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The evaluation of real-world digital libraries: a case at the Loughborough University Library

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Abstract

Evaluation is a crucial step for the development and improvements of digital libraries. Unfortunately, nowadays only few studies are focused on this matter and even fewer concentrate on how evaluation is conducted in real-world digital libraries.

The study contributes to the research presenting the results of a qualitative case study conducted at the Loughborough University Library, based on data collected from eleven semi-structured interviews and document analysis. It reports how evaluation is conducted in a real-world digital library, which are the knowledge and competences of the staff in charge of performing it, which are the obstacles and barriers encountered by the staff and it examines what happens after the conclusion of the evaluation, in particular how results and recommendations are turned to profitable account. The research also aims to act as source of references for researchers who want to investigate this field further.

The collected data were analyzed through constant comparative process and seven main categories matching the research objectives were identified and discussed: definition of evaluation by the interviewees, conceptual purpose of evaluation according to the interviewees, training on evaluation by the interviewees, problems, time constraints, resources, cooperation within the group, individual attitude, project planning, project development, how implement actions from recommendations, dissemination of results, sections taken to implement the recommendations, impact of evaluation projects. Recommendations for the Loughborough University Library and indications for further investigations are also discussed.

The research confirms that currently the knowledge about how real-world-digital libraries deals with evaluation are insufficient and it raises several new and controversial questions, which should force the scientific community to investigate deeper the reality of digital library.

Key words

Evaluation, digital libraries, digital libraries evaluation, real-world digital libraries, Loughborough University Library, digital libraries evaluation strategy, knowledge and competences about evaluation, obstacles and barriers of evaluation, turning recommendation into profitable account.

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1. Introduction

- **Background to the research**

Digital libraries have a short history. While a discussion about them, under various names, started in the 1960s, it was not until the mid of 1990s that researches really took off. Since then their growth have been exponential and in little over a decade, thousands of digital libraries, in a variety of forms, were built all over the world (Saracevic, 2004). Nowadays digital libraries are an essential foundation for several heterogeneous areas such as electronic publishing and strategic defense, and it is a primary instrument to deliver content for scholarship, commerce, cultural heritage, and education (Fuhr, et.al., 2007).

Unfortunately, despite these advances, there is little awareness of the effectiveness of digital library systems and services as support for this essential activity of daily life in the 21st century (Fuhr, et.al., 2007).

As stated by Crawford, evaluation is central in digital libraries project planning and development, in fact “in times of rapid and profound societal and technological changes, evaluation is essential to collect information to facilitate decision-making and justify increasing expenditure or defending existing expenditure (Crawford, 2000).

In particular users' oriented studies are necessary to ensure what Crawford (2000) names the *public trust*: “even when evaluation is not required for purposes of accountability, for demonstrating the need for libraries, for avoiding costly mistakes, or for planning, systematic evaluation is desirable as an expression of the library's concern for its public trust. [...]The focus on the public that pervades all types of libraries and library services in it suggests a need for evaluation, for exploring ways to do things better, for demonstrating that the library's administration and staff want to provide the best possible library. The desire to improve, to grow, and to provide ever better services and products, is a deeply rooted part of the librarian's philosophy” (Crawford, 2000).

The evaluation of a digital library is categorically a priority, but it is a hard work. It deals with many challenges coming from technologies, different approaches, staff and costs (assessment is a very expensive activity).

- **Statement of the problem**

Nowadays many theoretical framework, strategies and standards are available in the literature to allow digital libraries to evaluate the services that they provide.

However, in everyday life, how do digital libraries deal with evaluation? Do they utilize them? Which are the potential problems that they encounter? And what happen after the evaluation is conducted?

Despite the large amount of literature, coming from different communities and disciplines, a specific bibliography on these problematic does not exist so far; they are just mentioned in few researches as challenges, but never seriously tackled. Further studies on this regards are therefore required.

- **Research question**

Based on the statement of the problem, the natural research question is:

How do digital libraries deal with evaluation in real-world?

Understanding how evaluation is done in practice is relevant to develop new and more efficient theoretical paradigms, which match the actual needs of digital libraries.

- **Aim and objectives**

The aim of the study is to understand how evaluation is tackled by real-world digital library in everyday life. The focus will be neither on methods nor on data collection techniques, but on the (evaluation) process itself, from the project planning to the transfer in actions of recommendations.

The objectives of the study are:

- Explore the evaluation strategy of a real-world digital library.
- Establish which are the staff knowledge and competences about evaluation.
- Identify the problems, obstacles and barriers encountered by the staff.
- Explore what happen after the conclusion of the evaluation, in particular how the results or recommendations are turned to profitable account.

● **Methodology**

In order to answer the research question a literature review, both on theoretical articles and best practices is a necessary step, and then a case study will be put in practice.

The most appropriate research method has been judged to be the case study, in particular a single embedded (multiple units of analysis) case study (Yin, 2003).

This method guaranteed to conduct a deep investigation of a case, from the large unit analysis (the digital library policy about evaluation) to the subunit level (specific evaluation projects). In addition, the case study is very appropriate when the investigator has little control over the events (as it is), and when the focus is on a contemporary phenomenon within some real-life context (Yin, 2003). Of course, the method has also some weaknesses, which are analyzed in the *Limitation* chapter.

The document analysis and the interview are the data collection techniques chosen because the two techniques, properly combined, allow for gathering all the required data to answer the research objectives.

● **Scope of the research**

The study focus on the Loughborough University Library, specifically on three of the main evaluation projects in which the digital library services have been involved in the last two academic years:

- *Use of Web 2.0 tools by students at Loughborough University* (October 2009 to March 2010)
- *Scholarly communication at Loughborough University* (April to September 2010)

● Limitations

Every researcher has to deal with limitations, which can come at different stages of the study and have multiple causes. The main restrictions for this study come from the lack of time and resources.

Indeed, additional case study involving other digital libraries with different evaluation approaches would have added relevant information. In addition, multiple interviews with respondents at different stages of the evaluation projects and focus group with the entire involved staff would have ensured richer and deeper data.

Other potential limitations due to the research method, for instance coming from the data collection techniques and the data analysis, were suitably avoided following strictly the trustworthiness criteria reported in the *Trustworthiness of the Enquiry* chapter.

● Significance of the study

Evaluation is a crucial step for the development and improvements of digital libraries. Unfortunately, nowadays only few studies are focused on this matter and even fewer concentrate on how evaluation is conducted in real-world digital libraries.

The study contributes to this research analyzing a case study (the Loughborough University Library) that reports how evaluation is conducted in a real-world digital library, which is in charge on performing it, which are the obstacles and barriers encountered and described carefully what happens after its conclusion, in particular how results and recommendations are turned to profitable account.

The research also aims to act as source of references for researchers who want to investigate this field further.

By this study, it is expected to highlight the importance of evaluation and to raise new and controversial questions to force the scientific community to investigate deeper this field encouraging institution starting new project.

- **Outline of the thesis**

The study is organized in five chapters.

The first chapter (*Introduction*) provides a general description of the research domain, and the most common related problems. Then the research question, aim and objectives are listed. In addition, an overall depiction of the methodology, scope of the research, limitations and the significance of the study are reported to contextualize the research and provide an outline on it.

The second chapter (*Literature review*) defines the key terms of the research and reviews the literature pertinent to the topic and that has informed this study. In particular, it focuses on key concepts related with evaluation and how they are applied in everyday life. It aims to both provide a background to the study and to understand and interpret the collected data.

The third chapter (*Methodology*) outlines the methodology including the research approach, the research method, the sampling strategy, the data collection techniques, the data analysis, the ethical considerations and the trustworthiness of the enquiry.

The fourth chapter (*Findings, analysis and discussion*) is divided in three main sections: the findings section defines the context of the case study describing the involved institution, its evaluation policy, the examined projects and the interviewees; the analysis section illustrates and categorizes the data collected during the research; the discussion attempts to explain the results of the analysis. The chapter is organized to escort the reader through the steps taken in developing the research in order to give evidences of the results.

The fifth chapter (*Conclusions and implications*) reports the study conclusions aligned with the research question and objectives; recommendations for the Loughborough University Library and indication for further researches are also here presented.

Enclosed to the research are an alphabetical list of the cited references and four appendixes: the introductory mail sent to the interviewees, the preliminary consent form, an exemplar of set of questions and the final consent form.

- **Chapter summary**

This introductory chapter reports background information about the research, the statement of the problem, the research question, aim and objectives. In addition, the methodology is briefly described, as well as the scope of the research and the limitations as they apply to the study. Lastly, the significance of the study and how it is organized are reported.

2. Literature review

● Introduction

In addition to serving the researcher in the research process, this literature review aims to provide the reader with an overview on evaluation as a process. In order to achieve it, firstly a clarification of the terms digital library and evaluation is presented; secondly a brief history of the digital library evaluation is sketched; thirdly the process of evaluation is described and organized as answer to four of the five W's; finally a reflection on how the real-world digital libraries deal with the evaluation is reported.

To collect the materials, a specific searching and retrieving strategy was followed. The starting point was the book *Digital library use: social practice in design and evaluation*, published by MIT Press, Cambridge in 2003. It is a collection of inedited articles written by the most influential experts on evaluation from all over the world reporting studies about concepts and techniques as well as practical experiences. From the harvesting of the references provided in the book, it was possible to retrieve other relevant contributions and bibliographies, which contributed to create a strong base.

In addition search sessions were carried out using *E-LIS: E-prints in Library and Information Science*, *ACM Digital Library*, *Journal Citation Reports*, *SCOPUS*, *Web of Science*, *IEL*, *IEEE/IEE Electronic Library*, *LISTA - Library, Information Science & Technology Abstracts (EBSCO)*, *Google scholar*, *Informaworld*, *ERIC (Education Resources Information Center)*, *Periodicals Index Online* available through the Sistema bibliotecario dell'Università degli studi di Parma hosted by the Università degli studi di Parma. The search strategy included the terms "evaluation of digital libraries", "digital libraries AND evaluation", "digital libraries assessment", "electronic libraries evaluation", "evaluation of e-services" occurring anywhere in the record and within the timeframe of 1985 to 2011.

One hundred and twenty significant documents were selected to be reviewed from these databases after evaluating the initial results, but only 62 have been judged relevant to the study after the reading review.

As presented the strategy has some limitations, therefore the author do not claim the literature as exhaustive.

- **Definitions**

- a. Digital library**

Digital libraries have a short history; despite the first discussions, under various names, started in the 1960s, researches really took off in the mid of 1990s. Since then their growth became exponential and in a little more than a decade thousands of digital libraries, in several different forms, have been built all over the world and many other are going to be realized (Saracevic, 2004). Libweb, a directory of libraries on the web maintained by the University of California, Berkeley, currently lists more than 8,000 pages from institutions in more than 146 countries, and many others are reported each year (LibWeb, 2011).

During these years, many professionals and organizations have dealt with the hard task of providing a unique definition for all these experiences, unluckily without reaching an agreement. In the 2000 Schwartz listed more than 64 different definitions coming from students attending a digital library course (Schwartz, 2000), and examining the literature many other examples confirming this trend can be find (Bawden & Rowlands,1999; Chowdhury, 1999; Oppenheim & Smithson, 1999; Schwartz, 2000; Borgman, 2000; Allard, 2002; Witten & Bainbridge, 2003; Lesk, 2005; Thanos & Borri, 2007).

However, the most surprising aspect is not the amount of definitions, rather the lack of consistency between them (Tedd & Large, 2005). As previously mentioned, definitions come from different professionals (information systems technician, librarians, researchers), but also from different organizations (local/national/international institutions or associations) and therefore they highlight different objectives and focus on different aspects.

Another interesting aspect to be taken into account is the time period when the definitions were coined; indeed most of them are prior to 2007 while afterwards the focus moved to the classification of specific characteristics that digital libraries have or should have.

The most quoted definition (Tedd & Large, 2005) is the one reported by Borgaman and colleagues in the *Final report to the national Science Foundation*: "Digital libraries are a set of electronic resources and associated technical capabilities for creating, searching, and using information. In this sense, they are an extension and enhancement of information storage and retrieval systems that manipulate digital data in any medium (text, images, sounds, ...) and exist in distributed networks. [...] Digital libraries are constructed – collected and organized - by [and for] a community of users. And their functional capabilities support the information needs and uses of that community [...]." (Borgman, 2002).

Nevertheless, in this study a definition coined by the author has been adopted: digital libraries are services; they provide selected and organized resources (staff and materials) to satisfy the information needs of a community or set of communities, which contribute to its development. They can be extension or enhancements of, or integrated into, a variety of institutions including libraries.

Another matter widely discussed is the existence of several different types of digital library. In agreement with Lynch "three general kinds of services or systems are emerging that might be considered digital libraries. The first are commercial [...]. The second group contains research prototypes such as those that developed during the NSF/ARPA/NASA Phase I Digital Libraries Initiative grant program. The third are extensions of the research or academic library (or occasionally the public library) that incorporate extensive network-based collections and services. These include the efforts of virtually all major research libraries to deploy what they are most commonly calling a digital library component.[...] A few additional categories might plausibly be recognized as digital libraries" (2004, 193).

In this study the focus is on libraries belonging to the third category, in particular on academic library which are defined by the National Centre of Education Statistics (NCES) as "an entity in a postsecondary institution that provides all of the followings: an organized collection of printed or other materials, or a combination thereof; a staff trained to provide and interpret such materials as required to meet the informational, cultural, recreational, or educational needs of clientele; an established schedule in which services of the staff are available to clientele; the physical facilities necessary to support

such a collection, staff, and schedule. This definition includes libraries that are part of learning resource centers." (National Center for Education Statistics; 2004, 1). In addition, the report clarifies the definition of the included electronic services, which "covers information about the availability of electronic services in the library and elsewhere on campus, and off-campus access by primary clientele and other users. Additional services include Internet access, reference services by e-mail, full texts of periodicals and academic course reserve materials available electronically, and electronic library indexes such as citation indexes." (National Center for Education Statistics; 2004, 5).

b. Digital libraries evaluation

Just as definitions of digital libraries change, so do the digital libraries evaluation definition (Xie, 2008); this condition is the effect of the competing visions coming from the several communities that are involved in digital library evolution (Saracevic, 2000). Indeed being dynamic, the relationships among knowledge, technology and people, the assessment needs, design, and evaluation must be equally dynamic. (Bishop, Van House & Battenfield 2003).

The most quoted definition is the one provided by Marchionini (Saracevic, 2000, Chowdhury & Chowdhury, 2003): "Evaluating digital libraries is a bit like judging how successful is a marriage. Much depends on how successful the partners are as individuals as well as the emergent conditions made possible by the union. All three entities--the two individuals and the gestalt union--are of course influenced by their context as well. The difficulties arise from the complexity of mutually self-adapting systems interacting in a rich environment." (Marchionini, 2000, 1). Afterwards he explains that "This approach is based on the belief that evaluation is a research process that aims to understand the meaning of some phenomenon situated in a context and the changes that take place as the phenomenon and the context interact. This definition implies that evaluation specifies what is the research process (metrics and procedures), what is the phenomenon (its mission and salient characteristics), and the context(s) in which the phenomenon occurs." (Marchionini, 2000, 1).

Based on this last assumption, it is clear that "evaluation has both theoretical and practical impact in information science. Theoretical constructs, such as information needs,

relevance, and information transfer, are debated and assessed regularly, and metrics for assessing system development and operation are crucial to continued progress in practice." (Marchionini, 2000, 6).

Therefore, a clear distinction between metrics and evaluation exists. As Nicholson stated "measurement is just a precursor for evaluation in order to fully understand a system. [...]Measuring without evaluating is a common problem with automated reporting tools. Measurement produces data; however, evaluation creates information. The evaluation involves some method of judgment about the collected measures and metrics through some criteria."(2003, 175).

Lastly, a distinction between digital libraries evaluation and libraries evaluation is mandatory. As Marchionini emphasized "digital libraries marry the missions, techniques, and cultures of physical libraries with the capabilities and cultures of computing and telecommunications" (2000, 1), but the associated metrics "may be points of departure for evaluating digital libraries, but they are not sufficient to characterize the new rapidly emerging entity" (2000, 1). Nowadays this approach is widespread among most of the authors like Bertot, who indeed claims that "there is a need for separate and distinct measures of library electronic services and resources as they have no corollary in the traditional library operating environment." (2004, 5), but not all of them are accepted; on 2004 Kyrillidou & Giersch commented that "the intersection between digital and physical libraries provides fertile territory for adapting physical library measures for use in the digital environment" (2004, 1).

● **Evaluation evolution**

Although evaluation activities began as soon as the first digital libraries came along in the eighties, the goals of the efforts were quite heterogeneous (Borgman, 2002), nevertheless all of them had the common primary aim to measure the impacts on users and humanities community (Marchionini, 1994). In the early nineties, the scientific community began to recognize the theoretical value of these projects and started to refer to evaluation as a metadiscipline (Scriven as cited in Nicholson, 2004).

