



User perceptions of digital libraries: a case study in Italy

Anna Maria Tammaro

University of Parma, Florence, Italy

Abstract

Purpose – The purpose of this paper is to describe the findings of a survey promoted and financed by Fondazione Rinascimento Digitale about users' perceptions of digital libraries in Italy. The primary objective of the survey was to obtain feedback from users on their perceptions of digital library services and to give them an opportunity to make suggestions. A secondary objective was to establish and test a collaborative methodology with which to evaluate best practice for digital libraries.

Design/methodology/approach – Questionnaires and interviews were used to gather the data. A questionnaire was also distributed to the managers of those cultural institutions involved.

Findings – The results of the survey indicated that users have different perceptions with regard to digital libraries and that they tend to use the services of more than one cultural institution. Overall, there is a positive attitude towards digital libraries, but the survey also underlines that users often do not know how to use the libraries and are unaware of all of the services offered. The accessibility of the interface was considered important, but as it becomes more sophisticated offering more services more staff assistance will be required.

Research limitations/implications – The survey has had limitations of time and resources available. The focus was on on-site users at the cultural institutions and not remote users and non-users.

Practical implications – The results of the survey have identified user priorities, but users are rarely involved in the design of digital libraries. The Fondazione Rinascimento Digitale aim was to stimulate a culture of excellence in the different cultural institutions involved, focusing on users' expectations.

Originality/value – The survey served to test experimental quality indicators and inquiry methodologies that focused on library users. This paper considers the implications of these results for digital libraries in general, and the value of a cooperative approach to the identification and evaluation of digital library users in particular.

Keywords Digital libraries, User studies, Library users, Perception, Italy

Paper type Case study

1. Introduction and background

The first projects using digital library applications in Italy started in early 1990, led by research institutions (such as the IMSS Digital Library from the Institute of History of Science) or academic departments (as with Biblioteca Italiana created by a consortia of universities). 1999 saw the start of the national Italian Digital Library project, developing a distributed digital collection and issuing guidelines for metadata and other technical standards. In the last ten years many other digital libraries projects have flourished, and nowadays all libraries are involved in the transition to digital. However very little is known about the perceptions users have about digital library services.

The Fondazione Rinascimento Digitale[1] is a recently created institution, established to encourage the cooperation between various organisations, and share experiences and know-how in the digital sphere, and with a goal of promoting the use



of new technologies in cultural institutions by establishing high quality standards. The Digital Libraries Applications Project, begun by the Foundation, aimed at evaluating the services currently offered by digital libraries in Italy to identify the current state of the art and any obstacles to improving their services, in order to stimulate greater cooperation between different cultural institutions. To realize this aim, a study group was established, starting to work in the summer of 2005. It comprised a wide group of experts representing different cultural institutions that either offer digital services or make their collections accessible digitally, and representatives of projects dealing with digital library themes.

The approach chosen by the study group was to evaluate the complexity of the digital library from the user's point of view. Surely although the user has a primary role in every digital library project, nonetheless it is not always easy to discover users real needs and if the user is satisfied with the digital resources and services available. The base supposition that the survey was that in order to justify the efforts involved in establishing and managing a digital library, it must offer a significantly superior value when compared a traditional library: this added value must be measured not only quantitatively (for example, the number of uses) but also qualitatively, based on its usefulness to the users themselves. The broad goal was to stimulate a culture of excellence for digital library services with the user as the main focal point. To accomplish this goal, the study group set the following objectives:

- to identify and measure the expectations and perceptions of the service together with the user satisfaction with available digital resources and services; and
- to launch a user survey comparing a number of diverse case studies in the area of humanities. The choice of the humanities sector was due to a knowledge gap about the users perceptions of most of digital libraries developed in this area.

Specifically, the study group posed these questions:

- What needs are considered to be priorities by which group of users?
- In relationship to these needs, which services and resources are essential and which are considered desirable?
- How can digital libraries be useful to their public?

