communication. What libraries are defines what needs to be managed and therefore measured. Hence this brief consideration focuses on the broad picture of library performance measurement as demonstrated in the conference keynotes, and the attempts within those presentations to define paradigms and frameworks for measurement or for libraries themselves.

In the 1st Conference Nancy Van House's (1995) keynote, still memorable to those present, laid out some of the enduring issues and predicted some of the main trends which would form the core of future research and consequently Northumbria conference topics. The broader environmental context of change and competition was recognised and defined. Crucially the basis of performance measurement as "constructing sense in the organisation" and the power of the combination of empirical evidence with narrative was recognised. This definition of evaluation as an iterative process of sense-making and "telling the story" has since underpinned the quest for measures that must also pass the test of relevance and importance. Van House predicted future competition for our turf, but recognised that our competitive advantage is the understanding we have of our users, and that user-centred measurement will avoid the risk of irrelevancy. The final caution was (in the Zen saying) "not to mistake the finger for the moon"; in this case mistaking the measure for the performance.

In the 2nd Conference Lancaster's (1998) keynote expressed concern at what libraries were becoming and suggested a decline in the service ideal. The Conference itself might have offered proof that this was at least not the case amongst attendees. Lancaster recognised the inevitability of digital developments, foreshadowing continuing debates about disintermediation and the measurement consequences of delivering services in the digital environment. Rowena Cullen's (1998) 'postmodern' keynote analysis in the same conference was a thought-provoking deconstruction of the discourse of evaluation, again seeking to answer the fundamental question of whether performance measurement activity improves organisational effectiveness. Cullen produced a values/focus/purpose matrix to achieve a definition of the positioning of any library that would then inform measurement choices. This brave attempt at a new paradigm may not have generated much practical take up of the associated framework, but the challenges in the paper still apply.

Peter Brophy has provided two keynotes to the Conference which picked up the theme of what a Library is in the digital age, how it relates to its users in this context, and what the consequences should be for measurement and evaluation. In the 4th Conference, Brophy (2002) presented a potential framework for conceptualising what libraries might be in the 21st Century, given that the networked environment had fundamentally changed our business. The five models for the future library were:

1. The Traditional Library
2. The Memory Institution
3. The Learning Centre
4. The Library as Community Resource
5. The Invisible Intermediary

and Brophy proposed measures for each. Brophy also referred back to Orr (1973) in suggesting that this might require a new interpretation of what 'library goodness' means in a networked world. These potential distinctions may help inform measurement, but in the case of many research institutions, "The Library" now encompasses all of these functions and probably more.

In the 7th Conference, Brophy's (2007) keynote returned to Van House's (1995) challenge of 'telling the story' and combined this with his appreciation of the digital context. The proposition here was that libraries must meet and support users where their life and research occurs, creating presence and support in their:

- Workflows
- Learnflows
- Leisureflows
- Lifeflows

To gain user's trust in this environment requires a deep understanding of their language and habits; an understanding of their terminology and concepts, and how they share meaning. For academic and research libraries this includes recognising disciplines as social systems. Whether or not Brophy's (2007) paper directly led to the development of the subsequent ethnographic studies of users, drawing on expertise and methodology from this discipline, it correctly predicted a trend, and reinforced the importance of narrative in creating meaning about libraries out of the complexity of our modern context.

The focus on users, their expectations, opinions and quality methods for management and measurement has been a strong strand of the Conference since its inception. The 5th Conference hosted Ananthanarayanan Parasuraman (2004), reflecting the central importance of service quality across the two decades of the Conference, and in particular the application of the SERVQUAL approach to measurement culminating in the LibQUAL+ tool. Booth's keynote on evidence-based practice in the 6th Conference reflected an approach which now has its own international conference (Booth, 2007). In the 8th Conference Town attempted to return the community to the issue of 'the good that libraries do' with a focus on value concepts and measurement as distinctive from quality data (Town, 2009), and Tenopir (2011) in the 9th reflected on the substantial new programme of activity around ROI measurement. Jantti (2014) in the 10th Conference describes the two decade commitment of an Australian University Library to quality and performance, demonstrating the need for a long-term approach to performance measurement, but also to periodically refresh the data collected to remain relevant to the University's mission and to reflect the growing importance of value and impact measures. This exemplary description of a commitment to understanding and meeting user needs and tracking the performance of a library over the long-term is at the heart of effective library management.

When we began our thinking about the Northumbria keynote on which this introduction is based, a more extensive survey of papers and trends from the conference series was envisaged. Our initial analysis however soon suggested that any simplistic view of the history and development of performance measurement over the near twenty years would not be valid. The assumption of a successive and progressive development away from the quantitative towards the more qualitative and strategic is also not supported: all were present from the outset, and all remain relevant. There is evidence of the development of many new methods and techniques and the desire to engage with measurement across all areas of library service and management. Some large areas of library activity (particularly staff related measurement) are perhaps under-represented, but these reflect general difficulties with analysis and metrics in the broader management field.

