

**THE MANAGEMENT AND ROLE OF
LIBRARY E-PRESENCE:
A STUDY INTO BRITISH ACADEMIC
LIBRARY WEB SITES.**

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THE MANAGEMENT AND ROLE OF
LIBRARY E-PRESENCE:
A STUDY INTO BRITISH ACADEMIC
LIBRARY WEB SITES.

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Declaration

This is a declaration to state that this thesis is the candidate's own work and has not been previously published or submitted in support of any other degree or diploma.

Date: _____

Signed: _____

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Abstract

This thesis sought to undertake a primary, holistic and contextual investigation of the management and the role of academic library Web presence as it has evolved since its beginnings in the early 1990s. Most of the data collection took place in 2008 and it focused on the practice in British universities. Previous research on this topic was limited and published studies reported only limited investigations which had explored only some elements of the issue. Furthermore Web technologies have become crucial and integral part of library's Web presence and activity.

The study reviewed, analysed and determined the range of library web site role. It examined the library web site management within its context. Relations between the roles and management approaches were examined and factors, which affected both, were investigated. A mixed methods approach was used; four data collection methods were used (descriptive survey, content analysis and desk research, interviews) to collect both quantitative and qualitative data. Data was examined and analysed structurally and "triangulation" was used.

The study has provided evidence for the general understanding of the phenomenon and it has identified crucial factors and issues for further investigation; for instance the factor of authority over the library web site management and the issue of understanding of the web publishing by the library web managers. Unlike the wide and increasing potential of Web technologies, the web site for the academic libraries operated only as a simple provider of information about the library and its electronic services to library users. Moreover, an interesting finding was that when the parent institution was involved in the management of the library web site, two parallel and not so co-ordinated management procedures took place; one by the library and one by other(s) university unit(s). In addition, the development and completeness of LWS management processes undertaken by libraries was affected also by a trend for the LWS publishing as a project; rather than as a continuous library activity.

List of acronyms & abbreviations

ACRL	Association of College and Research Libraries
ALA	American Library Association
approx.	Approximately
ARL	Association of Research Libraries
CMS	Content Management System
DK	Don't know
DNER	Distributed National Electronic Resource
eLib	Electronic Libraries Programme
FE	Further Education Colleges that offer Higher Education courses
FT	Full-time
FTE	Full-time equivalence
HBCUs	Historically Black Colleges and Universities
HEFCE	Higher Education Funding Council for England
HEFCW	Higher Education Funding Council for Wales
HEI	Higher Education Institution
HERO	Higher Education & Research Opportunities in the United Kingdom
HRM	Human Resources Management
HTML	HyperText Markup Language
ICTs	Information Communication Technologies
ID	Identification
IP	Internet Protocol
IS	Information Systems
ISP	Internet Service Provider
IT	Information Technology
JANET	Joint Academic Network
LWS	Library web site
n.d.	'no date' is placed instead of the date
NA	Not Applicable
NIHEC	Northern Ireland Higher Education Council
OPAC	Online Public Access Catalogue
PT	Part-time
SCONUL	Standing Conference of National and University Libraries
SFC	Scottish Further and Higher Education Funding Council
UICS	University Information & Computing Services
UK	United Kingdom
UK	United kingdom
URL	Uniform Resource Locator
USA	United States of America
VLE	Virtual Learning Environment
WWW or Web	Wide World Web

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Chapter 1.

Introduction

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1. Introduction

1.1 Introduction

The introductory chapter aims to set the research question by placing it within the context of its wider research field and identifying the driving forces and limitations for its design and implementation (section 1.2). The overview of the study (section 1.5) closes this chapter guiding the reader to the following chapters and giving a panoramic view of the development of the thesis. This introductory chapter includes another two sections: firstly, one placing the library web site (LWS) publishing within the political, social and technological context of the study (section 1.3) and secondly, setting elementary definitions of the LWS publishing (section 1.4), in order to, on the one hand, familiarise the reader with the research topic and, on the other hand, support the development of the review on the background of the study in the following chapter, which was designed to be focused exclusively on the subject areas which are directly related to the study.

1.2 Statement of the research question

‘...academic library Web sites are such an integral part of their libraries, it is important to know more about the people, tools, and methods used to create these Web sites.’ (Connell 2008, p. 121)

This study sought to investigate the library web site (LWS) management undertaken by British university libraries taking into account the LWS role as one of its crucial aspects. The study’s objectives pursued, in order to meet the needs of the above aim, were:

- to review, analyse and determine the range of LWS role;
- to examine the application of the managerial processes for the LWS development and maintenance undertaken by the libraries within their context;
- to examine the relation between the LWS roles and the LWS management approaches which were identified;
- to investigate factors, which affected the formation of the management approaches and the LWS roles

The study contributes to knowledge about the evolution of ICTs in library practice. The LWS is one of the major applications of the library’s Web presence; the wide and universal

electronic environment for library's ICTs practice. The study investigated the core of that practice; the LWS management which can provide explanations for the practice's outcome - in essence the LWS. The investigation of the management of that web publication, taking into account - as a serious basis for explanations - always the role that the LWS plays, is going to bring out gradually:

- the position of that library function – web publishing - within the library organisation;
- the position of the LWS role within the library management;
- the role of the library web presence in the management of the library organization.

Additionally, this study contributes to the library science providing organised knowledge, tools and criterions for investigation about the library web publishing as library procedure in general and in particular regarding its management and its role.

Information Communication Technologies (ICTs) have evolved into one of the crucial drivers of change in the era of Information Society. Already in 1982 Baker described the phenomenon as 'computers and telecommunications are converging very rapidly, huge investments are being made, and the impact of information technology will be felt at every level in our society; in industry, in commerce, in our offices and in our homes' (Baker 1982, p. 77). In particular, the World Wide Web (WWW) has become a universally used, dynamic and flexible platform for the development of integrated ICTs environments. The inventor of Web, Tim Berners-Lee (2010) pointed out:

"The simple setup demonstrated a profound concept: that any person could share information with anyone else, anywhere. In this spirit, the Web spread quickly from the grassroots up. Today, at its 20th anniversary, the Web is thoroughly integrated into our daily lives. We take it for granted, expecting it to "be there" at any instant, like electricity... The primary design principle underlying the Web's usefulness and growth is universality. (Berners-Lee 2010)

The E-presence of academic libraries has become common practice almost since the introduction of the WWW in the early 1990s, as they operated within parent institutions with developed network infrastructures (Poulter *et al.* 1999). After more or less fifteen years, the management of library web site (LWS) by the academic libraries cannot be considered as experimental or on trial, but as an established and shaped practice. However, the research interest concerning the LWS management was limited, as it is discussed in detail in section 2.3; there were a few studies investigating the topic and even then only a part of the topic has been explored in any one study in areas such as the development of

LWS policies. In addition, the majority of these studies were conducted in the United States of America (USA) during the early years of the LWS practice.

The investigation of LWS management is part of the discussion about the management of the ICTs by the academic libraries and therefore part of a wider discussion about the management of change, as technology has become a crucial driver of change. The LWS is - at least one - of the fields where libraries apply the new technologies. As an electronic environment, the LWS has all pre-conditions and technological capabilities to integrate the library's automation playing an essential role in the entire library management. Its role, as determined by its management, affects the extent of LWS's impacts upon library organisation and the implementation of the defined role affects the extent and the quality of these impacts.

Moreover, the LWS differs from all the other library functions – as it primarily is a web publication - and its management can affect the organisational recruitment and organisational structure, to a greater or lesser extent according to the role which the LWS plays. The multi-thematic coverage of LWS's content draws the cross-library interest and causes the involvement of library staff working in various tasks across the library. The LWS as a publication requires a range of special skills for the tasks in management, development and maintenance; in particular these last tasks must be continually upgraded within the terms of the rapidly changing nature of the Web. In addition, the long duration of the web presence and its permanent prospect for the future showed that this library function differs from the library's other intersectional undertakings with a defined duration, like the digitisation of a special collection or the library collection re-classification.

Nevertheless, a high research interest has been developed in aspects of outcome of LWS management; for example, LWS's design issues, like accessibility and usability, provision of electronic information services, like portals and document repositories, and use of web functions, like Web2.0 tools. These topics – as outcome of practice under investigation - derive from the management of the LWS's development. Therefore, the investigation of LWS management can bring out pivotal factors and vital elements on the generating and final shaping of this practice. These factors or elements, finally, could be taken into account as requirements and standards for the recommended practice in development of library web services.

The limited volume and narrowly focused research on the management of LWS has left a wide area for study. Studies in aspects of management have focused mainly on the exploration of *library web master's* professional identity and duties and on an examination of web policies' development (see, section 2.3). Moreover the role of LWS was examined within a more or less *a priori* concept; as a medium for library services delivery and provision of information about the library (see, section 2.2). Consequently basic questions about what libraries wanted and what they have achieved through developing a web site and how they managed its production and sustainability had not been set as research questions and they have still remained without answers.

Initial understanding of the phenomenon, as it has been established, is a prerequisite for in-depth investigations in issues raised above, especially about the LWS's impacts upon the library's management of change. For example, the selection of a case or multiple cases for an in-depth study and its results would have to take into account whether the sample refers to the common practice or not. In addition, a preliminary, wide and holistic investigation can indicate trends and exceptional practices contributing to the existing discussion and raising crucial issues for further studies on the LWS management. Therefore, the scope of this study was shaped to provide answers to basic, but overall, questions about the web site management undertaken by libraries, exploring and mapping the practice and responding to the need for initial understanding of the phenomenon. Moreover, this study for the first time examined the management, taking into account the role of LWS; a crucial aspect for its management and its impact.

Nevertheless, the initial research project planning included also objectives for examination of the aspect of "management of change". However, the results of the first stage required re-orientation of the study in that part (see, section 3.3), adapting the framework of the study as it was presented above. This framework identified libraries' decisions on exploiting web publishing, showed the wide range of managerial processes for the LWS development and maintenance and their application in practice. In addition, it discussed the findings of the application of the managerial processes and the organisational status of LWS function in the terms of its role within the library.

The research field selected was British university libraries. They serve organisations, which were very early adopters of a networked environment via the nationally-funded Joint

Academic Network (JANET)¹. Moreover, this library sector has been supported since 1993 for development of web-based services by funded programmes. Therefore, the topic was studied within a mature environment, during a period that the management of LWS was no longer a new undertaking for libraries and the continually changing technological status had become an accepted factor in LWS management.

The study was designed based on the “mixed methods research” paradigm, developing a preliminary, holistic and contextual investigation of the practice. The exploratory character of the study approached the topic more in breadth rather than in-depth, mapping abstractedly the practice within its context. “Triangulation” was used as a methodological process applying four methods. Quantitative data collected firstly and mainly via descriptive survey and via content analysis and desk research. Qualitative data collected via key informant interviews supporting the explanatory part of the study. The overview - as a methodological approach - achieved to provide evidence for the general understanding of the phenomenon. It also brought out crucial issues for further investigation related with the role of the LWS in the terms of library’s ICTs management, the authority of the LWS management, the status of LWS management within the general library’s management, the understanding of web publication as procedure by libraries.

1.3 Context of study

‘Planning assumptions

...

- The operating environment will become increasingly standardised around Internet/Intranet technologies.’ (Corrall, S. 1998, p. 3)

Academic libraries in the UK were supported, but as well were pressured by political and economic factors, to enter and to take part in the new educational and training economy of “distance learning” and “life-long learning”, which were interwoven with the wide use of the Internet and WWW. They had already been working in a well-established networked environment, as academic institutions since the late 1970s had developed several regional networks and later in the mid-1980s with the nationally-funded Joint Academic Network (JANET) expanded and enhanced their network facilities (Joint Academic NETWORK n.d.).

¹ Joint Academic Network (JANET) has existed since the 1980s.

Since 1991 the academic community has started to be connected to the WWW and therefore, 'academic libraries were amongst the first wave of institutions to pioneer the development of Web pages' (Poulter *et al.* 1999, p. 41). Furthermore, as a result of the Follett Report in 1993 the funded programmes the Electronic Libraries Programme (eLib) and the Distributed National Electronic Resource (DNER) development programme exploited the development of substructure for the electronic information diffusion and delivery through the academic libraries and the use of these electronic resources in teaching, learning and research (Brophy 2007). In addition, academic libraries since the mid-1990s have been encouraged to support the higher education taking its place in the frame of lifelong learning, which has been derived from a range of government initiatives (Brophy 2005). Corrall and Brewerton (1999) summarised that situation writing:

'In the UK higher education sector, various government-funded initiatives have promoted the use of IT management and administration in teaching and learning, and also in libraries...The new Labour Government has given further impetus to such developments by promoting technology-assisted learning in the context of its lifelong learning and social inclusion policies...' (Corrall & Brewerton 1999, p. 132)

The decade of the 1990s saw a new status for the UK library sector in general and for academic libraries in particular. Libraries entered a rapid, substantial and continually changing environment, affected by changing networking requirements, the new digital information marketplace and other environmental pressures, like governmental and institutional directives, but as well new cultural attitudes. In the early years, Griffiths (1995) discussed the future directions and challenges that libraries were called to cope with, especially with regard to ICTs, which have become the main medium and source of change. Moreover, he warned about issues of librarians' IT literacy and their preparedness to cope with new social aspects of technologies, like freedom of information. Morgan (1996) also highlighted within the core skills - essential for academic librarians - the IT & management skills, the teaching & training and the credibility with academic staff. Lancaster & Sandore (1997, p. 15) discussed that new or enhanced skills implied by the automated library environment, like that 'librarians of today may need to understand the principles of marketing in order to develop new user-responsive services and to promote them within the community'.

Makin & Craven (1999) studied the impacts of political, social and economic factors in the UK on academic and public library services in the late 1990s and they pointed out that this changing environment for the libraries may be beneficial or harmful, providing both opportunities and threats. UK academic librarians and researchers were surveyed for drivers of new developments in library services; both groups identified as the major driver the high request by the academic community for availability of digital information sources (Brown & Swan 2007). However, Brophy (2007) indicated some threats for libraries from this changing environment and wondered whether libraries were [still] unprepared for the change. He argued (Brophy 2007, pp. 17-18) that ‘technology is complex and librarians have not developed the skills to understand it...’. Moreover, he pointed out that ‘libraries are expensive and becoming more expensive...’ [because of the high cost of electronic services delivery].

Organisational restructuring and revision of strategic priorities have been reported in American academic libraries which operated within a similarly changing environment. For example the Association of Research Libraries (Eustis & Kenney 1996), in the mid-1990s, carried out a survey about the library reorganisation and restructuring indentifying - as some of the major influential factors - the information technology, the availability of networked information and the new patterns of scholarly communication. Sennyey *et al.* (2009) discussed recently the future of academic libraries and highlighted the need for substantive reorganisations if they choose to emphasise digital services. Moreover, the ACRL² Research Planning and Review Committee (2012) continued highlighting the role of Information Technology and digital services in the academic libraries’ evolution. Nevertheless, Crawford (2000) suggested that in order for libraries to cope with change they need to keep alive the library’s mission related to their collection and services. In addition to the continuing discussion on the refining of the academic library role and therefore of the library organisational model, Dillon (2008) criticised academic libraries for their understanding of the changing processes and their trend to a business-oriented model. He claimed that:

‘Shifts in technology cannot be treated as isolated vectors, divorced from the human and social practices in which they are embedded. No matter how much pressure there is to conceive them as so, students are not customers, and academic libraries are not businesses. The explosion in digital resources reflects the rapid embracing of new tools

² The Association of College and Research Libraries

and new techniques for knowledge production that have not followed the predicted paths. One need only read anything from the past 20 years of speculative writings on library and technology futures to recognize how narrow our understanding of this process can be...Yet we are not helpless. We can control our destiny in some, though definitely not all ways, if we conceive the challenges correctly.' (Dillon 2008, p. 53)

Within this changing environment the LWS has been developed and established. The first web sites provided more information about the library as an organisation and its locally provided services, like circulation and reference services. Later they have started hosting electronic resources as well, like references/links to other web pages, and online services like OPAC³ (Poulter *et al.* 1999). Gradually, the capabilities of web technology were identified and used by libraries via their LWS. Cox (1996) wrote about the advantages and problems of producing an “electronic library guide” using Hypertext Markup Language (HTML). Since then there has been a plethora of literature about web-based services developed or provided via subscription by libraries, like library catalogues, selective dissemination of information services, instructional and information literacy tools, bibliographic databases, current awareness services and full-text databases. Moreover, libraries, apart from visualisation and delivery of library services, have taken part in projects for institutional repositories, institutional electronic journals and digital libraries of rare collections. In addition, in SCOUNL’s (Standing Conference of National and University Libraries) briefing papers for the vision of the academic library in year 2002 (Corrall 1998) and 2005 (Corrall 2001) pointed out that the increasing importance and standardising on the Web is included in the planning assumptions as Web has become an operating environment.

Many major web-based services of academic libraries have been developed within the terms of national programmes, like eLib. However, their ongoing maintenance and upgrading remain pivotal issues for libraries and the employment of appropriate and sufficient staff working in well-managed structures is one of the key points (Pinfield 2001). At the same time, web technology tools have not only replaced pre-WWW tools, like CD-ROM servers, but they have been and are continually changing and upgrading. Consequently, libraries have remained alert to requirements and opportunities to upgrade their web site and develop or finding solutions, like library portals and Web 2.0 tools, for the achievement of technological compatibility and of meeting changing user needs.

³ Online Public Access Catalogue

Nevertheless, the application of newer technologies, like Web 2.0 and mobile web technology, probably upgrading the “static” first generation of web services in the 1990s, does not represent a new paradigm for UK academic librarians since their libraries have a long history of adopting technology (Shoniwa & Hall 2007). However, adoption by libraries of ICTs’ evolution, on the one hand, it is not an end in itself and, on the other hand, it is not certain that academic libraries are able to apply new tools, as Breeding (2006, p. 32) contended ‘while I wholeheartedly agree that we need to be think about Web 2.0 concepts, I worry that we haven’t yet fully achieved Web 1.0’. Nevertheless, Nesta & Mi (2011) sustained that “Library 2.0” applications do not contribute to the core mission of libraries, as

Libraries are research networks, not social networks and the proper relationship of academic libraries to their users is professional and collegial. (Nesta & Mi 2011, p. 95)

The selection and the application of new Web tools should to be tied to the library’s strategic goals, taking into account the library users’ needs, otherwise Library 2.0 services often fail to have the expected impact (Cvetkovic 2009). Epperson & Leffler (2009) examined the application of social software programmes, such as Facebook and MySpace, by American academic libraries, discovering that the majority of the library users, who used this type of social software programmes, were apathetic about using them for library questions or research. The study of Kim & Abbas (2010) on the adoption of Library 2.0 functionalities by academic libraries and users’ utilisation of them showed that even if some tools were adopted by libraries, like RSS feeds (73%) and blogs (65%), users utilized them in low percentages (e.g. RSS feeds in 10.8%); whilst 42.5% of users utilized the bookmark function, the libraries which offered it were 22%. Nonetheless, the study of Partridge (2011, p. 262) highlighted that the provision of Library 2.0 services are ‘less to do with technology and more about quality transferable skills and interpersonal abilities’ on behalf of librarians. The findings of Sun *et al.* (2011) were in the same direction about the role of academic librarians in the new ICTs era; one of the major roles may have become teaching students and faculty to use new information technologies.

1.4 Library web site publishing

“A newer service is that of the librarian as publisher, specifically, publishing information on the WWW.” (Cisler 1995)

The LWS has become the main and the official e-presence of the academic libraries. It is a sub-site of the parent organisation’s web site. There is always at least a semantic interrelation derived from the organisational relationship between an academic institution and its library. Middleton *et al.* (1999) analysing UK higher education institution web sites studied the concept of the university web site as one web presence, without making a distinction between the university web site and other possible institutional sub-sites. Usually, in UK academic universities the organisational unit of Information Technology (IT) or Marketing has had the broad or central responsibility for the institution’s web site (Cox 2007a; Cox 2007b).

The LWS hosts a digital library branch (King 2009), which is built on a Web publication. Its information architecture is related with the role that that digital branch plays for the library or for the parent institution. Moreover, its publication form/substance is related with the decision derived from the LWS management and therefore the library management and the university management; as regards the academic libraries. Therefore, the LWS can consist of one web page or a body of web pages, whose content is related to the library. It can have its own domain name (e.g. www.library.uni.ac.uk) or it can be part of the university’s web site (e.g. www.uni.ac.uk/library/). Moreover, it can be hosted on server(s) of the library or it can be hosted *outsourced*; either by another unit within the university or a private company operating as outsourcing Internet Service Provider (ISP). Nevertheless, components of LWS’s content can be also inter-linked web functions, like the OPAC or subscription-based commercial information services, but as well other web tools, like blogs and other social network environments, which are hosted in different domain. Peterson (2006) pointed out that the variety of different types of LWS’s content, such as library catalogue, databases, tutorials and forms, differentiates the LWS from the university web site and other university sub-sites. This particularity of LWS is a primary concern when a common or shared template is going to be used to control the formatting of whole university web presence, as ‘it can be very difficult to modify the template effectively for the library’s purposes’ (Peterson 2006, p. 218).

The LWS has been named in literature as well as with alternative titles, for example “virtual library”, “portal” and “library workstation” (Diaz 1998; Leigh 2000; Moen & Murray 2002; Stielow c1999), indicating perspectives about its role (see, section 2.2). Nevertheless, the LWS basically is a web publication; a dynamic and flexible platform capable for development of integrated electronic environment, having all advantages and disadvantages, all capabilities and limitations of a web site production and maintenance. It is a complex process, in which all stages and all components of this undertaking interact and affect the currently launched outcome; in that case, each one launched version of the LWS. The web publishing procedure consists of the work stages of preproduction (planning and site information architecture), production (development of content, design and construction), promotion, maintenance and evaluation (Friedlein 2001). This undertaking requires expertise in various areas such as ‘in marketing, information architecture, graphic design, writing and editing, programming, and project management’ (Rosenfield & Morville 1998, p. 20).

The work tasks of web site publishing are specific more or less and they are divided broadly in four, five or six categories. According to Rosenfield and Morville (1998), the categories were: marketing, information architecture, graphic design, editorial, technical and project management. Friedlein (2001) identified main work tasks as the project management, the architecture and design, the programming, the 3D/Animation/Video/Audio and the content. Moreover, Griffiths (2004) identified four categories of web work: editorial, managerial, technical and design. For the multiple work tasks and roles that a web publication requires, it may be the responsibility of one person or a team depending upon the environment within which it is undertaken. Friedlein (2001) developed a team structure showing the roles that can constitute a large web development team (see below, Figure 1.1), which the work tasks are distributed among specialised job positions.

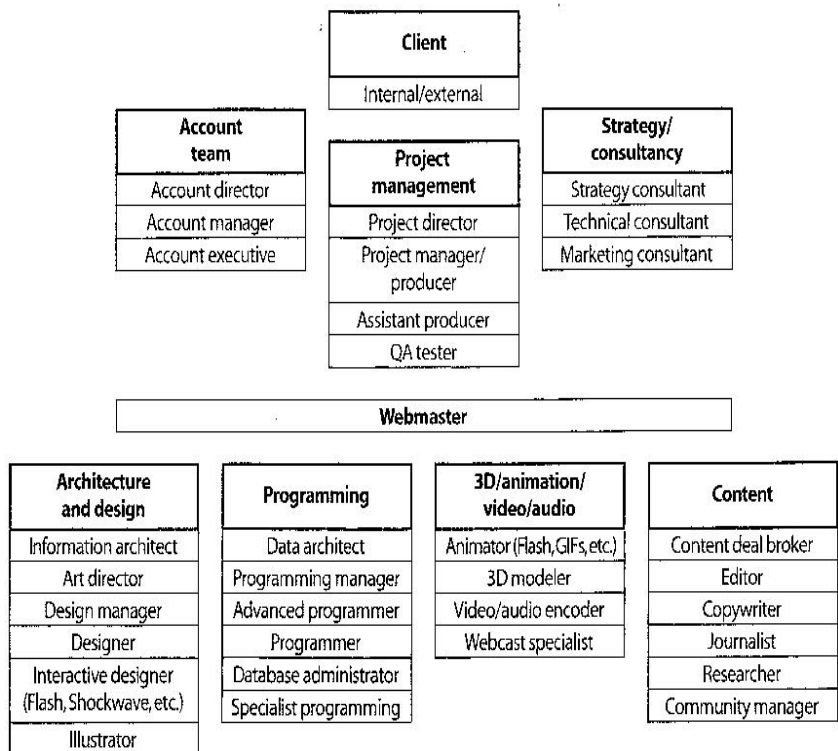


Figure 1.1: Team Structure the roles that can constitute a large web development team – source: Friedlein 2001, p. 21

Any web site as a final, entire and complete product consists of the editorial elements and the content components. The “edition” or the “web design style” is about the *publication form or media* of the web site and its web pages, including aspects like site structure, site and page elements, interface design, typography, editorial style and coding in markup language; including decision-making for tools/software like the Content Management System (CMS) - as King (2009) discussed in his paper with title “Building the Branch” meaning the LWS. In actual fact, the key points for the quality of the web edition are the information architecture, the editorial and design standards and the use of appropriate technology (Lynch & Horton c2001; W3 Wide World Web Consortium). Within this frame of the web edition, the “content” is organised and provided and is the information/resources in any *Type or Format*; in any ‘nature or genre of the resource’, like text, dataset and image, or ‘file format, physical medium, or dimensions of the resource’, like html, xml and gif (DCMI 2008). Rosenfeld & Morville (1998) explained with simple words that ‘we define content broadly as “the stuff in your Web site”. This may include documents, data, applications, e-services, images, audio and video files, personal Web pages, archived e-mail messages, and more’ (Rosenfeld & Morville 1998, p. 219). For the

case of the LWS, the content, for example, could consist of information about the library, electronic library services and networked functions for the members of library staff.

Summarising, the LWS as a publication is composed of the interlinking elements of “content” and edition’s web environment or “design” as practitioners participated in this study had named it. Its publishing broadly consists of its management (see, section 2.3) and its development & maintenance, which refer to the implementation processes of “content” and “design” (see below, Figure 1.2).