Despite these positive remarks, in 2000 Saracevic published the notable article *Digital Library Evaluation: Toward an Evolution of Concept*, where he claimed that evaluation was still in a formative stage and it was being mostly bypassed (Saracevic, 2000). According to him, evaluation was not keeping pace with the evolution of digital libraries, neither was it a step of their implementation nor, most important, concepts about what evaluation is and how to perform it had been clarified. On the same article the author dealt with the possible causes of that situation (i.e. digital libraries were at their dawning making hard any attempt of formal evaluation, informal and anecdotal methods were more than satisfactory, the interest in evaluation was poor because the popularity and the amount of users were the only considered parameter, the evolution of digital libraries is too fast and evaluation cannot keep up) and he concluded that the conceptual state-of-art of digital library evaluation was not sufficiently developed to start with (Saracevic, 2000).

After this crucial article, other authors have contributed in the identification of the causes of the lacks; above all Borgman (2000), who stressed the difficulties created by the richness and complexity of applications and users of digital libraries and Kyrillidou (2005), who accentuated the project-oriented nature of digital libraries, which makes them difficult to evaluate in aggregate.

Despite Choundhury, Hobbs, Lorie and Flores, in 2002, identified a growing interest of institutions in the evaluation of digital libraries, due to the increase of users expectation, a greater gained accountability and a greater attention to increasing development costs (Choundhury, Hobbs, Lorie & Flores, 2002), the situation has not change significantly since Saracevic wrote his article ten years before.

In 2007 Zhang repeated that “compared with the growing number of DL projects, the overall quality of DLs is insufficiently studied and reported (Chowdhury & Chowdhury, 2003; Goncalves, Moreira, Fox, & Watson, 2007; Isfandyari-Moghaddam & Bayat,2008; Saracevic, 2000; Xie, 2006, 2008). [...] In addition to the quantity issue (i.e. not every DL project has been evaluated, and not every project with evaluation has its entire DL aspects covered), the quality of DL evaluation is problematic. Evaluation approaches and criteria vary among the existing studies. It is hardly possible to benchmark evaluation findings”.

Although many studies, efforts and improvements have been done, much still remains to be completed. In particular authors underline the need to recognize common set of measurements (Zhang, 2007), to define new theoretical frameworks (Nicholson, 2004) and mostly to clarify concepts (Saracevic, 2004) and share results of evaluation projects, because this attitude will help to build more efficient applications reducing their costs (Marchionini, 2000).

In conclusion “Evolution of evaluation should be treated as a necessary part of the larger evolution of digital libraries and, as that larger evolution, it will have apart that ends in blind alleys and it is hoped a much larger part that leads to successes. But, it is never too early to start thinking about it and to go on clarifying evaluation concepts and doing evaluation experiments” (Saracevic, 2000).

- **The process of evaluating**

As a matter of fact, evaluation is a process; this assumption is justified by the analysis of its definitions and the practical evaluation studies.

During the years, many manuals, management books and how-to-do guides have reported theories and the fundamental steps to conduct a successful evaluation for libraries and information services. Unfortunately, only few of them deal with the specific needs of digital libraries.

Among the analyzed literature, the model considered the most clear and adaptable is reported in the *Six Steps to Effective Evaluation: A handbook for programme and project managers*, it is the result of a study financed by the Joint Information Systems Committee (JISC) and “intended for managers of JISC development programs and prospective and successful project teams who want to design evaluation into their initiatives” (Glenaffric Ltd, 2007, 2).

The handbook identifies six steps, from the design to the evaluation report and accounts that “projects have very different evaluation requirements which will determine the type of evaluation undertaken” (Glenaffric Ltd, 2007, 5).

These six identified steps are also reported in every other literature and adopted by the entire analyzed project with a different terminology and sometimes order. This situation suggests that they are universally identified as mandatory and can be applicable to each evaluation project

- **Identify Stakeholders.** At the very beginning, it is crucial to identify not only people involved in the project, but also who will be affected and who will use the evaluation findings, recognizing the relation between these three groups in order to have a clear understanding of the domain and therefore influence the future choices.
- **Describe Project and Understand Programme.** The implicit logic in the project and a draft plan are defined at this stage, therefore a plausible model of the way the project will be developed – known as inherent design - is defined. This stage offers also the opportunity to clarify the relationship between a project and its context and to check whether there is a clear relationship between institution mission and project objectives.
- **Design Evaluation.** This section manages the choices that the team needs to make (which are sometimes left to external evaluators) and record in an evaluation plan based on the documentation of the baseline at the starting of the initiative. The main choices are about attribution, timing and type of evaluation. At the beginning of this stage the team is required to take some
- **Gather Evidence.** At this step, the practical details for gathering evidence are fixed. The relevant subject to carefully investigate are: the sources (where data can be found), collection methods (like focus group, interview, questionnaire) and logistic (Who will collect the data? What data needs to be collected? When is it needed? Where will the data be found? How will the data be obtained?)
- **Analyze Results.** The type of analysis that can be performed mainly depends on the type of the collected data. The fundamental steps of this phase are very heterogeneous: first, collating and checking data (their consistency and accuracy and, when relevant, introducing the use of check sums and other data validation

techniques), then, coding and tabulating, analyzing and stratifying them. The phase ends comparing the projects with previous ones and reporting the data.

- **Report Findings.** The essential purposes of an evaluation project are to improve the running services using the inferred information and making available the outcomes, to provide advices and guidelines for funders and future projects. Therefore the reports are crucial to demonstrate the effectiveness of your project, identify methods and techniques for improving future projects performance, modify and refine project planning, demonstrate accountability and, not to be overlooked justify the received funding.

As previously mentioned, the reported procedure is one of the many process-steps description available in the literature, but as claimed by the authors of the handbook "that's it in a nutshell ... there may always be more but this is enough for most purposes." (Glenaffric Ltd, 2007).

● **What, why, how and when evaluate**

According to Saracevic & Covi "The general questions in any and all evaluations are: Why evaluate? What to evaluate? How to evaluate?" (2000, 4) in this study, another interesting question has been judged relevant and therefore analyzed: When evaluate?

a. What evaluate

Defining what should be evaluated in a digital library is a problematic task, first because there is no agreement on the definition of digital library and evaluation itself as already established.

As argued by Saracevic & Covi "It is difficult and even arbitrary to set the boundaries of a system. In evaluation of digital libraries, as in evaluation of any system or process, these difficult questions arise that clearly affect the results" (Saracevic & Covi, 2000).

Nevertheless, on 2001 the DLIB Working Group has identified three different models for evaluating a digital library. Their identification is based on different orientations, goals and criteria:

- Content: estimation of the amount of the existing collections and the distribution of the resources.
- Services: measurement of the efficiency and effectiveness of the service, usually considering the accesses and the usability.
- Users: assessment of sustainability, relationship with the service and familiarity with digital resources (D-Lib Working Group on Digital Library Metrics, 2001).

In consonance to the research community, the last model is the least investigated, although is considered the most relevant (Monopoli, 2002). As Bishop, Mehra & Bazzel & Smith emphasize, evaluation "relies on external standards of expertise, treats users as subjects or objects of the evaluation, and pays only indirect attention to social impacts associated with use, often striving to take a neutral and objective view." (Bishop & Mehra & Bazzel & Smith, 2003, 161).

Looking up in the literature, almost all the conducted studies had followed one of the mentioned models, but a combination of them had been applied rarely. As noticed by Xie "There are very few studies that assess every component of digital libraries" (Xie, 2007, 1351). The risk of this trend is that "Traditional an evaluation, which focuses on a single user group or system, may not provide to the managers of these services with the information needed to make effective evidence-based decisions" (Ackoff mentioned by Nicholson, 2003, 165).

b. Why evaluate

Despite the necessity to evaluate a digital libraries seems natural (testing the system, checking the users satisfaction), clear statements about its aims and benefits are needed for several reasons:

- firstly to sensitize practitioners on its effective relevance which incentives projects on this direction;
- then because the design and the development of digital libraries are expensive and therefore "evaluation results from previous systems can give guidelines as well as

assist in determining methods for the construction of cost-effective and sustainable new systems" (Borgman, 2002),

- and lastly it avoids users misunderstandings and complications, because they, in some specific cases, "expressed concern that data are being gathered for historical reasons or because they are easy to gather, rather than because they serve useful, articulated purposes" (Greifeneder, 2010).

Unfortunately, looking up in the literature, few authors expressed clearly why evaluate digital libraries is such important activity, while there are clear statements coming from the traditional libraries literature about evaluation which can be extended to digital library. A good summary is the one written by Crawford (2000), who identifies nine reasons:

- The principal and overriding reason for the evaluation of library services is to collect information to facilitate decision-making and justify increasing expenditure or defending existing expenditure.
- To evaluate the quality of service provided: both overall, and specifically to plan for future improvements.
- To identify the extent to which problems can be solved. It may or may not be possible to solve a problem identified by evaluation.
- To identify differing or contradictory needs of different user categories.
- To plan public relations work and information dissemination.
- To provide feedback to, and to evaluate contractors e.g. time taken by booksellers to supply items, and quality of OPACs.
- To involve users in management.
- To provide the basis of further improvements and direction.
- Closing the feedback loop. Recent research in higher education has shown that it essential to report to users on the outcomes of survey work and the decisions taken as a result. This shows the user that evaluation is a valid exercise to which they have contributed. Failure to close the feedback loop may be the reason for the phenomenon known as 'questionnaire fatigue'.

Nevertheless this list is not comprehensive and do not perfectly matches the digital libraries features, therefore clearer statements are required.

c. How evaluate

As previously stated, the methods and metrics used for the evaluation of digital libraries may vary depending on the evaluator domain (institutions, information systems, new technologies, collections, new services) (Borgman, 2002), on who is in charge of performing the evaluation (researchers, practitioners) (Borgman, 2000) and on the criteria and objectives fixed by the institution itself (Saracevic & Covi, 2000).

As debated by some author, during the evaluation, the focus is mainly concentrated on the interface and user levels (Zhang, 2010), on usability (Borgman, 2003) on assess performance, content (Xie, 2008), and on digital reference services (Xie, 2008). Likewise, the most used research methods are the survey and the log analysis, as confirmed by Greifeneder's study (2010), who conducted a content analysis on the use of methods in online user research over 70 publications.

The result of the attitude of focusing on very specific facets and exploiting a restricted set of methods involves conspicuous limitations, being the digital library not considered as a whole (Bishop, 2003), and embedded in its context (Mehra, 2003). Moreover the majority of evaluations are constructed via consolidating experts' opinions, reviewing existing DL constructs, projects, or relying on the researchers' own perspectives (Zhang, 2010) which drastically reduces the potential positive expected and unexpected outcomes (Marchionini, 2000).

Many authors have started to advice to adopt multiple methods (Zhang, 2010; Bishop, 2004; Saracevic & Covi, 2000). Because it would allow overcoming the previously described limitations, nevertheless it has also some disadvantages, as properly reminded by Borgman and Larsen, which are the increase of the costs of evaluation and the need to employ non-intrusively techniques (2003).

Another set of recommendations from the literature are the requirement to practice valuable standards and frameworks (Bertot, 2004; Zhang, 2010). Their introduction will allow investigating more deeply and massively relevant aspects and values of digital

libraries “for example, how well DL information and collections are integrated with each other, to what extent different DLs are compatible with each other, how well DLs support social/group interaction among heterogeneous users utilizing hypermedia information, and whether there are any changes in users’ daily work and lives that are associated with DL applications” (Zhang, 2010, 89).

Nowadays the two main approaches are the *Build it and they will come* (BITWC) and the *constant users involvement*. In the first case, designers and developers create applications based on their own imaginations of needs; this approach has the advantages of a good engineering and reduced costs, but has major the disadvantage of not considering the real needs of the target, which could bring to failure. At the opposite side the second approach is based on the a continuous study of the user needs and on their involvement at all stages; this approach, as remarked by Marchionini, Plaisant & Komlodi (2003), ensure a ready-made market, but this systematic bottom-up approach can produce lowest-common-denominator solutions and, in the worst case, may exhaust time and resources before any application can be build. A combination of the two approaches has therefore been promoted by Marchionini, Plaisant & Komlodi, who argued that “Clearly, some middle ground is needed for DL design. Holding on to high level visions that are guided by astute observations of human behavior and are coupled with systematic and iterative assessments seems to be the right approach” (2003, 123).

d. When evaluate

In addition to the three fundamental questions identified by Saracevic (2000), reported above, in my opinion, a fourth one, very relevant, has been added: When evaluate?

Practical experiences of digital libraries evaluation reported in the literature are mainly post program projects (conducted after the realization of a service, which usually is already provided). This approach satisfies the requests of designers and investors, because it usually is a test of the application and measure its appreciation by the target community. However it has also some major disadvantages, As stressed by Bertot this strategies “often fall short of providing useful and meaningful data, as they are an afterthought, [they] do not provide pre-program baseline data, and occur at a later point in time without clear objectives and goals” (2004, 1).

These limitations are overcome by, a new stratified model, which involves the evaluation activities as a part of the projects itself, therefore it is defined during the definition of the project and takes place during the development of the services (Bertot, 2004).

This approach, with some additional requirements, were adopted in "Geo-library", one of the projects joining the already discussed ADEPT project, where the evaluation is described as an iterative and collaborative process during which the user needs are identified, prototypes are developed according to users' feedbacks, and the design and development process are reconsidered depending on the results of any further investigations-(Borgman & al., 2008).

This formative model has been considered complete and high standard therefore its practice is welcomed and heavily encouraged, unluckily its spread in practical experiences is still struggling to take root in practical experiences because it requires a high allocation of resources.

Another relevant matter related with timing is raised by Gazan, who claims that "in practice, designers are more concerned with present and future digital library projects than with continuing evaluation of those of the past" (2005, 2) while "How it [digital library] is actually used can be more accurately determined when the system is in the wild, when the designers and their formal evaluation instruments have gone away" (Gazan, 2005, 1). As a matter of fact few projects, yet, picked the Gazan suggestions putting them into practice.

One of them is the already described Perseus Digital Library (PDL), which adopted a longitudinal and multifaceted approach looking at long-term effects and juxtapositioning data from multiple sources.

● **Two influential projects**

In this chapter two evaluation projects, considered as best practice by the scientific community, are illustrated. The overall objectives are to analyze two different approaches, compare them and describe how evaluation can be done.

a. Alexandria Digital Earth ProtoType

The Alexandria Project is a consortium of researchers, engineers, and educators, belonging to the academic, public, and private sectors, who working to develop distributed digital libraries for heterogeneous geo-referenced information.

The original motivation of the Alexandria Project was to create a digital library that could both reproduce and extend the content and functionality of a traditional research map library, but as soon as the project had grown, the focus of the Alexandria Project broadened to an integrated environment for managing, querying, and presenting geospatial information, especially for instructional applications. These new goals are referred by the umbrella label Alexandria Digital Earth ProtoType (ADEPT) (Smith, Ancona, Buchel, Freeston, Heller &Nottrott, Tierney & Ushakov, 2003).

The ADEPT project was funded by the U.S. Digital Libraries Initiative, Phase 2, it started as a five-year project in 1999 (DLI-2, 1999-2004), but the education and evaluation component of the project continued until 2005 (Board of Regents of the University of California, 2006). It involved more than fifteen faculty, the most active were UCSB and UCLA, which also hosted the larger amount of graduate research assistants, at their campuses. Other participants include UCSB's Map and Imagery Library, UCSB's and UCLA's Offices of Instructional Development, the San Diego Supercomputer Center, the California Digital Library, Georgia Tech, the University of Georgia (Leazer, Gilliland-Swetland &Borgman, 2004).

The evaluation matter was pondered since the very beginning and took in account during the research schedule and strategy (Borgman et al., 2001). The applied approach was the formative evaluation, "an iterative and collaborative approach to development, with evaluation integrally embedded in design. Needs are identified from the user and collections perspective, prototypes are constructed and evaluated. And the results fed back into the design and development process" (Borgman et al., 2001). The reason why this approach was chosen as the most suitable was "[it] is particularly valuable approach in such situations, because user needs and requirements can be studied concurrently initial stages of designing the system" (Borgman et al., 2001). The evaluation focused on multiple target user communities (earth scientists, information specialists, and educators)

using a variety of concurrent methods, including online surveys, ethnographic studies, a classroom study with a later version of the interface and transaction logs and establishing general design principles (Borgman et al., 2001).