From the papers from the first conference it is clear that library performance measurement was already a well-established concept in 1995. Many of the enduring topics were present from the start: organisational effectiveness, climate, morale, change and other staff issues were covered, as were quality management models and frameworks, and benchmarking. The challenge of new electronic measures and wider stakeholder perspectives was also recognised. The introduction to the second conference proceedings (Dixon and Parker, 1998) suggested that the third would move "firmly into the field of strategic management" and that "quantitative methods need to be complemented by interpretation and strategic vision", but it would be hard to argue that a very broad vision and conception of performance measurement was not present from the start. Measurement appears to have been intrinsic to library management and strategic development across the time period of the conference series.

## Conclusions

There are some general conclusions about library management and measurement that might be drawn from the Northumbria conferences. These conferences have played a part in the continuing discourse about the future of libraries in the digital age. Despite many pessimistic predictions, libraries have survived. One message for library management and measurement from the Northumbria conferences is that if there is a paradigm for performance measurement, it is "The Library" as it continues to exist and practice. The bulk of contributions to all the conferences have continued to arise from practitioners and researchers applying scientific research methodologies to management questions arising from real world library contexts. It may be that the application of quantitative methods drives research towards library operations and services, rather than towards the 'organism' and humanistic aspects of library practice. This balance probably reflects the level at which most conference attendees work. It has therefore been important for regular conference keynotes to arise from the library leadership level, so that there was also a conference focus on strategic, political and advocacy questions. If there is a major change on the horizon, it may be that the focus on the collection of evidence of library performance through disparate projects using single sets of data needs to be supplemented by a future of correlation, in which large library, institutional or broader datasets are combined to demonstrate the scale impact and value of libraries to their user communities and parent organizations.

In conclusion, the management benefit from the Northumbria Conferences also arises from the creation of an international community of practice of library performance measurement and assessment. The fertile exchange between researchers from library and information schools and practitioners has been a positive feature, as has the cross-sectoral and international nature and the involvement of staff from all organisational levels. This is not a common experience in our profession. The conferences have always had a high percentage of contributors amongst the attendees, and the trust involved in sharing data has created social capital for those involved, and encouraged collaboration.

Library performance measurement is still an important and relevant idea, and we are ahead of many other professions in our thinking and practice. It could be argued that one of the reasons that libraries have survived into the digital age is because they have engaged in evidence-based change. Some of this is due to the diverse, curious, and biennially

visible 'invisible college' of Northumbria. At its simplest, this a group of people who can make one feel less alone in the quest for better libraries, through a deeper collective understanding of their performance and management. Northumbria has achieved this for many librarians across the world, and not least for these two authors.

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# Culture of evaluation? UK assessment of library space projects

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## Premise

In recent years millions have been invested in new library buildings, learning spaces, and in refurbishing and redeveloping existing space.

As part of development work, libraries seek to understand the limitations of their existing spaces, and develop a vision of their future provision which will address the needs of their stakeholder group. An excellent example of this is the work undertaken by the University of Leicester (2008) before their refurbishment/new build. This allowed the library team to demonstrate to students how their building had been designed to reflect the needs of the student body, as to assess the success of the development against these criteria.

This study aims to understand what degree the sector undertakes evaluation of spaces *after* they had been delivered and any actions taken subsequent to this evaluation. Anecdotally, libraries rarely cease to re-configure or improve their space after any development project, and this investigation gathers evidence about this ongoing work, and also provides an insight into useful methodologies for evaluation of spaces.

This article will briefly examine the drivers for evaluation of library space – why evaluate? It shares the outcomes of initial research into this area and comments briefly on how professional organisations offer a way of evaluating library space.

## Drivers for evaluation

As a profession, librarians strive to be reflective practitioners, hence evaluating our buildings after any redevelopment should be standard practice. However, there are other environmental drivers which encourage us to evaluate.

In the UK, recent changes to government policy have led to the introduction of a higher rate of student fees (£9k per annum, repayable after graduation on achievement of a certain income threshold). This, coupled with mandatory publishing of the Key Information Set (HEFCE, 2014) alongside course information has increased the emphasis placed on the student experience by Higher Education Institutions (HEIs). The Library space has a key role to play in ensuring a good student experience, and HEIs have recognised this through the investment they have made in learning space.

It is crucial therefore that librarians can evidence the impact of space development on the student experience. Aligned to this is the need to evidence the value of the investment in our buildings and the need for continuing evolution of space, ensuring that it is fit for purpose meeting the changing needs of the user population.

## Methodology

A questionnaire was devised to understand how libraries undertake evaluation of learning spaces. The questions can be viewed in appendix 1.

The questionnaire was sent to 18 libraries that were believed to have undertaken some form of work on library space after 2008. This selective approach was taken as the author was engaged in the judging of the SCONUL Library Design Awards 2013 at the time, and it would therefore have been inappropriate to have circulated the questionnaire more widely to the sector under these circumstances.

The questionnaire was created using the online survey tool Survey Monkey, as it was simple to use and to administer, and offered some assistance with compilation and presentation of results. Participants were invited to take part by email, and were given one week to respond.