Among the analyses already carried out in Italy there were two useful surveys, one by the Istituto e Museo di Storia della Scienza, (Museum of the History of Science – IMSS) and the other by the Biblioteca Nazionale di Firenze (National Library of Florence – BNCF) from which the study group took useful methodology suggestions.

The study group took as its reference points some of the most important studies, including SCONUL's E-measures project (Town, 2004)[2], ARL's E-Metrics project (Miller and Schmidt, 2001) and COUNTER (Blixrud, 2002, 2003). The eVALUED project (Thebridge, 2003) proved particularly interesting to the study group as it had developed a toolkit to facilitate the assessment of digital libraries. The aim of eVALUED was to simplify a first reading of qualitative data, without abandoning the gathering of quantitative statistics.

From literature and documentation on the subject, the study group noted that few of the user surveys had studied their opinions (Chowdhury and Chowdhury, 2000; Goncalves *et al.*, 2007; Mazzocchi and Ridi, 2006). These surveys investigated either

information seeking behaviour or just general satisfaction with the digital library services. The study group used a methodological approach that integrated these international experiences with the experimental approaches of the IMSS and BNCF.

2. Methodology

The Fondazione Rinascimento Digitale survey has been divided into three phases. The first phase was dedicated to gathering information on existing digital libraries in Italy, and the second phase to gathering the contributions of experts to help define a theoretical context and reference model for digital libraries. Finally, in the third phase, a user survey subgroup carried out the survey and analysed the data.

These results were used to develop measurement tools for three areas:

- (1) digital contents, services available and their uses;
- (2) user satisfaction with those digital resources and services, and;
- (3) outcomes measurement.

From the beginning of the survey, the study group had to allow for limited resources and time when considering the scope of the survey, and therefore chose to carry out various case studies in order to compare the final results rather than a broad quantitative survey. The survey had other limitations as well:

- it was limited to on-site users at the institutions and therefore did not consider remote users; and
- the results would have been more useful if they also included non- library users.

Normally digital library evaluations about user perceptions, use measurement and service impact with are done separately. Nonetheless, the study group believed that the three measuring and evaluation processes should be complimentary, and that the comparative results wouldn't be in conflict. Therefore a methodological framework was developed, and these results are probably among the most interesting from the user survey.

The study group chose three humanistic cultural institutions where the survey was carried out using the same methodology. They were the Mediateca of the Tuscany Region, the Humanities Library of the University of Florence and the Library of the Museum of the History of Science; the results were later compared to those obtained by the National Central Library of Florence.

2.1 Collections, digital services and their uses

The questions were aimed at identifying the user expectations of the services offered, including: available hardware, on-line catalogues, access from home, portals/sites, users educational background, promotion/publicity, and staff assistance. The digital resources available in Italian digital libraries included: electronic journals, e-books, databases, CDROMs, learning materials, audiovisual and multimedia, thesis and students' work. Additionally, the survey attempted to identify cultural institutions other than the surveyed institutions, which the users regularly use virtually.

Traditionally the most common measurements concentrated on numbers and data such as budget employed, number of titles in a digital collection, etc, just because they are easily obtainable. Many digital libraries collect these types of statistics, but are not

able to gather other data about the user and their normal activities in a digital library. The study group wondered whether enlarging the size of the collection is necessarily correlated to users' needs, but did not arrive at a definite conclusion; moreover it is difficult to understand if a single research session on a digital library is truly useful to the user, or if it even has had an impact on them. Therefore it was decided to gather the perception that users have on how resources are employed as well as the digital services available.

2.2 User satisfaction

Despite the fact that it is essential to develop a tool to measure how digital libraries services contribute to the user's success, this is very difficult to assess. Therefore the study group chose to define user success as closely tied to the success of the institution to which the digital library belonged, as expressed in their mission or in other project documents. This necessitated finding a tool capable of identifying the critical criteria of the specific mission of each individual digital library, one that preferably included a definition of user activities.