The project is well documented (more than 150 articles, books chapters, conference and workshop papers, and technical reports are available) and the most influential experts in digital libraries were involved. The methods and techniques practiced by the project and the result achieved have inspired many other digital libraries and after 10 years, it is still taken as example by developers of new digital libraries.

b. eVALUEd

eVALUEd is a project funded by HEFCE (*Higher Education Funding Council for England*), and mainly developed at the University of Central England; it started in September 2001 and ended in February 2004, although some side activities were carried out until August 2005 and a revision of the projects outcomes were held in the Spring of 2006 (Hartland-Fox & Dalton, 2002).

The main two goals were to develop a model that could be applied in e-library evaluation in Higher Education and to provide dissemination and training in e-library evaluation.

In order to achieve these objectives, a procedure were planned at the preliminary stage: first good practices in electronic library evaluation were examined, then a questionnaire was sent to all HEIs (Higher Education Institutions) to find out what Digital Library developments were made and based on the collected data, a comprehensive toolkit was prepared (eVALUEd, 2006).

The first version of the toolkit was released in Summer 2004, while the final version was released in 2006 and "it is designed to support library and information services staff in HEIs in the evaluation of Electronic Information Services (EIS)" (eVALUEd, 2006). The toolkit takes a super-focused approach to the evaluation, mainly with qualitative data collection techniques.

The toolkit stresses the need to conduct evaluation projects and to embed them within the culture of the library workforce, then it organizes the evaluation process in nine stages describing each of them in a natural language:

- stage 1: decide the purpose of the evaluation
- stage 2: identify relevant stakeholders
- stage 3: decide what to evaluate
- stage 4: choose the methods of data collection
- stage 5: collect the data (staffing, timing, who is the to target)
- stage 6: analyze the data
- stage 7: present the findings
- stage 8: use the findings for the purpose identified in Stage 1
- stage 9: review the evaluation process and identify future actions and priorities.

In addition to the toolkit, a website was created to support the institutions with additional materials, case studies presentations, tools to for personalized evaluations and mostly, offering consultant services.

The model has been judged relevant because its flexibility and usability by not-expert staff, furthermore, the scenario has been improved providing additional services and creating a community, which are fundamental steps.

● **What happen when it comes to real-world life?**

After having analyzed two of the most significant experiences of digital libraries evaluation, a central question come out spontaneously: What happens when it comes to real-world life?

As Lynches pointed out there is a huge difference between what he calls *research prototypes* (digital libraries developed in controlled environment by researchers, often as grant programs) and extensions of the *research or academic library* (academic library incorporating extensive network-based collections and services, or occasionally also public libraries)

(2003). The main difference is that in the first case evaluations are conducted in controlled environments with high specialized staff and sufficient allocation of resources, infrequent for the second category. The author states that the first category has had too much attention by the scientific community and astutely questions the extent to which research prototypes can be misleading, indeed “the other two classes of digital libraries [extensions of the research or academic library and commercial information services] (what might reasonably be thought of as real-world digital libraries) come with a very different set of political, economic, governance, and cultural dynamics that can call into question, and even subvert, many of the socially grounded engineering approaches” (Lynches, 2003, 193).

Therefore fundamental tensions and disconnections between digital library research prototypes and real-world digital libraries exist and have to be widely considered, or in other words “we need to uncover the *practical everyday reality* (Catherine C. Marshall, chapter 3) of workplaces, libraries, and other settings in which DL use happens and the *network of social and material relations* (Van House, chapter 11)” (Van House, Bishop & Battenfield, 2003, 3).

Analyzing the literature, only few authors tackled this matters (in particular the relation existing between research prototypes and academic libraries, being the last one the most active), by the way all of them stressed the difficulties in comparing real-world evaluations because of the different contexts, community policies, staffs and technical constrains (Marchionini, 2000). Despite these barriers, some relevant common ideas can be identified.

The most immediate and most significant is the aim of evaluations projects: “in reality, any evaluations occur because of a problem or report requiring immediate management involvement [...]. These last-minute evaluations are akin to modern emergency-room medicine” (Nicholson, 2004, 164). In addition it has to be noticed that usually there is no organization created for the long term, “at most, an advisory committee is established” (Lynch, 2003, 193) .

The second point is that the priorities of real-world digital libraries are connected with economics, sustainability and governance (Lynch, 2004).

A third observation deals with the methodology and criteria applied, each institution adopts their own ones, indeed, as stressed by Xie (2008), frameworks and standards are not always applied in practical studies because they do not feed the institutional needs or are not enough promoted. Institutions feel the need to customize them according to their specific needs (Marchionini, 2000).

Then, many authors reported that the needs of providers and managers has a strong influence on the design and on the evaluation of digital libraries (Marchionini, 2000; Gazan, 2005; Lynches, 2003); they suggests that "socially grounded design may not be allowed to have much influence on system evolution because the users of the system are not the ones developing it or paying for its development" (Lynch, 2004, 194). Some of them (Gazan, 2005; Lynch, 2003) therefore they also noticed that "understandably, digital library designers tend to create evaluation instruments that demonstrate in a measurable way the work they've done, a tacit statement of the value produced for the grant funds received" (Gazan, 2005, 1).

In conclusion, as identified by many authors a huge gap between evaluation theorists and evaluation practitioners exists, since the theoretical criteria (frameworks, standards, and methods) are only seldom applied in practical studies. Further studies on how real-world digital libraries deal with evaluations are heavily needed because, as Agree commented, "society will evaluate digital libraries in terms of the ways that they fit, or fail to fit, into the institutional world around them" (2003, 219).

● **Chapter summary**

This chapter reviews the literature relevant for the study.

It starts with the discussion and definition of two keywords, digital library and digital library evaluation, then it continues with an overview on the evolution of evaluation, from the eighties to present, besides the basic steps of any evaluation project, based on the ones listed in the "Six Steps to Effective Evaluation: A handbook for programme and project managers" by Joint Information Systems Committee (JISC), are illustrated. Afterwards the chapter analyzed the core aspects of the evaluation process answering to four of the 5Ws questions (what, why, how, when) and describing two successful

evaluation project frequently mentioned as best practices (Alexandria Digital Earth ProtoType, eVALUEd).

Lastly, tensions and disconnections between digital library research prototypes and real-world digital libraries are analyzed. This last assignment allows concluding that a gap between evaluation theorists and evaluation practitioners exists and it needs to be further investigated.

3. Methodology

- **Introduction**

The chapter illustrates the methodological approach practiced in the study, providing evidence of the made choices. It starts with the research approach and methods, continues with the sampling strategy and it concludes describing the data collection techniques and the data analysis.

- **Research approach**

In this research, a constructionism epistemological approach has been adopted. According to Crotty “all knowledge and therefore all meaningful reality as such, is contingent upon human practices, being constructed in and out of interaction between human beings and their world, and developed and transmitted within an essentially social content” (1998, 42) and an interpretivist theoretical perspective (Crotty, 1998, 41).

Researchers have discussed much about the differences (Neil, 2007; Gorman & Clayton, 2005; Trochim, 2001), the features (Trochim, 2001; Woods 2006) the value (Hoepfl, 1997) and the definition (Denzin & Lincoln, 2005; Strauss & Corbin, 2008; Ritchie & Lewis, 2003) of qualitative and quantitative approach without reaching a consensus.

In this study, a qualitative approach has been taken, following Jane Ritchie & Liz Spencer definition which states that “although definitions vary, the aims of qualitative research are generally directed at providing an in-depth and interpreted understanding of the social world, by learning about people's social and material circumstances, their experiences, perspectives and histories” (2003, 22).

This approach was required by the chosen research question because it has an interpretive character, aimed at discovering the meaning events have for the individuals who experience them, and the interpretations of those meanings by the researcher (Hoepfl, 1997). Moreover, the selected research question needed a natural setting, being interested in “life as it is lived in real situations” (Woods, 2006).

- **Research method**

The research method adopted in this research is the case study.

As Pickard states, "Case studies are not as simple to define as many other research methods, because of the nature and form of the method [...]. Case study research is a method designed to study the particular within context and has a very specific purpose [...]. The purpose of a case study is to provide a holistic account of the case and in-depth knowledge of the specific through rich descriptions situated in context" (2007, 85).

According to Yin (2003) the first and most important condition for differentiating among the various research strategies is to identify the type of research question the most suitable questions for a case study are based on "How" or "Why" questions because they investigate a contemporary phenomenon within its real-life context, especially when boundaries between phenomenon and context are not so well defined. Moreover Yin (2003) specified that the study inquiry relies on multiple sources of evidence, because data needs to converge in a triangulating fashion and defines five different possible applications of the case study: explain a presumed causal link in real life, describe an intervention, illustrate certain topics, explore a situation and being the evaluation of another case (meta evaluation).

Indeed the investigation analyses the Loughborough University Library experience in evaluating its services. Moreover, the research questions deal with the reason to conduct the investigation (Why), the process (How) and the issues encountered during the process (How/why).

The research belongs to the second category of case study subdivision, as identified by Stake (1995), and labeled as "instrumental case study". Indeed its aim is to inspect a particular phenomenon and "the case itself becomes less important than other as a vehicle for our investigation" (Pickard, 2007, 85).

Mentioning categories, the study can also be classified according the Yin (2003) case study designs matrix as a single embedded case study design. This occurs when, within a single case, attention is given to subunits.

• Sampling strategy

The sampling is “the process of selecting few from the many in order to carry out empirical research” (Pickard, 2007, 59)” so, due to the features of the process itself, it is affected by the used research approach. Therefore, having the study a qualitative nature, a purposive sampling technique was applied as Patton stated “the logic of purposeful sampling lies in selecting information rich-cases for study in depth. Information –rich cases are those from which one can learn a great deal about issues of central importance to the purpose of the research” (as cited in Pickard 2007, 60).

Since the research is a single embedded multiple units of analysis case study, first clear sampling criteria were defined, then several sampling processes were performed, using as sample population the resources selected in the previous sampling.

In the following figure, the performed sampling processes with their corresponding sets of criteria are shown.

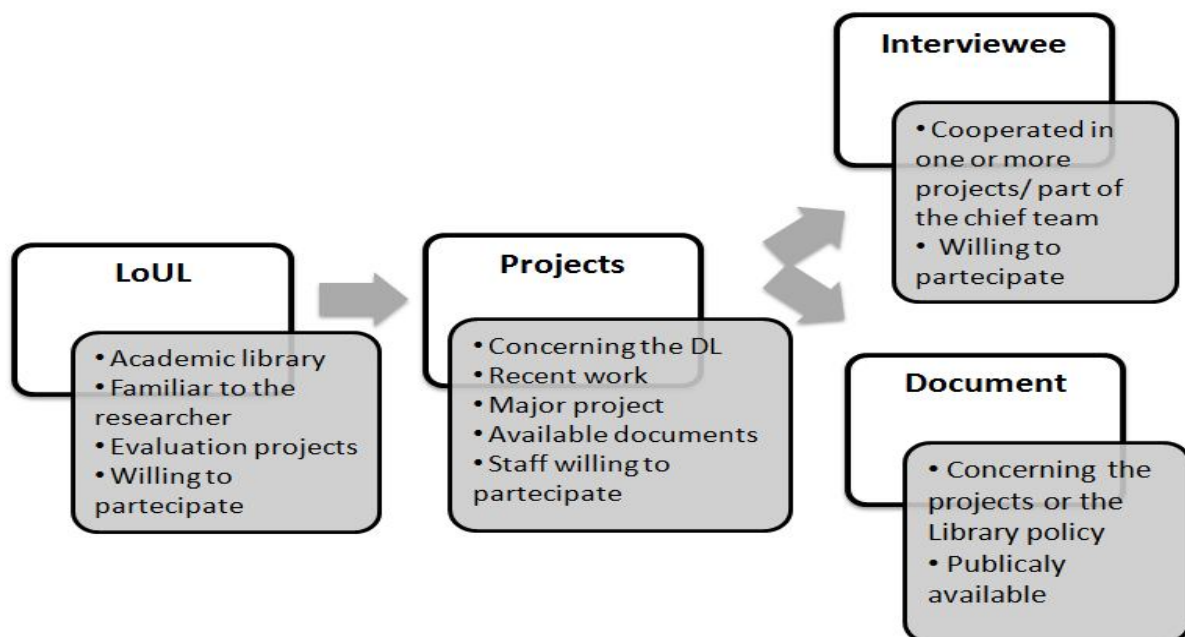


Fig 1: The made sampling and the corresponding sets of criteria

The first sampling was the institution; the criteria were intentionally broad, but strictly needed:

- Academic library (because of the interest of the researcher)

- Familiar to the researcher
- Running evaluation projects (based on the topic of the study)
- Willing to participate

Applying these criteria, three institutions were meeting the criteria: the digital library of the University of Milan (Biblioteca digitale- Università degli studi di Milano), the University of Parma digital library (Biblioteca digitale d'ateneo dell'Università degli studi di Parma) and the Loughborough University Library. The Loughborough University Library was preferred because of the personal interest of the researcher on the English working status and because of the language (no need to translate the documents and the interviews avoiding possible bias and misunderstandings).

Once the institution was selected the need to focus on specific projects rose, indeed the Loughborough University Library conduct many evaluation projects every years at different levels. The following set of criteria was therefore identified:

- Concerning the DL (because of the purpose of the study)
- Recent work (To ensure that the interviewees have fresh memories)
- Major project
- Available documents
- Staff willing to participate

Applying these criteria three projects emerged: The use of Web 2.0 applications by students at the Loughborough University Library, Scholarly communication at the Loughborough University, University of Derby Library cooperation.

The sets of criteria concerning the documents and the interviewees were basic and with no specific requirements rather than the followings.

The documents had to:

- Concern the projects or the Library policy

- Be publically available
- While the interviewees:
- Cooperated in one or more projects or being part of the chief team
- Willing to participate

For a complete list of the consulted documents, it is possible to consult the *References* chapter, while for the respondents see the *Interviewees* chapter.

During the identification of these specific projects, of the staff members to interview and the selection of the documents to consider and analyze the role of the key informant, Doctor Walton, was crucial and, therefore, he had heavily influenced these activities, nevertheless he was selected because of his familiarity and knowledge of the domain.

The amount of the sampled projects, have been partially conditioned also by the time constrains and lack of resources, anyway the sampled population is considered well established and fully representative for the research purpose.

● **Data collection techniques**

In this research, two data collection techniques were adopted: the interview and the document analysis. The last one allows to get an overview of the institutions, of the developed projects and used as basis to structure appropriate interviews. The interview was utilized to collect the large amount of the data and specifically to answer the research questions.

a. Interviews

Interviews are considered one of the most popular (Pickard, 2007) and most important sources (Yin, 2003) in case study and in library research in general. Some researchers even claim that nowadays we live in a “interview society” because of their heavy use as “a systematic social inquiry by sociologist, psychologists, anthropologists and other areas in humanities”, but also by the mass media (i.e. TV news interviews, call-in radio talk) (Ikeda, 2007, 1).

Despite this last sentence could sound fulsome, it is—a matter of fact that “in a research report using different kinds of data, the interview material is almost always the most interesting and, above all, it enables you to see and to understand what is reflected rather more abstractly in other kinds of data (statistical summaries, for example)” (Gillham, 2004, 10).

Looking for a definition, the interview is “a conversation usually between two people [...] where one person – the interviewer- is seeking responses for a particular purpose from the other person: the interviewee” (Pickard, 2007, 171).

The interviews were chosen as the main data collection technique because it is considered the most appropriate to answer the defined research question; indeed “interviews are usually used when we are seeking qualitative, descriptive, in depth data that is specific to the individual and when the nature of the data is too complicated to be asked and answered easily. [...] Interviews can be used for reconstruction of events, descriptions and feelings about current events and predictions of future developments.” (Pickard, 2007, 172). This sentence fully matches the aim of the study (analyzing the real life evaluation process of digital libraries) and the objective (exploring the evaluation strategy of a real digital library, establishing the staff knowledge and competences in the subject, identifying the problems encountered by the staff and exploring the actions taken at the conclusion of an evaluation project) which all require depth data about events and feelings about personal experiences.

The interviews were semi-structured: a table shell, with a set of questions and key points to be covered, had been prepared for each interviews according to a set of parameters. The interviews started asking some broader questions, going through core questions and then concluding with another a new set of broad questions. This scheme was introduced to help the interviewees feel as comfortable and relaxed as possible during the whole interview. An example of table shell is available in appendix C.

The use of semi-structured interviews was due to the need of ensuring that a basic set of ground was covered, but giving in the meanwhile a considerable freedom in answering the questions to the interviewees.

Despite “the use of ‘open’ questions doesn’t mean that you have no control over the way the interviewee responds” (Gillham, 2003, 45) a predefined set of broad questions and a list of key points to be tackled in each of them are considered essential to let the interviewer maintain the control over the interview and reach its objectives, moreover having guidelines and not mandatory or predefined answers (as in the structured interview) is useful also for the interviewee.

