

Defining the Boundaries of an Italian Systems Librarianship: Library Managers and System Managers of an Automated Library System

Case study

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1. Introduction

Systems librarianship has become a field of interest for professional literature from the late 1980s and until current days many authors have continued to investigate the roles, competencies and related issues of the systems librarians' position within their organisation and library environments.

This branch of literature has been reviewed by the researcher¹ with the main purposes to cover the topic at an international level and define the limits of the debate.

From that investigation, major themes could be narrowed as follows:

- systems librarian's position is one of the few direct organisational effects which can be attributed to the introduction of information technology in libraries
- professional role of systems librarians is under the pressure of a continuing re-definition due to the rapid development of library related technology
- roles, competencies and status of systems librarians are strictly dependent from the type, size and geographical site of the libraries in which these professionals work
- educational backgrounds of systems librarians are different, often joining previous knowledge in traditional librarianship fields with skills in computing acquired by "accidental" thanks to the new committed role
- LIS schools are trying to develop adequate curricula not only to sustain these professionals in their information needs in a context of lifelong learning, but also to allow new library workers to enter the profession

The same investigation has revealed the great limit to be specifically related to experiences and debates proposed in the literature from authors of Anglophone countries (UK, USA, Canada and Australia). An attempt to investigate the European context with particular attention to the Italian one has to be made in the light of the consideration that library automation systems at the current times are well spread all over the world with same characteristics and features.

Focussing on the Italian context, major themes retrieved are:

- systems librarianship is a practice never covered by the professional literature
- systems librarian's position is perceived both as a lack and a need by a few authors who anyway do not provide any definition of competencies, roles or duties
- roles and competencies related to a systems librarian position and expertise are probably hidden within or shared among different departments of the institutions in which libraries reside
- LIS schools are trying to develop appropriate curricula to provide new library professionals with the basic equipment in computing to face the issues of library related technology
- LIS schools and library organisations are taking into great consideration the necessity to develop programmes to assist library workers in their needs of continuing education

¹ The researcher is referring to "The systems librarian: a literature review", BP100 assignment for International Master in Information Studies by distance to which the present research proposal relates to.

2. Purpose of the study

The main purpose of this research is to assess the effective existence of systems librarians' expertise in Italian library organisations in the light of the fact that professional literature has never considered the topic in depth. In an increasingly automated environments linking globally the information world, the researcher intends to focus her study on the need to investigate the field of systems librarianship as a key issue for successful implementation of library related technologies.

For these reasons, the searcher states the following aims and objectives.

2.1 Aims

- to enhance library automation services through the development of systems librarians' professional expertise
- to suggest LIS schools possible areas of intervention for designing educational curricula and course programmes for continuing professional education

2.2 Objectives

Thanks to an investigation focussed on library staff dedicated to ALEPH library integrated system through Italian sites, the searcher has set her objectives:

- to assess competencies and duties of professionals involved with the maintenance of a library automated system; and as consequence
- to assess skills and abilities related to the position
- to verify their backgrounds in terms both of educational qualifications and previous work experiences

2.3 Research questions

Research questions leading the study and focussing on library workers dedicated to manage a library automated system have been identified as follows:

- What are the distinctive professional characteristics of these specialists?
- What do they exactly do at work?
- How have they arrived to fill that position
- Do they have a suitable educational background?

3. Background

3.1 Literature review

From reviewing the professional literature on the topic, different issues are emerged. Following are the major themes retrieved for the purpose of this research.

3.1.1 About literature on systems librarianship

Until today systems librarianship seems to be of unique interest of Anglo-American authors, who are in the most of the cases systems librarians themselves. The reasons for this geographical limitation is probably due both to the awareness of the growing importance of information workers and to the need to defend competencies and abilities gained during the times thanks to the “invasion” of technologies in the library world, in particular of library automation systems. For this latter reason, it has to be considered that it conveys issues concerning with job security and career developments, since some authors envisage the end of information library systems (ILS). Historical reasons linked to the adoption in their primitive age of such technologies also help to understand how and why we need to refer to foreign literature to investigate the systems librarianship, but they are not enough explicative to understand why in European countries, including Italy, a similar debate on the topic has not yet developed.

3.1.2 Identified trends in systems librarianship

Currently, two main trends have been identified among authors who has devoted their attention to systems librarianship.