### Questionnaire results: Demographics

Overall 12 libraries completed the survey. The respondent group was mixed across the University Mission Groups: four were Russell Group institutions, two were 1994 group, three University Alliance and two specified “Other” – GW4 and SCONUL.

Of the respondents, eleven stated that they had completed a refurbishment or new build of library or learning space over the last six years. One had not. Of these eleven institutions, seven described their developments as refurbishment and four described work as a mix of new build and refurbishment.

### Questionnaire results: Evaluation

Seven libraries said that they had evaluated their building after completion of work, whilst three libraries opted to answer “other” to this question. “Other” responses focussed around the use of existing data from which information on the space was gathered. More specifically:

- one library had not undertaken any formal evaluation but changes were reviewed after implementation
- one library looked at usage statistics and NSS scores the following year, and concluded that changes in both were attributable to the refurbishment
- one library analysed feedback from various channels including NSS and other surveys, student press, Facebook and other similar sources
- one library used feedback from their annual survey, statistics and comments from students as evaluation mechanisms.

### Questionnaire results: Timing of the evaluation

As illustrated in table 1, the timing of evaluation varied between libraries, though typically this occurred within the first year after evaluation.

Date of work	Date of evaluation
2012	2012
2012	Evaluation a bit piecemeal but in 2012 and 2013
2012	2012
2009	12 months
2008	2009
2008	Tracked comment since completion
2009	Within weeks of completion
2007	2010
Most recent 2012	Work reviewed annually and ongoing basis
2007	Summer after completion then ongoing
2008	One year

Table 1: Timing of the evaluation

### Questionnaire results: Methodologies

Libraries were typically found to use a number of different methods for evaluating their building work, rather than focussing on a single approach. A summary of these is shown in table 2.

Evaluation method	Number of respondents
Questionnaire	3
Focus group	3
Discussion in official committees with users	7
Suggestions from staff	6
Analysis of usage statistics	7
Observation	8
User comments	8
Customer journey mapping	3
Other	5

Table 2: Evaluation methodologies

The methodologies listed as “Other” were:

- LibQual+®, NSS
- Completed review as part of submission for a SCONUL building award
- NSS scores
- Internally funded research
- LibQual+®.

Participants were also asked if they had found any evaluation method to be particularly insightful. Those who responded to this question mentioned:

- talking wall – particularly during early weeks of occupation to weed out teething problems
- user comments (including those from LibQual+®)
- whiteboard – pose a single question
- pre-development survey allowed evaluation to focus on delivery of identified user needs
- customer journey mapping.

### Questionnaire results: Further work undertaken

Anecdotal evidence exists that space continues to develop and evolve even after a major build or refurbishment, so a question was asked to ascertain how many libraries had undertaken further changes and whether this was based on the evaluation which had taken place.

The results supported the anecdotal evidence, showing that 75% of responding libraries had gone on to make further changes after the completion of their work. Of those making further changes, all libraries responded that these were based upon the evaluation which had been undertaken.

These changes included:

- additional acoustics treatments after a period of inhabiting the building to understand where any noise issues were arising
- changes to and additional signage



- plants to break up open space
- behaviour management implemented to manage noise levels
- additional seating
- created quiet research space
- stripped out one floor of a 3 floor library to create a social learning space including a café
- more fixed PCs and exchanged informal furniture for tables and chairs
- delineated more silent areas – enabled by creation of flexible space as design brief
- improved signage
- additional quiet study space
- more group study spaces
- more silent areas
- more group study spaces – “the demand is almost inexhaustible”
- phone zones.

## Summary

This short investigation has shown that libraries are actively engaging in evaluation of their learning spaces developments through a variety of formal and informal evaluation methods. Even those libraries who had said that they had not undertaken structured evaluation were deriving insight into the use of their buildings through collecting information from standard feedback mechanisms.

Of the different methods used for evaluation, the most commonly used were observation and user comments followed by analysis of user statistics and discussion in official committees with users. Participants in the survey indicated that they found the most insightful evaluation methods were those where they experienced the voice of the user, such as customer journey mapping and user comments in surveys such as LibQual+®.

The survey also demonstrates that evaluation is often an ongoing rather than one-off practice, and this leads to further developments of learning spaces as the needs of the university population change and develop.

Currently there is no “toolkit” for evaluation of library space, however International Federation of Library Associations and Institutions (IFLA, 2014) recently issued their “Questionnaire about Library Buildings (Characteristics – Operation – Evaluation)” as a tool which could be adapted to suit the needs of the evaluator, and which might be used “in preparing reports for funders and organisations, to assess levels of user satisfaction or to inform future alterations, expansion or new-build projects” (Designing Libraries, 2012). Some of the areas mentioned in the IFLA questionnaire also feature in the evaluation criteria for the recent 2013 SCONUL Library Design Award (SCONUL, 2013). Summaries of both of these tools appear in Appendix 2 and would serve as useful frameworks for an evaluation exercise, supported by such tools as user consultations, questionnaires and focus groups.