As stated, the table shells were prepared according to a set of parameters (job position, educational and working background, and enrollment in the evaluation projects) but also depending on data collected in previous interviews. Indeed new key points and interesting comments about specific events were raised during some interviews and they deserved to be further investigated. The changes on the table shells did not involve the set of questions, but the key points to be tackled. This approach is corroborated by Allison Pickard (2007) and it has been successful in this research to collect deep and meaningful data.

Eight different interviewees were asked, (for details about the interviewees, see *The interviewees* chapter in *Findings and analysis*) among them a key informant were interviewed three times: a preliminary interview to get a clearer idea about structure, policy and projects of the Loughborough University Library, and to define the focus of the research and identify the potential interviewees; an intermediate interviewee about the library evaluation strategy and general matters; and a conclusive sessions about the University of Derby Library cooperation project and clarifications of some open questions coming from the others interviews.

The contribute of the key informant, Doctor Walton, was crucial for the success of the research; In addition of giving an insight of the matters, he suggested relevant documents and records and granted to access them, and lastly he provided the contact of the other respondents. The risk of over control (Gillham, 2004) or over dependence from the key informant was not faced in this research.

The composition of the respondents group is well balanced because all the topics were covered by at least two experts; as corroborated by Bill Gillham “this [achieving an understanding of people in real-world context] can be very effective even with as few as

four or five interviews of individuals carefully selected as typical or in different positions (e.g. a couple of patients, a couple of nurses, a couple of doctors, if you are investigating the working of a hospital ward)" (2003, 12). Groups interviews and interviews repeated at different state of a projects would have had additional value to the research, but this approach was an unconscious or carried on due to time constrains and to the busy schedule of the respondents.

Although piloting interviews is a critical and, sometimes, a necessary step, no pilot test was—conducted mainly because it was no possible to identify reliable and relevant respondents willing to participate outside the Loughborough University Library context. Moreover the sets of questions were targeted according to the single interviewee and strictly connected with their personal experience, so a pilot with respondents unaware of the context and with different experiences would not have add any value.

Alternatively, a trialling of the interview questions was set up, with the cooperation of an Italian librarian, working in the digital library department of the Università degli studi di Milano, and two Library and Information Science students.

It resulted to be extremely meaningful because "it gives you some sort of feel for the interviewing process [...], it alerts you to the range of factors that give an interview flavor and direction [...] it focus you on what it is about questions that makes them productive and stimulating, [...] it highlights key questions and indicates those that are redundant, and those that need rethinking" (Gillham, 2004, 22).

The interviews were of the face-to-face kind (except one) and each session had been scheduled according to the respondents availability during the 10th week of the year (March 7-Sunday 13) and was held in English. The time allocated for each session was 30 minutes, but the questions were structured to last at most 20 minutes, in order to have time for introductory and conclusive talks, for extra comments or answering questions from the interviewee; this schedule worked properly for all the interviews (the longest interview lasted 39 minutes, the shorter one 15 minutes).

Although face-to-face approach is enormously time consuming (Gillham, 2004) and other medium provides "sufficient benefit to encourage its use in many research studies"

(Pickard, 2007, 179), this approach was preferred because the researcher can elicit deeper response and adapt the questions as necessary, clarify doubt and ensure that the responses are properly understood by repeating or rephrasing the questions, furthermore nonverbal cues could be picked up from the respondents (Mann & Steward, 2000). An interview, due to the busy schedule of the respondent, was conducted via the video application of appreciation Skype (Skype, 2011) on 14 March.

The sessions were organized in three stages: the introductory talk, the answering to the questions and the final talk.

The aim of the introductory talk was to make the interviewees comfortable, to repeat the basic information about the purpose of the interview and of the research project (already extensively communicated by mail), to inform about the length of the interview, to ask for the permission to record the sessions and to sign the required modules (for details see the *Ethical considerations* chapter).

During the answering of questions, the interviewer interfered only when necessary, mainly asking for clarifications ("Can you spell it for me?"), showing appreciation and understanding ("yes, I see", "that is so interesting!") or expanding the narrative ("Can you add something more about this?"). Nonverbal dimension (facial expression, gesture) were annotated and reported in the transcripts.

The conclusive stage consisted not only in thanking and greeting the interviewees, but mainly in explaining him/her the procedure of the data analysis and asking for eventually future contact (for details see the *Data analysis* chapter).

The sessions were recorded (with the agreement formally expressed by the respondents) and fully transcribed to facilitate the analysis of the data.

The used digital recorder was the Olympus VN-7500 (10.6 kHz sampling rate), the open source software CamStudio (CamStudio TM open source, 2011) was used to record on a PC their playback in an AVI file. VirtualDub (Virtualdub.org, 2011) allowed extracting the audio track (in WMA format), and lastly, using the open source software CDex (CDex,

2011) the file were converted into .mp3 in order to provide to the respondents a more common format.

The audio file, the final agreement and data analysis policy documents were sent to the respondents while the transcripts were sent only when explicitly asked (for details see *Data analysis* chapter).

b. Document analysis

Documentary information is often used in case study because they are stable (can be reviewed repeatedly), unobtrusive (not created as a result of the case study), exact (contains exact names, references, and details of an event) and broad coverage (long span of time, many events, and many settings) (Yin,2003).

In this study, the documents were used to get an overview of the institutions, of the developed projects and to corroborate evidence from other sources rather than primary resources because of the specific purpose of the study, which aims at discovering the meaning, events have for the individuals who experience them.

Specifically public administrative documents and written reports of events were analyzed. The choice of utilize public documents (available on the Loughborough University Library portal and on the web) was dictated by the institutional restrictions and by the privacy policy. A complete list of the consulted documents is reported in the reference list.

● Data analysis

As previously stated, the gathered data comes from two different sources of evidence, the documentation and the interviews; despite they are very different, the qualitative analysis has been chosen to process both of them because the data are mainly the answers collected in-depth interviewing which, therefore, requires comprehension and interpretation in order to generate a hypothesis. Pickard declares that: "qualitative analysis is applied in any study that focuses on emerging theory, using the inductive analysis process to arrive at an understanding of the phenomenon under investigation. When

applying qualitative analysis the purpose is to generate a hypothesis based on the data gathered and interpretation of that data" (2007, 14).

There are many recognized strategies for qualitative data, but the most effective for this study is the "constant comparative analysis" which involves, when examining data, comparing repeatedly them with the others to formulate categories and then assumptions; this strategy is frequent in qualitative studies and implies that categories are inductive and emerge directly from the raw data, although previous researches and studies certainly influence the full process of making categories, as Dey point out: "Evaluation [...] cannot be separated from how I understood and interpreted it" "Quality is a measure of relative value, but based on an evaluation of the general character or intrinsic nature of what we are assessing" (2005, 11).

According to Strauss & Corbin the constant comparative analysis "involves very careful, often minute examination and interpretation of data" (1998, 58) and it "is not structured, static, or rigid process. Rather it is a free-flowing and creative one in which analysis move quickly back and forth between types of coding, using analytic techniques and procedures freely and in response to the analytic task before analysts" (1998, 58). Despite this assumption, the authors organized the analysis process in three main operative steps to facilitate its understanding and provide a procedure to follow: the open coding (to determine categories from the raw data), the axial coding (to identify connections between the categories) and lastly the selective coding (to integrate and refine the theory).

The applied data analysis will be discussed considering this scheme.

a. Open coding

The open coding is "the analytic process through which concepts are identified and their properties and dimensions are discovered in data" (Strauss & Corbin, 1998, 101).

In this study the open coding started during the data collection and influenced the key points tackled during the interviews and the reading of the documents, indeed as Pickard claims "the gathering and analysis of data occurs concurrently; it is a constant interplay of data and analysis, data informing analysis and analysis informing new data collection" (2007, 242).

The operative steps were:

- reading each transcript (completed with the behavioral researcher notes) and highlighting substantive statements, ignoring repetitions and irrelevant materials (i.e. digressions).
- going back to the highlighted statements and try to assign them labels.
- comparing all the documents, checking if there are in common and if some could be grouped under a unique label.
- creating a list of categories.
- to selecting which categories meets the research questions and objectives.

In this step, different techniques for interactive data readings recommended by Den have been experienced successfully above all the interrogative quintet (it consist in developing a set of questions to be asked to the data itself) and the substantive checklist (identify substantive issues, which are interesting for the researcher) (Den, 2005).

It is relevant to observe that the resulting categories do not necessarily match with the subjects of the set of questions and key points set by the researcher. The selection of categories was driven by the collected data rather than by previously defined ones in order to make the most of the data.

b. Axial coding

The axial coding is “The process of relating categories to their subcategories, termed *axial* because coding occurs around the axis of a category, linking categories at the level of properties and dimensions” (Strauss & Corbin, 1998, 231).

At this stage, categories and subcategories are defined more accurately as well as the boundaries between them resulting in the set of categories and subcategories, which can be found in the *Findings, analysis and discussion* chapter. This analysis resulted in being very helpful because new questions and ideas for further data collection were suggested. The last step consisted in researching possible relation between categories.

In order to finalize the set of categories the principle of exhaustiveness (categories are comprehensive of all the possible data) and exclusiveness (the category admit only designated data) (Den, 2005) was followed.

c. Selective coding

The selective coding is “the most difficult stage in the process” (Pickard, 2007, 242) because it is about “integrating and refining the theory” (Strauss & Corbin, 1998, 143).

In this study it was not possible to define a framework or identify a core category due to the nature of the research itself, so a set of core categories have been identified and theories, recommendations and inputs for future studies have been generated (see *Conclusions and implications* chapter).

During the entire process, the use of a computer was crucial. No specific software for the analysis of the data was used, but a laptop was mandatory to write the documentation, to communicate with the respondents via emails, to conduct one interview (via Skype), to transcribe the interviews, to record and store data and to retrieving them (via the OpenOffice Writer, a word processor which supports the highlighter function, given the chance to add comments and has the words counter and finders facilities).

Unfortunately, due to time constrains and to the busy schedule of the respondents it was not possible to conduct a verification of the interpretation of the data collected during the interview, asking them to confirm the accuracy of the interpretation of their speeches (Pickard, 2007).

● Ethical considerations

Each research has to deal with ethical considerations to guarantee it has been developed respecting the rights and needs of the analyzed population.

There are more ethical issues than expect, covering different aspect of the research, and they “do not belong to a separate stage of the interview investigations, but arise throughout the entire research process” (Kvale, 1996, 110).

The documentation is freely available online or by the library, community so there is no specific issue related to its used. On the other hand, several and imperative matters are relevant for the interviews

About them, the main considered issue is the privacy information. Each Country has its own policy, therefore in this research the European Union data protection directive (Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data) and the specific transposition into the Italian (Codice in materia di protezione dei dati personali, Decreto legislativo 30 giugno 2003, n. 196) and United Kingdom (Data Protection Act 1998, chapter 29) law were both taken into account because the study was carried out by a member of an Italian institution, but with the participation of the staff working at two British institutions.

Within the information privacy, the most relevant characteristic is the confidentiality, which implies that private data, which identifies the participant, will not be reported (Kvale, 1996; Pickard, 2007).

Therefore, a strict and well defined procedure was followed to avoid such kind of problems.

Before taking the interviews the respondents were informed by an introductory mail about the research purpose, the interviewer background and a confirmation of the meeting (see Appendix A). The aim of this first step was to clarify the research basic information and to receive their final confirmation of participating at the study, because the first request was sent them by the key informant, Doctor Walton.

At the beginning of the interview, the research, the specific topic of the interview and the typologies of questions to be asked were described accurately followed by an explanation of the recording matter, the data proceeding and the approach to the confidentiality, then the respondent was asked to read and sign an informed consent form, provided in two copies (one for the respondent, one for the interviewer), reporting what had been explained at the introductory stage (see Appendix B). Concerning the confidentiality aspect it was explained that the information collected during the study would be kept

strictly confidential until the record of the session was sent them, revised (they could arise or make sentences anonymous or make the full interview anonymous) and a final consent form was returned to the interviewer. Indeed, from seven to ten days after the interviews, a thanking mail, enclosing the audio record and the form, was sent to each interviewee (see Appendix D).

This procedure was applied in each interview, except in the virtual interview, where the informed consent form was sent a couple of hours in advance asking to return it at the beginning of the interview.

All the respondents gave their consent to be recorded and be identified nominally in study report and related materials.

This procedure resulted in being successful allowing meeting the researcher's objectives:

- To make the interviewed as comfortable as possible; knowing that the interview was recorded, the respondents experienced a big pressure and do not behave naturally. The chance to revise the record cancel or make sentences anonymous is relaxing, as confirmed by many interviewees.
- To get deep and open data; if respondents are comfortable their response, and therefore the data, are more frank and meaningful.
- To fully respect the information privacy. The process charged the interviewees of taking care of their privacy right, releasing the interviewer who has to follow their indications.

● **Trustworthiness of the Enquiry**

Establishing criteria for judging a study is a crucial and essential step doing research, but it is still controversial and heavily debated within the scientific community (Pickard, 2007).

Different models have been taken in consideration (Yin, 2003; Dey, 2005), but the most suitable for this research has been judged the trustworthiness model of Pickard (2007) because it is specifically designed for qualitative researches and tackle different aspects.

The model implies a set of criteria: the credibility, the transferability, the dependability and the conformability (Pickard, 2007).

To guarantee the credibility the use of multiple data collection techniques, which allow to compensate for any limitations of individual techniques (Pickard, 2007) and the constant alert to the subjectivity of all qualitative study, allowed to compensate whenever necessary (Pickard, 2007).

Concerning the transferability a rich picture on the case has been provided describing the institution, its evaluation policy, the selected projects and giving some information about the participants, so that the reader can decide if apply the findings to its context (Pickard, 2007).

The dependability of the research is proofed by accurately describing each done step and providing evidence routed in the collected data, which demonstrates that the method and the techniques used, were applied appropriately and with relevance to the study (Pickard, 2007).

Finally, the conformability is guaranteed by tracking back the results to the raw data. This criterion is fundamental to limit investigator bias and provide evidence that the results are not merely product of the researcher interests, once again, this is guaranteed by the accurate description of the steps and justification of decisions made (Pickard, 2007).

Having respected all these criteria, the trustworthiness of the research has been properly ensured.

● **Chapter summary**

The chapter provides a detailed discussion of the methodology used in this research. The methodological approach of the study is qualitative and the adopted research method is the case study, specifically an instrumental single embedded multiple units of analysis case study. A purposive sampling technique was applied and three evaluation projects conducted at the Loughborough University Library were chosen. Interviews and document analysis were used as data collection techniques: In depth this last one collection techniques allowed getting an overview of the institutions, of the selected

projects and were used as basis to structure appropriate interviews; semi-structured interviews had utilized to collect the large amount of the data and specifically to answer to the research questions. Then the sampling strategy, the method of data analysis and ethical issues were discussed. The data analysis (constant comparative analysis) is explained thoroughly, as well as the ethical considerations and the trustworthiness of the enquiry.

4. Findings, analysis and discussion

- **Introduction**

The chapter is structured in three main sections: findings, analysis, and discussion. The first section introduces the Loughborough University Library and its evaluation policy, the projects that had been investigated and the staff interviewed to lead it. The second section analyses the collected data, organized in categories. In the third section, the identified categories are discussed.

- **Findings**

- a. Loughborough University Library**

Loughborough University is a UK research and teaching intensive university located in the Midlands and it is one of the largest campuses in Europe. It has nearly 14,000 undergraduate, postgraduate taught and postgraduate research students distributed across three Faculties: Engineering, Science and Social Sciences & Humanities. Sport has also a high profile at Loughborough and the University is positioning itself to be in the top 10 university sport campuses in the world ((Loughborough University, 2011b).

There is a single university library on the campus: the Pilkington Library. The building was opened in 1980 and covers 7777 square meters over three floors (the fourth hosts the Information Science department) with 900 study places, including 140 workstations (Walton, 2010). The library provides access to approximately 19,000 e- journal subscriptions, over 500,000 books and 681 print journal subscriptions housed primarily on Levels 1 and 2 (Loughborough University Library, 2010); indeed the floors are organized such that the resources relevant to the University's science and technology students (according to the Dewey Decimal Classification system) are housed together on Level 1 and the remaining primarily arts, humanities, social science and computing are on Level 2. On level 3 are located the main entrance with the reference desks, the staff offices, some training rooms available for students and almost half of the study place,

there are no books or shelves on this floor, except for the high-request books. The library hosts also the University Archives, the David Lewis special collection and the European Documentation Centre (EDC).

The library's main objectives are to support and facilitate the research, learning, teaching and administrative activities of the University, by organizing, maintaining and providing access to appropriate literature and information resources; to supply services and expertise designed actively to promote the effective exploitation of library and information resources; and to provide an appropriate and comfortable environment, accommodation and facilities for the use of library resources, and for individual and group study (Loughborough University Library, 2010).

The staff is composed of 87 members, 55 full-time equivalents located across 9 teams, which includes the team with overall responsibility for e-learning in the University (Walton, 2010).