The first, the last in a chronological order, is engaged by Wilson (1998) whose work represents the attractive to give an objective foundation to systems librarianship through a variety of approaches to defining it. His description of systems librarianship is holistic, based on a theoretical approach. The framework he provides is reinforced by several contributions of authors who in the early 1990s had debated the role of systems librarians in the light of the rapid pace of library technologies. His book arrives at the end of a relatively short but intensive process of library automation and development of library related technologies, when Anglo-American systems librarians have joined a more proactive role than a reactive one. The second trend, and the first in a chronological order, is identified by those authors who have investigated the systems librarians’ position when it was only a matter relegated in footnotes of library automation manuals (Muirhead, 1994a). Their approaches to systems librarianship were empirical, based on surveys conducted through questionnaires distributed to libraries and to librarians (Muirhead, 1993, 1994a, 1994b, 1994d; Epstein, 1993; Hatcher, 1995) or through analysis of systems librarians’ salaries and job advertisements (Budd, 1990; Long, 1997): for most of them the principal aims were to identify roles and competencies of systems librarians in relation to their status and prospect for career developments. Recently this trend has developed an interest for aspects inherent the education of systems librarians, in particular for those educational backgrounds gained before accessing the position (Foote, 1997; Dorrian, 1998; Xu and Chen, 1999, 2000, 2001; Rhyno, 2003). The aims of these authors were to identify gaps in academic education and in continuing education to stimulate LIS schools and professional organisations to provide this breed of library specialists with adequate curricula and programmes (see in particular Chavez-Villa and Perezrul, 2003).

3.1.3 Systems librarian: a definition

In reviewing the literature, the searcher has verified that the systems librarian profile is identifiable not for her/his job title but uniquely for the contents of duties s/he performs according to the library organisation commitment. These seem variables strictly dependent from the type and size of the institutions and from the purpose of their information service to think globally (Lavagnino, 1997). A wide range of competencies in which a systems librarian could be involved has been provided from Wilson (1998): it seems more a framework for possible spheres of action than a real and existing profile, since he defines a professional enjoying an high status, provided with a large spectrum of skills and competencies, and with an high degree of influence in library organisation and towards all its stakeholders.

3.2 Definitions of the terms

Many Anglo-American authors have stressed the fact that competencies, skills and roles pertaining to systems librarians' positions can be labelled with different job titles (automation librarian, systems administrator; systems manager, etc).

The *systems librarian* is meant to be a person with primary responsibility for one or more computer-based library systems (Long, 1997).

For the purpose of this work the focus is on the content of the job and related issues as defined with the research questions, and it is assumed in general terms that *systems librarians* “are specialists whose principal responsibility is the management of automated library systems. The term is used to embrace a variety of job designation [...] and it does not exclude those who have additional line or other responsibilities” (Muirhead, 1994b)².

The definition of such a term is an important step to start and conduct the research. This definition is broad and for this reason it allows to investigate the selected population without misunderstandings. The searcher intends to derive a rich picture of the real situation and stratification of duties of library professionals devoted to the management of library automated system in the context defined below in the fieldwork.

² The same Muirhead has conceived his book (Muirhead, 1994b) for “systems librarians and library systems managers”.

3.3 Fieldwork of the study

The research will investigate the professionals involved with the management of ALEPH integrated system, a commercial product available on the Italian market from the early 1990s and well spread all over the world from the late 1980s. From the mid-1990s this turn-keys system has developed the features of the third generation library systems, and in particular including the full UNIMARC format for entering and exchanging cataloguing data. At the current date, ALEPH is installed in 57 settings (representative of 1000 libraries), most of all university libraries, but public libraries, documentation centres and special libraries are represented as well³.

From the point of view of prerequisites defined from the system distributor before the installation of the product, it has to remind that library organisations are asked to identify specialists who should have been provided with special responsibilities and duties. In particular the vendor asks for a definition of two technical professional expertise, the *library manager* and the *system manager*. They are both involved in a range of operations and they receive technical know-how during appropriate training sessions delivered by the vendor's employees. Here the vendor's definitions:

- *Library manager*: s/he is primary involved in the customisation of the system following the training sessions delivered by the vendors. Her/his full-time duties concern with the maintenance of the "public" view of the system both for users (librarians involved in the use of the systems for their branch of expertise) and end-users (the library OPAC on the Web). S/he is also expected to deliver communication to librarians concerning systems developments and co-ordination among different parties involved with the system use. For the system vendor s/he constitutes the only point of contact with the library organisation by whom requests for support and system developments have to be filtered. For the vendor it has no relevance from which background this professional comes from, she could be a pure "librarians" or a computer specialist.
- *System manager*: s/he is primary involved in the maintenance of the system such as back-up and disk-saving operations, in re-sizing the server hosting the system, automatic running batch processes, adapting peripherals. S/he also receives on-the-job training from the vendor, but this type of training sessions are shorter than those for library managers since system managers normally should own a wide range of knowledge and skills in computing maintenance. In fact for this expertise the vendor asks for professionals skilled in SQL language and Oracle tools. Her/his role is conceived as being of support to library manager's responsibilities. Normally s/he devotes only a part of her/his work time to the library automated system and reports to the computer department of the institution.

Since these two labels are meaningful only in the vendor environment and jargon defined for his internal and standard operations as being Vision 2000 awarded, at the current time it is unknown by which official job titles these two professionals are identified within their library organisations, at what level they are enrolled, which are their status and so on. Furthermore it is not unusual the case in which both the specialisations are covered at the same time from a one sole person.

³ For more information about the Italian vendor/distributor see at URL: www.exl-it.com .For the producer see at URL: www.exlibrisgroup.com (last visited both 20/09/2004).

4. Gaining access

In the investigations a problem could be constituted by the access and authorisation to conduct the research and these issues have to be considered at the very beginning of the process (German and Clayton, 1997). This is particular true for the characteristic of the setting where this research will take place and strategies have to be considered to avoid a low rate of participation due to any type of suspicion towards the researcher. The research design should consider in depth this issue.

The proposer is not a well experienced researcher. She is an employee covering the position of systems analyst and trainer for the Italian distributor of ALEPH500 library integrated system. As systems analyst within the staff of the local distributor, she deals with the customers in problem solving and running the system with appropriate customisation and with the producer to keep the best knowledge on the more and more complex understanding of the system itself. As a trainer, she is involved in the library staff training on the system, in delivery appropriate documentation, in transferring know-how for the best practices. From the perspective of the library organisations and their staff she is perceived an “extraneous” and “commercial” stakeholder in the process of the introduction of the IT system.

Communication

Since the research will take place in a context of relationship between vendor and customers even if conducted for purposes of personal study, it is important to establish good communications to provide the best neutral setting.

➤ Ongoing communications

Ongoing communications will be provided at each relevant stage of the research process to avoid suspicion towards the real end-purposes of the research, they will concern: a brief summary of the literature reviewed, aims and objectives of the research, research design and instruments for collecting data. At the end of the work results will be available in electronic format for participants who have given their adhesion to the study, since researchers owe something to people who contribute to the information they collect. Anonymity and privacy will be assured.

➤ Researcher’s employers

The proposer has informed her principals and gained the informal authorisation to conduct the research. She will not be provided with any type of resource from her enterprise.

➤ Institutions

Library institutions will be informed trough their directors that for reasons of personal study the searcher will conduct a survey among the population defined. For reasons of security, references to verify the truth of the communications will be provided along with the time needed from respondents to participate to the research process.

➤ Participants

Before starting the research, participants will be informed of the research project that aims to investigate the systems librarian’s job contents for reasons of personal interest of the searcher. A high degree of consensus is expected since a lot of ALEPH library and system managers

have already expressed informally their intention to adhere. They find of particular interest the topic at the current never covered by the Italian professional literature.

5. Methodology

This section discusses the choice of the method and techniques adopted to conduct the research in the light of the issues until now identified, in particular aims and objectives stated, previous similar investigations on the same topic, fieldwork to explore and personal constraints of the searcher (Moore, 2000).

5.1 The case study approach

For the purpose of this work a case study approach will be adopted to explore a single entity or phenomenon bounded by time and activity and to collect detailed information by using a variety of data collection procedures during a sustained period of time (Creswell, 2003). In particular Yin (2002) puts on evidence how the case study is involved with the investigation of a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident. Furthermore the case study approach is particularly appropriate for individual researchers because it gives an opportunity for one aspect of a problem to be studied in some depth within a limited time scale (Bell, 1993).

The proposed research project intends to investigate the professional environment and sphere of competency of those library workers involved with the management and maintenance of ALEPH500 library integrated system through Italian sites. Data will be collected from different sources in order to assess and understand the systems librarians' position within their library organisation.