To identify and measure the impact, the group limited itself to evaluating the specific digital library services in the case study, which ones were provided in such a way as to be a support – or if you prefer, “useful” – to the activities of the users and their regular research activity and information use. The impact, therefore, is not a value of the resources or of the services in or of themselves, but more pragmatically a measure that identifies activities that would be impossible to accomplish without the use of the digital library. Impact measurement defined in this way was researched in the comments section of the survey and in a specific question asked during the interview. Of particular interest to the study group were qualitatively negative or neutral (those that were not negative or positive) comments.

The tools employed in information gathering were a questionnaire and structured interviews. Table I represents the analysis grid.

The methodology employed could be used periodically to correlate the results obtained from user surveys and use these for the improvement in services.

Table II synthesizes the model chosen for the evaluation.

3. Results

This is an analysis of the data comparing the individual case studies. The full survey is available in the online report[1].

3.1 Who are the users of the cultural institutions?

Users were classified by age, gender, nationality, profession and hobbies. In the Humanities Library of the University of Florence the sample chosen was of undergraduate and graduate students, with an age range of between 25 and 40; they have an average knowledge of internet and they frequently use the on-line library system, but they rarely use the Ateneo's Digital Library. The users at the Library of the Institute and Museum of the History of Science are professionals and employees with a post bachelor degree and an age that ranges from 32 to 76; they have a good or excellent knowledge of internet and they frequently use the Digital Library. Mediateca users are primarily students and the youngest in age, from 19 to 25; they use the Mediateca weekly, also access it from home. All of the users replied that they also use

Analysis factors	Data collection tools	Data collected
Who are digital library users?	Questionnaire Interviews	Demographic data
What are users' expectations for digital resources and services?	Questionnaire Interviews	The users' priorities for digital resources and services
How satisfied are the users with the resources and services?		User satisfaction with digital services and resources
What is the impact of the resources and services?		Impact on the users' productivity
What is the users' perception of the service?	Questionnaire Interview	Level of internet knowledge Level of knowledge of what a digital library and web site are
What do the users' find unsatisfactory?		Frequency with which they are used Problems with user accessing the digital library and related problems
What are the users' suggestions to improve the quality of the services offered?	Questionnaire Interview	Open answers Cooperation between cultural institutions User education courses

Table I.
Analysis grid

Cultural institutions	User information	Output	Outcomes (impact)
Approaches and strategies applied by digital libraries	Needs, priorities and perception of services	User satisfaction (measured as GAP between expectations and perceptions)	Achievement of the Cultural institutions' mission
Experts' contributions to the discussion	Demographic analysis of the users	Frequency with which digital assets and services are used	Measure:
Activities and state of the art in the Italian digital libraries	Socio-economic factors with an impact on the utilisation of the applications of digital libraries		How do digital libraries support their regular users' activities?
Digital Contents and services currently available			What would not be possible to do without digital libraries

Table II.
Fondazione Rinascimento Digitale evaluation model

the services of other libraries: the users of the Library of the Institute and Museum of the History of Science and the Mediateca users access other national and international institutions with the same specialisation from remote locations; the University students primarily use the local services from the Florentine Public Library system.

The most significant result from this first part of the survey lies in the definition of the user, because upon it depends their choice of service and digital resource priorities. Even within the limits that have already been underlined, we can say that the users of different institutions have different service priorities.

3.2 Comparison of the results

Even with a wide range of different uses some results were common to all groups and can easily be compared.

3.2.1 What are the service perceptions? Through a careful examination of the service expectations, correlated to user satisfaction with those same services, it was possible to identify which services users consider to be unsatisfactory and thus where it is necessary to concentrate our improvement efforts. These are:

- the promotion/publicity of resources and services;
- on-line tutorials;
- user education; and
- staff assistance.

It should be noted that need for promotion/publicity of services available was expressed by all users.