The library designs and delivers many services such as borrowing, IT facilities, AV and photocopying, enquiry service, professional online search service, inter-library loan, generic information literacy and study skills courses (Loughborough University Library, 2010). It provides also specific services according to specific categories of users like alumni, researcher, users with special needs, distance learners, member of the public. In recent years, it has also incorporated Twitter, digital video, blogs, podcasts and Google Apps into its services (Walton, 2010).

The library invests significant time and effort investigating its population has needs and gathering data on it. To fulfill this purpose a Library Users' Committee has been set up which act as a channel of communication and dialogue between the university library and its users. In addition four undergraduate student library Ambassadors have been appointed to liaise with the Faculties and provide the library with a students'-eye view on the provided services (Loughborough University Library, 2010).

Finally many researches are carried out over the years (user survey, investigative studies exploring how the library supports learning, analysis of the data generated by the library systems, and so on) (Loughborough University Library, 2010).

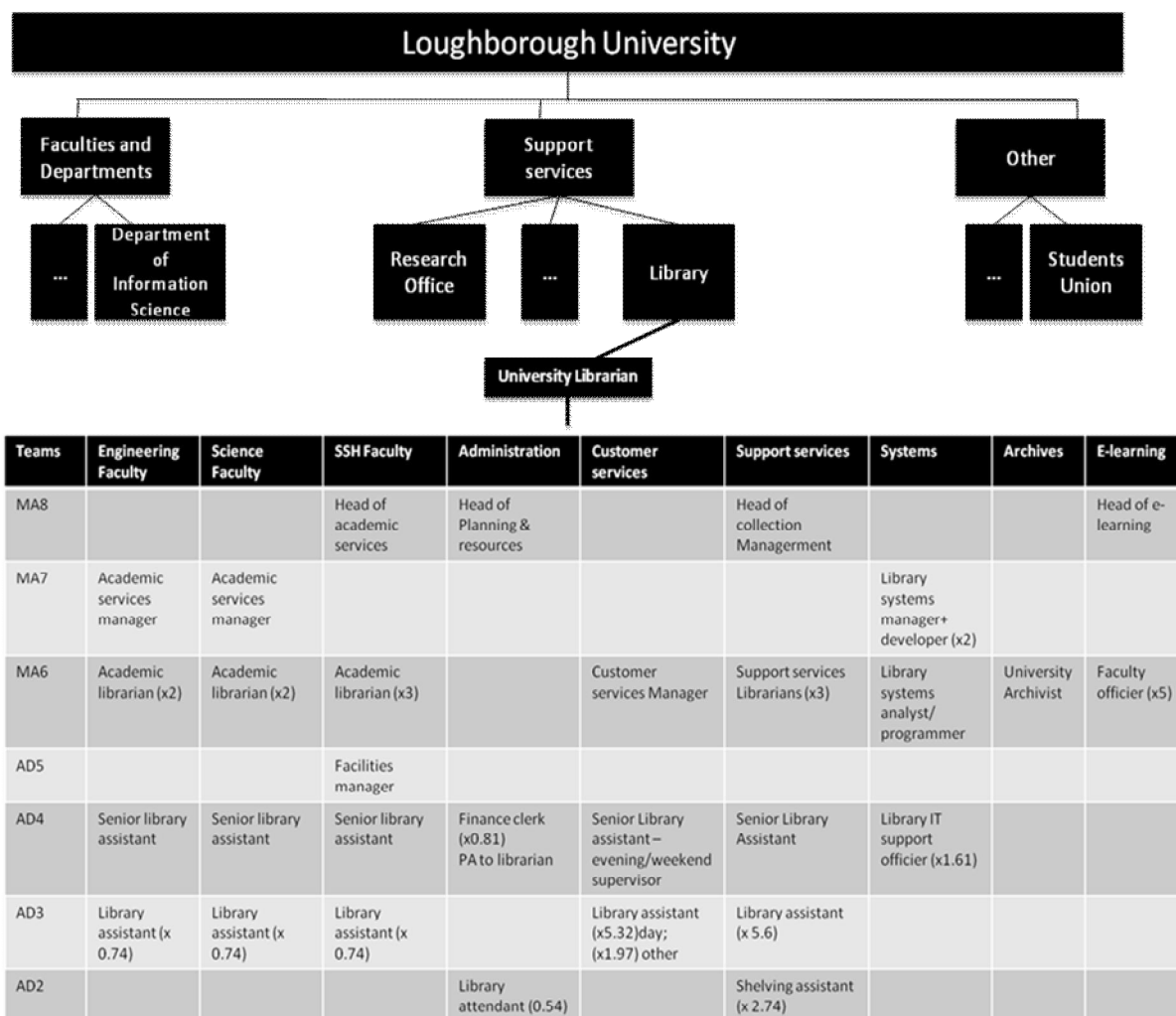


Fig.2: Loughborough University structure with a focus on the library. The staff is organized according to the departments and job grades.

b. The Loughborough University Library evaluation policy

The Loughborough University Library has a strong culture of researching and innovating its services portfolio, staying updated with the discipline trends and implementing new services, often based on new technologies. The aims are reported in the strategic plan (filled in every 2 years) and the activities performed during the year are reported in the yearly report of the Librarian. Both documents are published on the library official website.

Despite this positive attitude, the library has not a defined evaluation strategy. Indeed once a year two main surveys, having researching and teaching as subject, are scheduled to investigate what new services could be implemented, in addition other data (i.e.

electronics statistics from the editors about the use of the purchased resources) are collected through different modes (i.e. extrapolating data from third part surveys, monitoring the log-in sections), nevertheless a comprehensive and defined evaluation strategy cannot be considered applied.

This approach is aligned with the University evaluation policy, which does not require official revision and analysis from the offices and departments and assign to each institute the responsibility to carry on, if necessary, an evaluation of its services and activities, following its own internal policy. The only evaluations required by the university policy are the performance of staff and the mandatory national surveys.

At the library, the evaluation process is on responsibility of the head of planning & resources (Doctor Walton) who is also in charge of the quality of the services, the training of the staff, the marketing of the library and leading the administration team, which manages the finance and the library building.

No official standards or frameworks have been adopted for the last years (the last one adopting a standard was held in the 2004), so all the projects have been specifically designed according to the library requirements.

In the development of the two yearly main projects, external staff is always involved; they usually are representative of the studied population (i.e. leader of the Students Union, Library Liason Officers) or/and professionals from other offices and departments (i.e. research office, department of Information Science).

The subjects of the projects and the services to be evaluated are decided by the head of planning & resources.

The working group is usually formed on a voluntary basis asking directly to people and spreading the word. Once the team is completed, usually an introductory meeting, where the main objectives and the project design are defined, takes place. If required, they are update in the future by online communications or during subsequent meetings. When an agreement on objectives, expected outcomes, methods and data collection techniques is reach, a pilot test usually takes place, whose results are discussed between the working

group. After the analysis of the results and potential minor changes on the project plan is made, the survey is conducted and the resulting data collected. Afterwards, a new meeting usually takes place and opinions are shared, the data are analyzed and further tasks are assigned. Then a report, usually written by the head of planning & resources, is discussed during a new meeting by all the team members until an agreement on the release of a first draft is reached.

Finally, the report is presented to the chief management team, which decides whether bringing it to the management group; which evaluates which actions will be taken, their schedule and their owner. Afterwards the final report is published online and lastly the results of the projects are presented at conferences or published as articles or book chapters.

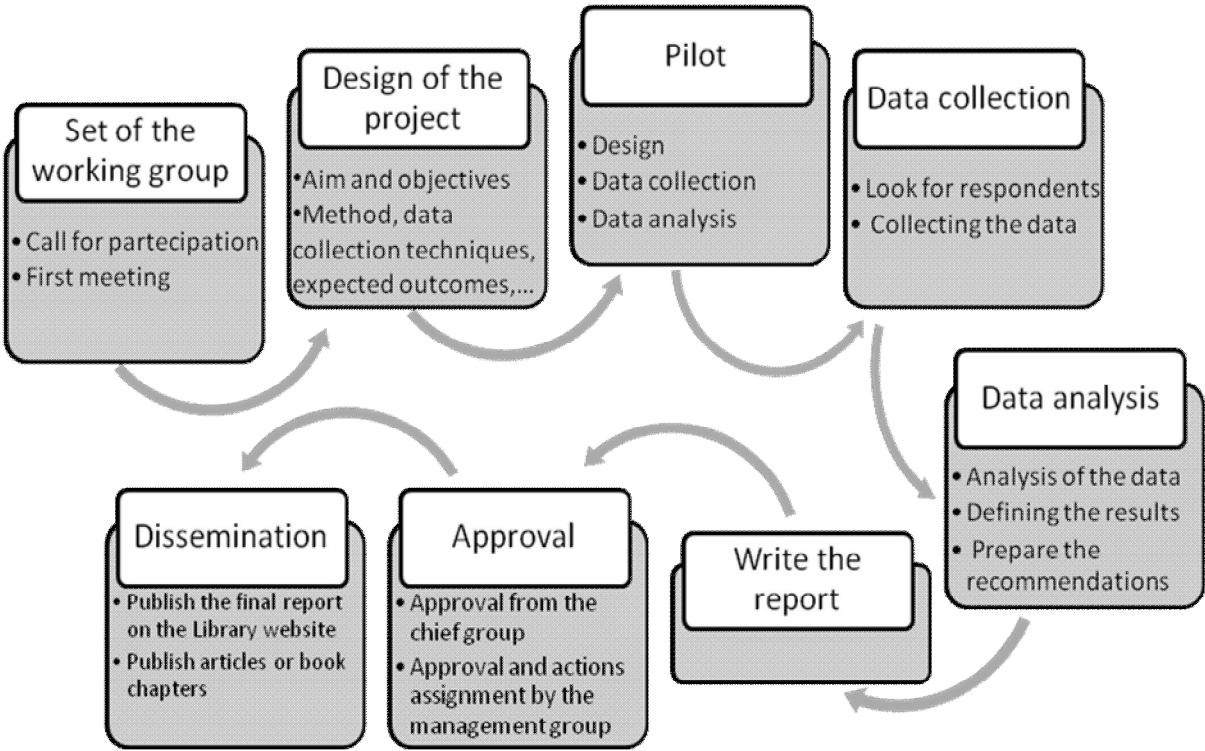


Fig 3. The evaluation projects process.

c. The projects

In the following chapters, a brief description of the three selected evaluation projects is provided in order to facilitate the understanding of the analysis to the reader.

i. Use of Web 2.0 tools by students at Loughborough University

The project was jointly managed with the Students' Union at the University and the Loughborough University Library and it took place over a 6 months period from October 2009 to March 2010. There were no resources specifically allocated for the work, as it was undertaken within peoples existing workloads.

According to the final report "It has become increasingly evident that there is a growing trend for students to using a mixture of formal University systems (such as LEARN and MetaLib) and informal Web 2.0 applications" (Barnet, Collis, Narborough, Parry, Peel, Shields, Stubbings & Walton, 2010) therefore the overall aim of the project was to "gather a deeper understanding of Loughborough University undergraduate students perspectives and experiences in using web tools in learning" (Barnet, Collis, Narborough, Parry, Peel, Shields, Stubbings & Walton, 2010) and a particular focus (as stressed by the respondents) was on the use of Web 2.0 applications (especially Facebook) as learning tools rather than social tools. A previous study reported some complains from students about the use of Web 2.0 application in the library as they perceived it was not for academic use, the library was concerned that this perspective was mostly anecdotal and that there was a need to gather firmer evidence on which Web 2.0 tools are used and where they are positioned in University learning.

There were two phases of data collection based on online surveys: a short online survey was made available on LEARN to gauge an initial overview of where Web 2.0 figured in students learning, and a full survey where students were asked to indicate if they used them for academic work, social life/sport, or both, which were their two favorite Web 2.0 sites, and about demographic data (age, gender, year of study, Faculty and home country)

The full survey was piloted with members of the Students Union Executive and was active for three weeks, promoted to students via the electronic Student notice board, the library blog and General news & announcements on Learn; an incentive of a prize draw for a £ 25.00 iTunes voucher was offered to encourage participation. At the end, there were 178 responses.

From the results, the following recommendations were identified:

1. Students should not be restricted in their use of Web 2.0 technologies on University provided PCs.
2. Approaches to ensuring students have the skills to make effective use of Web 2.0 should be introduced (using a light touch approach).
3. Academic staff are to be encouraged to make more effective and informed use of LEARN and its various pedagogic applications.
4. Processes should be established to allow students to more effectively integrate information of different digital types with resources provided both internally by the University and external resources.
5. Facebook has a high uptake by respondents and highly probably Loughborough University students as a whole. The University needs to consider how Facebook is best used in its activities.
6. Mobile devices are already important in accessing Web 2.0 applications for learning by Loughborough students. University services and systems need to be developed and enhanced to support this.
7. A particular difficulty encountered by students is accessing (and being provided with) on-line discussion forums for their studies. The University should consider how this issue can be best re-addressed.
8. Many Web 2.0 applications are freely available and students are already taking advantage of them. The University should support the use of these existing technologies rather than developing new technologies from scratch.

ii. Scholarly communication at the Loughborough University

Impetus for the work was provided by the impending introduction of the Research Excellence Framework (REF) in 2014 and a cross department project group was set up to oversee the study consisting of staff from the library, the Department of Information

Science and the Research Office. The study ran from April to September 2010, and there were no resources allocated.

The drivers behind this focus were raising the profile of the institutional repository changes in information and communication technology (such as blogs and wikis) and the need for the university to make sure academics' communication has as much impact as possible

An online survey, developed via the Bristol Online Survey tool (BOS), was conducted exploring the academics aspects of scholarly communication, such as institutional support for disseminating outputs, the perceptions of the importance of specific outputs, recognition and reward associated with the dissemination of outputs, and the awareness and use of currently available library resources and services in support of producing and disseminating outputs.

The communications within the work group were by email, Google Docs and in person meetings.

The questionnaire was piloted within the Department of Information Science and it was sent to the target via email. Reminders were sent out at suitable intervals to ensure best response, and participation was encouraged via three £ 50 book tokens.

Complete results were received from 142 respondents (which represents about 14% of the number of Loughborough University researchers).

Data were successfully gathered on how academics perceived different media for their scholarly communication. The peer review journal was seen as the most important, but newer forms of communication such as the institutional repository and Web 2.0 applications also had a profile. The investigation confirmed that scholarly communication is crucially influenced by the REF and its predecessor. Evidences were gathered on how academics perceive and use the various services provided by the library to support their scholarly communication. Some services were used regularly such as e-journals, the library catalogue and library provided databases. It also illustrates that services such as advice

from the Institutional Repository Manager and advice from academic librarians were used at lower levels.

The study has resulted in five recommendations for the University and three for library about how scholarly communication can be enhanced and improved.

iii. University of Derby Library cooperation

The cooperation with the University of Derby Library started in September 2010 and it will end in October 2011, but the project planning started long before; the reason for the delay was the founding, which never came anyway.

The focus of the project is to explore the data collect by both the institutions about their services, compare them and figure out how to better use them. The two involved University have a very different strategy about research and learning, which influence a lot the relation with the Loughborough University Library services and the expected outcomes.

The project is organize on three stages: collect and compare the collected data, bring the staff from both the libraries together to discuss about which data should be collected and which are the difficulties in practice, and finally bring the results of the project back to the individual institutions and discuss about possible implementations.

The first and second stages are completed, but the last one is still ongoing, therefore it is not possible to define the outputs of it.