Case study is normally associated with qualitative method of research, but it should not be confused with qualitative research, since case studies can be based on any mix of quantitative and qualitative evidence and, in addition, they need not always include direct, detailed observations as a source of evidence.

Qualitative research is exploratory and is useful when the researcher does not know the important variables to examine. This type of approach may be needed because the topic is new, the topic has never been addressed with a certain sample or group of people, or existing theories do not apply with the particular sample or group under study (Creswell, 2003).

Rowell (2004) stresses the importance to introduce "qualitative" approaches to researchers that LIS professionals can use to structure the way in which they look at the environment, and organisations with which they are working. Among those approaches, case study is useful to seek to understand a situation.

Anglo-American professional literature has investigated the role of systems librarian through surveys whose approach was mainly quantitative, focussed on the extent to define the major issues involved with the competencies, duties and education of this professional expertise.

This study aims to propose a different research design trying to provide a picture of the context where such type of Italian professional has cultivated her/his main characteristics. In the whole process, research questions set at the beginning of the proposal will lead the investigation through the different steps and they will constitute the basis for the development of this study.

5.2 Triangulation

One of the great strengths of case studies as compared to other research methods is that evidence can be collected from multiple sources. Triangulation uses evidence from different source to corroborate the same fact or finding (Creswell, 2003; Rowley, 2004).

Since many authors (see in particular Securest and Sidney, 1995; Yin 2002) stress the need to employ a mix of quantitative and qualitative methods in order to increase the reliability and validity of the results, the searcher will use triangulation to probe and find a confirm of data and findings collected from different sources and with different techniques about the topic of system librarianship addressing various aspects of the same research questions.

The specific methods and techniques to collect data are described below.

5.3 Resources available

Research is a time consuming process especially if it embraces a qualitative approach including interviews. This inexperienced researcher has to pay attention to resources at her disposal and environmental constraints to keep the study manageable and realistic

➤ Time and space

The prepares will conduct the research in her free time as being a full-time worker for a private enterprise busied with the library sector who doesn't sponsor the study. For the purpose of this work, she is anyway interested to reach the population spread all over Italy. She has also to pay attention to satisfy respondents' needs and do not waste their time but at the same time to capture their interest.

➤ Money

The study has been not committed from any parts and conducted for personal continuing education. At the current the searcher has what it needs: a portable PC, an e-mail account, and a tape recorder.

➤ Respondents

Their disposability is the main resource of this research. A great disadvantage is constituted by the fact they're spread in all the Italian country, and for this reason it is no simple to have a face to face contact. Fortunately the searcher is used to communicate with them by e-mail for reasons linked to her job duties. Even if the work has no received any commitment and communication to library organisations have not yet sent, informally contacted the respondents have demonstrated their enthusiastic appreciation for the research sometime suggesting their expected and desired outcomes.

5.4 Population

For the purpose of this research, data will be gathered from a population constituted by those people involved with the distribution, administration, maintenance and handling of ALEPH500 library automated system in a broader meaning. Following groups have been identified:

➤ Librarians: *library managers* and *systems managers*

In the phase of data collection no distinction between *library managers* and *systems manager*⁴ will be made, since it is a distinction derived and imposed by the vendor to define people with special duties towards the automated system and not provided at institutional level by library organisations who could have decided for other job titles and for further distinctions of competencies among those professionals. A self-evaluation questionnaire will be administered to them and recollected by e-mail. The proposer is able to identify and reach by e-mail every potential respondent.

➤ Employer institutions

A sample needs to be defined among library directors and library system services' co-ordinators to offer to this research the perspective of the employer institutions that have adopted ALEPH500 as their library automated systems. The sample has to be carefully selected in the light of its representatives according with the degree of technological development of library institutions, their impact on the territory, the professional backgrounds of directors and/or co-ordinators, their availability and desire of co-operation to the research. It is intended to be a *purposive sample* (German and Clayton, 1997) and it be constituted by no more than three people and the proposer will collect data from them by interviews.

➤ System vendor

The proposer intends to conduct a focus group with her colleagues to derive the perspective of the system vendor on the topic of this study. The group will be composed by five people with different expertise and sphere of competencies within the company. Three of them are responsible for the main activities of the ALEPH500 Italian distributor, which are: research and development, installation and migration of systems settings, customer assistance and system training. Remaining two people cover the same level position of the searcher within the company, in particular: one is devoted in training on the system applications and related problem solving, the second is involved with system installation and related issues. At the moment the proposer is not sure to include in the group her principals since it is very difficult to gain their time and because the three identified responsables plus the two employers own such competencies to consider the group "exhaustive" and representative of the company's policy. In fact, they have all a continuous contact with library workers under investigation, two of responsables have more than 10 years of experience in the company, and they are completely committed from principals for operational and technical aspects of the system delivery. All members of the groups are well experienced in data migration and concerning issues.