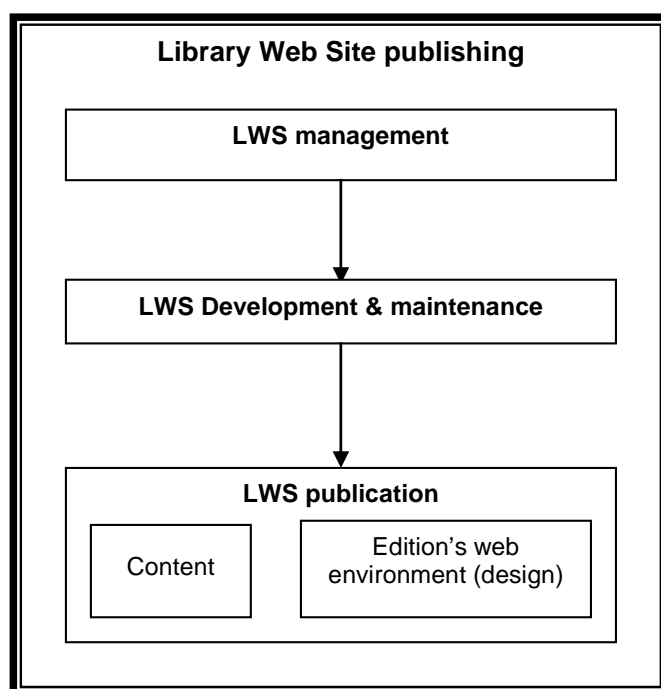


Figure 1.2 Library web site (LWS) publishing

1.5 Overview of the study

This study sought to investigate the practice in LWS management undertaken by British university libraries taking into account the LWS role as one of its crucial aspects. The first chapter of the thesis set the research question by placing it within the context of its wider research field and identifying the driving forces and limitations for its design and implementation. It also placed the LWS publishing within its context and defined elementary principles of the LWS publishing in order the literature review following to be

focused exclusively on the research topics. In overview, the thesis develops into the following chapters:

- Chapter 2 reviews the literature in order to present and discuss the background to the study and to allocate materials and identify stepping-off points needed for the present research. Therefore, the literature review is focused on the role of the LWS and the management of LWS.
- Chapter 3 takes into account issues raised from the investigation of the study's background and develops a suitable research design in order to answer the research question, noted in the section 1.2. The research aim and the objectives are presented, the methodological stance chosen is discussed, limitations considered, and the research methods selected are described.
- The results of the data analysis are organised in chapter 4 into three sections, reflecting the methodological approach of “triangulation” which was used collecting quantitative and qualitative data through four research instruments. Thus, the results of quantitative and qualitative data analysis are presented separately and then they are summarised into a third section.
- Finally, the results of the study are discussed (see, Chapter 5) taking into account the overall background introduced in chapter 2, so that conclusions may be drawn in chapter 6.

Chapter 2.

Background of the study

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2. Background of the study

2.1 Introduction

The study aimed to investigate the topic of LWS management taking into account the LWS role as one of its crucial aspects. This chapter aims to review the literature in order to place the study in its context and identify stepping-off points needed for the present research. Consequently, the literature review was focused on the two main research areas; the LWS management and the LWS role. The LWS management as a process has been already identified (see, section 1.4) within the terms of LWS publishing and in the third section of this chapter (section 2.3) the investigation of LWS management is going to establish the general web site management's framework, placing within its issues, approaches and studies found in literature. The examination of LWS role (section 2.2) opens the chapter of literature review identifying its content and placing this study aspect within the context of the LWS publishing, as it has been already drawn in section 1.4.

2.2 Role of library web site

In literature, the LWS has been named with alternative titles; “virtual library”, “portal” and “library workstation” are some examples (Diaz 1998; Leigh 2000; Moen & Murray 2002; Stielow c1999). However, these titles indicate perspectives about LWS's role within a library, whose presence appears in a local and an electronic environment. The review and the analysis of the evidence of literature revealed that the concept of the LWS's role has more than one facet and starting point for its approach. In addition, questions were identified which addressed the role that LWS plays or could play or should play. These questions were formatted by the researcher as:

- What a library wants to achieve through the launch of its LWS?
- For what functions a library can use a web publication such as its LWS?
- How a LWS can impact upon the library organisation which develops and manages it?

Therefore, the three following sub-sections (2.2.1-2.2.3) have been developed to present and discuss the LWS role related to:

- a) the mission statement of LWS;
- b) the content of LWS and;

c) the library management.

Finally, in the fourth sub-section (2.2.4), all these three facets and approaches of LWS role are placed within the terms of LWS publishing.

2.2.1 Role of LWS and mission statement of LWS

What does a library want to achieve through the launch of its LWS?

Griffiths (2004) pointed out that libraries have to develop web presence in response to the eagerness of the audience - including academic communities - for web-based information. Corral & Brewerton (1999) also noted several advantages in developing web site by libraries, like the support of large audience and the opportunity to utilise ICTs. However, they underlined the fact that before the LWS development libraries need to define clearly LWS's audience and its purposes. From this perspective, the content of LWS's role is defined through the answers to the question "What do we want to achieve through the launch of our LWS?" and it needs to be determined through the planning process in terms of setting aims and objectives with a clear sense of the target-groups (mission statement development).

'We need to ask *why* we are adding services [in our LWS]' (Corral & Brewerton 1999, p. 135)

'Many website owners undertake or commission considerable amounts of design and content collection work before they address this simple question, but if you do not know what audience you have in mind when you develop your site, it will lack purpose and cohesion ... You need to know from the outset who the intended users of the site will be, because you need to design with them in mind' (Griffiths 2004, p. 27)

The audience for the LWS of an academic library could be selected from the range of library's stakeholders. Bryson & Alston (1996, p. 43) defined a stakeholder in general as 'any person, group or organisation that can place a claim on an organisation's resources, attention or output, or is affected by its output'. Focusing on the library practice, Kuchi (2006, p. 150) described that USA 'academic library stakeholders typically include students; faculty and staff members; university administration; donors or friends of library; and state, regional, and national library partners, associations, and collaborators'. For the UK academic libraries broadened the definition of stakeholders further by identifying

‘student, academic staff, university support staff, library managers, library support staff, university managers, the government, society: internationally, nationally, regionally and locally, international research communities and posterity’ (Brophy & Coulling 1996, p. 41). Nonetheless, for the case of a LWS the general wide web public can be also included in the groups of stakeholders because of the technical capabilities for unlimited time and place accessibility which are derived from the web publishing nature.

However, from the whole range of stakeholder groups, two in particular seemed to be singled out as target-groups for the LWS: the academic community - as library services users - and the general web public. Griffiths (2004, p. 29) referred indirectly to those main categories of target-groups through his list of probable LWS’ purposes: ‘publicizing the library organisation’, ‘providing information’ and ‘communicating with customers and other stakeholders’. In other words, the LWS role is based on *servicing perspective* or on both perspectives; the *servicing perspective and marketing* one. According to this approach the LWS is designed for information provision about library and its services and/or provision of electronic library services (*servicing perspective*) and it could be also designed for promoting library through LWS (*marketing perspective*).

Alison (2001), having as her starting point that the purpose of LWS is the information delivery (*servicing perspective*), identified as the target-group the users of library services and therefore the LWS as a *library’s virtual front-desk*. This conclusion derives from the range of elements for the core content of the LWS (objectives), which she suggested and in particular these were:

- to promote a product or service
- to deliver a product or service
- to provide service information
- to offer curriculum support
- to collect orders or enquiries
- to deliver printed materials
- to provide database access
- to act as a print depository
- to deliver training and support
- to provide a communications link
- to recruitment
- to a launch pad to wider resources
- to host community discussions.

(Alison 2001, p. 434)

This *servicing* perspective for the role of LWS was identified too in the survey of Traw (2000)¹. Librarians of the Association of College and Research Libraries (ACRL) were asked whether the library considered their LWS as a separate “service” or an “extension of existing services”; in other words, the study had set *a priori* the role of LWS based on that *servicing* perspective. Consequently, the results were guided by this perspective; the majority of the respondents ‘believe[d] their library’s web site [was] an extension of existing services, primarily: reference, library instruction, interlibrary loan, and reserves’ (Traw comp. 2000, p. 4).

Nevertheless, Stielow (c1999) added as target group the library staff. He extended the use of LWS beyond the *servicing & marketing* perspective as basis for the aims of LWS; the LWS could be used as an alternative source for delivery of supportive materials for library staff work tasks. In particular, in his book addressed to librarians he suggested to them to consider the answers of the following three questions in order to define the LWS’s objective:

- Is the purpose to have an electronic sign proclaiming or marketing the institution?
- Is the project a new work product or supplemental resource – such as a virtual library?
- Is the purpose to provide staff with alternative sources of information for their job?

(Stielow c1999, p. 25)

Clyde identified the importance of clear determination of purpose and users’ needs in successful LWS publishing. Based on that principle she explored the status of LWSs during the period 1996-2002, carrying out three studies and comparing their results. These studies in literature were the only investigations of the LWS’ role as it is defined in its mission statement. For the first project (Clyde 1996) the examined web sites were from public and school libraries in 13 countries. For the two later research projects (Clyde 1999 & 2004) she used only school library web sites. Content analysis was applied as a data collection method for all these studies. One of the research components was the identification of the LWS’ aims and target-groups via analysis of statements and other written evidence located within the examined web sites.

The results (Clyde 2004) indicated that the LWSs served multiple purposes, like provision of information & instructional services and information about the library; the audience

¹ In section 2.3 there are more details about this study.

served, was students and teachers primarily, parents and people outside the school, like parents of prospective students. However, especially in the results of the 1996 analysis there were some cases that did not have a clearly stated aim or purpose or did not clarify the intended audience (Clyde 1999) and Clyde - pointing out the planning process as a key factor for the web site publishing - concluded that the 'most effective of the library Web sites or home pages appeared to be those that had a clear sense of purpose and a clear sense of the needs of users' (Clyde 1996, p. 556).

These studies, however, were limited regarding their examination and discussion about the LWS's role. Apart from the examination of the aims and target-groups, they also analysed the design (edition's elements) and the content (e.g. services provided) of the LWS. Regarding the LWS role, Clyde examined what compilers of school LWS wanted to achieve through their web site without though comparing these aims (mission statement - outcome of LWS planning process) with the implemented LWS's functions (LWS contents – outcome of LWS management); whilst the data about the LWS' content had been collected. This analysis could have enhanced the results about the LWS role approaching it through two facets: the role aimed and the role implemented; as the LWS's content is developed according to the role that it is going to play (mission statement) and the LWS content, which had been developed, eventually shapes the applied/real role of LWS.

Furthermore, Stover (1997) approached the LWS's role having as his starting point the mission of the library – as an information organisation. He discussed the role of the LWS in relation to the library's mission. In particular he clearly claimed that the LWS content should support the purpose of the library, writing that the 'role of Web site is ... to make information available' (Stover 1997, p. 56) and he sets:

'a key question for those of us who create and maintain library web sites is this: How can we continue to function in our transitional role of selection, organisation, and dissemination (and perhaps also preservation) within the context of the new Web environment?' (Stover 1997, p. 56)

This perspective was expressed also by Von Elm & Trump (2001) who defined the role of academic LWS within the "hybrid library" which provides both print and electronic resources. They noted that LWS has to host user-centred services 'keeping pace with evolving technology and directing technology toward services that are relevant to the

users; and maintaining the library's mission in a continually evolving environment' (Von Elm & Trump 2001, p. 35).

This approach, on the one hand, concludes, like Alison's (2001) perspective, for the exclusive use of LWS for provision of information to users excluding other roles for the LWS, like 'publicizing the library organisation' as Griffiths (2004) claimed, and reducing consequently the target-groups of LWS to the library services users. On the other hand, this perspective limits the role of LWS to a *library's virtual front-desk* where users can have access to information delivery services – similar to Alison's (2001) approach. Whilst, the LWS - technically at least - is able to support additional functions addressed to library staff, which in the end serve the library mission.

For example, an intranet can be used as the main method of library staff communication and primary source of information (Corrall & Brewerton 1999, p. 136) and the library staff are mentioned as users of an intranet section of the LWS which can support them 'to develop document delivery services' (Griffiths 2004, p. 186) using functions running within intranet for work-tasks related to searching, retrieving and providing documents; in other words the intranet for library staff can be used as their electronic working environment. Therefore, the LWS as mean of ICTs utilisation can be designed to be used as well as by library staff serving the mission of library because its functions can beneficially support the internal work tasks for the foundation of the traditional library mission to provide information.

Moen & Murray (2002) supported this alternative perspective including the library staff as users of LWS. They approached the LWS's role as a library's function for a *virtual front-desk*; as a system of a functional integrated virtual environment which, on the one hand, provides information and library services for the library's users and, on the other hand, provides services for the library staff in order to support these services addressed to users. They named the LWS as a "virtual library" which is built as a system of web-based services and focuses on serving library's patrons according the general mission of library. However, they added in the LWS content - apart from the services addressed to library's patrons ("external or patron-oriented services") - the 'internal or foundation services, that are the behind-the-scenes services without which the patron-oriented services would be

jeopardized' (Moen & Murray 2002, p. 97); these internal services address to the library staff and consequently they are included in the LWS users.

2.2.2 Role of LWS and content of LWS

For what functions can a library use a web publication, like its LWS?

The literature review brought out another approach to the content of LWS role; a *uses-based approach*. Uses of LWS compose the content of the LWS role and the content of LWS operates as the source for the identification of these uses. Leigh (2000) approached the academic LWS' role based on the content that a LWS has to provide and discussed the evolution of the LWS from a "static" web site to a "portal". She adopted this term from Connolly's (2000) paper where the "portal Web sites" 'serve as a starting point for people when they connect to the Web or that they tend to visit as an anchor site...is a gateway to the Web that allows the plethora of information ... to be organized and customized through a single entry point' (Connolly 2000, p. 39). Leigh also indicated that 'more than ever, the Library web site is the gateway to the breadth of information that a library has to offer ...' (Leigh 2000). In a similar vein, Liu (2008, p. 6) identified the 'academic library Web sites [as] ... gateways to information that supports faculty and student research and educational needs.' This framework defines the role of LWS as a library's services virtual access point; a *library's virtual front-desk* addressed to library's services users operating as an organised provider of electronic library resources and referential information about the library and its in-house library services.

The perspective that LWS role is to operate as a *library's virtual front-desk* was used by Chisenga (1998) and Agingu (2000) as *de facto* principle in their studies in academic web presence examining elements of the LWS publications. However, any study that presets unfounded content for the LWS role possibly limits the breadth of its real content and at the same time this limitation is not identified and then it is not stated in the research design. Chisenga conducted content analysis of 13 university LWSs of 11 Sub-Saharan African countries in 1997 taking into account that the 'World Wide Web offers libraries the opportunity to provide library and information services for both local and international communities, and to gain access to various electronic information sources on

the Internet' (Chisenga 1998, p. 49). The aim of the study was to examine the provision of access to electronic information services and the provision of general information about the library and its in-house services. The major results showed that LWSs mainly provided information about the library and in-house services, rather than electronic services. Agingu (2000) carried out in 1998 a comparative content analysis of the LWSs of Historically Black Colleges to Universities (HBCUs) and other institutions in the Southeast USA in order to determine how useful the LWSs were as tools for disseminating information and providing services for users. An assessed checklist of twelve (12) questions was used for the document examination. According to the results, 'most HBCU libraries used their Web sites mainly to provide information about the library and its collections' (Agingu 2000, p. 30).

Diaz (1998) defined multiple roles that academic LWS can play, remaining in the terms of the *library's virtual front-desk* perspective for provision of information services (*serving* perspective) and publicising library organisation (*marketing* perspective). According to Diaz the LWS can be considered as a tool for multiple uses (a *multi-uses/multifunctional* tool); it can operate as a 'library workstation both for the users and for the librarians serving them'. Moreover, members of library staff are considered as users of LWS, such as library's users; they can use services provided via LWS in order to serve library's users, for example answering questions about library collection. In addition, for the needs of library management the LWS is a 'communication tool' providing information about the organisation, like organisational structures and missions, and about the in-house services and facilities provided in-house/locally, like interlibrary loans and research workshops.

This *uses-based approach* of categorises components of LWS's content according to their uses and the LWS' role can be determined in a more analytical level. Another example of this approach is given by Xiao *et al.* (1997), who described the LWS's role of specific USA academic libraries at an early point in LWS publishing as:

- a "public relations tool" providing 'an avenue for one-way communications out of the library';
- an "instruction tool", providing materials related with an 'instructional program in the library';

- a “search platform”, providing a common access point for all different databases and catalogues;
- a “communication tool”, providing ‘interactive services between library users and the library staff ... for customer feedback on library services’;
- a “museum/virtual library”, providing special materials in digital format, like ‘rare books, manuscript, research collection, and archive repository of ... University’.

This *uses-based approach* of the role of LWS was used in studies of Cohen & Still (1999), and Sapa (2005). In these studies the researchers set a list of possible LWS roles whose application they examined via content analysis of the academic LWS publications grouping located elements of content and design. Nonetheless, all perspectives about the role of LWSs expressed through these lists indicated that basically they had as their starting point the *library’s virtual front-desk* perspective for provision of information services and publicising library organisation addressed to library users and the general web public. However, the methodological approach for the investigation of the LWS’ role using assessed list of LWS roles under examination provokes questions about the wide coverage of the investigation of the LWS role and the content elements supporting it (see more, in section 3.4.1).

Cohen & Still (1999) conducted in 1998 a comparative content analysis of 100 academic LWSs of fifty American research degree granting universities to fifty “two-year colleges”. The aim of the study was the determination of purposes of the web sites ‘as manifested by their content and its placement within the structure of the site’ (Cohen & Still 1999, p. 275). The researchers systematically collected data about three LWS elements; ‘content, functionality and structure’. For the identification of the web site purpose, a set of four LWS uses were set in the format of questions:

- a) “Is the library Web site an information tool?”
- b) “Is the library Web site a reference tool?”
- c) “Is the library Web site a research tool?”
- d) “Is the library Web site an instructional tool?”

Each of them was examined with a checklist compiled of specific elements located or not within the publications; the web pages of LWS. The results showed that all the web sites examined could serve all of the four purposes.

Sapa (2005) surveyed basic conceptions and possible roles of academic library web sites as they derived from a literature review. The examined roles as they were formatted were:

1. Provider of online information about printed resources of the library and a tool for handling processes connected with accessing such resources.
2. Gateway to online resources not fully integrated with World Wide Web.
3. Access point to digital resources integrated with World Wide Web.
4. Provider of information and reference services online.
5. Tool for educating library and information users.
6. Space for communication with various groups of library users, supporters and collaborators as well as for e-publishing.
7. Tool for promoting the library (as well as its online services), creating its image and realising public relations tasks.
8. Keystone for a given university local Web environment.

(Sapa 2005, p. 5)

The researcher for the purposes of his investigation carried out a comparative study of fifty American and fifty Polish academic library web sites in the period of 2002-2003 focusing on the aspects of content and usability. The data collection method applied was a questionnaire of 237 elements regarding their contents and 38 regarding their usability. The differences found in the LWSs' content between the two groups of library web sites guided Sapa to summarise that 'while the users of Polish Web sites are only informed about the services offered in "real life", those who use American Web sites – "virtual versions of libraries" – can complete their tasks and satisfy many of their information needs wholly on the Web' (Sapa 2005, p. 1). In other words, Sapa pointed out a crucial difference between the use of LWS by Polish and American libraries; the American LWS were designed to provide beyond informative content, like information about library collection, as well functioning content, like electronic/online information services, covering directly users' needs.

'While American academic libraries tend to perform all their functions wholly on the Web and to move as many services and resources as they can to the new online and digital information environment, Polish ones seem to treat their Web sites mainly as a means of passing information about themselves to the users.' (Sapa 2005, p. 12)

2.2.3 Role of LWS and library management

How can a LWS impact upon the library organisation which develops and manages it?

Different facets of LWS's role related to the above approaches are brought out through Downing's (2001) analysis. He discussed the role of LWS as part of ICTs' management

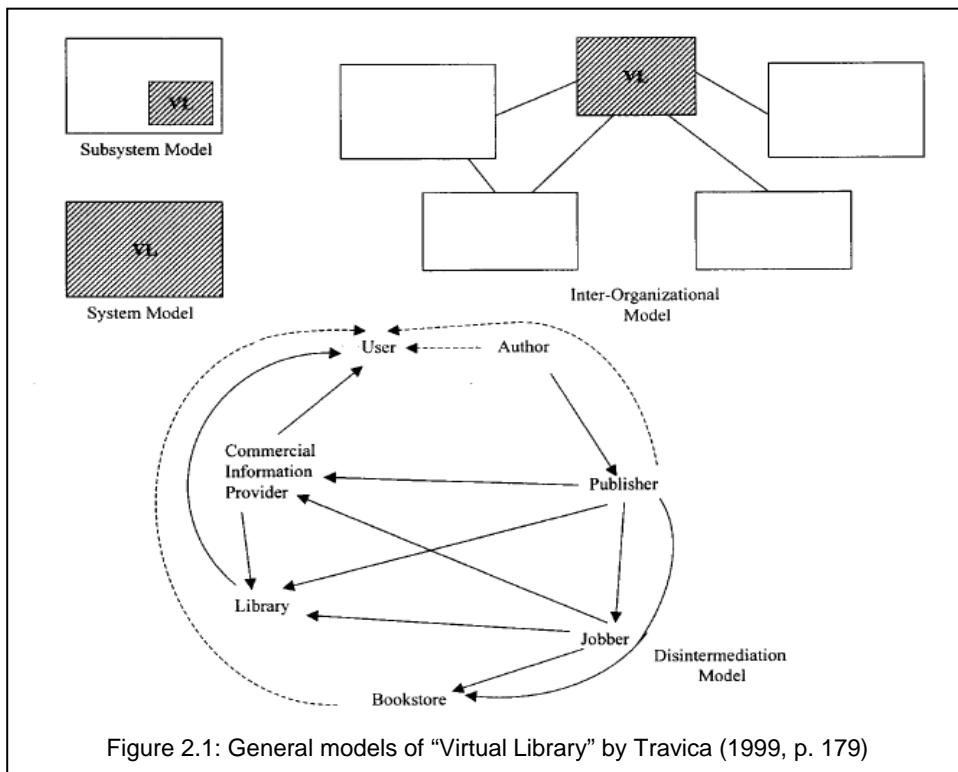
from the library management point of view. Specifically, he reviewed influences of the Internet and impacts of LWS on the management areas of ‘management of facilities, the mission of the library, the presentation of the image of the library, the internal organisation of the library, staff recruitment and development, budgeting, fund-raising, interlibrary cooperation, and legal issues’ (Downing 2001, pp. 25-26). The LWS as a publication and as a publishing procedure can be used by library management for the achievement of its strategic goals, but at the same time decisions about the management and development of LWS may affect other library functions too.

The investigation of the LWS’s role, in the terms of this perspective sets the following question: “How does the LWS impact or could it impact upon library organisation?” For example, the management of physical library space may be impacted from decisions about the web space as regards collection, facilities and functions. Marketing goals and establishment of policies may be achieved through development of appropriate informative and functional LWS’s content. Library budget, recruitment and organisational structure may be affected by decisions related to LWS publishing. In addition, internal library functions may be impacted by decisions about their automation hosted in an intranet section of LWS.

Travica (1999) conducted a study about the impact of LWS on library’s organisational aspects. He took into account the changing environment, into which academic libraries have been entered during the 1990s, and the crucial role of technology as driver of change. Within this context, he considered the relationship between library organisation and “virtual library” (VL), as an organisational entity built on ICTs focused on information resource delivery functions. He selected this the term VL because it ‘may be more capable of capturing both technological and organisational aspects’ (Travica 1999, p. 177). He developed four proposed library organisation models with possible relationships between the library and VL. He used them during his survey of library directors from 300 academic libraries randomly selected from the American Library Directory aiming to investigate how the VL had involved in library organisation, shaping the new contemporary library.

These four models captured different levels of virtualisation of information service functions related to the library organisation (see below, Figure 2.1). Downing (2001, p. 34) made a synopsis of these models:

- (1) Subsystem model: The VL may be treated as a system of a library organization, crossing the boundaries of departments but anchored to a set of technologies.
- (2) Inter-organizational model: The VL may serve as the focal point around which new networks of libraries emerge.
- (3) System model: The virtual library may transcend its associated technologies and represent a new form of virtual organization that redefines the relationship between the library and its users, as well as relationships within the organization itself.
- (4) Disintermediation model: As the Internet enables publishers to communicate directly with information seekers and provides everyone with the potential to become a global information provider, the VL may reflect the elimination of the role of the library as intermediary in the traditional chain of information delivery.



The results of the survey showed that there was a valid orientation toward the concept of VL as ‘a subsystem in the existing libraries, built around appropriate technologies which are couched in appropriate organisational arrangements’ (Travica 1999, p. 178). However, library directors approached the VL’s concept mostly from a technological perspective and they did not identify crucial impacts on organisational aspects, like in the management of human resources.

Travica (1999) discussed the involvement and the impacts of LWS on library organisation having although for his starting point his approach for the LWS's role as provider of electronic library resources. Consequently, he determined that the web presence of libraries refers to the utilisation of ICTs regarding electronic information delivery services exclusively. Therefore, the "System Model" seems similar to the approach of Moen & Murray (2002) for a LWS as a system of a functional integrated virtual environment for library users and library staff (see above, p. 20), focusing on the provision of library and information services – a *virtual library front-desk function*. In addition, the "Subsystem Model" seems similar to the perspective of *library's virtual front-desk* identified above in most literature documents.

Nevertheless, some issues rise from this study:

- The perspectives about new technologies by library management affect essentially the utilisation of ICTs, therefore the development of LWS.
- The possibility that a LWS focused on provision of electronic information delivery services to become a collection of links to commercial information services subscribed by library (see for example, the Disintermediation model) affecting decisively the management of LWS publishing, as the content produced by the library would be limited, and the role of LWS within library management.