Despite this situation, a first draft of the results will be presented at a conference in June 2011 by the head of the Library and Customer operation of the University of Derby.

a. The interviewees

A brief introduction about the respondents is reported in order to provide the reader with useful information about their job position, their background and what they were asked about.

i. Graham Walton

At the library he is the Service Development Manager, convener of the Library Marketing and Publications Group and convener of the Library Training Group, therefore he is in charge of all the evaluation projects. In addition, he is research fellow at the Library and Information Science department of the Loughborough University. His background is in Librarianship; he joined the library on 2006 after many years at a University at the north of England in the Health department. He was the key informant, but he was also asked about the University of Derby Library cooperation project.

ii. Jenny Fry

Doctor Fry is a lecturer at the Loughborough University department of Information Science, her research is concerned with disciplinary and professional cultures and how they shape the production and use of networked digital resources and digital infrastructures. Before joining the department, she was a research fellow at the Oxford Internet Institute. She received her Ph.D. in Information Science in 2003 from the University of Brighton and since then she has held postdoctoral research fellowships at different institutions. She was asked about the Scholarly communication at the Loughborough University project in which she was involved.

iii. Jenny Narborough

She works at the engineering faculty of the Loughborough University as e-learning officer. She has a science degree and she worked as a lecturer before joining the library. During the interview she was asked about the Use of Web 2.0 by students at the Loughborough University.

iv. Martin Ashby

He is a research e-learning officer working to support the research and the personal development of the Loughborough University research staff. His background is human factors, graphic design, information design, e-assessment and e-learning. During the interview he was asked about the Scholarly communication at the Loughborough University project.

v. Pat Johnson

Miss Johnson is the head of the Library and Customer Operations of the Learning and Information service at the University of Derby. Her background is in Librarianship and she has worked at the University of North before joining the University of Derby. First she joined as assistant librarian and then she moved gradually to the head. During the interview she was asked about the cooperation project with the Loughborough University Library.

vi. Peter Lund

He is in charge of the academic liaison for Chemistry, Mathematical Sciences and Physics, responsible for library support for research and he is academic services manager of Science. Before joining the library, he worked for two companies having an engineering and science background. He was involved in the Scholarly communication at the Loughborough University, and therefore he was interviewed about it.

vii. Ruth Jenkins

She is the University Librarian (the head of the library). Before joining the Loughborough University Library, she worked in libraries and information services organizations. Her background is in library and information Science. During the interview she was mainly asked about general matters and about the library evaluation strategy.

viii. Ruth Stubbings

She is the leader of the Academic liaison for Business School and Economics, Academic Services Manager and Convener of the library Information Literacy and Study Skills Group. She worked as research assistant, as librarians in special libraries, but also in specialist organizations. During the interview she was asked about the Use of Web 2.0 by students at the Loughborough University in which she was involved as critical friend.

• Analysis

Based on the methodology described in the previous chapter, it was possible to identify a set of categories related with the established objectives. In the following chapters each category will be presented and discussed.

a. Definition of evaluation by the interviewees

When asked about the definition of evaluation, respondents gave very different answers depending on several conditions such as their background, their current job position and their methodological approach. Indeed, it was not possible to identify a common understanding, but common aspects.

Looking over the adopted key words, people with an engineering or scientific education were less fuzzy than others; they provided a straight definition without hesitation, and using more technical words like “measure”, “impact”, “testing”. On the other hand people with a librarianship or human science education preferred to use words like “collect data”, “self-reflection” “reflection of what is actually going on” “make sure it is effective”, “get feedback”, “monitor”. Of course, these different perspectives affected the project activities creating some minor misunderstandings, which will be discussed in the *Problems* chapter.

Still focusing on single words used by the interviewed, “research”, “study” and “survey” were used as synonyms of evaluation. This attitude was remarked on also by Doctor Fry who said during the interview: “you can’t necessarily call it research, that is my perspective, but from the library perspective it is research” and adds “I think that more time needs to be spend at the beginning by coming to understand what you mean by research”. A clarification on this regard came up from the service development manager who is also in charge of the library quality services and as a consequence of all the evaluation project: “it [evaluation] is all about generating the knowledge that you can use to make decisions, because it is easy to make the wrong decisions if you just guess, but if you evaluate things, you should have data that you can use to actually go that way, that way, or that way [...] there is a conflict, because researchers claim that you have to have your methodology first, you got to be supervised, you go to numerical analysis because if you don’t do it, it is not proper research, whereas I know, in the job I do, you have just to gather the data from where you got them from”. This position is reinforced by Miss

Jenkins, the head of the library, who stated: "I think that I am quite conscious [about evaluation]...I think that it doesn't always work like that".

No statements defining evaluation are present in both the final report of the two previous projects, which contains, instead, other crucial terms: "Web 2.0" and "Research assessment regimes". Possible reasons are a shared understanding around the staff (which is not the case as already show), or, more likely, a lack of sensibility to its importance.

Despite the many differences, one aspect was common to all the answers: all the respondents overstressed that evaluation is more connected with practice and every day activities than with conceptual works and discipline.

The most clear was Doctor Walton, who stated: "Evaluation is not a theoretical science", but also Miss Stubbings has the same "there are a couple of different types of evaluations, some of them are quick and dirty, some are more detailed; the library needs to do a whole range of evaluations" and Doctor Fry as well "of course evaluation has much more to do with things in practice".

Many librarians cited experiences to define the word evaluation and everybody mentioned that doing practical evaluation project is different from theory ("we try to put more formal research methodology in place, and I say try because [...]"; "I think we did well, things considering"). This attitude is spread among people working at all levels at the library and among the external staff.

Related with this gap (the splitting between practice and theory) is the relation with the literature. Not only no one quote any official or formal definition, but also they did not even mention him or her. Looking over their answers, it is clear that they have some good knowledge about the research methodologies and evaluation projects experiences, but nobody refers directly to them to support their opinion. The only respondent mentioning the literature was Ruth Stubbings, the head of the academic librarians, who stated "I try to freshen up through some readings, and through reading about other people research projects and I think I have learnt more from that than from the dry theory".

To sum up:

- It was not possible to identify a common understanding, but common aspects.
- People with a engineering or science education utilized more technical and less fuzzy terms, while people with a librarianship or human science education preferred more generic terms, and sometimes oriented on personal-evaluation.
- "Research", "study" and "survey" were used as synonyms of evaluation.
- All the respondents overstressed that evaluation is more connected with practice and every day activities than with conceptual works and discipline.
- Just one respondent referred to the literature during the interview.

b. Conceptual purpose of evaluation according to the interviewees

Discussing about the purpose of evaluation, the respondents had quite different opinions. Generalizing and interpreting the different uses of words the main reasons are:

- Being more competitive. Quoting: "the reasons we need to do that [evaluate], is that we are now competing in the global market, so we are competing with libraries in the UK, but also across the world and more importantly we are competing with Google."; "We are getting less resources, there is more competition".
- Target the efforts. The head of the library stressed this point many times during the interview: "something, anything, that takes a lot of times and energies and efforts do a formal review [...] we need to evaluate it to make sure it is effective".
- Take decisions: "You have to make decisions quite quickly, so unless you have some information to make those decisions, you will just be guessing"; "we are getting customer changing, then we need to have a different idea of what they want to do"
- Testing and measuring. This category fit include two different view, in the first the purpose of evaluation is "testing, and measure", while in the second one is "see what impact measurements, certain measurements, have on an audience".

Remarkable is the absence of intention in validating the provided services and in seeking funds. Both of them, however, were mentioned and stressed by the head of the University of Derby Library, Pat Johnson: "The purpose is to improve my services! Definitely that is what it is about, otherwise it is pointless!" and further on "here in Derby we had to be a

little more pragmatic about getting the funding... we have to bring a business case forward [...];so we had an history here at Derby of doing this for a while Loughborough haven't had that."

Finally comparing the definitions and purposes provided by the respondents with the ones coming from the literature, it is evident that they have not much in common: researchers are focused on defining theoretical frameworks and standards, whereas practitioners have very pragmatic knowledge of what evaluation is and why it is required.

To sum up:

- The main reasons to conduct an evaluation projects are: being more competitive, target the efforts, take decisions and testing and measuring.
- Remarkable is the absence of intention in validating the provided services and in seeking funds.

c. Training on evaluation by the interviewees

During the interviews, the participants were asked about their training on the evaluation subject, especially referring to their know-how, so they could talk about academic courses, job training, but also individual readings and anything else they consider significant for the topic.

The interviewed answered with a negative sentence, usually located at the very beginning ("No. [laugh]"; "Not at all"; "Not really") or at the end ("To some extent [hesitation] [...] a course helped explain the length of evaluation the teaching you have undertaken[...]So that's one example. And...maybe the only one"; "I would say yes and no. [...] When I did my post graduated diploma in Librarianship there were a small about it in Management [...]what it was told it doesn't really matter").

When asked for further information, they listed the following types of training:

- Individual readings: surprisingly mentioned by just one person.
- Master courses

- Master in LIS (above all courses dealing with the research methods and management, although they were aware they are not strictly related with evaluation)
- Phd program
- Job training

Nevertheless the knowledge acquired was judged insufficient by the interviewees, and sometimes totally absent (Jenkins stated: "it was mentioned, but I would disagree by calling this training"), even referring to individual readings (Stubbings "I can read about evaluation theory, but the message is how can I use it.").

Particular attention must be put on the fact that nobody mentioned the lack of training as obstacles for the development of evaluation projects and the necessity to have one.

When Discussing about this matter, Doctor Walton argued that "I think that probably for students of librarianship there is so much to be covered and doing an entire course on evaluation is not an option, because there are so many other things that need to be done, and also when you work in a library, you have got so many things to do that evaluation is a tiny intensive activity".

Concerning the usefulness of their studies in the evaluation projects, the clearest and most straightforward comment came from Stubbings: "what I remember it was told it doesn't really matter". This assumption can be extended to other respondents who felt that the received knowledge has no relation with everyday working experience.

The gap between theory and practice is once again repeated: all the respondents, in different ways, reported the practical nature of the evaluation and pointed out their "evaluation skills" developed during the working years.

In conclusion, the training was considered clearly insufficient, but somehow not strictly necessary. The everyday activities allowed them to develop the required skills.

To sum up:

- The knowledge acquired by training was judged insufficient by the interviewees, and sometimes totally absent.
- The types of training reported by participants were: individual readings (mentioned by one person), master courses, master in LIS, PhD programme, job training.
- Respondents felt that the received knowledge has no relation with everyday working experience.
- Nobody mentioned the lack of training as an obstacles for the development of evaluation projects and the necessity to have one.

d. Problems

In this section a core research questions of this study will be answered: what barriers and obstacles the staff had met planning, doing and utilizing the results of evaluation projects. Therefore, every respondent was asked the following question:

Which are the problems, obstacles or barriers that you encountered conducting the evaluation project?

The answers were much differentiated and many interesting matters were risen. Moreover some additional information was also provided answering to other questions enriching the analysis.

Looking up at the answers, the identified problems were grouped according to their similarities; as a result, the following list was completed:

- Time constrains
- No resources (above all financial resources)
- Challenges in cooperating within the group
- The negative individual attitude
- No proper project planning
- Difficulties with the project management
- How implement actions from recommendations

Each category will be described and analyzed deeper in the following paragraphs, a general comment is here required.

Since this is a qualitative study, the categories are not organized according to statistics and relevance ranking, anyway some details, i.e. how many people mentioned a specific problem, have been judged relevant and therefore considered during the analysis.

Further comments will be added during the analysis of each single category.

i. Time constrains

The most frequent word reported in the interviews was "time". The frequency that the word was repeated and the central value given to it by participants, suggest to do not include it into the wider category of lack of resources, although time has to be considered a valuable resource.

On the other hand, this category does not deserve to be further discussed because its meaning is clear and the participants did not argue much about it; common sentences were "Purely time", "I didn't have much time", "it was done in piece of time", "we didn't have extra time".

Participants reported, answering to other questions, that "evaluation is an intensive activity" and "it takes a lot of work before it actually happens", but because of time constrains "it is just another thing on the desk".

Asking for the reason of this lacking of time a participant declared that it was something he had to squeeze in his/her daily activities because there were no possibility to have extra paid time; while another respondent answered "we have always knew that there were no money for us to be able to do things, allocating time or be able to get other resources in staff, if we had had something we may have done things slightly different, but we actually did well with what we had".

The problem of allocating time for evaluation project was also remarked by the head of the library, miss Jenkins who said: "I think there is a strong culture here [Loughborough University Library] of research, of questioning, of looking at rather we can do things

better, and of innovation...but sometimes we are just too busy innovating and running the service to stand back and evaluate critically”.

Time was really the most felt challenge to face in order to conduct valuable evaluation projects.

ii. Resources

“Resources”, was another central topic discussed in the interviews. The term was accurately chosen to be generic, so that interviewees could refer to different things, but the answers were limited to the availability of staff and, above all, funds.

The most sensitive were library external staff (Ashby, Fry, Johnson) who reported the lack of funds and the needs of additional staff (i.e. research assistants), only a person, from the library, indicated them (lacking of resources) without emphasizing it.

Discussing about the resources allocation for evaluation projects, the head of the library, miss Jenkins said: “I think it is higher here than in other places where I have worked [...], but even so I would say it is a tiny percentage of what we do, maybe, you know, 2 to 3% of what we do, because we have so much else”.

iii. Cooperation within the group

The second most reported challenge was the cooperation between the members of the staff.

As described, library strategy includes involvement of other University offices and population representatives to maximize the benefits and buy in other people. The benefits of this approach have been widely reported in the library strategy chapter, therefore only the challenges will be treated here.

In this category, different understandings and obstacles are grouped: overcoming the disagreements, staff selection and personal skills exploitation.

The most observable challenge, as expectable, is the overcoming of the disagreements:

Nobody added specific details about internal disagreements, and nothing further was asked on this regards, but it was inferable from some answers that the major disagreements were about the design and objectives of the project, therefore, as a respondent said, “they had to do some compromises in the end”.

A participant, particularly enthusiastic about the involvement of different professionals, commented stated that “it is natural in group”, while another member reported “that there were some efforts to see others perspectives [...] especially when people come with preconceived set of assumption about the project”.

A second issue was the team composition.

Two respondents believe that “The group was not necessarily right constitute” which implies the major issues: “They didn’t really added any value to the project”; “One lady was from the department of Information Science [...] by the time of writing she had less involvement on that part because she moved back to Spain, so I don’t know if it was a problem, but it was a further complexity”.

A third issue was the exploitation of personal skills within the team. A participant reported that: “We were not able to use them so much in the analysis, I think this would have been nice”.

The cooperation with external staff had never been specifically reported as obstacle, but this topic and the related challenges rose in other part of the interviews.

iv. Individual attitude

This category analyzes the personal motivation of each staff member. Many respondents revealed they have personal reasons to participate to a project and they consider that it has positive impacts on its development, especially during the transition from recommendations to actions, nevertheless it brought also some challenges that will be analyzed.

Indeed during the interviews it was argued that not all the staff had the right motivation and therefore the right effort was not put: “Right people with the right buy in, I don’t think we did that and I think that was a huge issue”; “I think there are lots of

barriers...people are not taking it seriously, people not taking responsibilities for specific action, [...] and also there is the cynicism about the evaluation value”.

As well as summarize by Doctor Walton, the responsible for the evaluation projects: “it takes a lot of motivation and push to make it [an evaluation project] happens”.

v. Project planning

Unusual but relevant, the project planning was mentioned as a problem by four respondents, each of them considering a different side. The project planning is considered the initial stage of the project, when the focus and the expected outcomes are defined.

The respondents perceived this stage as key in order to get the highest result: “if we are going to do what we have to, we need to be sure that it has benefits”, “We do have to take pragmatic decisions to target our efforts, particularly in this place”, “think carefully about the survey that we do, to be sure that they are...effective and maximize benefits of doing it”, but some of them claimed that some project wasn’t properly planned: “I think it was a sort of lack of array”, “it could have been more focused”, “We should think about these sort of things [obstacles encountered] before”, “I think that more time needs to be spend at the beginning by...coming to understand what you mean by research and what do you really expect to get out”.

vi. Project development

A topic related to the planning is the project management.

Some respondents reported the issues of “keeping it going and getting it done”. Above all, the main difficulties were arranging meetings using the appropriate tools and producing a good report: “It was sometimes difficult to schedule the meeting groups and stuff”, “We had problems with the tools it [the project] was designed, I don’t think it actually answered the questions we had and it didn’t help me with the analysis”, “there are lots of obstacles and barriers to produce a final report [...] if you are going to put a report outside to the world it has to be good, so therefore the quality. We can’t just have a scratch report”.

vii. How implement actions from recommendations

Transferring the recommendation in the everyday activities of the library and the related complexity was a problem described by many respondents, the main declared causes were library bureaucracy (“The library is incredibly slow to change, so for example [...]”) or the lack of efforts from whom is in charge of realizing them (“People are not taking responsibilities for specific actions”).

Discussing about the library evaluation strategy, respondents added more details about the need to get back and check the correctness of action taken (“few are going to take forward actions, what I will say is this library no longer really goes back to look at actions”, “at that extent, I think we are not too prescriptive, we must do this and then... not exactly what happen”).

To sum up:

- The major problems encountered were: time constrains, no resources (in particular financial resources), challenges in cooperating within the group, the negative individual attitude, no proper project planning, and difficulties with the project managing, complexity to transfer the recommendation into actions.

e. Dissemination of results

At the Loughborough University Library the dissemination of results is perceived as a key step of the project itself; as Doctor Walton stated “I think we all have the responsibility to actually disseminate our work; so many people do reports and leave them on the shelves”.

The respondents has the same attitude indeed they agreed about the central role of the final report and shared the belief of the potential issue it can bring above all the quality of the project and the report itself: “If you are going to put a report outside to the world it has to be good, so therefore the quality. We can’t just have a sketch data”.