5.5 Characteristic of the research and settings

The study will be made up from an inexperienced researcher suffering from constraints of time and space. For these reasons she'll try to keep the study focused and not dispersed. An important issue to consider is the neutrality of the site. From the respondents' point of view (librarians and employer institutions), the searcher is an external person normally involved in commercial relationship with their institutions. This could constitute a preconception even if in the most of cases the searcher has previously made participants' acquaintance during training sessions on the system. However, it is expected that the topic of the research can be perceived as a mean to develop the interest and adhesion of the respondents to the survey.

⁴ See the subsection 3.3 of this research proposal: Fieldwork of the study.

A flexibility of approach in changing plans after the first phase of the research should be considered according to the results of the focus group.

5.6 Data collection techniques

Choosing an appropriate data collection technique or set of techniques is the most important activity when developing a research plan. The proposer has to return to research question formulation in order to match these research questions with the most useful data-gathering techniques (Gorman and Clayton, 1997). The approach mainly qualitative of this research project implies the use of multiple methods that are interactive and humanistic. The researcher looks for involvement of participants in data collection and seeks to build rapport and credibility with the individuals in the study (Creswell, 2003).

For the purpose of this case study three data gathering techniques have been chosen: focus group, interviews and questionnaires. A literature review and analysis of documentary evidence are considered important steps to be taken before starting the data collection process.

5.6.1 Literature review

As previously referred, many Anglo-American authors have described the system librarian's roles and competencies through surveys and other research techniques. The proposer intends to conduct a new and in depth literature review in order to find out major works relevant for her research questions. Tools and techniques adopted from those authors will constitute a framework for a reflective practice on the method chosen for this research and will be relevant for the design of the instruments of data collection.

5.6.2 Documentary evidence analysis

An analysis of documentary evidence is likely to be relevant to every case study topic (Yin, 2003), and for this work it will be conducted in particular through the examination of messages posted to different mailing lists subscribed by the searcher, they are: ITALE (Italian Aleph Users Group), NAUG (North-American Aleph User Group), AUTOCAT (Library Cataloguing and Authorities Discussion Group) and SYSLIB-L (Systems Librarians Discussion Group)⁵. Special attention will be devoted to the examination of job advertisements for systems librarian's position posted during the years to AUTOCAT and SYSLIB-L mailing list. This process should be helpful in providing major themes concerning definition of roles, duties and educational background of systems librarian as really perceived in the Anglo-American library world from their major actors and in providing terms and wording for this particular branch of technical language.

⁵ ITALE is hosted by University of Udine, NAUG is hosted by MIT/Boston; AUTOCAT and SYSLIB-L are both hosted by University of Buffalo, The State University of New York.

5.6.3 Focus group interviews

This recently developed technique (Gorman and Clayton, 1997) has often been used as a preliminary stage preceding a survey and provides a good example of one way in which qualitative and quantitative approaches can complement each other. The focus group will be used with researcher's colleagues in order to collect background data, knowledge, perceptions about the definition of the ideal systems librarian expertise from the vendor's perspective. Focus group will be used also to obtain basic information to start the research process, to define guidelines for the following interviews and design the self-evaluation questionnaire structure. At this stage of the study process, the proposer has to pay attention to assess the definition of systems librarian's competencies in general terms, since the local distributor and his employees could be biased in providing their definition by the distinction of roles of the *library manager* and *system manager* that the same vendor has imposed to his customers⁶. Since very few topics can be covered in a focus group (Moore, 2000), a guideline will be distributed to participants in order to focus their attention on specific and narrowed themes. The discussion will be recorded and notes will be taken during it.

5.6.4 Interviews

Interviewing is one of the prevailing forms of data collection technique associated with qualitative research method. The interviews involved unstructured and generally open-ended questions that are few in number and intended to elicit views and opinions from the participants (Creswell, 2003). By the mean of this technique the searcher aims to collect data from the point of view of employer institutions – in the person of their library directors and/or library automation co-ordinators - trying to derive major themes and problems related to skills and abilities that library institutions own among their workers or should own to get the best performance from running a library automated system as ALEPH500.