2.2.4 Facets and approaches of LWS role

The major perspective about the role of LWS found in the literature was the LWS as provider of information about library (organisation & in-house library services and facility) and electronic information/library services operating mostly as a *library's virtual front-desk* addressed to library users and general web public, but as well as including in the target-groups part of library staff as users. In other words, the LWS role was based on a *servicing* perspective or on a *servicing & marketing* perspective. Nevertheless, additional uses of LWS were also mentioned, which addressed to library staff, as users of the information services provided via LWS or as users of specialised section (intranet for library staff) for communication functions and delivery of support materials for their work tasks. However, according to an *organisational* approach the LWS seems that it covered a part of utilisation of ICTs in library hosting mostly content related to the

provision of library and information services, whilst a library organisation has a range of other functions too for its management, administration and production-line which can be automated and could become part of the LWS content too.

The approaches to definition or investigation of LWS role identified were:

- a) the *mission statement* (purposes) of LWS, answering the question “What does the library want to achieve through the LWS development?”;
- b) the *uses* of LWS, answering the question the question “For what functions is the library using the web publication?”
- c) the *impacts* of LWS, answering the question the question “Which are the interrelations between LWS publishing and library management?”

The research projects for the investigation of LWS role usually approached the topic examining the *uses* of LWS, conducting content analysis of LWS publications; less through the examination of *mission statements* or *impacts* of LWSs upon library organisation. However, a strong methodological influence identified in the results of these studies was that researchers had *a priori* a specific perspective about what was the broad role of LWS and usually they examined aspects of that broad role.

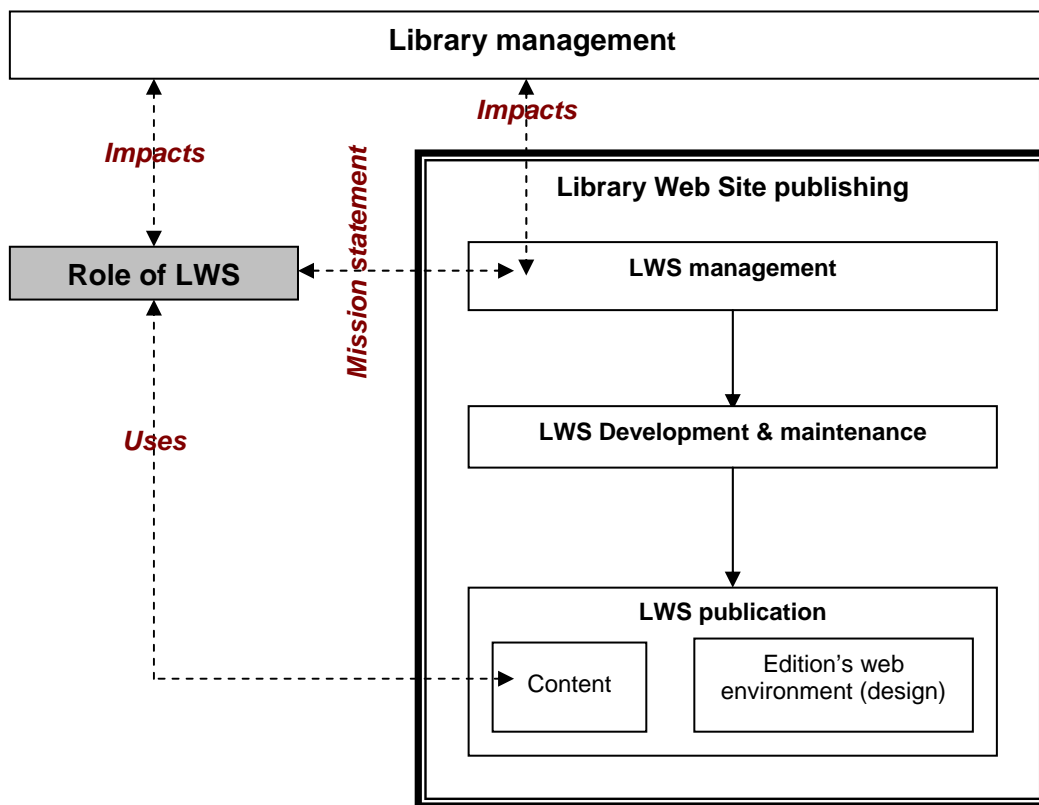


Figure 2.2: Interrelations of the library web site's role with library management & aspects of LWS publishing

Regardless of any particular perspective about the LWS role, its facets remain strongly related to the library management and naturally with the LWS web publishing, especially with the LWS management and its content (see, Figure 2.2). It is defined through the *mission statement* in the terms of planning process of LWS management affecting the development of LWS content. Moreover, the LWS role is identified through the *uses* of LWS publication and the *impacts upon* library management.

2.3 Library web site management

Already in section 1.4, the LWS management has been placed within LWS publishing as one of its core components. The LWS management is central to the launch and the sustainability of a LWS. The aspect of LWS role - as it was identified in the previous section (2.2) - is strongly related to and affects the whole LWS publishing and is closely related to LWS management and its outputs; the LWS content. However, research had not focused on this relationship. Previous studies in the whole area of LWS management examined only few aspects, like the development of LWS policies and guidelines and the human resources management, focusing especially on the role and the professional identity of a library webmaster. Moreover, literature on LWS management does not provide a clear and complete frame of the work tasks and roles. Therefore, there is a question about the components which constitute the LWS management. In addition, there are issues related to the LWS management about the type of LWS publishing as library function and the position of this function within library organisation.

This section is developed in four sub-sections. The first one (2.3.1) aims to provide a basic management framework for a LWS derived from the literature of management and web development in order to define the components of the LWS management. The second section (2.3.2) presents and discusses the perspectives about the LWS publishing as a process within the library organisation and its management approaches. The third section (2.3.3) places the webmaster's role within the terms of the LWS management. Finally, the fourth section (2.3.4) presents and discusses the studied in the area of LWS management.

2.3.1 Processes of LWS management

The LWS management cannot be considered as a process outside of the general framework of management. Cole (2004), reviewing literature, noticed that there is not a generally accepted definition of management and pointed out a broad definition which was used by Roberts & Rowley (2004) too as the basis of their further review of how modern management approaches affected information services; for example, the approaches of Mintzberg and Drucker which tended to be a more detailed and behaviour-oriented analysis of what managers actually do. Basically, management is:

'a process that enables organisations to set and achieve their objectives by planning, organizing and controlling their resources, including gaining the commitment of their employees (motivation)'. (Cole 2004, p. 7)

'Management is not an activity that exists in its own right. It is rather a description of a variety of activities carried out by those members of organisations whose role is that of a "manager" [is] someone who either has formal responsibility for the work of one or more persons in the organisation or who is accountable for specialist advisory duties in support of key management activities. These activities have generally been grouped in terms of *planning*, *organising*, *motivating*, and *controlling* activities. These grouping describe activities which indicate broadly what managers do in practice, primarily as well as to middle and senior management roles.' (Cole 2004, pp. 9-10)

The description of the managerial activities is usually based on the roles or tasks of managers, in so far as the management has been considered as a function, rather than as an exclusively controlling element in work. Regardless of the approaches, like the strategic management and their historical evolution, the management is composed of specific broad managerial areas of activities. An abstractive framework for most of the key aspects of the work of managers in practice consists of four groups of management activities (Cole 2004, pp. 10-11):

- "Planning": an activity which involves decisions about *ends* (aims/objectives), *means* (plans), *conduct* (policies) and *results* taking into account the external environment and the internal strengths and weaknesses;
- "Organising": an activity which involves detailed organisation and coordination of tasks and the human and material resources needed to carry them out;
- "Motivating": an activity which involves managers' gain of commitment of the employees;
- "Controlling": an activity which involves monitoring and evaluating processes providing corrective mechanisms.

In handbooks and guides about LWSs, authors referred briefly to the management activities for the LWS, highlighting planning processes and including development of policies and financial planning. Moreover, marketing activities were pointed out, especially because web publishing requires current and detailed awareness of the potential audience's needs and promotion of information services provided. In addition, education/training activities were considered pivotal for web staff motivation. Garlock & Piontek (1996) included in their handbook for building a LWS – apart from development and maintenance activities – the managerial aspects of planning processes, with development of “project timeline” and policies. They also highlighted activities for educating staff, promotion and evaluation of LWS. Moreover, Griffiths (2004, p. 17) mentioned as skills needed for management those related to ‘disciplines ... focused on adding value for the customer...project and financial management’. Specifically, the managerial staff, who can be called “corporate web manager”, “web project manager” or “site production manager”, need to work in financial planning and people management having an overall picture of the undertaking and understanding of all the development and maintenance procedures. Further, Johnson (1998) considered that training activities, as a tool of motivation, play a critical role in supporting library's web team in a rapidly changing environment with development of necessary skills which can be conducive to an increased productivity; an increase in employee confidence within the team and within organisation and to the improvement of communication and collaboration between the staff with different specialities. In addition, he considered training as an investment and pointed out that budget is important for the reservation of adequate time in training.

In addition, Stielow (c1999) referred to the management aspects of:

- planning, defining the purposes of the LWS, its audience and developing policies;
- selection and organisation of human resources, developing work schedules and work tasks;
- marketing;
- training staff

Other handbooks about web site publishing also referred to the planning and marketing processes and in addition to the evaluation/controlling activities. However, detailed, organised and complete information about the management of the development and

maintenance of a web site was given only by Friedlein (2001). Guidelines by UNESCO (2005) for publishing a web site referred in particular to the planning stage, which includes clarification of aims and objectives, marketing strategies and selection of appropriate tools and other resources for development, update and evaluation.

Nevertheless, Rosenfeld & Morville (1998, p. 20) defined the “project manager” as the person who ‘keeps the project on schedule and within budget. He or she facilitates communication between the other teams and the clients or internal stakeholders’. However, Friedlein (2001) described in detail the managerial work tasks grouping them in two main teams/categories: the “strategy/consulting team” and “project management team” (see, Figure 1.1, p. 12). The work tasks of these teams correspond to Cole’s (2004) broad framework of management including aspects related to ICTs and issues like data protection and copyright. The work tasks both teams refer to:

- planning activities, including definition of aims and objectives, development of information and technical architecture, use of marketing tools and provision of help for overcoming hurdles;
- organising the implementation of work according to schedule and budget;
- motivating the team;
- controlling the results and evaluating their functionality and quality

2.3.2 Management and the function of LWS publishing

The perspective about the LWS publishing as process and the LWS as function within library organisation affects the LWS management, as regards its activities undertaken, but as well its official status. Friedlein (2001, p. 10) contends that a web site ‘is a living and evolving “creature”, with no end and, once born, living, we should hope, longer than any of those who initially created it’. This perspective requires strategic planning, well-organised and skilled team and change control, as is pointed out many times in Friedlein’s book. However, evidence in the literature showed that LWS started as an unofficial experiment undertaken by an individual or a small team of members of library staff interested in creating web pages, and its evolution seems to be an alternate and irregular function consisted of redesign projects and in-between periods of maintenance without

clarified organisational status; a *one-off life cycle* approach. Close to Friedlein's perspective there are suggestions for a *strategic planning* approach to LWS.

During the mid 1990s, Lester and Oaks considered LWS publishing as a simple procedure; they regarded that 'creating a Web page is simple. Once you get the hang of HTML, it's basically a matter of creating a bibliography of Internet resources, and playing with the page format' (Bell 1995, p. 29). McLeod & White (1995, p. 47) also reported that in 1994 'librarians [from their academic library] began experimenting with writing in HTML and creating actual Web home pages...this small group formed an information Web Team...[which] quickly broke itself down into three subcommittees: technical, graphics, and policy and content'. Moreover, Mach & Kutzik (2001, p. 32) set the issue of LWS's place in the organisation suggesting that 'it is no longer possible for many library web sites to be maintained by an individual or small group'.

Shucha (2003) presented an example of an approach to academic LWS management based on a *one-off life cycle* approach about the version of the LWS launched each time. The LWS publishing consists of periodical redesign projects with periods of mainly content maintenance. She described the steps of redesign as:

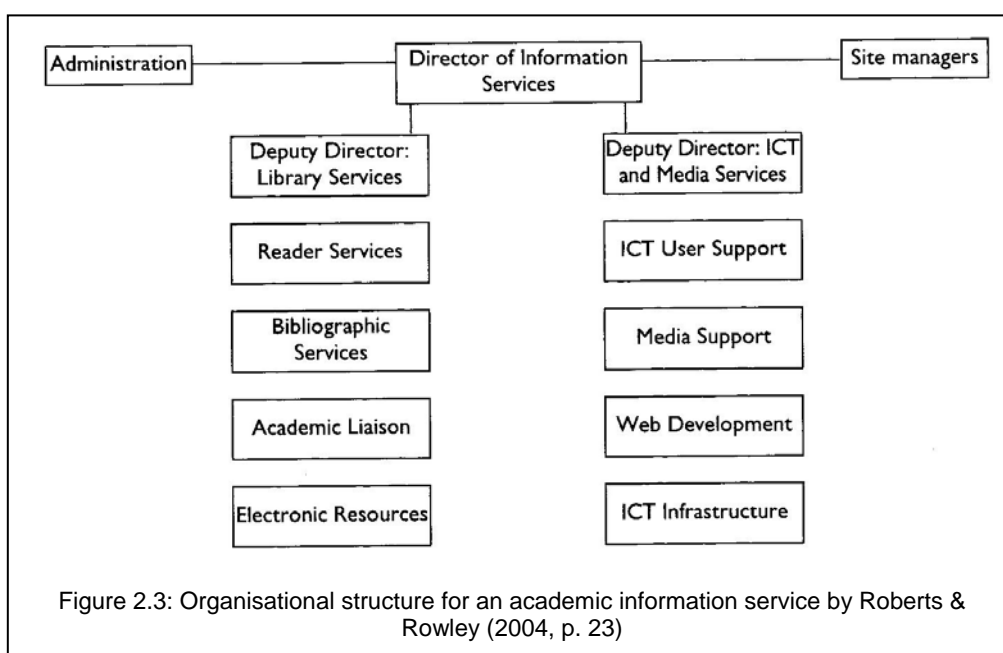
- "designing", setting policies about the content and the design of the new version of LWS;
- "implementing", working according to the plan for the development of the new LWS's version;
- "reviewing", testing the new version before its launch;
- "marketing", attracting users to the new version;
- "maintaining", keeping updating content and repairing problems of the new version, until the new redesign project

This approach set the LWS as an occasionally repeat project, with little effort during the intervening period, debasing the activities of marketing, motivating and controlling. In addition, the characterisation of the LWS publishing as an irregular function can affect the decisions about the financial and resources planning, which cannot be on an annual basis, and the visibility of organisational status for the library staff working in the LWS during the redesign period or/and the maintenance period, who very possibly have other regular duties. An example of this practice is given by the North Carolina University

Libraries (Fullington Ballard & Teague-Rector 2011), who developed a redesign project in order to launch a new version of their LWS. However, once more they composed a library committee in order to set the aims and the objectives of the LWS; they hired a project manager and they created a core implementation team for the period of the redesign project. The last LWS redesign project was five years ago and some questions have been raised:

- Were the aims and the objectives of the LWS (the LWS role) different five years ago?
- Where were the people who were supporting the LWS operation all these years?
- Why the LWS publication cannot be a ‘corporate’ library function, but it operates as a periodical library project?

Guenther (2000) identified three LWS’s evolution stages in academic libraries. The first stage was a period of ‘Web discovery and exploration by an individual or small interested group’ within the library, who were already employed on some technical work. However, the work for the LWS was not yet formally recognised by the organisation. Whilst, Garlock & Piontek (1996) pointed out the need for the LWS function to become part of the library organisation gaining the general staff support. In the second stage, the LWS’s effort has started to be recognised because of its valued role, but there was a question about ‘who and how the Web will be managed within the organisation’ usually raised between the marketing and the IT section of the library. Related to this conflict, Roberts & Rowley (2004, p. 22) allocated the “Web Development” in a hierarchical structure under the “ICT & Media services” library section (Figure 2.3) showing an example of a



typical organisation structure for an academic library. Finally, in the third stage where the LWS was recognised as a “corporate” function within the library, the need for “overall management” was raised. About this need, Griffiths (2004, p. 65) noted that within the whole range of web work - editorial, managerial, technical and design – ‘the days of the all-singing, all-dancing webmaster are largely gone from all but the smallest sites because of the depth of skills that are now needed to make sites perform at their best’. Nevertheless, the *one-off life cycle* approach for the LWS development and management does not support the establishment of this third stage.

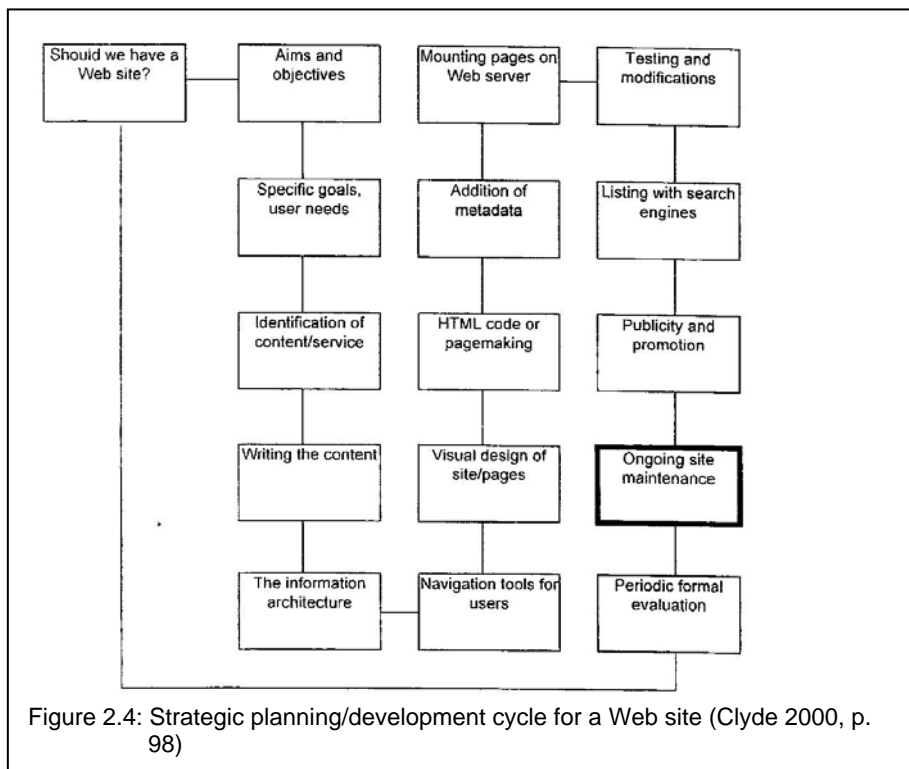
Ryan (2003, p. 208) suggested - in answer to the limitations and hurdles encountered by LWS evolution described by Guenther (2000) - the adoption of a strategic planning process in order to be ‘ensure[d] a dynamic, properly maintained web site’. She suggested ‘administrators [of small academic libraries to] consider following a strategic planning process that encompasses a mission statement, a purpose statement, web site administration, structure and organisation, content, maintenance and updates, and evaluation and assessment’. This management approach is able to create one “alive” and well-maintained LWS publication, of which the content is developed and updated regularly according to an agreed schedule, regardless of possible programmed changes in the LWS’s lay-out (design). Furthermore, especially for the development of LWS policies, which has already been mentioned (see, McLeod & White 1995; Garlock & Piontek 1996; Stielow c1999), Ryan (2003) pointed out that policies developed independently of a planning process risk to be arbitrary.

‘Out of the strategic planning process will come web site policies and procedures. In effect, the ultimate goal of the strategic planning process is to be able to create effective policies and procedures; those developed outside a planning process are often arbitrary or contradictory to institutional missions and goals.’ (Ryan 2003, p. 209)

Furthermore, Clyde (2000) suggested a strategic planning approach to LWS management because the ‘web site development and maintenance are ongoing activities (not a “one-off project”) for which resources and personnel (time) are needed on a continuing basis’ (Clyde 2000, p. 107). The “strategic planning/development cycle for a web site” that she suggested does not refer to a *one-off life cycle* LWS publishing such as Shucha (2003) does; Clyde presented the interrelations between managerial activities with the whole publishing procedure and its evolution taking into account the context of the library

organisation which undertakes it. She used as example the web site of the International Association of School Librarianship.

Taking into account that this twelve page paper is not a strategic management handbook or a manual for web sites, it is not expected that its content is to detailed in the strategic planning process and accurate to the web development tasks and required skills. The strength of this paper can be identified in the following points. Firstly, the author provided a clear and easily understood picture of basic management aspects connected with development tasks (Figure, 2.4) symbolising at the same time the ongoing procedure of LWS publishing always taking into account the library’s purposes for the LWS as library function. Secondly, she referred to the need for the library to develop all management areas identified above (see, Friedlein 2001; Cole 2004) and discussed how decision making affects and is impacted by library management and availability of appropriate resources.



Almost a decade later, King (2009) approached the LWS as “the digital branch” of a library. He focused on issues of decision-making related with the LWS development; whilst he made clear that the product of any management tool chosen to be used - like a Content Management System (CMS) or the back-end custom coding - is not the library’s

product; the product of the LWS management is the ‘front end of [library’s] site that users interact with’ (Kink 2009, p. 19). However, he discussed the importance of the decision-making for the selection of a CMS, which operates as the heart of the digital branch, as it formulates operations, roles and the whole work-flow of the LWS development during the design period and later during the regular life-term. In addition, the choice of a CMS affects the information architecture of the LWS. In other words, King identified indirectly two issues about the LWS; the LWS as an entire library function, which is more than a periodical library project (see, “the digital library branch”) and the impacts of the technological tools in the management of the LWS development, whose selection must be a crucial part of the planning process and the decision-making about the LWS development.

2.3.3 LWS management and webmaster’s role

In the literature on librarianship the role of “webmaster” or “web manager” was usually mentioned relating to the LWS management (Church & Felker 2005; Corrall & Brewerton 1999; Dowling 2003; Griffiths 2004; Wilson 2004). However, the content of this role was not clearly defined and it was not common within the various sources. In the wider literature the term “webmaster” was also defined with various contents which were not always related to or exclusively related to the management of a web publishing (Friedlein 2001; Richmond n.d.; Spainhour & Eckstein 2003; Van Der Walt & Van Brakel 2000; World Organization of Webmasters n.d.). This variation in the webmaster’s duties related also to the size of the organisation which indicated that the examination of the webmaster’s role could not be an exclusive, accurate, precise and complete source for the identification and examination of the work tasks for the LWS management and development.

In the literature on the librarianship, Corrall & Brewerton (1999, pp. 146-148) identified the “webmaster” or “web manager” as a new IT-related role, as the only one, which was related to the LWS, and the suggested duties were developing and maintaining web pages, providing technical support for users, assisting library staff providing them with the technical tools for their work and leading a team for development of an intranet and administering local web-based databases. Dowling (2003, p. 4) in his report, “Web

manager's handbook" addressed to libraries, defined the role of "web manager" as the person who 'is responsible for establishing, configuring, maintaining, and upgrading a website'. Griffiths (2004) reviewing related literature concluded that there has been not a common content for the webmaster's role and he noticed that the role variety is related to the size of the organisation that the webmaster works within. Church & Felker (2005) pointed out that, because of the greater complexity of an academic LWS, one person cannot do all the work. Therefore,

'the traditional Web master is now more of a manager than a technical person, coordinating the work and assisting the Web Administrator who is responsible for the technical aspects. The focus is increasingly on planning and goal setting and making critical decisions. This still requires familiarity with many of the technical processes but from a much less "hands-on" vantage point'. (Church & Felker 2005, p. 553)

Wilson (2004) identified the role of "web manager" with duties related to the LWS management; but distinctively with the development and maintenance tasks. She, also, pointed out that in small organisations one person may be in charge of the development and maintenance of the LWS, although without that person having management responsibilities too. Moreover, Wilson (2004, pp. 3-4) referred to the need for committees consisting of library staff to support the work-tasks of the LWS development, but only during the period of the LWS creation or redesign and during the period of LWS maintenance only one person, the web designer, upload information following either a centralised or a decentralised model. In the centralised model the web designer uploads the new/updated information and in the decentralised model staff from various departments of the library is permitted to upload information too. However, this staffing approach is very close to the perspective of the *one-off life cycle* approach of LWS publishing, as the LWS is designed once, with the assistance of a project library team which stops working on the LWS after the first launch period and then the maintenance aims to keep the LWS updated, until the next redesign project.

In the wider literature, the World Organization of Webmasters (n.d.) answering the question of "what is the web professional?" declared on its web site that:

- 'Essentially, webmaster is a term that can be used to describe almost any web professional. A webmaster can be:
- one person interfacing with Net-based communication, back-end technology, and business management
 - a general contractor/team leader for the creation and management of websites

- a person who authors and creates HTML, CGI, XML, Graphics and more
- a web project manager
- an individual who markets and promotes web sites'

In 1996, Richmond (cited in Van Der Walt & Van Brakel 1997, p. 20) defined the webmaster as a 'person who manages a web; mediator between web authors and system administrator – ensures that applicable standards such as HTML validity and link liveliness are met; optimises the web architecture for navigability; takes editorial responsibility for the content, quality and style of the site; finds, creates and installs tools to create web content; check consistency, develops and enforces the house style; liases with graphic artists; provides first level user support.' Richmond kept this definition after all these years, but he pointed out that "'Webmaster" is currently an amorphous title, describing everything from a beginning programmer to a management-level marketing professional, depending on whom you talk to' (Richmond n.d.). In addition, Spainhour & Eckstein (2003, p. 3) wrote that 'when you examine what webmasters actually do, there are different definitions' and they grouped his/her responsibilities into four general roles, which have common basis; the technical support within the procedure of the web publishing :

- content provider
- lay-out designer
- programmer
- server administrator

Van Der Walt & Van Brakel (2000) discovered this unevenness in job title, description-tasks, specification-human skills of webmasters via their research during the 1998. The source for the list of the research sample was Fortune Magazine's Global 500 list of organisations. 100 organisations were selected randomly and 63 respondents took part finally in the survey. The results showed that:

'A large proportion of respondents were employed at a technical (or IT) level (in this case, 21 respondents or 33%). On the other hand, 17 respondents (27%) had middle management positions and 18 (29%) were undefined or mentioned in the category 'other', as defined within the questionnaire. These 'other' positions included posts such as individual consultants. In some cases, the webmaster was not employed fulltime. An important finding was that 11% of the respondents held positions within the top management structure of their organisations.' (Van Der Walt & Van Brakel 2000, pp. 22-23)

Friedlein (2001) described the work tasks for the web site publishing grouping them in roles undertaken by members of a team, covering the activities for the management, development and maintenance. The example he used refers to a large team in order to bring out the variety of the work tasks required for this complex undertaking. The role of “Webmaster” is not included in the management teams, but it is related to the development and maintenance of the web site after the main development (see also, Figure 1.1, p. 12). The “Webmaster” was described:

‘as a job description [that he/she] is used to cover a wide range of tasks and skills...The Webmaster’s role really comes into play after the main development effort, when the site needs maintenance, administration, monitoring, and updating...The Webmaster is usually responsible for ensuring the correct functioning and uptime of the site once it is running. She is often the first line of support regarding user interaction and issues with the site’. (Friedlein 2001, p. 25)

King (2012), having as a starting point the approach that the LWS is a “digital branch” of the library, discussed a variety of “digital branch teams”, instead of the staffing perspective of the one person/webmaster. The role of the “Webmaster”, as it was described by Friedlein (2001), was titled by King as the “branch manager” or “digital services director”, who acts ‘as editor-in-chief of digital branch content and direction’ (King 2012, p. 16) and he/she meets with the other web teams, which have to achieve their specific goals for the LWS development.