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## APPENDIX 1

### Survey Questions

- Name of institution
- Affiliation
- Name and email address
- Have you completed any refurbishment or new builds of library/learning space over the last six years
- Did you evaluate your building at the end of the build/refurbishment?
- If yes, was this a refurbishment or a new build?
- When did you complete the building work?
- If you have conducted any evaluation how long after the work was completed did you begin your evaluation?
- If you did undertake evaluation what methods did you use?
- Are there any particular evaluation methods which you have found particularly insightful – please specify the method and why this was effective
- Have you made any changes to your space since the completion of your building/refurbishment work?
- If you have made changes were these changes based on the outcome of any evaluation?
- Please provide some brief details of the changes you made and the rationale for undertaking these.
- Thank you for completing this questionnaire. If you would be willing to be contacted for further information please provide your contact details below.

## APPENDIX 2

### Summary of IFLA Questionnaire

- General – Facts and figures, Location, Accessibility, Sustainability, Safety and Security, Flexibility
- Building – Entrance area, Materials, Flooring, Ceiling, Acoustics, Openings, Lighting, Furniture, Heating, ventilation and air conditioning, Installations and wiring, Data, Sanitary areas
- Services – Service areas, Shelving, User areas, Children's areas, Young adults, Staff areas, Automation, Maintenance
- Conclusion – Fairy question: If you had three wishes concerning the building, what would they be? Is there anything you would change? Anything particularly successful?

Full questionnaire can be found at [www.ifla.org/files/assets/library-buildings-and-equipment/Publications/poe\\_final\\_version.pdf](http://www.ifla.org/files/assets/library-buildings-and-equipment/Publications/poe_final_version.pdf) (accessed 6th January 2014)

### SCONUL Library Design Award Criteria 2013

- Strategic relevance
- Design
  - Meeting objectives
  - Creativity and innovation
  - Service innovation
  - Accessibility
- Impact
  - User experience
  - Service development
  - Staff experience
- Efficiency and sustainability

# The Quality Maturity Model: Your roadmap to a Culture of Quality

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## Abstract

### Purpose

This paper presents the complete details of the Quality Maturity Model (QMM), and the associated Quality Culture Assessment Instrument (QCAI). The QMM provides a framework for libraries to self-assess their progress towards achieving a culture of quality.

### Design, methodology or approach

The research used a Design Science approach and predominantly grounded theory methodology to develop the Quality Maturity Model as a roadmap that defines an ordinal scale for measuring the maturity of an academic library's quality culture.

### Findings

The Quality Maturity Model describes seven facets of quality culture, and five levels for each facet.

### Practical implications

The QCAI enables libraries to locate themselves within the quality maturity landscape. They will then be able to use the Quality Maturity Model as a roadmap to plan their route to improvement. Such a strategic approach to improvement allows libraries to make sense of the literature in terms of what is appropriate for them, so avoiding expensive irrelevancies.

### Originality and value

The Quality Maturity Model is unique. There are other models that assess quality culture, but the details of these models are kept secret and the only way to be assessed is by paying a consultancy fee. There are other models that make their details public, but they describe only one or two aspects of quality culture, not all.

### Keywords

QMM, Quality Maturity Model, Quality Culture Assessment Instrument, Library, Assessment, Quality, Culture.

## Introduction

Everything that we do in a library is done by people. Library staff make every decision from building design to what books to buy, from how to design an education session to the priorities for spending. Even when so much in libraries is automated; a self-issue machine may check out the books, but it is a *person* who decided which machine to install, how many to have, where to put them, the impact on the staffed service points, how often they are serviced, and what to do when one breaks down. A person decided the rules that the machine operates by – how many books you can check out, for how long, and what you are charged if you fail to return them on time. If a customer is unhappy with their experience of borrowing a book, it is not the fault of the machine, but of the decision-makers. There is no such thing as “computer says no”.

In an environment where quality is defined by the customer, and people are crucial to performance, the management of the library must ensure their staff members make the appropriate decision each and every time. But, as everyone who manages people knows, it is not that simple. You can have rules, procedures, manuals, notices and training events, but still people will do it their own way. The key to modifying behaviour is to understand that it is not driven by formal instructions, but by organisational culture (Schein, 1990). If you want to improve the quality of your library service, then you must improve the organisational quality culture.

In the rapidly changing environment within which libraries operate, agility is necessary for survival. But agility is difficult when it relies on people, because people find change difficult, unsettling, threatening and traumatic. And it does rely on people, because we can't sack everyone and start fresh with new staff every time the library takes on a new role. Organisational culture is once again the key – if you can create a culture where change is accepted, embraced, welcomed, even sought out, then you are on your way to building an agile organisation, able to evolve with its environment and consistently provide a high quality library service to its customers.

If the key is changing the organisational culture, how do we do it? According to Schein (1990), culture is a pattern of assumptions, invented, discovered or developed by a group that has worked well enough to be valid and is taught to new members as the correct way to perceive, think and feel. He describes three fundamental levels at which culture manifests itself, illustrated in figure 1.