From this face-to-face process it is expected to collect opinions and points of views different from the researcher's one, for this purpose particular attention will be devoted to avoid any type of bias or interference's due in particular to the position of the researcher who is also a "stakeholder" in the process of the library automation. A semi-structured interviews will be chosen: they are the best used "to collect both structured information and information about attitudes, beliefs and values" (Moore, 2000). In this way the researcher attempts to fix and control the circumstances of the interview so that the data are collected in as consistent a fashion as possible allowing at the same time a sort of flexibility and responsiveness typical of an in-depth-interview. In fact two important issues have to be considered for this interview process, the first is that informants will be reached at their own sites spread in different Regions of Italy, the second is that the way of automation process and the degree of implementation and expectations from it could be different for each installation, depending on

⁶ see section 3.3 Fieldwork of the study

different environmental factors. An initial description of the research project, of its context and of its aims will be followed by a session with basic open questions giving a path for suitable eliciting respondent's own views on the role of the systems librarian. Once again special attention will be posed on the wording to avoid any misunderstanding, in particular on the terms *system manager* and *library manager* as imposed by the vendor.

Informants will be asked for the permission to recorder the interviews; in any case consistent notes taking will allow fixing major issues. Criteria for their selection is exposed above (see section 5.3 Population).

5.6.5 Questionnaire

As Moore (2000) describes:

“Self-completion questionnaires are very popular with researchers. They are relatively easy to administer. They are flexible in that they can be used to collect a wide range of data in a variety of different circumstances. And they are relatively cheap”

For the purpose of this work, the questionnaire is the selected tool to collect quantitative data in the last phase of this process. It will be administered to all ALEPH *system manager* and *library manager* without any type of distinction to gather data in order to meet the research questions, design the context in which those professionals deliver their duties, to define a profile of the Italian systems librarianship. Since questionnaires surveys have been the preferred tool of Anglo-American authors to investigate the role of systems librarians in their countries, this technique is expected also to provide consistent data to make a comparison between Italian state of the art of the practice and that emerged by reviewing the foreign professional literature.

An appropriate design for a self-evaluation questionnaire will be provided in the light of the following elements:

➤ Literature review

The Anglo-American literature has investigated the role of the systems librarians with surveys conducted through questionnaires. They will be kept in depth consideration with particular attention to that delivered from Muirhead (1994b)

➤ Information gathered with previous techniques

Themes of particular relevance arisen during focus group and interviews will be considered for the questionnaire construction in order to assess the major issues emerged

➤ Length

Authors are agree in the statement that the longer the questionnaire is, the less likely people are to complete it. In the covering letter respondents will inform how long they will have to spend for the completion. The searcher will ask to library institution in the person of their directors and/or co-ordinators the permission for the surveyed personnel to complete the questionnaire in their working time

➤ Questions

Closed questions are chosen for the most part of the questionnaire since they are easier to handle for both respondents and searcher. Informants will be required to answer by choosing

between a limited number of answers reducing in this way the change that respondents will give an ambiguous answer. For this reason wording and technical terms to use will have to be carefully considered. A very small number of open questions will be used for answers requiring narrative responses

➤ Anonymity

It is highly desirable for the searcher to know the respondent of each questionnaire. However for the success of the project it is important to promise and maintain anonymity

➤ Covering letter

The covering letter is a crucial step to obtain consensus for a high response rate. It will be sent in advance to all respondents before administering the questionnaire. By it the researcher will explain the purpose of such investigation, the scope and the possible benefit of the study, the time taken to complete the questionnaire and assert the total liberty to participate. Since the nature of the searcher, special attention will be dedicated to ensure that the collected data are free of any implication and for this reason means to maintain anonymity will be created. References to probe the nature of personal study will also be provided

➤ Delivery method

Since respondents are spread all over the national territory, the questionnaire will be delivered by e-mail. Respondents could return it by e-mail or by mail to the home address of the searcher

5.6.6 Piloting

The final step concerning the preparation for data collections is the conduct of a pilot case study in order to refine data collection plans with respect to both the content of the data and the procedures to be followed (Yin, 2002). For the purpose of this research a piloting phase for each technique will be provided. In particular:

➤ Focus group

In order to conduct the focus group with any doubts about the approach it will be highly desirable to undertake a pilot discussion with a group not included in the research. Since the specificity of the topic and people involved it results in a difficult step. For this reason informal conversations will be kept with the members of the group during the lunch time and breaks before the focus group event in order to derive a general picture in which leading the discussion

➤ Interviews

Since interviewing is a structured activity and not just a chat where the interviewer should talk as little as possible and concentrate on listening (Crawford, 2000), the searcher will have previous informal interviews by telephone with people responsible for library automation systems. The searcher aims to conduct the pilot interviews with people dedicated to systems other than ALEPH, for example SBN. Thanks to their availability, the searcher will have also the opportunity to assess the main issues concerning professional expertise involvement in running a library automation system well spread in Italy based on a different technological architecture

➤ Questionnaire

The researcher will submit the instrument to her dissertation supervisor and to a few number of potential respondents to avoid problems such as poor choice of terminology and varying interpretations of the questions due to ambiguous or misleading wording or simply the different viewpoints of respondents. One of these potential users is a professional involved for many years with the maintenance of ALEPH and now covering another position in a different organisation.

5.7 Validity and reliability

Reliability refers to the consistency of answers when phenomena are studied repeatedly, and validity pertains to the truth, or credibility, of the picture that emerges from an investigation (German and Clayton, 1997).

Since the study case approach chosen for this research will use a mix of qualitative and quantitative techniques, a series of steps have to be considered to check the validity of both the quantitative data and the accuracy of the qualitative findings.

For the quantitative stage, validity should be assured by the content of the questionnaire instrument based on previous surveys on the similar topic in the Anglo-American literature. Consistency is also expected by the possibility to replicate the same survey instrument in other context, that is for example to those professionals involved in the maintenance of library automated systems other than ALEPH500. Piloting the research tool should assure internal validity.

Triangulation of sources expected by the same adoption of mixed methods is the most spread technique to assure credibility and confirmability to qualitative data gathered (Gorman and Clayton, 1997). Furthermore detailed descriptions of results, confirmations of findings with participants and consistent note taking should assure transferability to research.

5.8 Strengths and weaknesses of the method

In order to conduct the research project, the searcher has to know in advance any possible type of advantages and limitation of the chosen method.

➤ Advantages

The main advantage of the case study methodology is an depth exploration of a topic, the possibility to derive knowledge of a phenomenon from an intensive investigation of a specific instance or case. Libraries are service organisation involving social realities and individuals who work within these realities; they are places rich in meaning created by these individuals, and in which group and individual behaviour is an important factor (Gorman and Clayton, 1997). While the case study approach may be complex because it involves multiple sources of data and produces large amount of data for analysis, the advantages of the case study method are its applicability to real-life, contemporary, human situations allowing an understanding of the context and of its many issues.

➤ Limitations

A frequent criticism of case study methodology is that it conveys the attention on a localised study, by which any generalisation is not possible (Hamel *et al.*, 1993; Yin, 2002). Furthermore potential subjectivity of data collection and analysis have to be considered as a possible limitation to generalisation of findings. This risk has to be taken under control in consideration also of the nature of the proposer who could not be perceived by respondents as a neutral researcher toward the reality is trying to investigate. To avoid any bias and preconception, neutrality and objectivity will be declared at any fundamental step of data collection process.

5.9 Ethical issues

During this research proposal, the searcher has put on evidence her position towards the possible respondents and has tried to made up a research project considering this issue. It is

important to underline that the proposer has responsibility towards all the participants who may give highly personal information or information which could compromise themselves or the organisation for which they work. For this reason mutual trust and respect are required. Therefore confidentiality will be assured to respondents as a concealment of their individual identity giving them pseudonyms and making sure that the setting is not identifiable (Gorman and Clayton, 1997), and no one for no reason will be openly named.

6. Suggested analysis

Case studies generate a great deal of data that need to be analysed sufficiently and with appropriate techniques in order to be useful and readable. Analysis will begin early and is ongoing with the use of a constant comparative method since “no stage is really left behind completely until the end report has been written” (German and Clayton, 1997).

For the purpose of this study the searcher will adopt an inductive data analysis. She will organise the report of procedures into qualitative data collection and qualitative data analysis followed by quantitative data and collection analysis. In the conclusion of this process, the researcher will comment on how the qualitative findings helped to extend the quantitative findings.