‘The digital services director is a system-wide, long range planning role’ (King 2012, p. 16)

Among the web teams operating for the LWS development King mentioned also teams related with the relatively new technologies, which supports social media networking, like blogs, Twitter/Facebook, Youtube, Flickr and Pinterest. This is an indicative practice for the LWS, evolution; it can include/utilise new web technologies in the terms of its web publication as far they meet/support the LWS roles.

2.3.4 Studies in aspects of LWS management

Thirteen studies located in the literature treated only a few aspects of LWS management’s processes and activities. Almost all studies investigated Northern American academic libraries between 1996 and 2008 and most of them in the end of 1990s and the beginning of 2000s. Only one was carried out for the UK academic library sector in 2008. Most of

them focused on the human resources management and policy development and usually researchers examined the selected aspects separately from their context of LWS management, LWS publishing and organisation. The studies are presented in chronological order, as there is not any other reasonable basis for grouping them, such as thematically because usually the studies covered more than one aspect. In addition, methodological issues of these studies are going to be mentioned in particular because it was important for the study to consider how other researchers approached their topics and some of those cases are going to be discussed in the following chapter about the research methods.

The Association of Research Libraries (ARL) carried out a comprehensive survey in 1996 and repeated it in 1998 (Liu 1999) about the management and development of LWS aiming to identify patterns and trends in the design and the content of LWS. The questionnaires covered mainly developmental aspects focusing mostly on the design and less on the content of LWS. The aspects related to the management referred to the organising of resources (staff, servers and software), financial planning, future plans for further LWS's evolution and development of guidelines. Indicative results showed that in 1996, 84% of the libraries solely managed their LWS and 13% of them managed it jointly with other university units. In 1998 there were guidelines for web site development developed by the library in 67% of the sample and by the university in 70% of the sample and guidelines for electronic collections development developed by the library in 37% of the sample. Both in 1996 and 1998 in about 86% of the libraries examined, at least one member of library staff was working on the LWS and most of them had the professional title of "librarian"; whilst in the results of 1998 it was noted that 'the web development responsibilities were spread much more broadly across the library staff' (Liu 1999, p. 3). Especially regarding the position of the "Library Web Master", where it was reported, it was occupied by a librarian in 76% of the cases in 1996 and in 90% of the cases in 1998. His/her primary duties as identified in the 1998 survey were:

- Provide overall direction for development and maintenance of website(s) – 87%
- Develop web content – 83%
- Respond to web email – 81%
- Handle HTML programming and technical training – 70%
- Recommend web hardware and software – 69%
- Manage web development staff – 59%

(Liu 1999, p. 14)

Evans (1999) carried out a survey in January 1997 of “authors of academic library home pages” from 124 American college and university libraries. The aim of the study was to identify the professional identity and skills of the web page compilers and the methods of their training in web page construction. The general professional profile of web page compilers drawn from the results was that about 78% were librarians and about 20% were “non-librarians”; they were recently hired employees, working only part-time in this responsibility and most of them (83%) worked in web page construction with collaborators. Their job titles varied with more frequent “systems/programming”, “electronic services/media”, “technical services”, “reference” and “webmaster”, but there were about 23% of librarians and 8% of non-librarians who worked in more than one job in the library. In addition, in regards to the training for technological skills development, respondents stated that this took place through formal training and self-instruction and Evans concluded that skills need to be continually upgraded in both ways, but always with the organisation’s support, and she pointed out that:

‘the investment in training has its payoff ... Institutional support for training will allow those ... both to create a more attractive, useful and functional presence for the library on the World Wide Web and to develop a larger pool of human resources for continuing to work in the virtual environment’ (Evans 1999, p. 318).

Taylor (2000) studied solely the role of the “webmaster” in library web sites in 1998 via a survey of the library webmasters of Association of Research Libraries (ARL) institutions. The research explored webmasters’ role, job tasks, educational profile and their job satisfaction and dissatisfaction. For the purposes of this survey, the term “webmaster” was described/defined as ‘someone whose responsibilities may have included, but were not limited to, Web site policy development, editorial oversight of content and graphics, organisation of files and directories, page maintenance, and user support’ (Taylor 2000, p. 116). This description of the webmaster’s role affected the results, reducing their source of data; as the author mentioned, some respondents stated that they could not match one specific person with this job task description and they did not fill out the questionnaire. The results showed that the work tasks of a webmaster were undertaken by more than one person in 52% of cases. 1/3 of the webmasters had job titles related to “Systems/IT/networked resources or services” and the majority of them (about 80%) had more responsibilities for design and content development work tasks, like HTML coding, designing graphics and layouts and adding content, and less responsibilities in the

management processes, like participating in the decision making about the content and the design.

'More than 80 percent of the respondents performed HTML coding, designed graphics and layouts, wrote material for their Web pages, and participated in editorial decisions including deciding what content should be provided...The webmaster role was shared at many institutions. Just over half of the respondents shared their positions with others, with almost this entire group sharing it with one other person...Two respondents stated that the Web committee served as the webmaster ... Although almost 85 percent of the respondents were responsible for decision making about Web content and layout, these responsibilities were often shared with managerial librarians, other librarians, and Web committees [teams]' (Taylor 2000, p. 118)

The Association of College and Research Libraries (ACRL), division of the American Library Association (ALA), studied the features of library web site policies by small college and university libraries (Traw 2000). 224 libraries were surveyed, but the time period is not reported. The response rate was 73%, however only 25% responded to all the policy questions. The questionnaire covered five areas:

- a) general information about the library;
- b) general information about LWS;
- c) information about the authority of LWS publishing;
- d) information about the development of policies for LWS and
- e) characteristics of the LWS policies.

This structure provided a context within which the research topic was studied. A synopsis of the results about the development of LWS policies is that 21% of the libraries had developed specialised policies for their LWS covering mostly design and content development issues; whilst 52% of them used the policies developed by university management to govern the institutional web presence and about 36% of the libraries had only informal/non-written policies. 'The most common reason given for not having policies [was] that library needs [were] currently being met by their institution's policies' (Traw 2000, p. 3). The low percentage of LWS policies development by libraries was explained by that the 'library web site policies [were] a relatively new idea for most small college and university libraries' (Traw 2000, p. 5). In addition, about the development process of the 21% of the libraries, in 45% of them a web team/committee was involved; most of them (67%) were derived from a LWS redesign project and the evaluation and revision of policies took place in an irregular basis.

In the summer of 2001 ARL (Ragsdale 2001) conducted a questionnaire survey of its member libraries. The study explored the human resource management needs for the LWS development and maintenance. The study examined the application of three models of staffing:

- a) one webmaster;
- b) a web team or committee
- c) distributed web work across the library staff.

The results showed that, in addition to those three models which described some libraries, other models were identified containing elements of the two or even all three of these models. It was not clearly presented either how many of the libraries were matched to the three models or to the other ones. Ragsdale (2001, pp. 9-10) mentioned only that 'responses show that libraries use elements of all three models...Some libraries have mixed and matched combinations of these staffing models. A few libraries even report coming back to a once-abandoned model after experimenting with another'. Additional results of the survey were that 79% of the libraries developed guidelines for LWS development and that only a few libraries developed training programmes in technical issues for their web staff. However more training and workshops were provided either at the institutional level or outsourced to external providers. Moreover, the staff working in the LWS development and maintenance was not solely library staff, but in some cases "institutional systems staff", "graphic designers" and "consultants" who were used for assisting the LWS development.

Shropshire (2003) carried out a literature review of LWS management and located some documents that 'do examine selected aspects of Web site management, but the authors' interpretations of the concept "management" is too narrow to provide real assistance to beginning Web manager' (Shropshire 2003, p. 95). The researcher tested concepts and theories identified through literature in practice conducting a multiple cases study of four American academic libraries during the fall and winter of 2001/2002. Comprehensive data was selected by examination of their websites and interviews of library directors and other staff members involved with the management, development and maintenance of the library web site. However, further details of the methodology are not given.

Shropshire (2003) identified that the recruitment of a library web team was mainly from the existing library staff and the new staff did not take up posts in LWS management, but

they worked in LWS development and maintenance. She also pointed out that for the successful web manager the technological competence was not the most important ability, rather ‘the sense of the big picture, his or her clear vision for the Web site’ (Shropshire 2003, p. 99). However, she discovered that library ‘web site managers may find themselves in a position of having responsibility, but not authority’ (Shropshire 2003, p. 98). Finally, she concluded that for the LWS ‘such an entity should have the strong backing of library administration and should be to divest itself of any (library) departmental loyalties to cultivate a broad perspective that reflects in an understanding of how parts of the site interrelate’ (Shropshire 2003, p. 100).

In the middle of 2000s, Kneip (2007) focused on the role of webmaster in the American medium-sized academic libraries, examining issues like Evans (1999) and Taylor (2000), but without developing a deep discussion revealing reasons and key issues. The term “webmaster” was determined as ‘an individual who has a significant level of oversight for a library’s Web site and is actively involved in consistent updates and maintenance for the library’s Web site.’ Kneip (2007, p. 6). The study surveyed 63 individuals and it aimed to identify the identity of the academic webmaster, via their education, the criteria used for their employment, their duties and their training in web publishing issues.

The results did not reveal a reality different from previous similar studies. The “library webmasters” had other duties in addition to the maintenance of the LWS; whilst for 24% of them the duties of the webmaster took precedence over other duties. They were chosen for these duties usually because of their interest in web publishing, their previous experience in web design or programming tasks. Their educational background usually was Master in library science with undergraduate degree in humanities & social science. Finally, their web development skills were mostly via self-taught.

‘The majority, 92 percent, indicated they had used Internet sites to teach themselves Web development skills, with 89 percent using instructional books. Professional development workshops were used by 73 percent of respondents. Finally, 37 percent indicated taking a computer science course while pursuing a degree.’ (Kneip 2007, p. 12)

During the Autumn of 2006, Connell (2008) surveyed library Web team leaders in 110 academic institutions in the USA, having as starting point that ‘academic library Web sites are such an integral part of their libraries, it is important to know more about the people, tools, and methods used to create these Web sites’ (Connell 2008, p. 121). This

study examined some managerial aspects taking into account the *type of institution* according to the Carnegie classification (e.g. community college, PhD-level granting institution and research university²) and being built on the ‘assumption that most libraries operated with a multiple person team model’ (Connell 2008, p. 128). The issues examined were largely focused on human resources; about the profiling of the staff who were responsible for the LWS, the Web team’s size, selection, responsibilities and training, the centralised or decentralised³ LWS development within an institution with many library locations. The operation of LWS design was examined covering the areas of the responsibility for the LWS design implementation, the duration of design process, the tools/software and scientific design specifications for accessibility and usability.

The results showed that the type of institution could not be associated with the formation of the practices on the examined managerial aspects, such as the size and the training of the Web team and the design resources/tools. Nor was the library size or its type associated with particular patterns of LWS staffing and other resources. The size of Web team showed that about half of the cases (49%) had only one person working in the LWS and the Web teams were based on two or three people in approximately 28% of cases. Moreover, the work in the LWS was only one of the components of their job and only almost 5% of the Web team members indicated that Web designing was their primary (but not exclusive) job. Therefore, the results about job title of the “Web Editor” or in other words the “person responsible for the Web site or Web design team at their library” were reasonable that he/she had many job titles, as usually only one person worked in the LWS and the LWS tasks were not his/her exclusive/full-time occupation.

Furthermore, the selection for Web library staff was usually from existing staff and it was based on the personal interest of the staff for the Web design (approx. 42%) and only about 15% of the Web team members were hired for Web work. The relevant knowledge and skills of the Web staff was usually based on self-training. In the cases of institutions with multiple libraries (about 31%), usually the libraries shared a Web team (71%). According to almost all respondents (approx. 94%) the LWS design was an in-house operation; the six library cases, which used an outsourcing firm for that, did not have the

² The Carnegie Foundation for the Advancement of Teaching (<http://www.carnegiefoundation.org/>)

³ Regarding the centralised or decentralised model in LWS development, see in section 2.3.3 Wilson (2004). Briefly, in the centralised model a library web designer uploads the new/updated information and in the decentralised model staff from various library departments is permitted to upload information too.

needed resources for creating their LWS and accordingly in their decision-making logic it was not cost effective to train someone to do it. The design process usually took place within two to four months; for about 21% accessibility requirements were mandatory and for about 47% usability test adopters were used during the LWS design phase.

The researcher supported indirectly the approach of the *one-off life cycle* LWS publishing (see, section 2.3.3), as she focused on the creation phase of a LWS publishing and in the conclusion suggested for further investigation the subject of the LWS redesigning raising questions about whether the results about the staffing were during or after the period of redesign. Moreover, the issue of the authority over the LWS publishing was raised indirectly, although without being supported by collected data. Connell (2008) - only in the discussion (paper's section) - was mentioned the aspect of "campus Web committees", without making clear their role in LWS publishing and whether the LWSs examined were designed as part of the institutional web site or they were a separate and self-authorized web site. She reported mandates addressed to library Web designers derived from "campus Web committees" and the need for more autonomy on behalf of library Web designers, because 'a library Web site is complicated and needs to be regularly updated; requiring more autonomy and control than most other campus departments, but this is not always understood by campus Web committees.' (Connell 2008, p. 128)

Hendricks (2007) examined the aspect of LWS policies development and the involvement of the library webmaster in that process. He conducted a survey of "library webmasters" in American academic libraries. However, further details about the period of survey and its sample were not given. The results showed that almost 55% of libraries had developed a web policy with the note that the majority of respondents indicated that libraries should follow their university's policy. Respondents, who identified themselves as "webmasters", had usually as job title the "web services librarian", "reference librarian", "electronic resources librarian" or "systems staff". Their main work tasks for the LWS were on LWS maintenance and only close to 2% of them were solely occupied with duties related to LWS. In addition, their involvement in LWS policies development was low (about 9%); 'most respondents indicated that this responsibility [was] carried out by a web committee⁴' (Hendricks 2007, p. 143).

⁴ The "web committee" referred to a team of library staff.

A survey of 80 Northern American academic libraries was conducted (Academic library website benchmarks 2008) examining a wide range of aspects of academic LWS publishing. Details about the survey’s period and other methodological information were not provided. The results for each study element/question were presented separately and for the analysis of some elements it was also taken into account figures like the enrolment size, the status of the institutions (public-private), the Carnegie classification and the “webmaster staffing arrangement”; for example, while the results showed that no library had a separate line item in the library budget for the LWS, more than half of the cases (about 65%) considered LWS budget as part of the library IT budget; in addition, approximately 70% of these cases employed a library webmaster or library web staff (see, Table 2.1). However, the fact that more than 1/3 of the cases did not occupy staff for the needs of the LWS publishing indicated that after more than fifteen years of library web presence the LWS has not become a *de facto* an accepted function of library organisation.

Table 2.1: Line item status of library web site budget, broken out by webmaster staffing arrangement (Academic library website benchmarks 2008, p. 85)

Webmaster Staffing Arrangement	A separate line item in the library budget	Considered part of the library information technology budget and not separately broken out	Considered to be mostly part of the college information technology budget
Employs webmaster or web staff separate from college's website staff	0.00%	70.83%	29.17%
No webmaster or web staff of its own	0.00%	53.85%	46.15%

The aspects related to LWS management were web policies development, re-design planning, financial planning, hiring of consultants and resources management (staff and software). Indicated relevant results showed that a high percentage of libraries (more than 40%) used content editing system provided by the central university web staff. Libraries did not have a separate line for their LWS in the library budget; most of them (about 65%) considered the budget about LWS as part of the library IT budget, whilst approx. 35% considered it mostly as part of university IT budget. The majority of libraries (almost 80%) had not hired a consultant or consulting firm to advise on LWS development, although about 16% of them had done it and for about 4% of them the university administration paid for the consultancy. Moreover, there were “website policy committees” for overseeing website policy on content, IT, graphics, and other topics in which library staff participated. Over half of the libraries (about 56%) had launched a major redesign of

LWS and about 71% of them planned to do a major redesign project within next two years. In addition, more than half of the libraries (about 65) employed a webmaster or web staff separate from college's website staff (belonged to the IT unit). For 1/3 of this 65% of the libraries, staff from the university IT unit worked as well in the LWS development and maintenance. The professional identity of library's web staff was identified as either as "library IT staff" or as "library staff".

'The majority of respondents (75.3%) answered that the library IT staff handles both web content and most web-related technical work. The remaining 25% reported that the college IT division does most of the technical work and that library staff handles the content.' (Academic library website benchmarks 2008, p. 30)

Definition of the "webmaster" position was not provided in the report. However, a secondary reading of the options provided for the question 'Dimensions of the College Library Web Staff' showed that the "webmaster" position referred more to the staff whose main duty was the development and maintenance of the web site and not its management. The choices given to the respondent and the results for that question were:

1. We do some content editing but don't really have a full time web master (30.86%);
2. We are pretty much a one person show with a webmaster and perhaps a bit of help from others (43.21%);
3. We have a webmaster plus a small staff equal to about 2-5 FTE positions (20.99%);
4. We have a webmaster plus a staff of more than five FTE (0.00%);
5. We have multiple library websites many of which have their own webmaster and/or staffs (4.94%).

(Academic library website benchmarks 2008, p. 72)

Almost in the same period that the research reported here took place, another study carried out in the UK, sought to understand the approaches used by a group of academic libraries to manage, maintain and develop their web sites. Manuel *et al.* (2010) designed a pilot study with six university libraries in the East Midlands. This pilot study took place during June-November 2008 and used an online survey and four semi-structured subsequent follow-up interviews. This exploratory research also aimed to develop a survey instrument for a national survey of a broader range of the UK academic libraries. The respondents were chosen for having a primary role in decision making or responsibility for the development and maintenance of the library website; having a role similar to that of web administrator/web master. The areas covered were website management, maintenance practices, usability study methods and links with library strategy; although the paper did not give details about the content of these areas and the

questions that were set to cover them. In addition, the study did not take into account influential factors and considerations with practical applications, like staff from other departments, LWS hosting (hardware-software) and domain (whether the LWS is separated web site from the institutional web site or it is departmental sub-site within the university web site).

According to the findings, the area of LWS management examined the influential role of the university policy, about which five of the six libraries pointed out that the LWS management was affected by the university policy. Moreover, university control was found in the areas of the LWS design, as a web template was provided in three cases. All the cases had full control only in the area of website maintenance. In five out of six cases the library had total control of the content and the website development and in only three out of six cases the library had full control of decisions about design and budget. Decisions about the LWS tended to be made by a web group or committee in four cases and in one case by another library group and by an individual. About the qualifications of the staff involved with the LWS, but without being clear in which activities about the LWS and how many of them in the same library case, the findings showed people 'having a library qualification (six), being self-taught (five), having a computer science qualifications (four), being a marketing professional (one) or having a design qualification (one)' (Manuel *et al.* 2010, p. 151).

The researchers (Manuel *et al.* 2010) discussed during interviews four influential dimensions: the university, the library (change management and site management), and the sector and site users. University policy was pointed out as an influential factor in decision making, in design and maintaining system with guidelines and standards. The university marketing was also indicated as a key driver in delivering a web presence; an area that the sample libraries could not cover as they did not have professionals with marketing qualifications. Finally, the monitoring activities, in order to gather information about visitors' activity on their web site, were analysis of web analytic data, user survey, focus groups, task setting and anecdotal evidence.

In the same period during 2008, Fagan & Keach (2011) conducted an anonymous survey distributed to several American library e-mail lists, like the list of the ALA (lita-1). This survey was addressed to academic libraries and to those who "ever tried to coordinate a

web-related project' in academic libraries, which was defined as 'taking more than 2 weeks and/or involving more than 3 people' (Fagan & Keach 2011, p. 4). From the 121 responses 81 questionnaires were filled in completely. The survey covered issues about the qualifications and the job title and the job responsibilities of the "Web project managers", the departments that those web managers worked for, project management techniques and the organisational status of those web project groups of staff.

The results showed that most of the respondents (84%) held a masters degree in library science. The job title varied greatly, but from the 29 job titles the word "Web" was used in almost half of them (15). Usually, these web project managers were staff of Web/Technical/System department or Public Service department and in small percentages they belonged to Administration and Collections. However, job responsibilities related with web and digital topics were common place for the majority of the respondents; whilst about half of them spent less than 25% of their time managing web projects. From the given list of project management techniques, respondents indicated as most frequently used the "Documenting project requirements and documenting project specifications" and more than half of them marked as frequent activities the "archiving documents for future project teams, identifying milestones, submitting project status reports, writing a statement of scope or statement of work, creating a work breakdown structure, and identifying a project sponsor". Finally, the results showed that the web projects usually were staffed by a temporarily organisational team, with fewer cases where there were standing committees or organisational units.

Researchers concluded that web project management in academic libraries continued to be informally defined, without a consistent home within organisational charts, encountering challenges, like shifting/unclear priorities and inadequate staff/budget and resources. However, there is a question about the methodological approach of this research undertaking; the clearly focused and direct approach of the LWS management as "web project" radically affected the sample and therefore the results. The survey was addressed to "web project managers" and not to managers of the academic library web site, collecting data even from people who worked occasionally on a web based project. In addition, the list about the management techniques was limited and it did not cover even representatively all management area (see, section 2.3.1).

Finally, during 2008, Bundza *et al.* (2009) conducted another study in American academic libraries about library web development, including some management issues. They carried out a web-based survey at 149 academic institutions and finally 118 responses took place. The research was addressed to the staff responsible for coordinating the LWS tasks and those who most closely fit the description of head of reference services. The management issues were included were: LWS redesign, human resources and their organisation and the relationship with the parent institution. The results showed that the number of the staff working on the LWS tasks was limited (one to twelve), considering that none had them as primary responsibility, and the LWS management was distributed in the library organisation. The involvement of the parent institution seemed to be limited to the assistance in technical and marketing issues. In addition, the issue of frequent/periodical LWS redesign was common place for about half of the half of the cases.

2.4 Summary

The study aimed to investigate the LWS management undertaken by British university libraries taking into account the LWS role as one of its crucial aspects. The literature review has focused on those two research aspects; the role and management of the LWS publishing. The aims of this chapter were to place the study in its context and to identify stepping-off points needed for the present research.

Literature review highlighted that the previous studies and theoretical approaches had not investigated the topic of LWS publishing in its details, identifying or examining interrelations between its components. On the contrary, most studies seem to be small scale and concerned with a single aspect or a few separate aspects of the LWS management. Nevertheless, almost no exploratory investigation on the LWS role was taking place as literature revealed that there were strong assumptions/perspectives for the content of the LWS role. Clyde's (1996; 1999; 2004) approaches regarding the LWS role and the management were exceptions, providing prospects for further, deeper and more tabulated investigations on LWS publishing. However, no study included the interrelation between the LWS role and management. Consequently, the researcher examined, analysed and presented both research aspects (role and management), placing them

additionally within the terms of LWS publishing and showing the multiple interrelations between those two aspects, which were taken into account in the design of the current study.

Evidence derived from some studies raise issues for further discussion related to the factual support of the importance of library's web presence. The fact that it was found that a limited number of library staff worked in it and it was not an exclusive occupation for them and the lack of any clear line in the budget for the needs of LWS publishing seemed to not support the idea of an importance of LWS. In addition, the literature seems to imply a lack of integration of the management and operation of the LWS with the operation of the library. Nonetheless, the literature did not examine the aspect of the perspective on the LWS publishing as procedure (e.g. *one-off life cycle* approach, *strategic planning* approach, etc.), which could affect too the institution of the LWS publishing as library function.

The issue of the influence, even control, exerted over the LWS by the institution was reported only very much later via the UK study (Manuel *et al.* 2010) almost in the same period that the current research was undertaken. In all the previous studies or papers the aspect of the authority over the LWS management was not examined or even discussed. Therefore, during the procedure of the study's design this aspect was downgraded and the study focused almost exclusively on the management of LWS undertaken by the library, recording only the cases for which there was strong and broad institutional involvement in LWS publication (see, section 3.4.2.4).

Discussion in the literature brought out methodological issues which were taken into account during the research design (see, in particular the sections 3.4.1, 3.4.2, 3.4.4 and 3.4.5). The data collection about the LWS role was guided from the identification of the three facets and their appropriate data sources. However, practices in research design of some previous studies, like the use of a particular starting point for the content of LWS role as basis of the study design, were discussed in order to the current study to achieve accurate and thorough results (see, section 3.4.1). Related to the investigation of LWS management, the argument about the approach of LWS management using work tasks rather than roles, like the role of "webmaster", was used for the design of the survey on the LWS management (see, section 3.4.2). In addition, studies in LWS management

issues used to analyse solely each research element, presenting their results separately without taking into account possible correlation of them with other research elements (see, for example the Academic library website benchmarks 2008). This issue was taken into account in the research of the analysis (see, section 3.4.5) in order the analysis to ensure export of rich and enhanced results.

Chapter 3.