The Loughborough University Library policy expects that the projects are disseminated at three different stages. Its application can be also observed looking at the two concluded projects (the Use of Web 2.0 by students at the Loughborough University and the Scholarly communication at the Loughborough University the three level of dissemination are:

- at the library

- at the University

- outside

Each level of dissemination, having to meet different needs, requires the application of different tools:

- Library blog and internal communication

- Final report to send to interested offices, publication on the library website

- Articles, book chapters, conference papers based on the projects (not yet published).

Some projects had been developed in cooperation with the University of Derby, which clearly involves different challenges, among them the main was about the writing of the report especially about the format of document): “how we will provide the summary, you know, the way we are going to produce an official report to inform people about what we were doing, so the format of that will be a problem”.

In conclusion, the dissemination at the Loughborough University Library is considered as part of the projects and taken in huge account. Therefore, this activity raises some issues mainly about the format and its quality.

To sum up:

- The dissemination of results is considered as part of the project

- It has a key role in the library strategy of branding and contributing to the research profile of the Loughborough University.

- Dissemination is done at three level: library, university, outside, with different tools and techniques.

- Some challenges raise in the process like the quality of the results and the format of the report itself.

f. Actions taken to implement the recommendations

As a result of each evaluation project, a list of conclusions and recommendations is always added to the final reports, but usually they are quite broad and do not imply specific actions. (i.e. From the Use of Web 2.0 tools by students at Loughborough

University final report: Facebook has a high uptake by respondents and highly probably Loughborough University students as a whole. The University needs to consider how Facebook is best used in its activities; from the Scholarly communication at Loughborough University: the library should work closely with the Research Office to ensure that the University benefits from existing and new bibliometric tools).

Who move the recommendations into action is the management group. As already mentioned in the *Loughborough University Library evaluation policy* chapter, a draft of the final report is presented to the chief management team which has to decide if bring it to the management group meeting; once agreed that the group looks at the recommendations and decides which are the actions that will be taken, the schedule and the responsible for the action; afterwards the report is published online and publicly available.

But as Doctor Walton pointed out “that is a difficult bit” and the respondents had some concern about the process: “We have a list of recommendations and we know where they were allocated and we didn’t get back to check whether they are doing it[...], the team leader should double check on how it is progressing on or if there is still something it has to be done, rather than rely just on the people who should do it because we gave the action to do it in the first place. And that is one of the criticism”; “I think that is... Not sure whether it is a good or bad thing... But we tent to write recommendations in a way that... Because... We submit the report to the library management group... In a way that I suppose allow them to... See whether they want just to leave it or the library want to put some more efforts in it, ... And at that extent, I think we are not too prescriptive... We must do this and then... Not exactly what happen... Because I think that that would take away any initiative from the rest of the library, not everybody should be like that, to have the authority to do that.”

Asking them a straight question about what action did they take to turn recommendations into actions, one of the participants looked at the final report and listed all the action taken point to point (i.e. “The first one [recommendation from the Use of Web 2.0 tools by students at the Loughborough University] is not restricted access to students. That is a message that I continue to give back to student union, library staff and the University as a whole; that one keeps coming back and I keep reiterating the foundlings from the

project”) providing evidence that recommendations are actually turned into actions, but added “We should do a checking on what the outcomes are” and confirmed the already mentioned limits of the process.

To sum up:

- Recommendations are turned into actions by the library management group, who looks at the recommendations and decides which are the actions that will be taken, the schedule and the responsables for the action.

g. Impact of evaluation projects

In this chapter the impact of the projects on the library activities, based on the collected data, is illustrated. With the term “impact” it is meant the influence or the effect of a project on the library activities. This term has been preferred to other ones (i.e. benefits and values) because it can have both positive and negative implications and because it has a pragmatic connotation.

According to the respondents, impacts can manifest not only after the approval of the final report by the management group, but also during the projects development or just about its conclusion.

The selected projects are at different states:

- the cooperation between Loughborough University Library and the University of Derby Learning Centre. This activity is still ongoing;
- the Scholarly communication at the Loughborough University, whose final report has just been published;
- and the Use of Web 2.0 tools by students at the Loughborough University Library, which took place from October 2009 to March 2010.

Analyzing the answers of the interviews, the impacts can be divided in three main sets, depending mainly on the state of the projects itself:

- on project developers

The impacts were mentioned by several respondents who meant that their attitude, behaviors and knowledge at work were influenced by the relations with the other team members and the new skills acquired.

Some major answers were: "I developed very good working relationships with [...]; the results have impacted our behavior"; "just to get the library staff from two different libraries in the same room for three hours was an achievement because people learnt from each other, they have talked and that is an achievement itself!".

As doctor Walton, the responsible for the evaluation projects, declared: "My view of what we do is the benefit on not just on getting answer to our questions. There are lots of other benefits, and that is what sometimes people forget, that we get a lot out of the process [...] there is much more than getting reports, the process actually leads more positive things."

- on future plans

This category refers to the impact that the results of a project can have on future investigations and on the identification of new issues, as stated by the developers of the Scholarly communication at the Loughborough University projects. Indeed the results of a project brings new challenges to face, which are considered as impacts. As Martin Ashby said talking about the project "I think it highlighted as people had a kind of, not feeling much the issue anyway [...] it is kind of suggesting that there is a lot of work that the library can do to mediate, so I think it was a useful experience" also Lund talking about values concluded "I think we need to change and we are working on and we do that. So to that extent I think that it is one example of where we will increase efforts into different services".

- on activities

The impact belonging to this category are the one that affect the library activities and comes after the revision of the final report by the management group, which is in charge of deciding the improvements to realize and the services to implement.

Because of the status of the project, just the respondents involved in the use of Web 2.0 tools by students at the Loughborough University were able to discuss about them.

They argued that the library had hugely considered the results from the investigation and oriented its policy about Web 2.0 on them. Therefore the library decided to not restrict the access to internet, to develop an online tutorial about how to deal with personal data and one about how to write formal emails and to cooperate with the e-learning office to promote the use of Web 2.0 application by lecturers.

As Stubbing confirmed “Despite the time and efforts and disappointment, it was absolutely really really [sic] worthwhile”, “but at least me, If I wouldn’t have get back and look at this [report] I wouldn’t have realized that we are still working and progressing on that, and I wouldn’t have known on where they [students] were”.

In conclusion, the impact of the evaluation can be considered influencing at three different states: on project developers, on future plans and on activities.

To sum up:

- The impacts can be on three levels: on people, on project planning and on activities.
- The library take in great consideration the evaluation projects and base its activities on results and recommendations coming from them.

● **Discussion**

In the following chapters the previous categories are discussed.

a. Definition of evaluation by the interviewees

As pointed out analyzing the data, the respondents have no common understanding of the evaluation definition. This situation can be due to their different background, job positions and methodological approach, but also because of the strategy, with which the projects are carried out. Indeed, there is no defined and shared understanding among the team, since it is actually considered clear and as a consequence never discussed in deep. A serious reflection on it and its implication could be very fruitful and useful, not only for the professionals, but especially for the success of the projects.

Analyzing the words used by the interviewees, it is confirmed that the term evaluation is broadly comprehended and sometimes misunderstood by the staff since some respondents used terms like “measure” and “collect data” as synonyms of evaluation. It has also been noticed that staff with engineering or science education utilized more technical and less fuzzy terms, while staff with a librarianship or human science education preferred more generic terms, and sometimes oriented on personal-evaluation. From this data it seems that part of the respondents have no clear understanding of what evaluation is.

Another relevant outcome of the analysis is the gap that it is considered to exist between theory and practice; indeed all respondents overstressed that evaluation is mainly a practical activity and it does not involve theoretical works.

This attitude is widely spread not only among practitioners, but also among academics; unluckily this behavior heavily affects the development and the final results of evaluation projects. Therefore it is extremely relevant and worth to be investigated further; in the author opinion, nevertheless evaluation require practical skills, it also require deep theoretical knowledge.

The last remarkable conclusion is about the use of the literature by practitioners. This topic will not be discussed further in this study, but contrary to popular belief, the statement that practitioners do not read academic articles is not necessarily true; from the data analysis resulted that the staff keep abreast with literature, but they surely do not feel it useful for they everyday work.

b. Conceptual purpose of evaluation according to the interviewees

As for the definition of evaluation, there is no a shared understanding on the conceptual purpose of evaluation by the interviewees, but only common aspects.

Indeed the respondents mentioned some generic sentences like “being more competitive” or “take decisions” and they were all very pragmatic and reported reasons related with the everyday activities.

This attitude can be influenced by the library policy about evaluation which requires to focus on results in order to maximize the benefits coming from the projects (indeed, the projects had well defined aim to be reached), nevertheless the answers can not be considered satisfactory, since the question was clearly on the conceptual purpose rather than specific projects.

This result reinforces the need of further investigation about the understanding of evaluation by practitioners, about their training and mostly about the existence of a gap between theory and practice.

c. Training on evaluation by the interviewees

The first conclusion appraising the answers of the interviewees about their training history in the evaluation field, is its absence. No one reported to have had a good education or training in this subject.

Analyzing the data in depth, results that some academic courses (master level, PhD program) and other possibilities (personal readings, job trainings) were mentioned, nevertheless they were not felt useful or sufficient.

These consideration should push the scientific community to reflect about the academic programs and training held by universities and institutions; in particular, how are they perceived by the students and more important, if they match the everyday needs of practitioners.

In Doctor Walton's opinion "probably, for students of librarianship there is so much to be covered and doing an entire course on evaluation is not an option, because there are so many other things that need to be done, and also when you work in a library, you have got so many things to do that evaluation is a tiny intensive activity". In the author opinion, this view cannot be considered satisfactory, because evaluation is crucial for the success of any service and therefore it requires as much attention as the other tasks not just in the everyday activities, but also in the formative stage of future practitioners.

In addition the gap between theory and practice is once more repeated: all the respondents, in different ways, reported the practical nature of the evaluation and pointed out their “evaluation skills” developed during the working years.

d. Problems

The problems encountered by the staff during the planning, development and conclusions of the projects are core results of the study and they deserve a deeper discussion.

Each of the previously analyzed subcategories will be described and discussed in the following paragraphs, but some general comments are first required.

Despite the participants were a heterogeneous group (they differ in background, profession, personal attitude), their answers were similar and even the same words were used (i.e. time, resources, management), which means that obstacles barriers are not strictly depending on the job position or role, but they are generic and common.

Checking the identified subcategories, it results clear the obstacles are all very practical and related with the everyday activities, but also not connected with single projects. This result confirms the trends already described concerning the existing gap between theory and practice, which has a valuable effect on projects.

Moreover no one mentioned any theoretical obstacles confirming the understanding of evaluation as a practical activity by the interviewees.

Analyzing deeply each category, the most commonly quoted was the time constrains and it considered the most crucial barriers by the most of the respondents. The interviewees consider time valuable and central that they were asking for additional time, rather than financial reward. This result suggests that the library do not allocate time resources properly asking to the staff to squeeze their everyday activities, which inevitably affect their productivity.

The second category is the lack of resources. The answers reported the need of additional staff and funds. The library external staffs were more sensitive on this topic while librarians simply accepted it as a fact.

An explanation could be that the staff views these projects less important than other activities and therefore it does not require for additional resources. The institution should verify this conclusion and, if it would reveal correct, it should incentive and emphasize the importance of these projects allocating suitable resources.

The third identified barrier is the cooperation within the group, which includes different aspects: overcoming the disagreements, staff selection and personal skills exploitation. The comments about difficulties in cooperating and overcoming disagreements were expected in a working team, on the other hand complains about the selection of the staff and limited exploitation of personal skills were completely unexpected and therefore they deserve deeper studies. This issue has to be considered deeply by the library managers when planning a project.

The fourth category is the individual attitude. Despite some comments indicated positively the individual attitude as a crucial requirement, some ones complained for the lack of it. The importance of the personal attitude and above all individual motivation deserve very high attention by institutions and by the scientific community because it has a high relevance and incidence on the projects.

The fifth and sixth categories are connected with the project management. Although respondents reported and considered these problems as very relevant, no deep investigations were done because of the difficulties in collecting valuable data. Anyway the library is recommended to be careful at these issues because of the relevance assigned by the staff to these matters.

The last category concerns how implement actions from recommendations, which is an essential step. The main identified problems are the library bureaucracy and the lack of efforts of those who are in charge of realizing them. On this regard it is up to the library, as institution, to work and to find solutions to get a fully exploitation of the efforts.

e. Dissemination of results

The Loughborough University Library is a best practice on the dissemination of project results since a clear institutional policy, shared by all the staff member exists. This

behavior is the opposite of the trend registered in the literature review, where there seems to be more articles about evolution than reports about evaluation projects.

The good practice to produce articles, book chapters and conference papers from the final report also incentive the staff to work hard and following scientific parameters.

f. Action taken to implement the recommendations

At the Loughborough University Library the management group has the responsibility of turning the recommendations into actions. It decides the necessary further activities and also assigns them to the heads of the departments.

This procedure is judged negatively by the staff that performed the evaluations. They complained about the long waiting before the management group deliver and about the complete lack of control over the required feedbacks and action taken. Of course this process affects heavily and badly the impact of the projects on the library activities. The library should take in great consideration the possibility to modify the bureaucracy connected with the process.

From the data analysis it also appeared clear that a lot is left to individuals. This is a good practice because it encourages professionals to be creative and innovative, but if not properly managed can be very risky. It is therefore recommended that the management group checks on the action taken and evaluate its positive or negative impacts, making effective the benefits and the improvements that an evaluation can bring.

g. Impact of evaluation projects

As discussed in the *Findings, Analysis and discussion* chapter, impacts can be brought at different stage of a project (during the development, while the project is conducted and afterward) and impact different components (project developers, future plan, activities).

Identifying these differences resulted in being very fruitful because they proved the relevance of evaluation projects, which do not effect only on the specific service under evaluation.

These implications should be taken into account during the planning of a project and further investigated.

- **Chapter summary**

This chapter provides the inferred findings, the analysis of the collected data and a discussion of the categories of identification. These categories had been obtained in the research project exploring the main themes that were corresponding with the research question and research objectives.

The chapter starts presenting background information of the Loughborough University Library, its evaluation policy, the selected evaluation projects and the staff who had participated to the study.

During the analysis, the collected data are split in seven categories: definition of evaluation by the interviewees, conceptual purpose of evaluation according to the interviewees, training on evaluation by the interviewees, problems, dissemination of results, sections taken to implement the recommendations, impact of evaluation projects.

Lastly a discussion about each category is reported.

5. Conclusions and implications

● Introduction

This final chapter of the thesis reports conclusions about the research. It summarizes the key findings gained from the interviews and includes a document analysis, developed taking into account the research question and objectives. It provides recommendations for the Loughborough University and it concludes with a list of possible directions for future studies.

● Conclusions to the research question and objectives

The main aim of this study was to acquire a deeper understanding of how evaluation is tackled by real-world digital library in everyday life.

Achieving this goal required to deal with four research objectives, they were answered in the *Findings, analysis and discussion* chapter (see table 1).

Research objectives		Chapter which deal with the objective
1	Explore the evaluation strategy of a real digital library.	- Findings: The Loughborough University Library evaluation policy
2	Establish which are the staff knowledge and competences about evaluation.	- Analysis & Discussion: Definition of evaluation by the interviewees - Analysis & Discussion: Conceptual purpose of evaluation according to the interviewees - Analysis & Discussion: Training on evaluation by the interviewees
3	Identify the problems, obstacles and barriers encountered by the staff.	- Analysis & Discussion: Problems
4	Explore what happen after the conclusion of the project.	- Analysis & Discussion: Dissemination of results

	<ul style="list-style-type: none"> - Analysis & Discussion: Actions taken to implement the recommendations - Analysis & Discussion: Impact of evaluation projects
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Tab 1: A match of the research objectives with the specific chapters dealing with them.

In the following chapters the results coming from the study will be discussed according to the single research objectives.

a. Explore the evaluation strategy of a real digital library

The Loughborough University Library was chosen as a case study to meet this objective and therefore its evaluation policy was investigated in depth.

As described in the findings, the selected institution is the academic library of the Loughborough University, a United Kingdom research and teaching intensive University, located in the Midlands with nearly 14,000 undergraduate, postgraduate taught and postgraduate research students. The unique building (Pilkington Library) was opened in 1980 and covers 7777 square meters over three floors with 900 study places, including 140 workstations (Walton, 2010) and guarantees access to approximately 19,000 e-journal subscriptions, over 500,000 books and 681 print journal subscriptions. The library designs and delivers many services such as book loaning, IT facilities, enquiry service, professional online search service, inter-library loan, generic information literacy and study skills courses (Loughborough University Library, 2010), moreover it provides additional services to specific categories of users like distance learners and member of the public; in recent years it has also incorporated some additional application based on the most famous internet service such as Twitter, digital video, blogs, podcasts and Google Apps (Walton, 2010).