➤ Qualitative data analysis and organisation

Qualitative data analysis is an ongoing process involving continual reflection about the data, asking a systematic review of the findings and an open mind on their interpretation. Data analysis began as soon as the answers were received, organised and translated from Italian into English. After the data process (sorting and organising), the interpretation phase will take place considering different steps (Creswell, 2003):

- obtaining a general sense of the information and to reflect on its overall meaning
- coding, that is the process of organising the material into “chunks”
- generating a small number of themes or categories
- defining a representation of data
- providing an interpretation and meaning of the data

➤ Quantitative data analysis

The task will be of converting data into information. From the preliminary literature review a chart of issues emerging will be designed and categories drawn. They will be implemented with the ratios deriving from the questionnaire results analysis in consideration also of the non-respondents rate. Tables and graphics as consequence will be made up to handle better the findings and to derive a framework where comparisons with findings of Anglo-American surveys and documentary evidence are able to be significant. Furthermore this will constitute also the basis for exploring the data collected, their relationship, the evidence of the context that this work aims to emphasise.

➤ Integration of the quantitative results and qualitative findings

This is a process that occurs at several stages in the development of the research, but in particular during the end discussion the researcher will highlight the quantitative results and the complexities that surfaced from the qualitative results.

7. Planning

Every stage of this research project has been evaluated having also considered possible problems arising from the delay of the steps of the process. Three stages are identifiable:

- Preliminary activities stage
 - the submission of the dissertation proposal to the tutors
 - gaining consensus from tutors and defining suitable ways of communication with them

- Implementation stage
 - designing and piloting the focus group
 - designing and piloting the interview
 - designing and piloting the questionnaire
 - selecting the purposive sample for interviews
 - delivering of communications to inform that the research is starting, asking for consensus, delivering of the cover letters
 - conducting the focus group
 - conducting interviews
 - questionnaire administration

- Desk research stage (occurring all the time)
 - literature analysis about the topic and the methodology
 - recording and analysis of qualitative data: focus group and interviews
 - recording and analysis of quantitative data: questionnaires
 - integration of the results
 - writing the reports in all its component parts
 - preparation and submission of the end report
 - unforeseen events

A project timetable as follows

Research timetable

Activities	Oct. 1-15	Oct. 16-31	Nov. 1-15	Nov. 16-30	Dec. 1-15	Dec. 16-31	Jan. 1-15	Jan. 16-31	Feb. 1-14	Feb. 15-28
Preliminary activities										
Research proposal submission	X									
Communications with tutors	X	X								
Implementation										
Communications to respondents and institutions	X									
Focus group: design, piloting, delivery	X	X								
Defining the purposive sample for interviews		X								
Interview: design, piloting and delivery		X	X							
Covering letter delivery			X							
Questionnaire: design, piloting, submission to tutors				X						
Questionnaire administration and collection					X	X				
Focus group and interview analysis		X	X							
Desk research										
Reviewing literature	X	X	X	X	X	X				
Analysis and recording qualitative data					X	X				
Analysis and recording quantitative data						X	X			
Integration of results								X	X	
Report writing		X	X	X	X	X	X	X	X	
Preparation and submission of the end report								X	X	X
Unforeseen events						X	X	X		X

8. Anticipated outcomes

This research aims to investigate the boundaries of the Italian systems librarianship through an investigation of roles and attitudes of people involved with the management of a particularly library automated system. It founds its basis on similar and broader investigations conducted in Anglo-American library environments and finally it would verify if there are the conditions at the current days to debate properly about the system librarians professional as a specialisation within Italian library environment.

Since the topic has been never covered in the national professional literature, both positive and negative results are expected towards the prospected aims. Anyway some issues are expected in term of benefits, because if well conducted this research could highlight:

- the awareness of a breed of professionals primary involved in the work process of library organisations
- the possible path for further career development of systems librarians
- the possible path for filling in the gap with knowledge and skills at the current never considered before for those who are interested to access systems librarian's position
- the need for library institutions to enrol professional provided with particular competencies and for this reason to provide their employers with appropriate continuing education programmes

A evaluation stage of the whole process will be conducted at the end of the research in order to meet strengths and weakness of the work and suggestions for future improvements.

Dissemination of results will be ensured among those who are interested, in particular to surveys participants if they have previously expressed their consensus to obtain them. Any information will be disseminate in order to respect the privacy of the respondents and that of their institutions.

The proposer is aware that this study will be conducted in restrict field, that is ALEPH500 library system environment. For this reason she would like to recommend further investigations on the same topic relating other library system settings.

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