Research design

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3. Research design

3.1 Introduction

The LWS management, as a body of processes in the terms of LWS publishing, is applied in order to implement the LWS role within the library's organisational context. Literature review, regarding the LWS role, showed that studies had not aim to explore the content of LWS role, but to rather examined the application of a particular perspective about the LWS role, limiting from the beginning the breadth of the potential content of LWS role. Moreover, the LWS role was examined mostly based on data derived from the LWS content. Therefore, the concept of LWS role was approached mostly through one of its facets; the uses of LWS. Regarding the LWS management, the lack of a theoretical background was identified and studies explored only aspects of this topic, without taking into account the LWS management's context or the aspect of LWS role or other considerations derived from the library's organisational context. Moreover, some studies – in approaching the LWS management as a research topic – used roles, like the role of “webmaster”, instead of work tasks. In addition, many studies analysed the data of each research element solely, without investigating possible correlation between the research elements.

This study took into account either the results or the design of previous studies and it sought to explore and to give answers to the basic – but still unanswered – question of how libraries managed their LWS publishing taking into account what they wanted to achieve and eventually achieved in developing a web site. The research focused on the British academic libraries; this was chosen as the research field because of its relatively long history in library web presence, its geographical accessibility and the lack of relevant research.

This chapter presents the research design. It is divided into three sections:

- Section 3.2: summarises the research aim and its objectives, as they defined for meeting its needs;

- Section 3.3: presents and discusses the chosen methodological stance, which was selected in order to achieve the research aim and objectives within a framework of good research practice and to acquire new knowledge based upon the data, considering limitations;
- Section 3.4: presents and discusses of the research instruments (methods) applied to accomplish the study.

3.2 Aims & Objectives

This study sought to investigate the library web site (LWS) management undertaken by British university libraries taking into account the LWS role as one of its crucial aspects.

The study's objectives pursued in order to meet the needs of the above aim, were:

- 3.2.1** To review, analyse and determine the range of LWS role;
- 3.2.2** To examine the application of the managerial processes for the LWS development and maintenance undertaken by the libraries within their context;
- 3.2.3** To examine the relation between the LWS roles and the LWS management approaches which were identified (see, 3.2.1 & 3.2.2 respectively);
- 3.2.4** To investigate factors, which affected the formation of the management approaches and the LWS roles.

3.3 Methodology

The literature review concerning studies on LWS management did not provide sufficient materials, upon which any hypothesis about the LWS management by the academic libraries could be developed – as assessed pattern(s) - and be tested through new research. Consequently, the valid research question was not if something was applied in practice or not, but which management approaches were applied in practice. Mapping and understanding the phenomenon, as it was developed through more or less 15 years of

practice, responded to the lack of research and it could provide the prerequisite basis for further in-depth investigations on LWS management. This logic and argument supported and built the research question in section 1.2, explaining and locating the topic within its context.

The study was designed based on the research paradigm of “mixed methods”, as the third research paradigm with the other two: the qualitative or quantitative paradigm (Flick 2002; Robson 2002; Strauss & Corbin c1998). As Creswell (1998, p. 74) wrote, the paradigm may be best defined as a “worldview” and it is a ‘basic set of beliefs or assumptions that guide’ a researcher’s inquiry. Therefore, every researcher brings to his or her research a ‘set of interlocking philosophical assumptions and stances’ (Greene & Caracelli 1997, p. 6) including ontological beliefs; those about the nature of reality. In this case, the researcher did not explicitly identify herself philosophically compatible with either the quantitative or qualitative paradigm. In other words, no single perspective can always be the most suitable and the orthodox approach for each study case; neither the positivist (and post-positivist) perspective expressed through the quantitative paradigm, nor the constructivist nor interpretivist perspective expressed through the qualitative paradigm. On the contrary, the researcher finds more suited to reality the approach of the “dialectical position” (Greene & Caracelli 1997; Maxwell & Loomis c2003) of the “mixed methods research” paradigm whose underlying assumption is that research can be stronger when it mixes research paradigms because a fuller understanding of human phenomena is gained. Ma (2012) positioned herself in the same philosophical direction for library and information science research:

‘Mixed methods research that combines large-scale data analyses and a detailed description of community practice may provide us with a richer understanding of information and information-related phenomena.’ Ma (2012, p. 1866

In this particular study, the quantitative paradigm could not be applied because there was no theoretical background to support the development of a hypothesis or norms, which could be tested. The qualitative paradigm in a first reading could be ontologically more closed to the nature of the study, supporting the need for constructing realities – as this study was seeking for approaches applied on the LWS management by the British academic libraries. However only qualitative methodological instruments alone could not

collect all the needed comprehensive types and wide amount of data for the study (see, below). Therefore, the “mixed methods research” paradigm responded to the needs of a methodologically strong study, free from ritualistic restrictions derived from the qualitative or quantitative paradigm. In addition, this last point refers to the other position of the “mixed methods research” paradigm, the “pragmatist position” (Patton 1988; Tashakkori & Teddlie 1998) which calls for using “whatever methodological tool are required to answer the research question under study” (Tashakkori & Teddlie c2009, p. 7).

This study was designed to be a primary, holistic and contextual investigation of the practice; an overview. This starting point enforced the exploratory orientation of the study, related to the explanatory one. In other words, the study could not be developed more in-depth, but more in-breadth, focusing on the identification of management approaches within their context, covering a very wide and unknown area, and then to understand the reasons affected the formation of these approaches, examining relations and factors, identified through the previous procedure. Therefore, the objectives were developed upon this approach, starting with the exploratory part of the study (see, objectives 3.2.1 & 3.2.2) and then covering the explanatory (see, objectives 3.2.3 & 3.2.4).

Comprehensive data collection was required for the support of the investigated field’s composition and understanding, transcribing the practice in LWS management within its context and the range the LWS role and examining and identifying relations and influential factors. The literature review showed that criteria for the examination of both topics could be developed; regardless of the absence of the related theoretical background. Therefore, the investigation could be designed to provide systematic, measurable and verifiable results. Indicatively, the examination of the three facets of LWS role’s concept, which were identified, could be approached through the analysis of the mission statement and the contents of the web pages and the study of the library organisation related to the undertaking of the LWS publishing (see, section 2.2 & in particular section 2.2.4). In addition, the examination of the LWS management could be approached through the definition of its processes and its context, based on theoretical sources of literature about management and the management of web site development, and then through a variety of data collection instruments dependent on the type of information would be needed (see, section 2.3.1).

The wide range of aspects under investigation and their comprehensive content, which were required for the composition of the profiling of each examined case of LWS, raised a critical question about the methodological approach of the research. Case study or multiple case studies theoretically could serve the needs of the wide and deep data collection. However, criteria for the selection of the case or cases did not exist and could not be developed because there was no previous primary, holistic relevant research. Consequently, an arbitrary selection of sample-cases for study without criteria could not guarantee that the findings could produce generalisations. On the contrary, a survey-based approach could map the general situation, collecting a basic and wide range of quantitative data about the LWS role, the LWS management and aspects of the LWS context. Moreover, the findings of this primary survey could provide the source for development of criteria for case selection useful either in the current study or in other future studies.

Naturally, the exclusive use of a survey could not be the only data source for the needs of this investigation because it could not guarantee data's sufficiency. The comprehensive nature of the information needed required additional and supplementary quantitative and qualitative data, which was collected through a combination of research instruments in order for both the exploratory and explanatory parts of the study to be supported within the terms of a valid study. As Busha & Harter (1980, p. 145) write 'the type of information sought in a particular project has guided the application of appropriate research techniques'. Therefore, the "mixed methodology" stance was selected, applying "triangulation" design as the process of the use of two or more methods requiring consistent findings among the different data collection techniques in order for the findings to be reasonably valid (Powell 2004). In addition, the selection of the "triangulation" was based on its advantage that 'it can...capture a more complete, *holistic*, and contextual portrayal of the unit(s) under study' (Jick c2008, p. 109), answering to the needs of this study.

The combined quantitative and qualitative methods for collection and analysis of data could strengthen and benefit the study, where the research design's rationale of the mixed methods aimed 'to obtain ... quantitative results from a sample and then follow up with a

few individuals to probe or explore those results in more depth' (Creswell 2002, p. 100). Patton (1990, p. 187) also writes about the use of triangulation that 'one important way to strengthen a study design is through triangulation, or the combination of methodologies in the study of the same phenomena'. Nevertheless, an essential requirement is the achievement of a balanced and effective "marriage" of research aims and objectives with the methods selected in order for the 'method and subject of enquiry ... to be in harmony, not conflict, to obtain optimal information and insight' (Slater, 1990, p. 109). For this study this approach was selected because it was validated as suitable for the topic, taking into account its limitations; Patton (1990, p. 24) wrote that 'all approaches have their limitations and that there is no perfect approach'. However, the research design aimed to ensure the justifiable collection of precise and valid data in order for generalisations to be produced from the findings

The wide range of information needed worked as one crucial factor in the design of the study; especially because it should consist of more than one data source. Therefore, the range of some aspects of the study's chronological period and the sample selection should be reduced in order for differential factors to be controlled and then data credibility or homogeneity is not be affected. For example, data collection for a historical review on the topic would be in danger of lacking sufficient and reliable information as current library staff - as potential data source - were not expected to be same in the same post during the 10-15 years of the LWS presence. Moreover, the period of LWS publishing varied between the libraries. In addition, the evolution of ICTs application in library practice was not the same or similar within different countries and different library sectors. Specifically, the study investigated the current practice in a specific period (first semester of 2008) within the time terms of the research project. In addition, the university libraries were selected with purposive sampling, as the most developed sector of British academic librarianship on ICTs issues and their utilisation (see, section 3.4.2.2-c).

The investigation of the approaches in the LWS management, taking into account the LWS role as one of its crucial aspects, aimed to gradually compose LWS case profiles and to identify interrelations between components and factors affecting the formation of practices (see, study's aim & objectives; 3.2). The collection of information was built on the body of LWS cases, about which respondents in the descriptive survey participated.

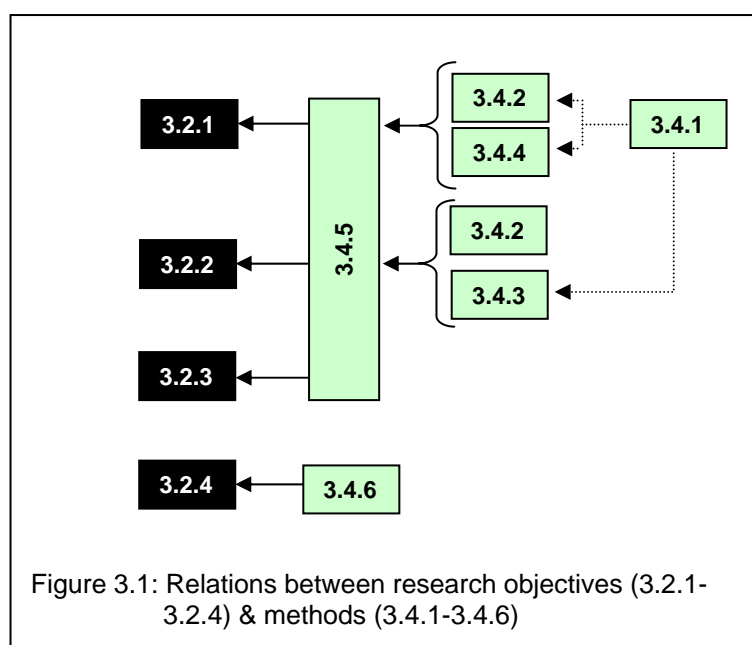
Thus, all the additional and supplementary quantitative and qualitative data was collected through the other methods were directly matched to each LWS examined case; these LWS cases composed the final research sample. Probably this sampling approach could limit the extent of the data derived from LWS cases, as the LWS cases, for which there was no response to the survey, could not be used further in the study as data sources. However, this decision to build LWS case profiles aimed to provide clear, rich and relevant data, which could be analysed via triangulation and “cross-tabulation examination”, investigating interrelations, providing added value in the quality of the research results. (see also, section 3.4.5).

The descriptive survey aimed to collect the major part of the quantitative data about managerial processes for the LWS development and maintenance, contextual elements of the LWS management and information about the LWS role (see, section 3.4.2). The other research instruments for quantitative data collection were desk research for collection of supplementary information about contextual factors (see, section 3.4.3) and content analysis for data collection about one facet of the LWS role; the LWS uses (see, section 3.4.4). Both methods were conducted chronologically after the survey in order to collect data only for the LWS cases, which composed the final research sample. In addition, but also prior to all the above methods, pilot content analysis was carried out in order to support the design of the survey, desk research and the content analysis (see, section 3.4.1).

The analysis as the fourth¹ research instrument aimed to bring together all the quantitative data from the different methods and to conduct an integrated and thematically structured analysis (see, section 3.4.5). All this different data was compatible for analysis and it did not cause conflict during its integrated analysis because, firstly, the data derived from the different methods had the same key/identity for each one LWS case and, secondly, because it was not used for the findings data about the same information, derived from more than one method. In other words, the data derived from different research instruments added identified and unique information for each case of the research sample and this united data was analysed.

¹The pilot content analysis (see, section 3.4.1) is included as the first research instrument.

The outcome of this method supported the first three research objectives, composing profiles, identifying groups and examining relations (see below, Figure 3.1). Specifically, the analysis (method 3.4.5) provided answers about the range of LWS role (objective 3.2.1), about the application of the LWS management undertaken by the libraries within their context (objective 3.2.2) and the relation between the aspect of LWS role and the LWS management approaches (see, objective 3.2.3). The data, which were analysed for the method 3.4.5, derived from the descriptive survey (method 3.4.2), desk research (method 3.4.3) and the content analysis (method 3.4.4); the pilot content analysis (method 3.4.1) supported the design of the desk research and content analysis. Finally, the interviews (method 3.4.6) provided answers about factors, which affected the formation of the LWS management and the LWS roles (see, objective 3.2.4).



The pilot content analysis (method 3.4.1) probably seemed that it supported only the methods of the descriptive survey (method 3.4.2), the desk research (method 3.4.3) and the content analysis (method 3.4.4), but its place in the research design was crucial and for that it opens the sections of the methodological instruments. In that first section about the pilot content analysis is going to explain the establishment of the theoretical background and the documentation about the content analysis, which was used for first time in a research; only later in 2010 Aharony (2012) carried out content analysis of American academic library web sites via Internet Archive as data source (see, section 3.4.1.2). Moreover, the pilot content analysis also tested the use of Internet Archive

Wayback Machine (<http://www.archive.org/web/web.php>) as a data collection source for documentary data, which was used possibly for first time in a library science study (see, desk research 3.4.3 and content analysis 3.4.4); see, also Aharony's (2012) study. In addition, the results of the pilot content analysis were used for the design of a section of the descriptive survey (see, 3.4.2).

The integrated and structured analysis (method 3.4.5) of the quantitative data directly supported the needs of the first three objectives. Therefore, the results of the analysis were presented in the chapter of the results (see, section 4.2). Consequently, the primary results of the quantitative data collection methods (e.g. questionnaire) and further - but detailed - data analysis of them were presented in Appendix III for documentation purposes.

The exploratory part of the study was based on quantitative data. The survey was selected as the main data source especially for the mapping of the LWS management practice. These relevant questions were mainly closed questions, examining the application, or not, of core managerial processes undertaken by libraries for the needs of their LWS development and maintenance. The list of these main areas of the LWS management was compiled based on literature sources. Moreover, the review of the LWS role, in the terms of the quantitative data collection and analysis, was limited to the examination of two of the three facets of LWS role's concept; the purposes of libraries for the LWS as they defined it through the *mission statement* of LWS (see, survey; question 8.1) and the *uses* of LWS publication by libraries, as these were identified through the content analysis of their web sites (see, 3.4.4). In other words, this first stage of the study was designed to support a broad, rather than an in-depth, investigation.

The initial research project planning included, as the second part, the examination of the aspect of "management of change"², investigating in-depth the management approaches related to the impact of LWS role within the context of management of change in libraries. Specifically the second part of the study, based on the results of the previous stage, would have consisted of a multiple cases study. It would have investigated in-depth the third facet of LWS role's concept – as *impact* – in library organisations' management and

² There is related reference in the cover letter of the survey (see, Appendix I).

operation focusing on which ways and to what extent the LWS was used for management of change purposes.

However, the results of the first stage (see, section 4.3) required re-orientation of the study. Firstly, the aspect of the authority of the LWS management brought out an additional area for further study as it could operate as determinant of the entire topic, raising questions about the value of the research questions regarding in which ways and to what the LWS was used for management of change purposes, when only 20% of the university libraries examined had sole authority of their LWS. Secondly, the results about the LWS role, which were limited to the facet of *uses* - as only 7% of the libraries had mission statement for their LWS - showed a limited range of uses indicating a respectively limited role as *impact* in library organisations' management and operation, impoverishing as well the value of the research questions about which ways and what extent the LWS was used for management of change purposes.

Consequently, the aims and objectives of the study have been changed partly after the completion of the first stage. The aspect of management of change was excluded and the investigation of the LWS role was confined to within the facet of LWS uses. Furthermore, the second and explanatory part of the study changed orientation, focusing on the understanding of practice and investigating the reasons which formed it (see, objective 3.2.4).

Therefore, the research strategy was diversified partly. As Patton (c1997, p. 201) discussed the difference between the implementation process and the ideal program plans, he pointed out that 'the implementation process always contains unknowns that change the ideal'. McTavish *et al.* (1975, p. 56) - as quoted by Patton (c1997) - also recognised the fact that 'initial plans usually have to be altered once the realities of data or opportunities and limitations become known. Typically, detailed plans for analysis and reporting are postponed and revised'.

This change of the study's orientation probably reduced the breadth and the depth of the investigation, which on the one hand could ensure a complete research project within the required time-frame, with research questions addressing the current wide practice

highlighting issues such as the authority over LWS management, which have not been studied before. On the other hand, the discussion about the limitations identified can contribute to the discussion of alternative studies and methodological stances, but also of the impacts derived from those limitations upon the historical and future development of the practice.

The research instrument, which was chosen for the main data collection and analysis in order to meet the needs of the last research objective, was semi-structured interviews (see, method 3.4.6) with practitioners, who completed the survey's questionnaire; this was selected to collect the needed qualitative data (see above, Figure 3.1). The qualitative data collection aimed to increase the level of understanding of the large scale of quantitative data which was collected in the previous stages, investigating factors which affected the formation of the management approaches and the LWS role (see, objective 3.2.4). As Cohen & Manion (1997) pointed out, interviews can be used to follow up issues in conjunction with other research techniques. The type of interviews was chosen to be the "key informant interviews" in which 'the interviewer collects data from individuals who have special knowledge or perceptions that would not otherwise be available to the researcher' (Gall *et al* 1996, p. 306).

The analysis of the quantitative data did not reveal significant interrelations, which could support sufficient assumptions about reasoning for the development of the practice. Otherwise, the type of interviews would probably be used would be the "confirmation survey interview"; 'a structured interview that produces evidence to confirm earlier findings' (Gall *et al* 1996, p. 307). However, this data produced sufficient information for mapping the LWS management practice undertaken by libraries and further enhanced, with additional questions, this qualitative data collection stage of the research, which aimed to investigate factors, affected the formation of the LWS management approaches and the LWS uses. The aspect of authority over the LWS management was raised as one key issue.

3.4 Methods

This section presents the six research instruments used for data collection and analysis. The documentation of each method is presented in separate sub-sections; the six sections are developed according to the chronological order of the research instruments' implementation. Specifically (see also Figure 3.2):

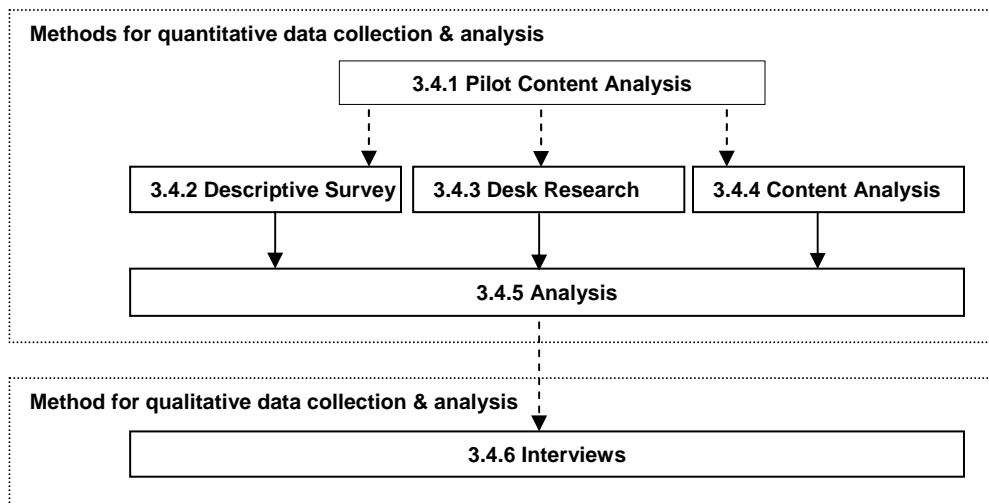


Figure 3.2: Study's research instruments

for the collection and analysis of the quantitative data:

3.4.1 Pilot content analysis of academic library web sites in current and archived versions, which aimed to support the procedures of the descriptive survey (3.4.2), the desk research (3.4.3) and the content analysis (3.4.4);

3.4.2 Descriptive survey via questionnaire of English & Scottish university libraries, which aimed to collect quantitative data for the procedure of the integrated and structured analysis (3.4.5);

3.4.3 Desk research of data on the Internet for secondary research data collection, which aimed to collect quantitative data for the procedure of the integrated and structured analysis (3.4.5);

3.4.4 Content analysis of archived LWS versions, which aimed to collect quantitative data for the procedure of the integrated and structured analysis (3.4.5);

3.4.5 Integrated and structured analysis of the data collection methods 3.4.2-3.4.4. Part of these results was used for the needs of the interviews' design (3.4.6);

for the collection and analysis of the qualitative data:

3.4.6 Semi-structured interviews with experienced professionals in the management of LWS.

3.4.1 Pilot content analysis

3.4.1.1 Framework

The aims of the pilot content analysis were a) to develop a core list of categories for LWS uses, which were used for the needs of the survey questionnaire (3.4.2.4.2; survey – Question 9), b) to develop and test a classification analysis method for identification of LWS uses for and the needs of the content analysis (3.4.4) and c) to test the Internet Archive Wayback Machine as a data collection source for documentary data, which could be used for the content analysis of LWS archival versions (3.4.4) and for desk research (3.4.3). Pilot content analysis was undertaken during November of 2007 for six cases of UK academic library web sites randomly selected. Three versions of each site were examined: the current version, the first archived version and one archived version chosen from the middle of the archived period. Therefore, 18 versions of library web sites were located in the WWW with the use of the Internet browser “Internet Explorer” and their content was analysed. The six current versions were retrieved directly from their hosting servers and the 12 archived versions were retrieved from the Internet Archive Wayback Machine.

3.4.1.2 Content analysis as a method for LWS role examination

Content analysis, as a research method, has been used since the 1600s, even if the term “content analysis” has only been listed in Webster’s Dictionary of the English Language since 1961 (Krippendorff 1980). Content analysis is ‘a research technique for making replicable and valid inferences from texts (or other meaningful matter) to the contexts of their use (Krippendorff 2004, p. 18). Other definitions are by Berelson as ‘a research technique for the objective, systematic and quantitative description of the manifest content of communication’ (Krippendorff 1980, p. 21) and by Stone *et al.* as ‘a research technique for making inferences by systematically and objectively identifying specified characteristics within a text’ (Krippendorff 1980, p. 23). This method has been developed over the time and it has been applied to variety of forms of communication, like written documents and visual or audio media. Holsti (1969) presented selectively some other definitions by Kaplan, Berelson, Cartwright, Barcus and Paisley, pointing out that the differences between the definitions indicate that content analysis can be ‘a basic research tool which may be useful in various disciplines and for many classes of research problems’ (Holsti 1969, p. 3). Gall *et al.* (1996) wrote about the use of this method in both the quantitative and qualitative studies.

Content analysis has already been used in library and information science research before web documents were included in the materials under analysis. Allen & Reser (1990) surveyed how content analysis was used, taking into account the theoretical background of the above resources. They found that the documents analysed were varied, such as ‘library tools, including book reviews, entries in indexes, and scientific abstracts, ...academic library standards, and manuals for online systems’ (Allen & Reser 1990, p. 254). Moreover, they identified that both basic approaches of content analysis were used:

- a) “classification analysis”, which ‘assigns documents (or other means of communication) to class or categories to quantify one or more of their characteristics’, using either a pre-existing classification scheme or a novel one;
- b) “elemental analysis”, which ‘is based on the identification of word or word group frequencies’

The World Wide Web as a documentary data source for research purposes was investigated by McMillan (2000). He examined the ways that researchers had started to apply content analysis to the web documents, adapting principles of content analysis: specification of research questions and/or hypotheses, selection of samples of documents, development of a category-coding procedure, coders' training for research reliability/replication and analysis – interpretation of data. It is noticed that one of the 11 studies examined was Clyde's research (1996) for the identification of the purposes for which a library might create a home page. McMillan found that the principles of content analysis can be applied to web documentary sources, but the dynamic communication environment of the Web raises potential problems for the researchers, especially in the sampling, coding and analysis of the data. In other words, the researchers need to understand the special characteristics of the web documents as communication means for analysis in all stages of the study design. Some of those special characteristics are the frequency of the content update/upgrade, which is reported by McMillan, and the distinction between the editorial elements and the content components, which all together compose the web documents (see, section 1.4). McMillan did not make any note of the latter characteristic, although it can be an essential issue for the process of *unitizing* - 'decision of what is to be observed, recorded, and thereafter considered a datum' (Krippendorff 1980, p. 57) -, which is the 'first task in any empirical study' (Krippendorff 2004, p. 97) and McMillan (2000) did not include in his study.