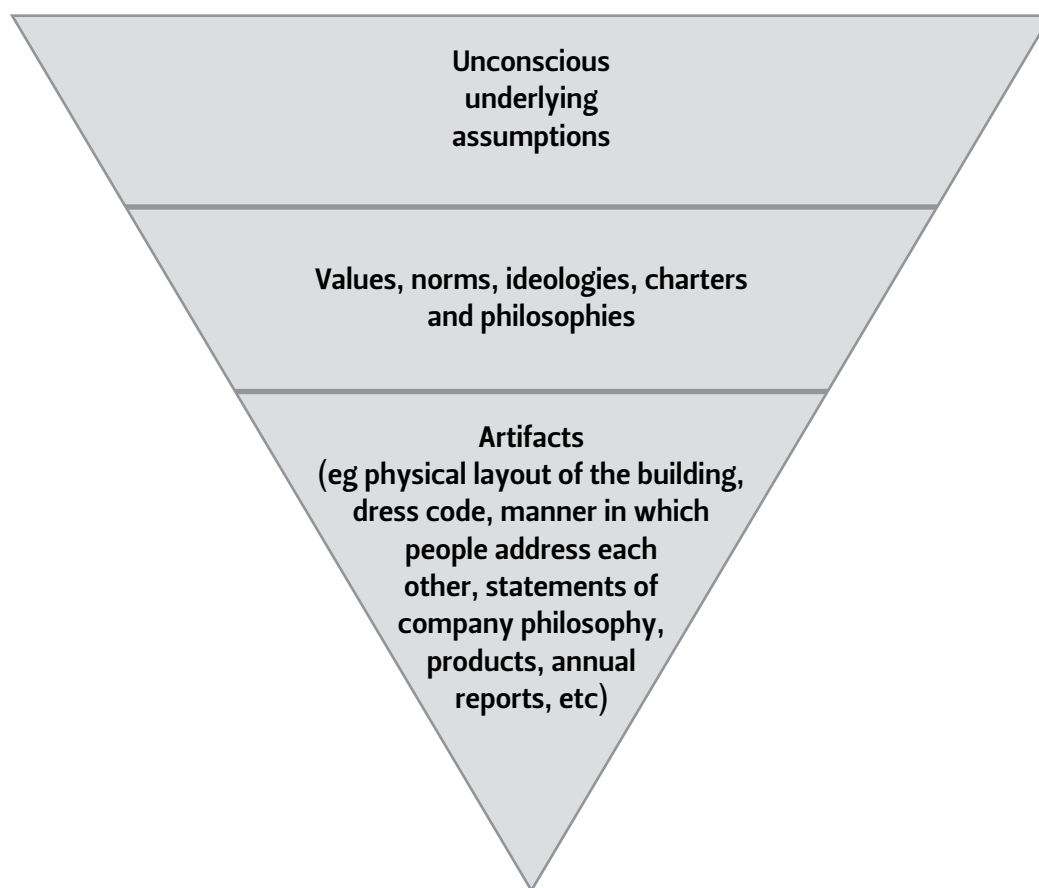


Figure 1: Schein's three levels of organisational culture.

Culture change so often fails because it is concentrated on changing the artifacts, without changing the underlying assumptions that determine perceptions, thought processes, feelings and behaviour. Which is why if you simply tell people the new way of doing things, no matter how many times you tell them, they will always revert to what they have always done. To successfully change organisational quality culture we need to address the underlying assumptions which lie beneath "the way quality is done round here"<sup>1</sup>.

1 After Deal and Kennedy's (2000) phrase "culture is the way things get done around here".

## What is quality?

A high quality library is able to meet, or even exceed, the needs of its customers. Such success comes from focussing on quality as being defined by the customers – a Total Quality Management approach (see, for example Crosby, 1979; Deming, 1986; Feigenbaum, 1991; Ishikawa, 1985; Juran, 1989). There are a multitude of books and articles about TQM and how to achieve it, however, the definition of quality in all of these is best described as “I know it when I see it”, which is too fuzzy a concept to be helpful to those trying to tease out the individual strands of what constitutes quality.

The Quality Maturity Model brings together all descriptions and definitions of quality in the existing literature, and an analysis of quality culture as embodied in practice in UK university library and information services in order to explicate a culture of quality.

The Quality Maturity Model describes a culture of quality as: doing things right; doing the right thing; learning; suited to the business environment, and explicitly and appropriately aiming to improve quality. The culture is created by strong leadership and by the people of the organization; and the ubiquity of the culture is determined by organisational alignment.

## The purpose of the quality maturity model

The purpose of the Quality Maturity Model is four-fold. Firstly, it is intended to be a roadmap to enable a library to determine where they are located on the journey towards achieving a ubiquitous culture of quality, and what is the appropriate direction of travel, because if you don't know where you are, a map won't help; and if you don't know where you are going, any road will do.