Concerning the evaluation strategy, the Loughborough University Library has a strong culture of researching and innovating its services portfolio, staying updated with the discipline trends and implementing new services, often based on new technologies. Despite this positive attitude, the library has not a defined evaluation strategy. once a year two main surveys, having researching and teaching as subject, are scheduled to investigate

what new services could be implemented; in addition other data (i.e. electronics statistics from the editors about the use of the purchased resources) are collected through different techniques (i.e. extrapolating data from third part surveys, monitoring the log-in sections), nevertheless a comprehensive and defined evaluation strategy cannot be considered applied. This generate a lower consideration of the evaluation as a key step in the improvement of the digital library services allowing to think the evaluation as a less important activity and therefore avoidable if not strictly necessary; having a concrete and effective evaluation policy would provide the current evaluation activities with a more official cover; this will also proof to the staff and to the university that the library has a strong interest in the assessment of its services and it will to introduce develop new one.

At the library, the evaluation process is on responsibility of the head of planning & resources (Doctor Walton) who is also in charge of the quality of the services, the training of the staff, the marketing of the library and leading the administration team, which manages the finance and the library building. The responsibility concerning the evaluation activities are integrated with the planning and the resources which has been considered a positive attitude because it integrates the evaluation with other crucial activities of the library, but it has also a drawback since the evaluation is not mentioned as a standalone activity and the responsible is in charge of many other relevant activities.

A very positive attitude of the evaluation projects at the Loughborough University Library is the involvement of external staff. It is usually representative of the studied population (i.e. leader of the Students Union, Library Liason Officers) or/and professionals from other offices and departments (i.e. research office, department of Information Science). This approach is considered as a best practice because it brings new competencies, different approaches and understandings, and the possibility to establish profitable collaborations.

The evaluation process adopted at Loughborough University Library has been analyzed and organized in eight fundamental steps: set of the group, design of the project, pilot, data collection, data analysis, report writing, approval and dissemination. However this established process has some lack, which emerged during the analysis. These lacks heavily

compromise the results and potential benefits of the projects, it is therefore necessary to repair them. Some advisable recommendations are illustrated in the next chapter.

It was also noticed that no official standards or frameworks have been adopted for the last years (the last project adopting a standard was held in the 2004), so all the projects have been specifically designed according to the library requirements. The personalization of the evaluation is a recommended practice, but the use of standard is also crucial in order to assess the services according to shared parameters and other similar or different realities.

This finding is considered crucial, so it was added to the *Direction for future researches* chapter as an interesting field to be investigate further.

b. Establish which are the staff knowledge and competences about evaluation

A specific focus was given to the staff training and to their understanding of what evaluation is and which is its purpose (see *Definition of evaluation by the interviewees*, *Conceptual purpose of evaluation according to the interviewees* and *Training on evaluation by the interviewees* chapters).

Appraising the answers of the interviewees about their training history in the evaluation field, resulted in being evident the complete absence of training, indeed no one declared to have had an education or training in this subject (however some academic courses, personal readings and job trainings were mentioned), but almost everybody stressed the “evaluation skills” developed by themselves during the working years. This data proof that evaluation is deeply understood as a practical activity and therefore it does not require a formal education. This position can be due to the fact that nobody received an appropriate training on evaluation subject or to the lack of the literature to match the needs of practitioners. Indications for further studies are reported in the *Indication for further researches* chapter.

Concerning the general consideration of evaluation, the respondents have neither a common understanding of the term itself nor of its purpose. Analyzing the words used by the interviewees, it is confirmed that the term evaluation is broadly comprehended, but

sometimes misunderstood since some respondents used words like “measure” and “collect data” as synonyms of evaluation; the same situation happened discussing about its purpose when some generic sentences like “being more competitive” or “take decisions” were used. These in homogeneities and misunderstandings affect the efficiency of the project and therefore the evaluation of the services.

Another relevant outcome of the analysis is the detection of the gap existing between theory and practice; indeed all respondents overstressed that evaluation is mainly a practical activity and it does not involve theoretical works. As already stressed, this last point has huge implications related with the effectiveness of the literature to matches the practitioners needs and the role that it plays in the real-world activities; indication for further studies are reported in the next chapter.

c. Identify the problems, obstacles and barriers encountered by the staff

The problems encountered by the staff during the planning, development and conclusions of the projects were organized in seven categories: time constrains, resources, cooperation within the group, individual attitude, project planning, project management, and how implement actions from recommendations. Each category was analyzed and discussed individually (see *Problems* chapter), however some common aspects to all categories emerged. Despite the participants were a heterogeneous group (they differ in background, profession, and personal attitude), their answers were similar and even the same words were used (i.e. time, resources, management). This means that obstacles and barriers are not strictly depending on the job position or role, but they are generic and spread.

Looking at the identified categories, it results clear the obstacles are all very practical and related with the everyday activities and not connected with a defined project; this result confirms the existence of the gap between theory and practice, affecting the projects efficiency.

Moreover no one mentioned theoretical obstacles, which has been considered as a confirmation of the understanding of evaluation by the interviewees as a practical activity.

d. Explore what happen after the conclusion of the project

The steps concluding a project are the dissemination of the results and the taken action based on them.

Concerning the dissemination of the results the Loughborough University Library can be considered a best practice, in fact a clear institutional policy, shared by all the staff member, exists and includes producing articles, book chapters and conference papers based on the final report. This is extremely positive because it incentivizes the staff to conduct new project, to adopt scientific methods and to be rewarded for their job. This attitude is the opposite of the trend registered in the literature review, where there are more articles about evolution than reports about evaluation projects.

Regarding the action taken to turn the recommendation into profitable account, at the Loughborough University Library, the management group has the responsibility of turning the recommendations into actions, deciding which the necessary further activities are and also assigning them to the heads of the departments and individuals in charge of performing them. This process has been heavily criticized by the staff who complained about the long waiting before the management group deliver and about the complete lack of control over the required feedbacks and action taken. As previously stressed this heavily impact the possibility to turn in profitable accounts the results and recommendations of the projects, it is therefore crucial to solve them. Possible recommendations to overcome this issue are presented in the *Recommendation for the Loughborough University Library* chapter.

Another relevant observation regards the impact of an evaluation project on the everyday activities. In deed it was proofed that impacts can be brought at different stage of a project (during its planning, its development and also afterward) and can influence different items (project developers, future plan, activities). Identifying these differences resulted in being very fruitful because they proved the relevance of evaluation projects, which goes far beyond the specific service under evaluation.

● **Recommendation for the Loughborough University Library**

Based on the analysis reported in the previous chapters, the Loughborough University Library can be considered a best practice: it is a well working academic library, with special attention on users and their needs and with a good evaluation policy shared both by the head of the library and by the staff.

Nevertheless, some recommendations, inferred from the analysis of the collected data, are advisable.

Even though the evaluation culture is spread all over the library, there is no written documentation, therefore. Writing a manifesto, where it is reported why evaluation is so important, which is the library policy about it and how an evaluation should be done, should be distributed to the staff. Firstly it would help the staff to be aware about the importance of evaluation and would encourage them to promote new projects and take them into account in their everyday life; secondly a written programme would help the institution to develop and perform standardized projects.

A second recommendation concerns the procedure to turn the results and recommendation into profitable account. As described in the findings, the procedure has two main drawbacks: the lack of control on the staff that is in charge of making an improvements and the unreasonable time gap between when the report is written and when the needed actions are taken. Fixing the whole process in a new and more effective action flow, will allow overcoming both of them.

Another recommendation is the need to appraise the evaluation projects. After a project, the team should meet, discuss and produce a short report about what had worked well, what had not and what can be done further. This attitude is useful for the staff, because they are pushed to revise his/her behavior and for the institution, because it helps to build more effective project, avoiding previous mistakes and building up on the positive aspect.

A fourth recommendation is about the training. It has been noticed that the staff involved in the projects have very different job position, background and education, as previously

stressed this is a remarkable point because it adds value to the projects, but it has also been noticed that not all the staff received an training about evaluation. It would be important that all the participants have a common understanding of what evaluation is, which is its purpose and which are the methods. This can be achieved through professional training courses, or easier, by a recommended list of literature to be read before the project took off.

The last recommendation concerns the resource allocation. Due to lack of fundings, all the evaluation projects have no allocation resources; they are assigned to some staff members, but without specifying timeline and the amount of time that has to be dedicated, without assigning specific instruments and mainly, without rescheduling the other activities of the staff involved, with the result that it is squeezed between the other daily tasks.

The institution showed to be aware of the limits coming from this attitude, but no actions have been taken. Anyway it is extremely important to figure out how to, at least, allocate additional time to the staff to work properly on the projects: evaluation can not be just a task to squeeze between the other everyday activity because firstly because evaluation should be considered as a priority and profitable activity, secondly (and more practically) the results could be seriously compromised.

● **Direction for future researches**

As stressed during the whole research, evaluation is a key subject therefore it deserves to be explored deeply with additional studies going in different directions.

Concerning this study, most of the covered issues can be investigated further, therefore a list of indications for future researches is here reported.

First, this research could be considered a starting point for similar studies on other institutions, followed by a compare of the results, which will help to have a better understanding on how real-world digital libraries deal with evaluation.

A second interesting aspect to investigate is the methods and data collection techniques used by real-world digital libraries. This study, as clarified in the *Introduction* chapter, focused on the process of evaluation without analyzing the applied methodologies; it would be relevant to make studies on this subject, investigating for each one its pros and cons and stressing its limits and potentialities.

Other directions emerged more specifically from the discussion of the results.

The first one concerns the education and training of the staff about the evaluation. It would be relevant to analyze the academic curricula and check if evaluation is properly represented, how relevant its teaching is compare to other subjects and which are the topics tackled.

Another direction, emerged from the analysis of the problems encountered by the staff, is that additional and deeper studies would be required to identify and classify the main obstacles and barriers of an evaluation projects and figure out possible solutions.

Researches focusing on the transfer into actions of recommendations and results coming from the evaluation projects and others on the impact that these actions have on the specific digital library are also crucial. It is extremely important to stress how evaluation project helps to improve the services and often it also helps to save money, therefore studies proving the efficiency increment due to evaluation, surely would encourage institutions to finance them.

Further studies might also examine the use of literature by the staff in their everyday activities, as emerged, in fact the staff seems not considering recommendations and indications from the literature valuable for their job, therefore more specific data and reflections on this matter are crucial.

This attitude can be considered related with another broader subject: the existing gap between theory and practice. During the interviews this gap emerged several times, but it should be reduced as much as possible to guarantee the development and utilization of valuable standards and shared practices; so studies on this subject are required.

In the context of these lines of research, both quantitative and qualitative approaches should be considered, as each will offer its own advantages for best determining the investigated aspect.

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Appendix

a. Appendix A (Introductory mail)

Dear -----,

This is to introduce myself and the research you kindly agreed to take part. I am a student of the International master in Digital Library and Learning and I am attending the final semester which is dedicated to the dissertation. The topic deals with the evaluation of digital libraries.

Ultimately, by means of this case study approach, I hope to identify and document answers to such questions as: Is there a gap between evaluation theories and practice? How do digital libraries deal with the evaluation of their services in everyday life? What issues does the staff face?

Your cooperation is most essential and I wish to express my gratitude for your assistance. On this regards I confirm you that our interview session is set up on:

Again, thank you very much.
Best regards
CHiara

Before taking the interviews, the respondents were informed by an introductory mail about the research purpose, the interviewer background and a confirmation of the meeting. The aim of this first step was to clarify the research basic information and to receive their final confirmation of participating at the study, because the first request was sent them by the key informant, Doctor Walton.

b. Appendix B (Preliminary consent form)

INFORMED CONSENT:

“The evaluation process of digital libraries.
A case study at the Loughborough University Library”

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Project Description:

The aim of the study is to analyze the real life evaluation process of digital libraries. The focus will be neither on methods nor on data collection techniques, but on the (evaluation) process itself, from the project planning to the results utilization and taken devices.

Translating the aim into a research question, it will be:

- How do digital libraries deal with the evaluation of their services in everyday life?
- What happen before and after the evaluation is runned?
- Which are the problematics that staff encounters?

Procedure and Risks:

The interview will be recorded, if you are willing, and the tapes will be used to write the material.

Please feel free to say as much or as little as you want. You can decide not to answer any question, or to stop the interview any time you want.

The tapes and transcripts will become the property of project.

If you so choose, the recordings and recording-transcripts (or copy of notes taken) will be kept anonymous, without any reference to your identity, and your identity will be concealed in any reports written from the interviews.

There are no known risks associated with participation in the study.

Benefits:

It is hoped that the results of this study will benefit the community through providing greater insight into the real life activities concerning the evaluation of digital libraries.

Cost Compensation:

This interview is completely voluntary. Participation in this study will involve no costs or payments to you.

Confidentiality:

All information collected during the study period will be kept strictly confidential until such time as you sign a release waiver. No publications or reports from this project will include identifying information on any participant without your signed permission, and after your review of the materials. If you agree to join this study, please sign your name on the following page.

INFORMED CONSENT FOR INTERVIEWS

“The evaluation process of digital libraries.
A case study at the Loughborough University Library”

I, _____, agree to be interviewed for the project entitled _____ which is being produced by Chiara Consolmi of International master in Digital Library Learning (DILL).

I certify that I have been told of the confidentiality of information collected for this project and the possible anonymity of my participation; that I have been given satisfactory answers to my inquiries concerning project procedures and other matters; and that I have been advised that I am free to withdraw my consent and to discontinue participation in the project or activity at any time without prejudice.

I agree to participate in one or more electronically recorded interviews for this project. I understand that such interviews and related materials will be kept completely anonymous. If I require it, and that the results of this study may be published in an academic journal or book.

I agree that any information obtained from this research may be used in any way thought best for this study.

Signature of Interviewee

Date _____

If you cannot obtain satisfactory answers to your questions or have comments or complaints about your treatment in this study, contact:

Professor Anna Maria Tammaro
Università degli studi di Parma
Via Università 12, Parma
23100 Italy
annamaria.tammaro@unipr.it

Cc: signed copy to interview.

At the beginning of the interview, the research, the specific topic of the interview and the typologies of questions to be asked were described accurately followed by an explanation of the recording matter, the data proceeding and the approach to the confidentiality, then the respondent was asked to read and sign an informed consent form, provided in two copies (one for the respondent, one for the interviewer), reporting what had been explained at the introductory stage (see Appendix B).

c. Appendix C (Set of questions exemplar)

Interviewee: -----

Role:

Project:

Date:

Table shell:

	Questions	Data to be collected
1	Can you tell me something about you and your role at the LoUL? And background	- Personal infos about background - Position and every day activities
2	What do you think evaluation is? What is its purpose?	
3	During your studies or jobs, have you been trained about evaluation?	
4	Why have you been involved in this project? Which were your responsibilities?	- Role in the project - Responsibilities
5	Can you briefly sum up what was the project about?	- Confirm documentation infos
6	Why did you conduct this investigation? Which was the purpose?	- Purpose of the project
7	Can you list the steps that the team undertook to conduct the investigation from the very beginning to the conclusion?	Mention evalaution meeting, personal preparation (readings,...)
8	How long did it take?	
9	Which are the problematics that you encountered conducting the research? Any kind.	- personal attitude
10	Which value do you think the project added to the Library? How did it contribute to the improvement of the Library?	- personal attitude
11	In the final report you listed some recommendation. Which action did you make to put them into practice?	- personal attitude
12	Do you think the Library gave enogh attention to the project in terms of resources and relevance in action taking? Is there anything you would like to add?	- personal attitude

The interviews were semi-structured: a table shell, with a set of questions and key points to be covered, had been prepared for each intervieuws according to a set of parameters.

d. Appendix D (Final consent form)

FINAL CONSENT FORM

“The evaluation process of digital libraries. A case study at the Loughborough University Library”

Dear Participant:

This form gives the final authorization to use material from your interview. A draft of these materials has been presented to you for your review, correction, or modification. You may grant use rights for this draft “as is,” or with the modifications you specify, if any.

I, _____, hereby grant the right to use information from recordings and or notes taken in interviews of me, to Chiara Consonni, and as presented to me as a draft copy. I understand that the interview records will be kept by the interviewer and the project, and that the information contained in the interviews may be used in materials to be made available to the general public.

_____ By initialing here, I also agree to be identified by name in the project and related materials.

Signature of Interviewee

Date: _____

Dear ----,

I want to thank you again for taking time to meet me last week to discuss the project "Use of Web 2.0 tools by students at the Loughborough University". I was very impressed with your extensive work.

Enclosed you can find the record of our conversation (I had to split it into two emails because it was too big) and the final informed consent form. Feel free to communicate changes and erasures.

If you need any more information please do not hesitate to contact me.

Looking forward to hearing from you soon.

Best regards.

CHiara

From seven to ten days after the interviews, a thanking mail, enclosing the audio record and the final consent form, was sent to each interviewee.