The services that received the highest level of satisfaction were:

- remote access; and
- on-line portal.

University students prefer remote access, but contradictorily they also appreciate the help of staff and information literacy courses with an actual teacher rather than online tutorials. The IMSS users prefer remote access and the portal, together with on-line tutorials, but they see staff assistance as their first priority. Mediateca users, a mainly local service owing to its particular characteristics, prefer local access and are the users that displayed the greatest appreciation of staff assistance even though only available through remote access; the portal and the tutorials are also regarded as important.

3.2.3 What are the priorities for digital resources? By repeating the correlation between the satisfaction for individual resources it was possible to identify those which are not considered priorities. They are listed in reverse order, starting from the less used:

- e-books;
- audiovisual materials;
- learning materials; and
- theses.

The resources that were listed as priorities are:

- the OPAC catalogue;
- on-line databases; and
- electronic journals.

For resources, the priorities demonstrate the big differences between different types of users. For example, University students mainly use the on-line catalogue and the databases; the IMSS users are the ones that prefer the e-book and CD-ROMs, and Mediateca users tend to prefer the audiovisual materials.

3.2.4 How are digital libraries useful to their public? The impact described by users largely named the advantages of the digital library such as the speed of access to digital resources, the greater number of resources available (even if this is not yet considered to be sufficient), and personalization.

3.3 What interventions are possible for improvement?

We conclude that digital library users want to be independent in conducting their research and that they want remote access: this is demonstrated by the general expectation of a good orientation through the portal, even in the cases where that user regularly goes to a physical library.

Databases and on-line catalogues are areas that need particular attention by professionals in order to meet the users' priorities. A service that users view as particularly important is searching the OPAC and databases. In the suggestions that were made it seems particularly relevant to underline the request for a greater functionality of the OPAC. Users expect to find and locate digital resources quickly and easily. Other answers included the possibility of integrating the different databases available, such as a link from the OPAC to a preview of the cover, copyright page, and contents of the book.

In answer to the question "Which services would you like to find in a digital library?" most of the users interviewed desired a greater number of digital resources available, although users also expect other functionalities such as navigation, virtual spaces for collaboration, etc. The personalization of the service was also viewed as important, as well as the possibility of having more functionalities available, like the ability to manage a personal digital collection.

In answer to the question on the need for using libraries, archives and museums, the indication was that the current situation of cooperation is definitely unsatisfactory and insufficient. The answers also underlined the need to improve the user skills to use digital resources along with the need for more promotion of their existence.

4. Conclusions

The results of the survey have made it clear that users have different needs, which correlate to the different goals of the digital libraries' institutions. Nonetheless, users regularly use the services of more than one cultural institution and they do share some common priorities. Users view the services offered by digital libraries in a positive light, but there is a lack of knowledge on how to use them and users are often unaware of all the services that are available to them. The accessibility of the interface is considered important, as well as searching tools, but the more sophisticated these tools are, the greater the assistance they require from the library staff.

In conclusion, it is important to give users the chance to have their say where services should be improved so that their expectations can be better met. Moreover, digital libraries could try to improve their services through a cooperation with their peers. Using such user surveys periodically, single institutions could compare and benchmark their own results with those of other digital libraries.

Notes

1. The project Digital Libraries Applications is part of the activities of Fondazione Rinascimento Digitale entitled: "Management of and Access to Digital Libraries". A report on the state of digital libraries and other documentary material is available on-line: www.rinascimento-digitale.it/
2. The goal was to produce a set of statistics to estimate the use of digital services in the university libraries of the UK. The project is based on the periodic survey conducted by all English university libraries. After two years the Project suspended the data-gathering

because they had reached no significant outcomes with which to understand the real performance of digital libraries. The Society of College, National and University Libraries (SCONUL) generate Annual Library Statistics, where the criteria that were developed by the Project are recorded.

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Corresponding author

Anna Maria Tammara can be contacted at: annamaria.tammara@unipr.it