Secondly, it is a framework to enable the management of a library to prioritise actions. The literature contains a myriad of tools and techniques, all proclaiming to be just the thing to help your organization improve. All libraries have limited resources, so where is it best to invest? What will give most bang for your buck? When a library knows its location within the quality maturity landscape, managers can take a strategic approach to improvement and so make sense of the literature in terms of what is appropriate for them. A score that is satisfactorily in most areas but low in a few areas may prompt library managers to concentrate improvement techniques on the low scoring areas. In addition, it can assist managers to avoid expensive irrelevancies just because they are the next big thing – after all, it is pointless trying to develop a balanced scorecard if your library does not have a strategic plan!

Thirdly, the Quality Maturity Model is a tool for assessment. Librarians love assessment; there are three international conferences devoted solely to this subject<sup>2</sup> (including, of course, this one). Libraries assess inputs, outputs, and combinations of the two; customer satisfaction, staff satisfaction, and their culture of inclusivity; value for money, return on investment; and their impact – on their customers, on society, and everything in between. It seems certain that libraries will also want to assess their quality culture. However, readers familiar with libraries will realise that the list of things assessed is somewhat disingenuous. While all libraries assess their inputs, very few libraries have successfully been able to assess their impact on society (Poll & Payne, 2006). This is related to ease of measuring – where it is quick, cheap and easy to measure something, it is universally measured; where it is difficult, time-consuming and expensive to measure something, only the most committed or innovative measure it<sup>3</sup>. The Quality Maturity Model, and accompanying Quality Culture Assessment Instrument, is intended to make it quick, cheap and easy to measure the quality culture of a library.

Fourthly, the Quality Maturity Model is intended to provide a common language and a shared vision for a community of practice.

## The quality maturity model

In common with other maturity models, the QMM has five levels:

1. **Ad hoc:** The quality management process is ad hoc, even chaotic. Few processes are defined, and success depends on individual effort and heroics.

<sup>2</sup> Northumbria International Conference on Performance Measurement and Metrics in Library and Information Services; International Conference on Qualitative and Quantitative Methods in Libraries; Library Assessment Conference.

<sup>3</sup> For example Huddersfield's Library Impact Data Project <http://library.hud.ac.uk/blogs/projects/lidp/>

2. **Repeatable:** Processes are in place so that success for one customer can be replicated with another (or the same one on different occasions).
3. **Defined :** Quality processes are documented and standardised. All work derives from the organisational strategy.
4. **Managed:** Detailed measures of the quality process are collected, and is understood and controlled.
5. **Continuous:** Continuous quality improvement is enabled by feedback and by piloting innovative ideas. Future requirements are anticipated so there is no drop in performance.

However, it is interesting to note that, with echoes of Schorsch (n.d.), the author has come across more than one library operating at below Level 1!

There are 41 factors, grouped into eight facets, to describe what constitutes 'quality culture'. The eight facets of quality are:

1. Management of the organisation
2. Environmental sensing
3. Learning organisation attributes
4. Attitude to change
5. Attitude to quality
6. Leadership
7. Investment in staff; and
8. Alignment.

The 41 factors that make up these eight facets are presented below.



<b>1. Management of the organisation</b> 1.1 Strategic plan generation. 1.2 Management alignment. 1.3 Progress monitoring. 1.4 Performance measurement. 1.5 Project management processes.
<b>2. Environmental sensing</b> 2a Customers (bottom up) 2.1 Gathering feedback from customers. 2.2 Collation of feedback from customers. 2.3 Response to feedback from customers. 2.4 Action taken as a result of feedback from customers. 2b Organisation (top down) 2.5 Gathering feedback from the parent organization. 2.6 Influencing the parent organization. 2c Wider context (inside out) 2.7 Gathering feedback on the wider operating context (eg Higher Education). 2.8 Involvement of library staff in the LIS profession.
<b>3. Learning organisation attributes.</b> 3.1 Staff empowerment. 3.2 Staff involvement in change. 3.3 Nature and level of learning that occurs. 3.4 Attitude to mistakes. 3.5 Attitude to risk. 3.6 Encouragement of staff to innovate.
<b>4. Attitude to quality</b> 4.1 Definition of quality. 4.2 Attitude to quality improvement. 4.3 Perception of responsibility for quality. 4.4 Type of quality improvement initiatives ("sexy" vs. "vanilla").
<b>5. Attitude to change</b> 5.1 Attitude to change. 5.2 Perception of drivers for change. 5.3 Identification of barriers to change.
<b>6. Leadership</b> 6.1 Vision and value setting. 6.2 Trust. 6.3 Inspiration and motivation.
<b>7. Investment in staff</b> 7.1 Attitude to staff. 7.2 Training provision. 7.3 Development of staff 7.4 Recognition of staff.
<b>8. Alignment – the ubiquity of the culture.</b> 8.1 Vertical alignment (top, middle and bottom all on same song sheet?). 8.2 Horizontal alignment (units work across boundaries, or in silos?). 8.3 Consistency. 8.4 Communication flow (up, down, sideways). 8.5 "Little cogs" – staff see where they fit in the wider organization. 8.6 Staff structure is appropriate. 8.7 Alignment of the attitude to quality. 8.8 Alignment of the attitude to change.