The literature review identified three methodological issues, which this study intended to avoid, in studies which applied content analysis for the examination of LWS role:

- a) use of a particular starting point for the content of LWS role as basis for the design of the content analysis;
- b) use of an assessed list of *units* and *classification scheme*;
- c) counting of editorial elements of LWS in the process of *unitizing*

All studies (Chisenga 1998; Cohen & Still 1999; Agingu 2000; Sapa 2005) had as a starting point that the fact that LWS was used as a *library's virtual front desk* (see, section 2.2), which could have reduced the range of LWS role content as the investigations were focused only on related aspects. In other words, these studies aimed more to test the application of the specific LWS role in practice – testing assessed *classification schemata*

- rather than to identify what was the LWS role in practice – identifying *classes*. Moreover, Cohen & Still (1999) and Agingu (2000) compiled a list of specific elements - *units* (e.g. from Agingu's study "Is the library's online catalog accessible via library's Web site?"), which would testify to the existence of assessed categories – *classification scheme* (e.g. from Cohen & Still "provider of information and reference service online"). The use of checklists limits from the beginning of the study the possible findings regarding the *recording* process (what elements/*units* are recording).

In addition, a common characteristic of these studies was that there was no distinction between the editorial elements and content components. For example, Agingu's (2000) list included "Site shows date of last update", which is an editorial element, and "Site provides links to other sites may be relevant to users' needs", which is a content component. Likewise, in Cohen's and Still's (1999) study there were in their list of findings the "Update date" and "Links to own OPAC". Similarly, Detlor & Lewis (2006) and later Aharony (2012) recorded *mixed* (editorial & content) elements for the content analysis of LWS pages. Upon this point, a methodological question was raised: are the editorial elements of the library web sites appropriate data for the examination of the LWS role? In other words, in terms of the content analysis method are the editorial elements of the library web sites, as documentary sources, relevant data for using them for the needs of *unitizing*?

The editorial elements provide relevant data for studies on the design of the library web sites, for example, evaluation studies about usability or accessibility. However, for the research question "Is the Library Web Site an information tool?" (Cohen & Still 1999, p. 277), the data of the existence or not-existence of the element "Update date", which was included in the checklist, does not provide in essence relevant information about its particular type of LWS use. The data is about the editorial quality as a documentation element and usually it is used for the evaluation of the "Information Integrity"; the value of the information content over time (Place *et al.* 2006). This methodological error was derived from the initial definition by the researchers of how a LWS can be "information tool". Specifically, they write:

'A Web site can provide a library with an opportunity to disseminate information about itself. This can include items such as physical address, (...). A Web Site also might provide information about itself.

This may take the form of an update date, (...).' (Cohen & Still 1999, p. 277)

The above definition aimed to support the investigation of 'the purposes these Web Sites serve as manifested by their content' (Cohen & Still 1999, p. 276). However, the researchers, with this definition, in essence referred to two research questions, rather than to the proposed one presented above taking into account the *units* they recorded. The second research question could have been "Does the Library Web Sites provide documentary evidence for qualitative design?". This is only an example of how important is the understanding of the special characteristics of the web publications, which can raise potential problems for the researchers using them as data resources.

3.4.1.3 Pilot content analysis design

The content analysis was designed as a "classification analysis", developing - as an outcome - a novel classification based on criteria of a classification schema (see, 3.4.1.2). Krippendorff's processes were used for the design of the content analysis (Krippendorff 1980 & 2004).

3.4.1.3.1 Research Question: "What broad uses of the library web sites can be identified from their content components?" The term "uses" referred to categories, which would be derived from the analysis of LWS content and be in the same level of categorisation with those identified already in literature review; see, section 2.2 about "the provision of access to electronic information services" and "the provision of information about the library and its in-house services". In addition, basic limitation elements of the study were:

- the editorial elements (see, 1.4) of the library web sites examined were not counted as *units* and they were excluded from the analysis process (see below, unitizing);
- the study did not aim to count the frequency of appearance of these categories within one LWS version or within the sample;
- the study did not aim to evaluate the quality of the contents or to identify the authority of them (who was the creator/compiler; e.g. library, other unit within

university or a commercial product bought by the library or of which the library is a subscriber).

3.4.1.3.2 Unitizing: ‘decision of what is to be observed, recorded, and thereafter considered a datum’ (Krippendorff 1980, p. 57). As a *unit* was defined, every component of LWS content consisted of one independent, complete and separate thematic item (e.g. “opening hours”, “photocopying”, “library catalogue – OPAC”, “training program”, “electronic information resources delivery service”, “regulations” and “mailing list”), placed within one or more web pages or accessed secondarily from a web page via linking to information in a non-hypertext format, like Acrobat Reader file, or via linking to an external electronic environment from the LWS publication, such as electronic journals accessed from the web site of a commercial supplier.

The framework described above can be closest to the *thematic “sampling units”*, as Krippendorff (1980) described, or alternatively it approaches the technique of unit definition based on *thematic distinctions* (Krippendorff 2004). Specifically, ‘sampling units are those parts of observed reality or of the stream of source language expressions that are regarded independent of each other’ (Krippendorff 1980, p. 57) and the thematic way of defining and identifying these units is based on ‘their correspondence to a particular structural definition of the content of narratives, explanations, or interpretations’ (Krippendorff 1980, p. 62). Nevertheless, Krippendorff pointed out that an issue of the thematic units is that the coder(s) need to be very familiar with the meaning and the context of the information analysed in order for reliability to be achieved. In the case of the present study, the researcher (and the only coder) had the relevant familiarity through a relevant higher degree within the discipline and practical skills and experience in an academic library in order to recognise the themes efficiently and reliably.

3.4.1.3.3 Sampling: For the needs of the pilot content analysis, six LWS cases³ were randomly selected from the compiled list of 149 English and Scottish university libraries (see below, 3.4.2.2.c and Appendix I.2) and in total 18 versions of them were analysed; three versions of each LWS case (see, framework of pilot content analysis; 3.4.1.1).

³ University of Bristol, University College for the Creative Arts, Leeds College of Music, University of Cambridge, The College of St Mark & St John, Manchester Metropolitan University.

3.4.1.3.4 Recording:

For the formation of the categories of LWS uses (see, next stage) four coding categories, which were defined, referred to characteristics of each content component (*unit*), which were recorded in addition to the title of each *unit* and its Uniform Resource Locator(s) - URL(s)⁴, as reference element (see, Table 3.1 for a demonstration of the recording system):

Table 3.1: Pilot content analysis design – Recording coding categories per unit (example)

Coding categories per unit				Unit
Stakeholders	Outcome	Access	Subject	
Academic community / General web public	Informative	Free	Library organisation	Projects undertaken
Academic community (students – academics)	Informative	Free	In-house library facilities/services	Photocopying
Academic community (students – academics)	Functioning	Free	Electronic library/information services	Online help desk
Members of Library staff	Informative/referential and/or Functional	Restricted	Intranet <i>workstation</i>	<i>Unknown content</i>
Academic community (students – academics)	Informative	Free	In-house library facilities/services	Special collections
Members of Library staff	Informative	Free	Professional interests	Training programmes
Academic community (students – academics)	Functioning	Restricted	Electronic library/information services	Electronic information resources delivery service

- a) the *stakeholders* being addressed to (e.g. members of the academic community, general web public, vendors and library staff);
- b) the type of *outcome*: the end-user accessing the *unit* can be informed about something (informative/referential) or is be able to act related to something (functioning)⁵;
- c) the *access* type: free and restricted;
- d) the broad *subject* area (e.g. electronic library/information services, commercial activities, professional interests), which referred to the widest possible subject coding of the *unit*. For example, information about a training program about copyright issues addressed to library users and provided in-house would not be categorised in “In-house information literacy services”, but in “In-house library

⁴ The elements of *Unit* and URL(s) - Uniform Resource Locators - were recorded as control data, ensuring the reliability of the recording process.

⁵ see, Sapa’s (2005) study.

facilities/services”. This broad and abstract subject coding could support an investigation of LWS uses beyond those already identified in literature review related to provision of access to electronic information services and provision of information about the library and its in-house services (see, section 2.2). The word “workstation”, which was used for the description of the access-protected sections of a LWS, like a library staff’s intranet, derived from the papers of Diaz (1998) and Moen & Murray (2002), in which the LWS is referred to as “workstation” (a working environment) for both users and librarians.

Having as a basis the aspects of the research question (see above, 3.4.1.3.1), the coding process recorded only each unique combination of the four coding categories regardless of within which LWS version it was first located. Finally, the recording process carried out by the researcher used MSExcel worksheets for data storage and administration. Thus further training of other coders was not required.

Nevertheless, the *restricted access*, usually with password protection, was found in some parts of the library web sites content, like in cases of “intranet workstation” for library staff or in “Electronic library/information services”; this caused only minor limitation during the recording process because of the highly abstract coding of the *subjects*. Specifically, sufficient free access information was always provided for the coding of the *units* of the subject area “Electronic library/information services”, whose access was protected. Only in the cases of “Intranet workstation” addressed to library staff almost no information was given about their content. Consequently, the type of *outcome* in those cases was coded as “Informative/referential and/or Functional” because of the undue expectation for utilisation of the advantages of intranets by a library, especially when it has already developed one. Griffiths (2004) enumerates a variety of applications through Intranets from library and information services, like access to electronic facilities, establishment of electronic collaborative working environment and internal communications.

3.4.1.3.5 Analysis and interpretation of the results: Statistical approaches for the analysis of the coding categories recorded are common place in the books of Krippendorff (1980 & 2004) and Gall *et al.* (1996). However, the analysis aimed to identify patterns within

the unique combinations of coding categories recorded in order to develop a novel classification schema, which can be flexible enough to classify any unit that could appear in LWS content of this pilot sample and any other LWS cases would be analysed with objectivity, especially since it is based on very abstract subject coding. Table 3.2 below shows a demonstration of the procedure of analysis and interpretation of the results procedure, using the same data recorded in Table 3.1. From the patterns identified the categories of LWS uses were formatted in sentences started with “The LWS was used for provision of...”. In the process of the categories formation emphasis was given to the elements of *outcome* and *subject*. The elements of *stakeholders* and *access* were noticed when they added special characteristics to the element *subject*, distinguishing most of the expected target-groups (based on the related literature) of students, academics and the general web public.

3.4.1.3.6 Outcome of the pilot content analysis: The final outcome was five categories of LWS uses, which were used as the core list for the design of question no. 9 of the survey questionnaire (see, section 3.4.2 & Appendix I.3):

- a. The LWS is used for provision of electronic library and information services.
- b. The LWS is used for provision of information about services and facilities hosted locally in the building/s of the library.
- c. The LWS is used for provision of information about the character and the operation of the library as an organisation (e.g. mission, information about the staff, undertaken projects).
- d. The LWS is used for provision of information for the professional interests of the library staff.
- e. The LWS is used for provision of an online “workstation” for the library staff (e.g. Intranet for the library staff).

Table 3.2: Pilot content analysis design – Analysis and interpretation of the results (example)

Coding categories per unit				Unit	LWS use (category)
Stakeholders	Type of outcome	Access	Subject		
Academic community (students – academics)	Functional	Free	Electronic library/information services	Online help desk	The LWS is used for provision of electronic library and information services to library services users
		Restricted		Electronic library	
	Informative/referential	Free	In-house library facilities/services	Photocopying	The LWS is used for provision of information about services and facilities hosted locally in the building/s of the library to library services users
				Special collections	
Members of Library staff	Informative/referential	Free	Professional interests	Training programmes	The LWS is used for provision of information for the professional interests of the library staff
	Informative/referential and/or Functional	Restricted	Intranet facilities	<i>Unknown content</i>	The LWS is used for provision of an online intranet-based “workstation” for the library staff
Academic community (students – academics) / General web public	Informative/referential	Free	Library	Projects undertaken	The LWS is used for provision of information about the character and the operation of the library as an organisation to library services users and/or the general web public

3.4.1.4 Internet Archive test

3.4.1.4.1 Aims and objectives

The third aim of the pilot content analysis was to test the Internet Archive Wayback Machine (<http://www.archive.org/web/web.php>) as data collection source for documentary data, which could be used for the content analysis of archival versions of library web sites (see, section 3.4.4) and for the desk research (see, section 3.4.3). The objectives of the test were to verify whether the Internet Archive satisfies the criterion a) of data availability and b) of data completeness. The objectives were focused on two types of limitations; the first one was derived from the archive documents as a method of data collection and the second one from the reported documents about access limitations in Web archiving. Finally, the results of this study showed that the Internet Archive could be an appropriate and sufficient source of data for the needs of the content analysis.

3.4.1.4.2 Internet Archive Wayback Machine

The Internet Archive Wayback Machine (<http://www.archive.org/web/web.php>) is a service provided by the “Internet Archive” and it gives access to archived versions of web sites which is one part of the archival collection. The Internet Archive is a non-profit organisation, founded in 1996, which aims ‘to build an Internet library, with the purpose of offering permanent access for researchers, historians, and scholars to historical collections that exist in digital format’ and its collection includes texts, audio, moving images, and software as well as archived web pages’ (About the Internet Archive). Through the environment of the Internet Archive Wayback Machine, the web site versions can be retrieved via URL search. The results of the archived versions of the specific URL are presented chronologically and for each version there is an active link for browsing within it (see below, Figure 3.3). The coverage of the archival collection of web sites starts from 1996. The frequency of crawling was every few months and each version is stored, indexed and provided within six months. The archiving system provided for each archived web page, regardless of the version owned belonged, a unique URL address, which can be used for bookmarking and reference.

selection of what is archived, the scale of archiving as regards to the quantity and coverage with the time, authority and access of archiving. The researchers using archived web sources encounter the potential limitation of the availability. The Access Tools Working Group of the International Internet Preservation Consortium (2006) reports that ‘archives of material published on the Internet are still in their infancy; the oldest archive (www.archive.org) is a more 10 years old’.

The web pages collection of the Internet Archive does not have topic restrictions; beyond the fact that it was freely accessed by public and it was the oldest archival collection, beginning three years after the free use of WWW technology. Other web archiving services, which have started archiving later, were topic or file format oriented. For example the National Digital Information Infrastructure and Preservation Program (<http://www.digitalpreservation.gov/>) by Library of Congress started in 2000. The WebCity (<http://www.webcitation.org/>) started in 2005 and it was a service that provided archiving systems only on-demand. The UK Web Archiving Consortium (<http://www.webarchive.org.uk/>) started in 2004 and it focused on specific subject areas. Finally, PANDORA, Australia's Web Archive (<http://pandora.nla.gov.au/>), even if it started collecting web sites in 1996; collection was selective and only those sites deemed of interest for research were archived.

The coverage of the Internet Archive as a data source was tested, by the researcher twice; once on a large scale and a second time on a small scale. During December 2006 – February 2007 the researcher carried out a test on coverage of UK academic library web sites. 190 British academic library web sites were searched through the Internet Archive Wayback Machine and for 185 (97%) of them archived versions were retrieved. During the pilot content analysis (November 2007) of all six selected cases of UK academic library web sites archived versions were located within the collection of the Internet Archive. Therefore, limitations on sources’ availability exists using the web sites Internet Archive’s collection, but even though it is the only source with a large scale collection. The 97% of the cases were examined were found in the Internet Archive’s collection; therefore the Internet Archive as a data source can reduce the coverage limitations to a very low percentage, at least for the specific sample of web sites in English language.

3.4.1.4.4 Data completeness

The Internet Archive was found to be influenced by two types of limitations affecting its data completeness regarding the versions of web sites archived: a) technical limitations of web crawling and b) intellectual property limitations. The documentation of Internet Archive gave the following relevant information. Some types of dynamic pages were not easily archived because of the compilation technique used; ‘When a dynamic page contains forms, JavaScript, or other elements that require interaction with the originating host, the archive will not contain the original site's functionality’ (Frequently Asked Questions). Moreover, the Internet Archive stored, indexed and provided only free access web pages and respected robot exclusion headers; in other words, the automate commands of web site owners for blocking the procedure of archiving (robot exclusion headers).

The pilot content analysis showed that the functionality problems, which could occur in some cases of archived versions, were not a serious threat as the study analysed the content and not the design component of the web sites (see, section 3.4.1.3). Accessibility limitations were also found, when web pages appeared with a note either about robot exclusion or about other access restrictions (e.g. via password or Internet Protocol - IP protection). However, similar accessibility limitations occurred as well as in the current (“live”) web site versions, regarding electronic information and communication services, like digital libraries, e-mail lists and intranet web sections and systems. Consequently, the completeness limitations did not arise from the characteristics of the archival data, but from the general accessibility to the documentary data controlled by the owners regardless of the reasons caused that, for example, special commercial agreements and personal data protection or intranet policies. The process of analysis showed that this data limitation affected further the cases of the library staff intranet, as discussed above (see, section 3.4.1.3.4).

3.4.2 Descriptive Survey

3.4.2.1 Aim and objectives

The descriptive survey aimed to collect primary current data via questionnaire from British university libraries about the managerial processes they undertook for the LWS development and maintenance, also taking into account contextual aspects of the LWS and the library organisation. The objectives of the survey were:

- to explore:
 - the LWS managerial processes
 - the LWS role
- to collect basic contextual information about:
 - the LWS publication
 - the library organisation

3.4.2.2 Data source and sampling

a) Data source

The determination of data source was a crucial element of the survey's design because of the comprehensive and, at the same time, specialised content of the questionnaire. The academic library directors and key-members of the library management team were set as the primary and the secondary target-group respectively; as the contact points, who would either be able to be the primary data source or would be in the position to decide and forward the questionnaire to the appropriate member(s) of library staff. This decision was also enforced by the relatively higher possibility of retrieval position and contact details for the above target-groups instead of the whole range of libraries' staff. Nevertheless, the possibility of the risk of a low response rate was considered as these target-groups might not give priority to questionnaire completion given their high workloads and responsibilities (see, section 3.4.2.5).

b) Sample population

The sample population consisted of the libraries of British academic institutions. However, there was not a single complete, update and accurate list of the academic libraries, which could be used for sampling. Therefore the sources examined were: a) online directories, b) the member list of the Society of College, National and University Libraries (SCONUL) (<http://www.sconul.ac.uk/>) and c) the printed directory “Libraries in academic institutions in the United Kingdom” in the Libraries and information services in the United Kingdom and the Republic of Ireland 2007-2008 (2007)⁶. The quality of available online directories could be open to dispute because their coverage was usually based on self-submission and in the information controlled directories there was a relevant statement by the compilers that they were not able to secure total coverage⁷. In addition, the function of categorisation either was not specified or it was missed⁸. The list of SCONUL members did not provide classification of the institution type and geographical location. This information was important as members of SCONUL were not only academic libraries, but national, research and museum libraries. Moreover, members from Southern Ireland were included, too. Finally, the printed directory could not be used as a source for the definition of the population because it did not provide documentation about the libraries including to which type of academic institution they belonged and it did not provide geographical distinction between the countries of United Kingdom.

Therefore, the population was defined through the institutions of UK higher education according to official lists of the institutions funded by the councils of Higher Education Funding Council for England (HEFCE), Higher Education Funding Council for Wales (HEFCW), Northern Ireland Higher Education Council (NIHEC) and Scottish Further and

⁶ Libraries in academic institutions in the United Kingdom. In: Libraries and information services in the United Kingdom and the Republic of Ireland 2007-2008. London: Facet, 2007, pp. 213-316.

⁷ The directory for “UK Higher Education & Research Libraries” (<http://www.library.ex.ac.uk/internet/uklibs.html>) by University of Exeter library web site was an example notifying that only currently the list included those links: “Currently there are over 150 libraries and information services listed, including those of universities, university colleges, and institutes and colleges of higher education.”

⁸ The Libweb: library servers via WWW (<http://lists.webjunction.org/libweb/>) was an example for directory of UK libraries on Web without any further classification (see, Great Britain and Ireland directory: <http://lists.webjunction.org/libweb/brit.html>).

Another example was the “UNESCO Libraries portal” for academic and research libraries in UK (http://www.unesco.org/webworld/portal_bib/pages/Libraries/Academic_and_Research/Europe/United_Kin_gdom/index.shtml).

Higher Education Funding Council (SFC). Other sources had also been examined for the definition of the population, for example the “Universities UK”, but they provided different figures or they did not provided a detailed list of the institutions (see, Appendix I.1). Consequently, the decision on defining the population based on the above lists was the only available found in order for the “coverage error” to be reduced.

‘Coverage error results from every unit in the survey population not having a known, non-zero chance of being included in the sample’
(Dillman 2000, p. 196)

c) Sample selection based on the libraries’ parent institutions

The sampling units of the academic institutions were: a) the academic institutions divisions and b) the geographical regions. (Table 3.3)

The UK academic institutions divisions were:

- Higher Education Institutions (HEI)
- Further Education Colleges that offer Higher Education courses (FE).

The geographical regions in the country level were:

- England
- Scotland
- Wales
- Northern Ireland

Table 3.3 Sampling units of the UK academic institutions

COUNTRY	FE	HEI	Grand Total
England	135	131	266
N. Ireland	6	4	10
Scotland	43	18	61
Wales	7	13	20
Grand Total	191	166¹	357

Date of data: 25-01-2008

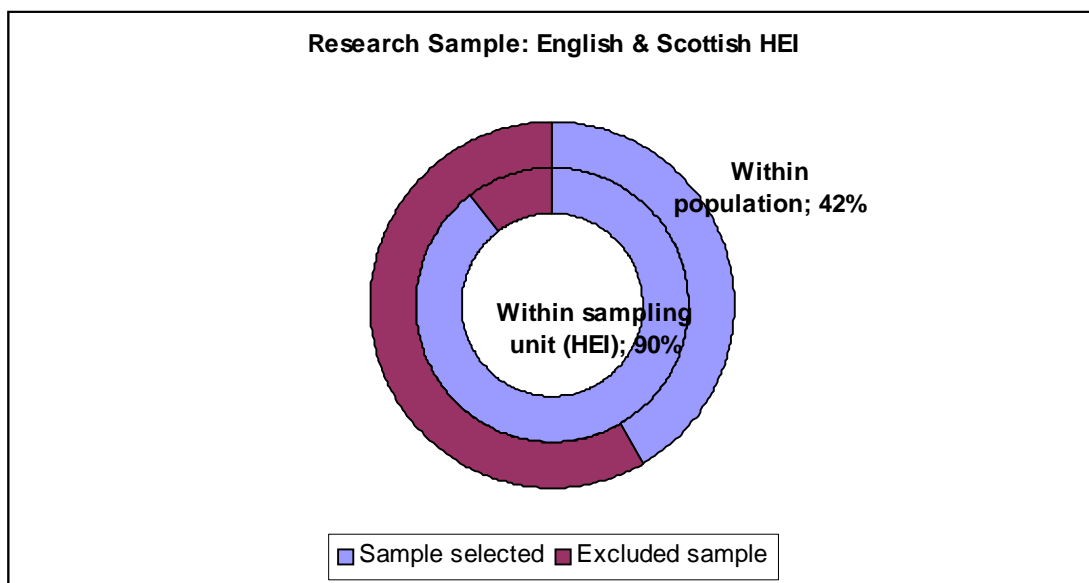
Notes:

1. The three branches of Open University in the regions of Scotland, Wales and N. Ireland were excluded.

The sample selected with non-probability sampling method consisted of the academic libraries of the English and Scottish HEI (149 cases; see, Appendix I.2). In other words, the primary sample selected was the 42% of the total population (UK academic institutions) and the 90% of the total UK HEI (Chart 3.1). The sampling was purposive,

aiming mainly at the qualitative value of data collection rather than to ensure the representation of each sampling unit. The HEI was selected because their libraries supported usually large academic communities from broad scientific and research subject areas. This attribute of the university libraries, instead of the college libraries which served mostly smaller academic communities focused on few specialised subject areas, would provide a sample which worked within a highly demanding academic environment. Therefore the investigation into the practice of that sample would likely produce the most valuable data, unaffected by the possible differences between HEI and FE institutions. The sampling units of Wales and N. Ireland (geographical regions) were excluded, reducing only by a little percentage (10%) the number of the selected sampling unit of the university libraries because many of the Welsh library web sites would have bilingual content causing an access problem for the researcher and the library cases in N. Ireland would increase the cost and the time needed for the researcher to visit them during the interviews procedure (see, section 3.4.6).

Chart 3.1 Research Sample: English & Scottish HEI



COUNTRIES	FE	HEI	Grand Total
England & Scotland	178	149	327
N. Ireland & Wales	13	17	30
Grand Total	191	166	357
Sample coverage (English & Scottish HEI)	NA	90%	42%

d) Sample: compilation of libraries' list

The sampling list of the academic libraries was based on the list of the 149 universities, as determined above. For the needs of the study the following terms was defined as:

- *Universities* was the term given to the higher education institutions (HEI) funded by the HEFCE and SFC respectively for England and Scotland;
- *Libraries* was the term given to any organisational unit providing library services for the particular university (e.g. Library, Information Services, Learner Support Services, Library and Learning Resource etc);
- *Library web site*, with the abbreviation LWS, was the term given to the official web presence of/for the *Library*.

The list of the academic libraries was compiled by the researcher within January-February of 2008 via searching secondary documentary data sources, reporting and cross-checking the data. The list consisted of the following elementary data per library case:

- a) Country (England – Scotland);
- b) Title of university;
- c) Uniform Resource Locator (URL) of the university web site;
- d) URL of LWS;
- e) Contact details of library director (e-mail, tel. name) [primary contact point]
- f) Contact details of members of library management team (e-mail) [secondary contact point]

The data sources were:

- a) The online directory “British universities and colleges finder” by Higher Education & Research Opportunities in the United Kingdom (HERO); the official gateway to UK universities, colleges and research organizations. This directory provided for 148 of the 149 examined HEI information about the institutions needed for the research (geographical location, title of university, university web site). – [web published source];
- b) The printed directory “Libraries in academic institutions in the United Kingdom” in the Libraries and information services in the United Kingdom and the Republic of Ireland 2007-2008 (2007). In this directory reference for all examined academic libraries was

- located, collecting for most of these cases contact details, but the information about the URL of the LWS either it was not updated or not included – [print published source];
- c) The web sites of the universities – [web published source];
 - d) The web sites of the libraries – [web published source].

The data gathered from all the above sources were entered into an MSAccess database in order to be cross-checked in the common data fields and to eliminate duplicates and errors. The investigation of the 149 university cases had as a result the collection of complete and valid data for 149 academic libraries, which belonged to 148 universities. For one university case there was no LWS, but only a reference in a university web page to the existence of the library. Nevertheless, in the list of universities there was one case, established in 2005, by the merging of two institutions both of whom still maintained their web sites, within which a LWS was located. Consequently, two LWS cases were recorded for one university case.