Figure 2: QMM factors

The QMM consists of a description of each factor at all five levels of maturity, as can be seen in figure 3.

Management of the organisation	Ad Hoc	Repeatable	Defined	Managed	Continuous
<b>1.1 Strategic Plan generation</b>	There is no strategic plan or annual operating plan.	There is a limited strategic plan	The strategic plan is derived from (mediated) environmental sensing.	The strategic plan is derived from environmental sensing (top down, bottom up and inside out).	Strategic plan derived from environmental sensing (top down, bottom up and inside out).
<b>1.2 Management alignment (a)</b>	Actions are solely reactive to events.	Strategic plan includes breakthrough improvement processes. Many actions are unrelated to the strategic plan and are reactive to events.	Strategic plan includes breakthrough improvement processes. Some actions are still unrelated to the strategic plan.	Strategic plan includes breakthrough improvement processes.	All improvement processes, both incremental and breakthrough, flow from the strategic plan, and it is updated to reflect new developments.
<b>1.3 Progress monitoring</b>	There is no monitoring of progress in achieving goals.	There is no monitoring of progress in achieving goals.	There is infrequent monitoring of progress, but no corrective action taken.	There is monitoring of progress in achieving goals, and some corrective action is taken.	Progress in achieving goals is closely monitored and corrective action taken where necessary.
<b>1.4 Performance measurement</b>	Basic statistical measures may be collected, but are used for competitive analysis of it all.	Basic statistical measures are collected and used for competitive analysis. Customer feedback is also viewed as an indicator of performance.	Customer feedback and measures of internal processes are used to determine how the library is performing.	A range of performance indicators is used to determine how the library is performing. KPIs may exist but are not necessarily fully aligned with metrics used or strategic aims of the library.	A range of balanced performance measures are used to monitor how well the library is achieving its aims. Metrics closely align with KPIs which closely relate to strategic aims and mission.

Figure 3: Snapshot of the QMM.

Each factor is assessed and given a score of 1 – 5. This score locates the library on the ‘quality culture roadmap’. So now you know where you are.

The rubric-style presentation of the model clearly illuminates the next step towards quality maturity for each of the 41 factors – enabling you to see where you are going.

Space prevents me from presenting the full Quality Maturity Model detailing all of the factors with the ‘rubric’ for each maturity level, but two of the factors, with their maturity level descriptors are presented below.

2.4 Act on feedback	
<b>Level 1</b>	No changes are made in response to feedback.
<b>Level 2</b>	A small number of changes are made on the basis of feedback. Changes are made only if small and/or agree with service's point of view ("sensible" "possible").
<b>Level 3</b>	Most feedback results in changes. However changes are limited to those "within the service's control"
<b>Level 4</b>	All feedback results in change (though some may be long-term), including changes to other services and big changes requiring institutional funding and support.
<b>Level 5</b>	All feedback results in change (though some may be long-term), including changes to other services and big changes requiring institutional funding and support. Analysis of trends leads to anticipatory changes, with both long- and short-term future focus. Feedback leads to changes in overall goals and strategy.
6.2 Trust	
<b>Level 1</b>	The leader engenders distrust and a lack of openness.
<b>Level 2</b>	There is distrust in the leader, attributed to lack of understanding on their part. There is no feeling of openness.
<b>Level 3</b>	There is a lack of distrust in the leader. There is a feeling of openness.
<b>Level 4</b>	There is trust in the leader and a feeling of openness.
<b>Level 5</b>	The leader engenders trust and a feeling of openness. They have the 'hearts and minds' of staff.

Figure 4: Extract from the QMM showing maturity level descriptors

## Assessment of Quality Culture

An assessment of the quality culture of a library can be made using the freely available<sup>4</sup> Quality Culture Assessment Instrument. This is in contrast to other models that assess quality culture, where the details of the models are kept secret and the only way to be assessed is by paying the consultancy fee<sup>5</sup>.

The QCAI is an online self-administered survey of all library staff, which produces a score from 0 – 5 (0 if the descriptors for level 1 are not met) for each of the 41 facets and so produces a quality culture profile. A library with a strong and ubiquitous culture of quality will score at level 5 for all facets. However, libraries that have not yet reached this utopia will score at different levels across the facets.

The purpose of the QCAI is three-fold. Firstly, it locates the library on the QMM, enabling the libraries to see their areas of strength and weakness, and managers to strategically plan improvement activities. An example of what a quality culture profile looks like is presented in Figure 5. The profile also enables libraries to see where improvements have been made by repeating the QMM assessment – thereby evidencing the impact of the improvement activities. However, cultural change takes time (Atkinson, 1990; Kotter, 1995), so the author recommends that repeated QMM assessment be conducted with at least a two-year gap.