The limitations for the compilation of the academic libraries' list were:

- a) for the cases of the University of Cambridge and University of Oxford, which consist of many colleges and therefore with one main library and many departmental libraries, only the main library was counted and examined;
- b) for the library cases, for which personal contact details (data collection elements), either for the library directors or the members of library management teams, could not be located, the library's general contact e-mail addresses (e.g. library@xxx.ac.uk) and telephone numbers were reported instead.

3.4.2.3 Survey method: questionnaire

The instrument used for the descriptive survey was a self-administered questionnaire of 28 main questions developed within seven sections (Appendix I.3). The questionnaire was in electronic format (MSWord document file in format type .doc) and it was sent via e-mail as a file attached to the e-mail list developed by the researcher in the previous research stage. It was accompanied with a covering letter with information about the researcher, the research project, the university ethical policy for the research projects

ensuring the confidentiality, basic instructions and information about the questionnaire and contact details of the researcher.

The main type of questions, which was used, was closed questions, collecting data at the current point of time. Nevertheless, open-ended (micro-qualitative) questions and retrospective and future measurements were used for a few points. Moreover, throughout the body of the questionnaire clear and detailed instructions were provided for usability purposes and to seek to minimize the chance for errors caused by misunderstanding, with the exception of one case described below (see, section 3.4.2.4 Questionnaire: content). In addition, an introductory sentence opened every section, explaining the subject examined each time, and clarifying the meaning of the terms “Library” and the “Library web site (LWS)”.

The researcher tested three electronic types of format for the questionnaire. The electronic format could provide time- and cost-saving options compared to the paper-postal survey for the researcher and for the participants (Dillman 2000). The first format was an online (web-based) survey, connected with networked database. The main criteria for the rejection of this option were the cost for the subscription to the commercial providers, as the free version permitted only a small number of questions (± 10), and the limitations inflicted on the design and on the data storage and export. In addition, the sub-option for an online survey designed and hosted by the researcher needed more time than was available for this project task. The second format was MSAccess file (version 2003) with secure interactive environment, developed by the researcher, but the risk of incompatibility was high. The third format was MSWord file (.doc) form-based and protected, allowing only the filling within the forms' fields, keeping the overall document format unaffected.

The last mentioned format MSWord was selected to be sent via e-mail because it was, on the one hand, compatible and usable and, on the other hand, it did not require excessive time for its development and editing. In addition, the e-mail delivery status could be checked via the function of the “Mail Delivery System”, informing whether or not the messages were successfully delivered. However, during the survey period, technical problems appeared regarding the delivery of attached files in some cases, usually because

of institutions' restrictions in document dispatch and delivery via e-mail. This problem was solved with the provision of an additional access option to the questionnaire from a secure web address used for that specific purpose and only during the survey period. This practice demonstrated that it should be part of the initial survey design taking into account this potential problem.

The questionnaire as content and as format was pre-tested during March 2008 with a pilot survey to a group of seven recipients (responded six) living and working in UK (five) and in Greece (two). The group consisted of professional librarians, researchers and academic staff in library and information science. The feedback was useful but focused more on the design and format issues of the questionnaire rather than on the subject coverage, as the recipients were not specialist in the research subject. This weak point of the pre-test was known and it had been taken into account, but it was ineluctable because the researcher was not able to ask directors or senior staff of UK academic libraries working on the LWS management from libraries, which were not included in the research sample, to pre-testing the questionnaire.

3.4.2.4 Questionnaire: content

The questionnaire aimed to collect data per LWS case about the LWS management undertaken by the library (see, section 3.4.2.4.1), the LWS role (see, section 3.4.2.4.2) and contextual information about the LWS and the library organisation (see, section 3.4.2.4.3). Nevertheless, the final formation of the questionnaire (questions' order and grouping within sections) was not followed absolutely in the design logic as presented below, but it aimed to provide for the recipients a structured and logically-ordered list of questions from the beginning until the end (see, Appendix I.3). The questions were mainly closed-ended questions in order for an abstract approach to be achieved, and the use of open-ended questions, which was not extended, served to gather extra information in support of the understanding of the abstract concepts. Moreover, the wording of the questions - with only very few exceptional cases mentioned below - was not ambiguous or poor. It was also more descriptive in order for confusion or guiding to be avoided respectively; for example phrases like "web master", "librarian web master" or title

positions like “web site manager” were not used, as in previous studies reviewed (Liu 1999; Taylor 2000; Hendricks 2007; Academic library website benchmarks 2008).

3.4.2.4.1 LWS management by the Library

The researcher compiled an abstract framework on the managerial processes and tasks derived from the literature review (see, section 2.3) and particularly from the works of Cole (2004) and Friedlein (2001). This schema was built upon the four broad categories suggested by Cole (2004), which are referred to in this study as “POMC”. This schema was not based on roles (personal-centred), but on work tasks; as work tasks can be carried out by more than person and one person having a job title (role) can work on multiple work tasks. Moreover, this framework was free of any reference to particular theoretical perspective or issue; such as strategic planning, developing culture, managing change and risk management.

Planning activities were determined as: 1) Decision making about the LWS’s aims and the objectives, plans, policies, content of the LWS, development (design) specifications for its publication mean, sources required in human, hardware and software, budget, working structuring and 2) Marketing. Cole (2004) places marketing among functions of management, beyond the main four categories of POMC, but for Friedlein marketing is one of the main components of “strategy/consulting team”.

Organising activities were determined as organisation and coordination of tasks and the sources needed to carry them out, according to the planning specifications.

Motivating activities were determined as leading, according to any management style, the members of library staff, who work for the LWS development and maintenance. One relevant aspect, which arose from literature about the library staff, is the training and skills development involving in this field of work; for example, in Evans’s (1999) study.

Controlling activities were determined as measuring progress and performance, reporting errors and correcting deviations.

The examination of the LWS management was developed mainly within three of the seven questionnaire's sections:

- section 4 "Management of the LWS";
- section 5 "LWS planning, controlling and achieving";
- section 7 "Organising and leading LWS development"

The design and organisation of those questions aimed to investigate primarily the involvement of libraries in the management of LWS and then to continue with further exploration only for the library cases, which had a main role in their web site management (see, Appendix I.12 for control in questionnaire's completion patterns). The type of the main questions was close-ended, but open-ended questions were also used for investigation of the type-position of Library staff involved in the procedures examined in order to support the understanding on the LWS management arrangements (e.g. "If YES, which Library staff (position titles) are involved in this process?"). Principal basis for the design of the questions was the managerial processes and not the work tasks of the library web staff, who were possibly involved in both in LWS management and development in order to avoid the methodological issues identified in literature in studies examining the identity and duties of "librarian Web Master" (Liu 1999), "authors of academic library home pages" (Evans 1999), "webmaster" (Taylor 2000; Ragsdale 2001; Hendricks 2007)

Design error was identified in two of the sub-questions of Question 26. The respondents - who would have stated that there was one member of library staff responsible for organising the work for the LWS development and maintenance - were asked further to provide some additional details. Two of those details were about the professional speciality of that person and whether his/her occupation consisted solely of those duties or additional others. The fact that those sub-questions were not completed by almost all the respondents indicated that the wording was not appropriate.

The table 3.4 below presents a general picture of the distribution of questions within managerial categories and questionnaire's sections.

Table 3.4: Core questions for exploration of LWS management

Managerial categories	Questions ¹	Questionnaire's Section
Planning	Q8	3 rd
Planning	Q12a	4 th
Planning	Q12b	
Organising	Q12c	
Planning	Q12d	
Planning	Q15	5 th
Controlling	Q16	
Planning	Q17	
Planning	Q18	
Planning	Q20	
Organising	Q25	7 th
Organising	Q26	
Planning	Q27	
Motivating	Q28	
Notes: 1. For the questions, see Appendix I.3		

3.4.2.4.2 Role of library web site

Section 3 of the questionnaire consisted of questions about the LWS role, which was examined through two sources:

- a) its aims and objectives as could be stated within its mission statement (Q8.1);
- b) its uses as could be identified via LWS's contents (Q9).

Moreover, a brief exploration of the change of LWS uses over time (Q10; the past and Q11 the future) aimed to build a general frame of the LWS evolution. In this point, there was a case of ambiguity about how the word "role" was used in question 11 ("Are there any future plans that will affect the role of LWS?") and whether it efficiently served the aim of the question. An alternative wording could be: "Are there any future plans that will change the current uses of LWS as they are stated in Question 9 above?"

Especially, for Question 9, the respondents were asked to select more than one of the provided categories of uses, having the capability to add more with the option of "other". The list of five categories was derived from the results of the pilot content analysis (see,

section 3.4.1). However, the results of this question were not used for further analysis; instead of them the results of the content analysis (see, section 3.4.4) were used for the LWS uses review. The decision for asking for this information from the respondents had two purposes:

- to test the convenience of the LWS uses' coding (How easily practitioners could understand it?);
- to make the practitioners, who participated in this survey, familiar with this classification schema and for which they are going to provide relevant data and about which - some of them - would be called to discuss during interviews (see, section 3.4.6);
- to provide to respondents a standard level of coding regarding the LWS uses, giving to them the needed reference point for answering the following questions (Q10 & Q11) in the same frame.

The comparison of the results derived from the survey to the content analysis (see, Appendix III.5) showed that the coding (classification schema) for the LWS uses was easily understandable by the survey's respondents. The differences identified between the results of those different methods were minor and they did not cause conflict during the discussion with the respondents, who also participated in the interviews (see, section 3.4.6).

3.4.2.4.3 Contextual information

Most of the previous studies approaching aspects of the LWS management and development did not take into account elements of the LWS's context – with the exception the study of Traw (2000) -, as discussed in section 2.3 of the literature review. The elements, for which data was collected and examined with the main body of data described above (3.4.2.4.1 & 3.4.2.4.2), were related mainly to:

a) Non-library involvement in aspects of LWS management. The exploration of the LWS management was focused on the involvement of the Library in it; on the contrary the involvement of other units within the university or other external stakeholders was

examined only as a factor for understanding the level of the Library's involvement. Consequently, the respondents were asked to skip most of the sections after negative statements in pivotal questions (see, Appendix I.12 for control in questionnaire's completion patterns). Information on external involvement could be reached through the answers to five questions: Q7, Q13, Q19, Q21 and Q22.

b) Time-range of LWS publishing. The exploration of this consideration aimed to review the range of LWS publishing experience. This element was examined with other facets of practice in LWS management in order to find whether this element could affect their evolution during the integrated and structural analysis (see, section 3.4.5). For the exploration of the time-range in LWS publishing, the respondents were asked to record the year in which the LWS was launched for first time (Q6). Related with this aspect, see also Desk research; section 3.4.3.4.

c) Sources for the needs of LWS development and maintenance. Two related aspects were selected to be examined; the LWS hosting and LWS staffing. Both aspects were examined, in the terms of the integrated and structural analysis (see, section 3.4.5), with other related data about the LWS management. Most of the previous studies in LWS publishing focused on the identity of the library web master/web manager's post (professional specialities and duties) and the aspects of servers and software were studied focusing on actual technical specifications (see, section 2.3.4). This study aimed to include peripheral elements related to the sources for the needs of LWS development and maintenance, but it focused mainly on the identification of their management, rather than on their specification. Therefore, the study excluded the element of software because it would be difficult to collect complete and accurate data about their source regarding their acquisition and application.

The aspect of servers was examined in the terms of the LWS hosting (Q7), looking on whose servers within the university, the LWS was hosted (e.g. of library or other unit within university). In other words, the question wanted to find out who was responsible for that aspect of the LWS development and maintenance. However, the answers to this question also indicated the existence of specialist staff that was responsible for the

maintenance at least of the hardware, software and files (e.g. web pages and database; if the last one was applicable).

The aspect of LWS staffing (human resources) was examined through three main aspects:

- i. the organisational source – to whom (e.g. the library and/or other unit with university) the staff working regularly for the LWS belonged (Q22);
- ii. only about the library's staff, when it was applicable, the type of occupation, the number and the speciality (Q23-Q24);
- iii. only for the library staff working solely for the LWS development & maintenance, the organisational position within library (Q23.1)

d. Library organisation profile. Information about the library was asked through questions Q1b (title of the library) and Q2 (mission statement of the library). These data were used for the analysis of the aspect “type of library organisation” (see, section 3.4.3.3).

e. The overall library staffing. The study, in order to increase the understanding of the results of the library web staff (see above), collected data about the library staffing (total number & classification by speciality) (Q4). In addition, the range of the total number of library staff was examined taking also into account the aspect of the total number of library sites (Q3).

Nevertheless, the present study, in order to keep the length of the questionnaire relatively short, excluded contextual questions related to the library management, the level of automation within the library for service production and provision, the financial sources, technological sources, the number and/or the type of in-house services provided and additionally the size of the parent institution based on the students' enrolment annually, which was used in the Academic library website benchmarks (2008) as one main aspect for the results analysis.

Two design errors were identified which affected the results about staffing as regards the whole library staff and the library staff working for the LWS development and maintenance (library web staff). The first design error was the classification used for the identification of the professional speciality of the staff (Q4, 23.2, 24.1): “Librarians”,

“Information Technology (IT) staff”, “Archivists”, “Administrative staff” and “Other” with space for details to be given. Respondents usually used the space of the field “other” typing a sum total of staff, explaining that the classification did not match their organisation (e.g. ‘Total 125 (not fte)’ and ‘120 - Can't differentiate between librarian and IT, also we have some media’). The second error referred to counting of library staff (Q4, Q23 and Q24). Respondents counted it in two different ways; either based on person or based on the full-time equivalence (FTE). Consequently, the results were estimated. An alternative design of these questions could be a rating range of FTE for the library staffing (e.g. 1-50, 50-100, etc) and for the library web staff the questions could be asked specifically to count the people, without any further examination about their speciality.

3.4.2.5 Survey response

The survey was carried out within the period 7/4/2008 – 20/6/2008, with three reminders (see, Appendix I.4-8). The third reminder was sent separately to each case including to the recipients’ list as well as additional persons from the wider e-mail list (secondary contact point), making it clear that only one questionnaire was required from each library. More reminders were not used because the period for response would over run the three month period, which was set by the researcher as the maximum period for that process, for time-management reasons and for securing the time homogeneity of the data collection. Moreover, as Gall *et al.* (1996, p. 302) noticed the use of four or more follow-ups in studies had not led to ‘a significant increase in returns over three follow-ups’. However, the fact that the percentage of responses increased with the use of the secondary contact point list in the third reminder showed that it should be used at least after the first reminder.

The response rate of the survey was 32%; 48 academic libraries returned completed the questionnaire from the total study sample of the 149 university libraries (see, Appendix I.9). Within the geographical sampling units the response rate was 30% for the English libraries and 50% for the Scottish libraries (see, Appendix I.10). As Fink (2003, p. 42) wrote ‘in practically all surveys, information is lost because of nonresponse. Nonresponse may introduce error bias into a survey’s results’. However, according to Krosnick (1999)

and Dillman (1991), when the characteristics of the respondents are representative of non-respondents, low response rates do not cause bias. Especially for the case of this study, the non-probability sampling method successfully covered the aspect of representation at least regarding the UK university libraries, as the study sample was compiled from the entire sampling units of English and Scottish university libraries; the 90% of the UK university libraries. Nevertheless, the low rate response was not a result of an unsolicited survey implementation.

The decision to send the questionnaire to the library directors (as the primary contact point) and to the library management team (as the secondary contact point) was verified eventually by the sufficient completion of the questionnaires (see, Appendix I.12). As an analysis of the respondents' profile (see, Appendix I.11) indicated that the majority of the respondents were members of the library management team including the library directors, for whom there was evidence of their relation and familiarity with the LWS management. Therefore, the decision to send the questionnaire to library directors and members of the management team was not conducive to gaining high rate response, but aimed to reduce the bias caused by “item nonresponse”; ‘this type of bias comes about when respondents do not know the answers to certain questions or refuse to answer them’ (Fink 1995b, p. 55).

The control of the questionnaires (see, Appendix I.12) identified three cases as providing unserviceable data and they were excluded from the data analysis. The entire analysis of the study was mainly based on the profiling of the LWS cases examined (see, section 3.4.5). Consequently, questionnaires, which provided very poor or little or self-contradictory data, could not support the building of case profiling; as the survey was the source of the core data, upon which additional and supplementary data would be added from other research instruments. Three cases were excluded for that reason. Only one of these three cases was due to the high percentage of “Don’t know” answers; almost to all main questions, showing that the respondent was not familiar with the topic. That particular questionnaire was completed by a member of library staff and not of the library management team⁹. Moreover, for that questionnaire case some questions remained

⁹ The information derived from the data provided in the last part of the questionnaire about the respondent’s details.

unanswered. The other two cases were identified as providing unserviceable data for two different reasons. One of them provided very little data (it was returned almost empty) and the other one presented a lot of contradictory statements. Therefore the final research sample consisted of 45 LWS cases (30%); see, Appendix I.13.

3.4.3 Desk research

3.4.3.1 Desk research: an “invisible” method

Desk research is usually used during the preparation stage or as supportive process of the main studies; for example, for the definition of the population and for the collection of information about the sample profile (Birn 2000). Nevertheless, a common point in the literature on research methods is that the desk research is placed among the methods in marketing studies for secondary research data collection (e.g. Ellwood 2002). However, an actual example of the multiple and wide use of the desk research as data collection method is the present study, for which desk research was already applied for the pilot content analysis (see, section 3.4.1) and the survey (3.4.2). The procedure for location of the archived web sites, which was used for the content analysis, was desk research. In the survey's design (see, section 3.4.2.2), desk research was performed to locate and evaluating of the sources a) for the definition of population and b) for the compilation of sampling list. Jackson (1994, p. 21) defines desk research as ‘the process of accessing published secondary data’ and he describes its process through four steps: data location, recording, evaluation and integration. A similar definition is given by Birn (2000, p. xx): ‘Desk research is the collection, sifting and interpretation of published data’.

3.4.3.2 Aims and objectives

The desk research aimed to complete the data collection for two aspects of LWS's context and to collect data in order to explain an issue, which was raised during survey. The selected information referred to cases where the academic libraries responded to the survey (see, section 3.4.2). The objectives of the research were:

- a) coding of the type of library organisation;
- b) specifying the year of the first publication of the LWS;
- c) investigating the use of Virtual Learning Systems (VLE) and other intranet systems.

For all objectives the secondary data was derived from free access sources on the Internet and, specifically, from the official web sites of the libraries examined and the web sites of their parent institutions. In addition, the relevant primary data derived from the questionnaires was taken into account during the procedure of data analysis.

3.4.3.3 Objective 1: Type of Library organisation

The desk research was carried out after the completion of the survey period during July of 2008. The sources retrieved and analysed were the library and university web sites of the Library cases who responded to the survey. The coded data recorded per library case was about a) the organisational status of the library and b) the services provided by the library. Additional sources taken into account in the analysis were the answers given by the respondents for the questions: Q1b “Title of the library” and Q2 “What is the mission statement of your Library?” (see, Appendix III.1). The results of the collected, cross-checked and coded data analysis were a broad categorisation of the library services type, based on the content of services provision (e.g. library, archives, learning and IT) – see results, section 4.2.2.2; Table 4.2. It is important to note that the limitations of this categorisation were: a) the secondary data used was produced by its owners for other purposes (Denscombe 1998) and b) this categorisation was developed only for the needs of the further data analysis in the 3.4.5 stage. The aspect of “library organisation type” was examined further in the integrated and structural analysis (see, section 3.4.5), with other related data about the LWS management.

3.4.3.4 Objective 2: Year of the first publication of the library web site

The aim of the desk research was the collection of complete and valid data, indicating the time-range of web presence in each library case. The need for that data collection arose from the lack of relevant data of the survey (see, section 3.4.2.4.3-b). Specifically, only

67% of the respondents stated a specific year, whilst 20% of them stated that they did not know the year of the first LWS publication and 13% of them did not answer the question (see, Appendix III.1; Question 6, Table A3.5). The desk research carried out during the survey's period, during May and June of 2008 for each LWS cases there was response to the survey. The Internet Archive Wayback Machine (see, section 3.4.1.4.2) was selected and used as a data source taking into account the advantages already identified during the pilot content analysis (see, section 3.4.1.4).

However, the accuracy of results would be *a priori* limited, regarding the time coverage of the data availability of the Internet Archive collection because it begins from the year 1996; whilst Web publication was launched in 1991. This unavoidable limitation determined that the findings could only indicate the time-range of the LWS presence whilst at the same time obtaining the most accurate and verifiable data possible. Therefore, the data from these research instruments were coded in two ways a) per decade and b) per quinquennium. An indicative example was given by the comparison of results derived from the desk research and the survey, which verified this limitation as 43% of the survey's comparable data referred to the period 1991-1995 (see, Appendix III.4).

In the desk research, the aspect of change in web publications was taken into account. It is common practice for the web sites' URL to have been changed during the publication's evolution. The desk research procedure included a range of searches in order to secure the investigation's efficiency. The search within the Internet Archive Wayback Machine was developed taking also into account the primary data from survey's question 6, when it was provided, under the following search strategy:

- a) Search with the current URL of the LWS, which was recorded within the sampling procedure (see, section 3.4.2.2-d). For the cases that the URL was different from that provided by the respondents in the Question 5 of the survey; "Home page of LWS", a second search was carried out as well.
- b) Search with the URL of the university web site. The possibility of university URL having changed (search for older URL versions) taking into account the year of university establishment (information provided from university web pages) and the first search results.

- c) IF, the oldest archived version of the university web site was in an older year, then a search within its pages took place in order to locate the home page of the library and to retrieve the older version of its URL.
- d) THEN, another search with the older retrieved URL of the LWS was run again.

The potential limitations regarding data availability of the archived web sites were recorded in a checklist during the desk research. The developed checklist consisted of the following options:

- a. IF there were not results for an URL searching
- b. IF the achieved version was blocked by robots.txt
- c. IF the achieved version was in status “Not in Archive”, which ‘means that the site archived has a redirect on it and the site you are redirected to is not in the archive or cannot be found on the live web.’ (Frequently Asked Questions n.d.)

3.4.3.5 Objective 3: Use of VLE systems

The investigation of the VLE systems was instigated by the data derived from the Question 10 of the survey (see, section 4.2.3.1). The need for deeper understanding of the uses of VLE systems related to the LWS content was established, in order to achieve better understanding of the data. Moreover, the results of the examination especially about the extent of the use of VLE systems would have indicated whether this issue would be included in the objectives of the interviews (see, section 3.4.6). Finally, the extension of the investigation to other intranet/password protected environments was decided in order for any other similar issue to be covered.

The desk research was carried out simultaneously during the survey period¹⁰ whenever each library case responded. The sources retrieved and analysed were the library web sites and the university web sites of the Library cases that responded to the survey. The coded data recorded was about a) the existence of linking to VLE systems within the LWS, b) the existence of the linking to other intranet or password protected web

¹⁰ During May – June 2008; therefore Internet Archive Wayback Machine was not used for this desk research – current/online web document were used.

environments within the LWS, like portals, c) information provided free about the content of VLE systems or the other intranet/password protected environments, d) the hosting of those systems via their URL and e) the architectural position of those systems related to the LWS.

3.4.4 Content Analysis

The content analysis aimed to identify the uses of the web sites of the libraries that participated in the descriptive survey (3.4.2) during the period of May and June 2008. Therefore, whilst the content analysis was carried out in November of 2008, the documentary data used was the archived versions of May 2008 of those LWS cases¹¹. The data collection source was the Internet Archive and the web site versions were retrieved via the service Internet Archive Wayback Machine (see, section 3.4.1.4). It is noticed that the version of May 2008 was the last available, as the archived web sites need about six months to appear publicly; this period was needed for storing and indexing by the system. The design framework developed based on the pilot content analysis (see, section 3.4.1.3) with only difference that in the *recording* process (see, section 3.4.1.3.4) the data was stored and diversified per LWS case. In addition, no additional type of accessibility limitations was encountered during the research procedure and the impact of the limitations that appeared was ranged in a similarly low percentage, as discussed in section 3.4.1.3.4. Finally, the results (see, Appendix III.3) were analysed further in the terms of the integrated and structural analysis (see, section 3.4.5) for the examination of the subject area of LWS role, which supported the needs of the research objective 3.2.1

3.4.5 Analysis

The integrated and structural analysis aimed to identify and examine managerial approaches undertaken by the academic libraries for the needs of their LWS development and maintenance and to examine aspects of the LWS management with contextual

¹¹ The survey period was from 7/4/2008 until 20/6/2008.

elements and the aspects of LWS uses. In other words, this fifth research instrument aimed to provide the required results for the needs of the first three research objectives (3.2.1, 3.2.2 & 3.2.3). It used all quantitative data for the 45 cases (research sample; see, section 3.4.2.5 & Appendix I.13: Research sample), which was derived from the three data collection methods (survey, desk research and content analysis).

The data analysed was based on the results of:

- the content analysis about the LWS uses (see, 3.4.4 & for results Appendix III.3);
- the desk research about the type of library organisation (see, 3.4.3.3 & for results 4.2.2.2);
- the desk research about the time-range of LWS publishing (see, 3.4.3.4 & for results Appendix III.2);
- the desk research about the use of VLE systems (see, 3.4.3.5 & for results 4.2.3.1-a);
- the survey, excluding Question 6 (“In which year was the LWS first available?”) because it used the relevant data from the desk research about the time-range of LWS publishing, and Question 9 (“How is the LWS used?”) because it used the relevant data from the content analysis.

The criteria for the selection of the study elements and the collection of the related data have already described in each section regarding the methods. In this integrated and structural analysis the whole data was grouped thematically, composing “piece by piece” a complete basic profile for each LWS case of the research sample and all together these profiles were examined thematically and per inter-related aspects. The structure of the analysis presented whole data within its general framework, exploring the practice as it was recorded and examining interrelations between study elements.

The analysis, firstly, presented the data about each subject area (e.g. “time-range of LWS publishing” and “LWS management undertaken by libraries”), identified patterns of practice and set coding for further analysis, when it was applicable and necessary for the study. Secondly, aspects of each subject area were examined with other related aspects in order to find out whether or not a crucial interaction or association existed between them (e.g. cross-tabulation examination of “Development of LWS mission statement”,

“Development of specialised policies for the LWS” and “Development of the main processes of the LWS management”).