<sup>4</sup> Available from [www.caul.edu.au](http://www.caul.edu.au)

<sup>5</sup> For example Baldrige ([www.nist.gov/baldrige](http://www.nist.gov/baldrige)) or EFQM ([www.efqm.org/en](http://www.efqm.org/en))

Facet	2013 score	2015 score
...		
6. Leadership		
6.1 Vision and value setting	1	
6.2 Trust	3	
6.3 Inspiration and motivation	2	
7. Investment in staff		
7.1 Attitude to staff	3	
7.2 Training provision	4	
7.3 Development of staff	3	
7.4 Recognition of staff	2	
8. Alignment		
...		

Figure 5: A QMM assessment

Secondly, because it is administered to all staff it identifies areas of difference within the staff pool. Thirdly, it tests whether the assumptions of the library managers about staff attitudes to service quality are true.

## The development of the QCAI

The QCAI was developed using standard techniques from the psychological sciences and tested for utility. It underwent three cycles of testing at two UK university libraries.

The QCAI was designed to assess the attitudes and knowledge of library staff, and predominantly uses closed questions for ease of analysis. The instrument itself is intended to be a change agent – to start to change the attitudes of staff – therefore the questions and answers are not randomised. As one tester stated “the questions themselves start a thought process [about quality]”. An example of the QCAI questions and answers is presented in figure 6.

17. Are you involved in changes?

☐ Only to point out the problems that they haven't thought of.

☐ Not really.

☐ I know about what the changes are. If it was relevant to my job I would changing what I do.

☐ Yes. If it is in my area or I am on a project group I help to plan the changes.

☐ Yes, we come up with improvement ideas, and if they are approved we implement them.

18. If you go on a course, what do you do with what you have learned?

☐ I use it in my work.

☐ I share what I have learned with the others in my team.

☐ I share what I have learned with others in my team, and other teams where it is relevant.

☐ I do a report that any library staff member can read/attend.

☐ I share it with the rest of the Library staff. We try to share learning, information and knowledge. We all know who to go to for more information about a topic.

Figure 6: Example of QCAI questions and answers

## Implementing the QCAI

Although the QCAI is an ‘off the shelf’ assessment tool, it requires customisation and therefore is provided in kit form. The kit includes introductory materials, the list of questions and answers that form the QCAI, instructions for analysis, templates for reporting, the QMM, and full instructions for use. To customise the QCAI, libraries need to amend language of the QCAI questions for their local situation and set up the categories of staff position within the hierarchy (usually grade or equivalent) and teams.

The QCAI can be run using any online survey tool, so libraries can select whichever they have access to. The selected online survey tool will need to be populated with the introductory material provided and the customised QCAI questions and answers.

The survey tool selected by the library is used to collate the responses. It is essential that the tool can segregate responses to the survey as a whole by the responses to a particular question. This is necessary so that those analysing the results can identify similarities and differences in response patterns between staff in different teams and different positions in the hierarchy. The results are analysed against the if-then table, an extract of which is presented in Figure 7.

QMM element	QCAI Question No	QCAI Answer	QMM score
1.1	Q3a	A1	Level 1
		A2	Level 2
		A3	Level 3
		A4	Level 4
		A5	Level 5
1.2a	Q3b	A1	Level 1
		A2	Level 2
		A3	Level 3
		A4	Level 4
		A5	Level 5
1.2b	Q4	All A1 or A2	Level 1
		A1 or A2, except LIS executive (A3, A4 or A5)	Level 2
		Senior staff A3, A4 or A5	Level 3
		A4	Level 4
		A5	Level 5

Figure 7: Extract from the QCAI if-then analysis table

The analysis produces a customised version of the QMM with the attainment level of the library highlighted. This locates the library on the quality culture roadmap, and illustrates the necessary direction of travel. An example of QCAI results presentation is shown in figure 8.

<b>3.4 Attitude to mistakes</b>	Mistakes are hidden due to a blame culture.	Mistakes are fixed – they are viewed as result of the person not following procedure.	Mistakes are fixed – they are viewed as faulty processes (especially not enough training).	Mistakes are viewed as opportunities for learning	Mistakes are viewed as opportunities for learning and are accepted as inevitable if trying new things.
<b>3.5 Attitude to risk</b>	The library is risk averse – it refuses to take risks.	The library is risk averse – it may occasionally take what it views as risks, but only if they are virtually guaranteed to work.	The library is risk averse – it employs checks and balances to minimise risks.	The library is risk tolerant – willing to accept risk taking behaviour (“It is OK to take risks, no-one will die!”).	The library is risk seeking – encourage risk taking behaviour (“It is better to do something and fail than to wait to be certain it will work and do nothing”).

Figure 8: Example of presentation of quality culture assessment results.

## Future developments

The author hopes to access funding to further develop the QCAI, in particular to undertake more widespread testing and psychometric assessment. Alternatively, she hopes that other LIS researchers will take on the baton and undertake such work.

The author hands these resources over to the Library community, and asks only two things in return: (1) that anyone using or referring to the Quality Maturity Model and the Quality Culture Assessment Instrument acknowledges the author's intellectual property, and (2) that everyone using the tools contributes to the community of practice via the blog. The author hopes that in the future this will become a resource for tools, techniques and best practice to be shared, and so the quality culture of all libraries is improved, for the benefit of our customers.

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