Previous studies discussed (see, Chapter 2), beyond their partial examination of the LWS management, did not examine associative data, which they had collected, but their analysis was limited to the presentation of the results for each research element (*single element examination*, see below Figure 3.4); two examples from those studies are presented below. Thus, the inter-relations between the elements were not examined (*cross-tabulation examination*, see Figure 3.4); an examination which could have brought out a greater depth of results. Birn wrote:

‘cross-tabulations show the survey results in greater depth, indicating where any significant differences arise in various subsamples’ (Birn 2000, p. 415)

Below, Figure 3.4 presents a demonstration with the two different data analysis of five study elements (no.1 to no.5). The *single element examination* focuses on only to one element each time, presenting the existence (“Yes”) or absence (“No”) of each element (e.g. 93% the element no.2, 54% the element no.5); whilst the *cross-tabulation examination* takes into account all five elements and identifies patterns of combinations of the existence and absence within all study elements (e.g. in 48% of the sample all five elements appear and in 2% of the sample the combination of element no1., no3 and no.4).

Element no. 1	Element no. 2	Element no. 3	Element no. 4	Element no. 5	Sum	%		
Yes	No	No	No	No	5	5%		
		Yes	Yes	No	2	2%		
	Yes	Yes	No	No	No	13	13%	
			Yes	Yes	Yes	6	6%	
			No	No	No	2	2%	
		Yes	Yes	Yes	Yes	No	17	17%
				Yes	Yes	Yes	48	48%
				No	No	No	2	2%
100	93	69	80	54	100	100%		
100%	93%	69%	80%	54%	100	100%		

Single element examination

Figure 3.4: “Single element & Cross-tabulation” examination (demonstration)

The ACRL (Traw 2000) studied the characteristics of LWS policies by small college and university libraries. The survey was not only focused on the policies (existence, authority and content) with 16 questions, but additionally contextual data was collected about the libraries – nine questions - (e.g. size and staffing), the LWS – two questions - (e.g. existence period) and the responsibility of the LWS development and maintenance – six questions - (e.g. server hosting, library staff involvement). The analysis that took place was mainly based on a *single element examination* of the results. The only results' combination which was made referred to the comparison of the general library staffing to the library staff working for the LWS development and maintenance. *Single element examination* was also used for the analysis of the large range of results of the survey of 80 North American academic libraries (Academic library website benchmarks 2008). The results for each study element - question were presented separately and in only some cases characteristics of the sample were taken into account, like the enrollment size and the status (public-private) of the institutions and the “webmaster staffing”. The present study used both techniques of data analysis. For the analysis by subject initially *single element examination* was used, presenting the primary results of the quantitative data collection. However, cross-tabulations were predominantly used, examining further selective study elements and taking into account other related elements or contextual of LWS considerations.

The structure of the analysis (see, section 4.2) was built starting with the contextual elements of LWS management and then by examining the main research subject areas LWS role and the LWS management undertaken by libraries. Specifically, the first section of analysis covered the aspects of LWS context and LWS sources for development & maintenance and mainly aimed to set up step-by-step coding of aspects, which were gradually used afterwards in cross-tabulations. The second section covered the subject of LWS role, focused on the LWS uses setting coding and went ahead with further examination of the LWS uses with aspects presented earlier in the first section. The next three sections covered the subject area of LWS management as was undertaken by the libraries, where cross-tabulations also took into account the aspects of the first section and the LWS uses of the second section. Finally, the last two sections examined the subject area of the non-library involvement in the LWS management, which brought out a crucial aspect; the authority over LWS management (who is responsible for the

LWS management). This aspect was also examined with elements of the previous sections, raising questions for further examination. Moreover, results about the main study elements (LWS uses, LWS management patterns and authority over LWS management) were examined with the aspect of the geographical regions of the sample (England – Scotland) in order to identify whether or not there was any significant relation, which would raise further questioning.

Figure 3.5 (below) is based on the Figure 2.2 “Interrelations of the library web site’s role with library management & aspects of LWS publishing” (see, section 2.2.4). It shows the main study elements and subject areas, which were analysed in the terms of this research instrument. The subject area about the LWS role, which referred to the objective 3.2.1, was examined through the approaches of LWS uses and mission statement. Nevertheless, the patterns of the LWS uses were also examined taking into account other contextual aspects, like time-range, library organisation type and LWS staffing. The subject area of LWS management undertaken by libraries was examined taking into account contextual aspects (see, objective 3.2.2) and the LWS uses (see, objective 3.2.3). In addition, the subject of LWS management undertaken by libraries was examined, within the terms of libraries’ or others’ involvement in the LWS management.

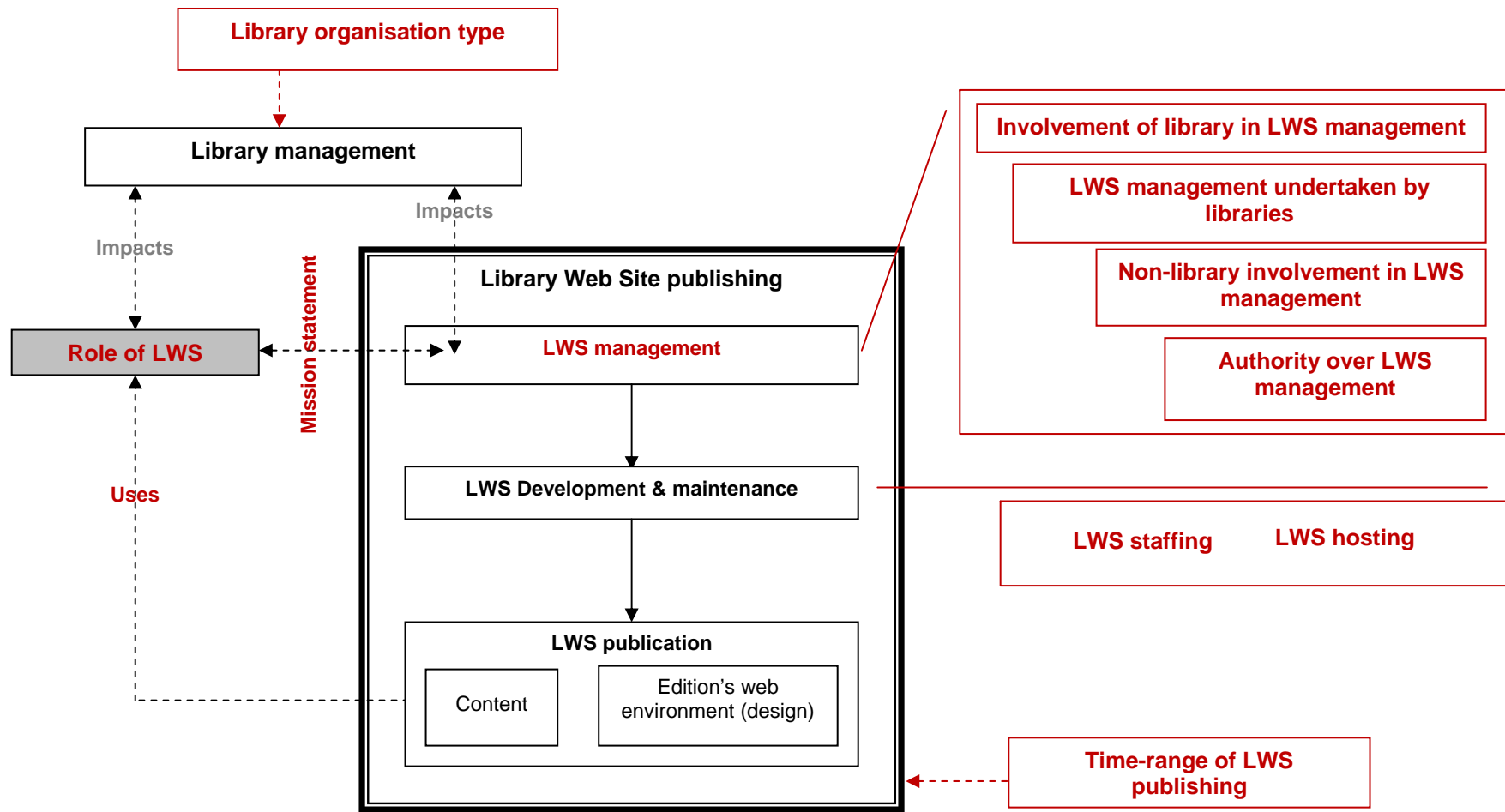


Figure 3.5: Main study elements and subjects analysed in the terms of the method 3.4.5 and presented within the framework of the interrelations of the LWS role with library management & aspects of LWS publishing

3.4.6 Interviews

3.4.6.1 Aims & objectives

Interviews were chosen to collect the qualitative data about the factors which affected the formation of the management approaches and the LWS roles (see, objective 3.2.4). The objectives of the interviews were:

- a) to investigate the involvement in the authority over LWS management by other unit(s) within the university apart from the library;
- b) to examine the relation between the library management and the LWS management;
- c) to further examine the aspects of LWS resources management;
- d) to explore the factors that have impacted upon the decision making about the content development of the LWS

3.4.6.2 Content of interviews

The interviews were designed as “semi-structured interviews” (see, section 3.3). This approach is suitable for qualitative studies through which ‘the interviewer has a list of issues and questions to be covered, but may not deal with all of them in each interview takes ... [allowing] probing of views and opinions’ (Gray 2004, pp. 215-217). Predefined questions were prepared in advance so that the interviews’ objectives were achieved. However, the researcher could modify or sidestep them and include some other questions, using her own judgement during the interviews’ conduct. Three interview schedules (see, Appendix II.4-6) were developed addressed to the three groups of libraries identified through the survey’s analysis based on their differences concerning the authority over LWS management:

Group: Only library authority - libraries which stated that they had sole authority over their LWS management;

Group: Shared authority - libraries which stated that other unit(s) within the university was/were involved in the LWS management except the library;

Group: Non library authority - libraries which stated that they did not have the main role in the LWS management

All schedules were structured in three parts, covering the subjects of:

Part I. LWS management

Part II. Organising and leading the LWS development

Part III. Decision making on the LWS's content

Each part of the schedules included a brief synopsis of part of the survey's results as an introduction and as the basis for the questions which followed. The content of those synopses was related only to the specific group of libraries to whom each schedule was addressed (see, below 3.4.6.4) and it was based on the results of the analysis (see, section 4.2.8.3).

Part I consisted of questions supporting objectives a) and b) of the interviews and the questions were adapted to each group so as to differentiate them. Questions for the investigation of the involvement in the authority over LWS management by other unit(s) within the university apart from the library (objective a) included in the Part I of the schedules for the groups "Shared authority" and "Non library authority". However, it was a design error that the group "Only library authority" was excluded from this subject investigation; the discussion about the sole authority over LWS management by libraries would have brought out another facet of the same issue enhancing the picture of the subject; "why these LWS cases did not have shared authority". The questions in Part II were common for all groups, examining further aspects of resources management for the needs of LWS publishing (objective c). Finally, Part III consisted of one common question for all Groups aiming to open a discussion about the LWS's uses, exploring the factors that have impacted upon the decision making about the LWS content development (objective d).

3.4.6.3 Data source

The interviewees were chosen to be the same people who completed the survey's questionnaire (see more details below in the sampling section, 3.4.6.8). This decision was based on the advantages of their familiarity with the study and its content, their experience in the study subject (see, section 3.4.2.5 & Appendix I.11) and their ownership of the questionnaire's answers, as the interview's content was related to and connected with the survey's results. Therefore, the discussion could provide valid data and it could be developed upon a common basis between interviewer and interviewee, avoiding time consumption in explanations and descriptions, but also avoiding potential controversies in the survey's results; a contingency which could have affected the interviews' validity undermining rapport and trust and switching the discussion from the real interview's content about the factors and reasons shaping the practice as was pictured through the survey's results.

The interviewees were asked to express their opinions about some of survey's results (see synopsis introducing each part of the interview schedule) taking into account their experience in the academic libraries, emphasising the reasons that affect the reported practice. The researcher, asking explicitly interviewees' opinion based on their general experience and phrasing the questions to avoid focusing on the interviewees' particular library. This was intended to clarify from the beginning that the interview was not focused only on their library. Achieving this starting point, the researcher aimed to open a discussion, which would be based on interviewees' experience, derived either from the specific working place and/or from previous similar working environments. This point was made clearly between the interviewer and interviewee at the beginning of each interview. A benefit of this tactic was that the interviewees were able to feel comfortable to freely express their personal opinion, enhancing the data as much as possible. Nevertheless, there was a risk that the data could be related to libraries other than those in the group which the interviewee had been selected to represent. The researcher attempted to minimise this danger firstly by being well prepared about the profile of each case of library and the characteristic of its group and of the other groups and secondly making this point clear when the interviewees generalised or talked about other library cases.

An alternative approach of interview, which could have provided rich data regarding each library group of library cases, would have been three focus groups composed of survey's respondents from the same group of library cases. Kreuger (1998, p. 18) defined a focus group as a 'carefully planned discussion designed to obtain perceptions in a defined area of interest in a permissive, non-threatening environment'. However, there were too many limitations and risks in the undertaking this approach, as are described below, and the final decision eventually was the use of one to one interviews, instead of focus groups; a decision which was supported as well as by Slater's (1990, p. 115) opinion that "solo interviews have a reputation of being better media than group discussions".

The risk of exclusionary low participation could have be occurred as the senior library staff were expected to be over-occupied with duties and for their participation in a focus group one or two days would have been necessary, as they were from different cities within entire England and Scotland and there would have had to be only one meeting point for all of them. Moreover, especially for one of the focus groups there were only two possible participants; a number which on the one hand was too small for a focus group and on the other hand was unsafe for successful conduct of a focus group or could turn the focus group into a solo interview resulting in for the study two different approaches of interviews to occur in the study. Nevertheless, bias could be caused by the potential threat of an oblique comparison or competitive environment of discussion, as the participants worked for different institutions and they would be asked to speak about their library, and in essence, represent it. In addition, there were limitations by the study's time-scale and financial obstacles, as the preparation of these three focus groups would needed more time than was available and the coverage of the travel and hosting expenses for the participants would have meant prohibitively increased costs. New technologies, like online conference via software such as Skype (www.skype.com), probably could reduce the financial cost considerably and the cost of time for all participants, but bias and other communication problems could be caused because of the difficulty of non-familiarity of the participants' voices.

3.4.6.4 Interview schedules

The schedule and the content of the interview were sent to the interviewees in advance via e-mail before the pre-arranged appointments. The “interview schedule” (see, Appendix II.4-6) was a MSWord file including identity and contact of the interviewer-researcher, the interview’s framework, definition of terms and the three subject areas for discussion, including brief results’ synopsis and basic questions. The interview framework included the interview’s purpose, selection criteria of the interviewee, information about the interview’s procedure (length, parts and intention of request by the interviewer for interview’s recording), interviewee’s rights, ethical issues like confidentiality. In addition all interviewees were asked to contact the researcher before the interview regarding any questions they may have. The decision of making the entire frame of the interview known in advance by the interviewees aimed to achieve the following benefits:

- building of rapport, trust and a common terminology between the researcher and interviewee;
- collection of rich data as the discussion’s subjects were wide and complex, therefore the interviewee should be at least be aware of the content in advance of the interview;
- time reduction for the introductory information of the interview (interview’s framework, definition of terms and results’ synopses) so as to use as much time as possible for the discussion

The presentation of the brief synopsis of the survey’s results to the participants could be a controversial point of the interviews’ design, as this could influence the interviewees causing bias. However, the results presented could not influence the interviewees because they were basic enough in order to provide a starting point for the discussion’s subject areas and they were related only to the specific group of libraries in which the library interviewees worked. Therefore, the results were very similar to the information given by the interviewees answering the survey’s questionnaire, avoiding bias caused by comparison between the practices presented and the library practice for which the interviewee worked. Moreover, the content of the interview was focused on the factors affecting the shaping of the practice as was shown through the results presented and some particular points about the specific interviewee’s library case that the researcher included

during the interview. Consequently, the brief synopsis of the results could not influence the interviewees guiding their answers, as the subject of the interview was not the practice itself, but the factors which affected the formation of this practice. In other words, the interviewees were not asked to describe what managerial activities were undertaken by their library, having prior information about the practice by other libraries, but they were asked to discuss the reasons which influenced the practice as they themselves had already described through the survey's questionnaire.

3.4.6.5 Interview length

The length proposed for the interview in the call for participation (see, Appendix II.1) was half an hour (30 minutes). The development of a wide and complex discussion could be restricted within this time-frame, possibly reducing the discussion's depth and therefore data's richness. However, the proposition of this short time-frame aimed to gain a sufficient number of interviewees, who would consent to participate. The candidates for the interview were members of academic libraries' management team; professionals expected to be over-occupied with duties and with limited time. This assumption for high risk of low-rate participation was already taken into account and was eventually proven during the survey's procedure (see, section 3.4.2.5). The proposed of length the interview was a crucial point for candidates' consent to be interviewed.

The half-hour length of the interview was tested during the procedure of interview pretesting (see, below 3.4.6.7) which indicated firstly, that indeed the professionals would consider negatively a proposition for a longer interview and secondly, that the total length of a half-hour interview, including the introductory stage and the discussion, could be sufficient for the data collection. Moreover, the advanced provision of the interview's schedule and content to interviewees assisted in the time economy advance discussion, as the interviewees were at least aware in advanced of the interview procedure, significantly reducing the introductory stage. Nevertheless, the researcher was available for a longer discussion in case the interviewees expressed willingness for this during the interview's procedure.

3.4.6.6 Interview modes

The interview modes proposed in the invitation were either personal, in candidates' work place, or by telephone interview. The interviewees could choose the mode. The main reason for this decision was the attainment of high participation rate, as advantages of each modes identified by the participants could be motivated; for example, participants could choose the mode in which they would feel more comfortable to speak. The researcher-interviewer was prepared to utilize their advantages and to encounter their disadvantages, ensuring equal quality as regards interviews' conduct and data collection. Floyd (2002) discusses the differences between personal and telephone interviewing and thoroughly compares their advantages and disadvantages. The discussion's content was not related to sensitive personal subjects; therefore the rapport and confidence building was not affected by the interviewing method, as telephone interviews are not suggested for personal and sensitive questions. In addition, telephone interviews could not reduce the data collection, as observations or other multimethod approaches were not used during the in-person interviews. Moreover the interviewer covered the financial cost and the cost of time to be in interviewees' locations within England and Scotland and the cost of the telephone calls.

3.4.6.7 Pretesting the interview

The researcher was aware that interviews' conduct required special skills by the interviewer and a well-prepared design in order to control and eventually avoid practices causing bias herself. Gall *et al* (1996, p. 317) pointed out exactly this interviews' threat, writing that 'researchers have discovered many interviewer behaviors that affect the quality of data yielded by the interview method'. Moreover, Kvale (1996, p. 147) wrote that 'the interviewer is him- or herself the research instrument. A good interviewer is an expert in the topic of the interview as well as in human interaction'. Pilot study on the interviews was essential procedure aiming the researcher-interviewer to:

- become familiar with the process of conducting an interview, encountering the worry of talking about the topic and especially in non-mother tongue;
- test interview's length;

- improve the interview schedule and content (questions) taking into account the comments from the participants and the researcher's personal notes and observations;
- test the use and the efficiency of the equipment for recording the interviews for both modes (in-person and telephone) for ensuring sound quality, making at the same time the researcher familiar in their use;
- test the procedure and coding of interview transcription

The pilot study was conducted during January 2009. One approach for pretesting interviews was the written documents (e-mail for invitation to participation and interview's schedules) to be given to three fellow research students from the same department and to one professional librarian with postgraduate qualifications in library and information management in order to check their wording-phrasing and structure. In addition, the researcher had a long and in-depth discussion with the professional librarian about the content of the interview as she was the most closely-related to the topic. However, she was not able to contribute to answering the pre-testing questions, because she was not a member of a library's management team or her duties and working experience were not related to the topic. This difficulty in the pretesting procedure was, on the one hand, expected as it had occurred as well during the pretesting of the survey's questionnaire (see, section 3.4.2.3), and on the other hand it substantiated the decision which had been made, firstly, for the survey and, secondly, for the interviews for restricted participation for a specialized group of professionals.

An additional pretesting practice was one in-person pilot interview, during which the researcher had only one opportunity to test the entire interview's procedure and content, but as well as this it enabled her to become familiar with the role of the researcher-interviewer. Only one pilot interview was not enough for the needs of the pretesting study. However, this was the only possible way for a valid pilot interview. Specifically, one library which had participated in the survey, but had returned the questionnaire after the survey's termination, was used for the pilot in-person interview. This case was not included in the survey's results and the questionnaire's respondent (manager of the LWS) was the only available appropriate pilot interviewee, having all the characteristics of the candidates for the interview. Consequently, this pilot interview managed to achieve all the

aims of the pretesting study, simulating entirely the real interviews, as they were eventually conducted. Naturally, the interviewee was informed in advance that the interview would be used for pretesting purposes.

3.4.6.8 Selecting sample

The sample frame used for the selection of the cases for the interviews was based on the voluntary consent of 25 out of the 45 respondents for further contact (see, Appendix I.9; Table A1.2). All three groups of library cases were represented through this sample; within those 25 library cases there was from two to 17 cases for each group of library cases. Therefore, the collection of data could be achieved covering all perspectives. The conducting of interviews for half of the cases per group (see, Table 3.5) was set as primary aim in order to achieve the:

- efficient management of total time and cost required for conducting and analysing the interviews, especially because the cases of libraries were located within both countries (England & Scotland), but as well as within all nine regions of England;
- ensuring availability of alternative cases, when the cases firstly selected could respond negatively to the call for interviews.

Table 3.5: Sampling selection for interviews

Group	Indented sum of interviews	Sum of cases providing contact details	Total cases
Only library authority	3	6	9
Shared authority	9	17	33
Non library authority	1	2	3
Grand total	13	25	45

The primary group of 13 cases covering all groups was compiled according to two criteria of representation of the analysis' results (see, section 4.2) and the distance; only when it could be applied. Taking into account the above criteria, the remaining 12 cases were grouped and sorted as alternative cases for contact.

The calling period was from 20/01/2009 – 26/02/2009. Three reminders took place in total, following the selection plan. In the end of the calling period all 25 candidates for interviewing were called personally for participation. Finally, 13 candidates accepted the call from two of the three groups:

- four (4) of the group “Only library authority”
- nine (9) of group “Shared authority”

Most of the 12 candidates did not reply to the call and some of them replied denying participating because of inadequacy of available time (e.g. ‘I regret that I am unable to assist with your research owing to pressure of work’). Most of the 13 positive respondents selected the interview to be via telephone conversation (eight cases) and the remaining five agreed for in-person interview. The length of interviews was from 20 to 68 minutes with an average of 36 minutes. A detailed demographic analysis of the interviewees can be found in Appendix II.7.

3.4.6.9 Conducting interviews

All interviews were conducted during the period 6/2/2009 to 9/3/2009 by prearranged appointments. The interviewees were contacted and called personally for participation via e-mail (see, Appendix II.1). The researcher, via this e-mail, thanked them for their earlier contribution to the survey and their willingness for further contact, based on this she asked them to take part in the next stage of the study. A brief description of the purpose, the content and the procedure (e.g. length, interviewing mode) of the interview was included in that call. In addition, the researcher made a special note of ethical assurances (e.g. confidentiality).

After the arrangement of the interviews’ date, time and type, the researcher emailed the schedule, at a maximum of seven days before the appointment, to the interviewees. For the cases of telephone interview, the researcher posted as well as the consent form with relevant memo (see, Appendix II.2) and a print copy of interview’s schedule, asking the interviewees to read the ethical consent form, sign it and post it back, using the prepaid envelope. For the in-person interviews the consent form was signed by the interviewees after the introductory statement (see, Appendix II.3). The introductory statement also took place in the telephone interviews. In other words, the researcher ensured that the interviewees were aware of the identity of the interviewer, the content, but additionally the procedure and the principles of the interviews, before they were asked to read and sign the consent form. Therefore, the consent form was designed to be short, simple and

in an easy-to-read format summarising basic principles of agreement. Fink (2003, p. 93) pointed out about the consent form that it ‘is designed to protect all parties: the subject, the investigator, and the institution. Therefore, it is important that it present information in an organized and easily understood format’.

All the interviews were recorded digitally, after gaining the interviewees’ permission, enabling the researcher to engage without distractions, like constantly keeping notes, and ensuring the accuracy of data collection. During interviews, the researcher asked questions in a straightforward, clear, non-guiding and non-threatening way. The main questions given in advance to the interviewees worked as starting point for the discussion and the researcher encouraged the interviewees to talk freely, expanding the subjects under investigation, clarifying some points when it was necessary and summarising for better understanding. Nevertheless, the main aim was the interviewees to talk rather than to listen to the interviewer. At the end of each interview, the researcher thanked the interviewees and an e-mail, with compliments and acknowledgement, was sent to them some days after the interview.

3.4.6.10 Analysis of interviews

Transcription of the full content for all sound recorded interviews took place as preparatory work for the data analysis. Slater (1990, p. 114) writes that ‘the more fully and accurately an interview can be recorded in respondent’s own words, the better analysis and conclusions will be’. The scripts of all interviews were analysed via qualitative data analysis computer program; a Computer Assisted Qualitative Data Analysis Software (CAQDAS) for the data analysis. The ATLAS/ti (<http://www.atlasti.com>) was chosen as the software for the in-depth and refined coding analysis of the interviews. It was recommended for its effectiveness by other fellow researchers and academic staff.

In the computer era, the advantages of the use of electronic analysis of the data were not a discussion subject and the disadvantages were negligible, especially in a period in which all these programs have been tested in practice and have been improved. Robson (2002, p.

426) mentioned three possible disadvantages. The first one is about how easy it is for the researcher to use these programs and how much time he/she needs to become familiar and proficient in their use. The researcher became familiar and proficient within a short period of time (before and during the interviews). To this, two considerations played a pivotal role:

- The software has been developed to be easy in its use, providing support materials (manual and tutorials) online from the official web site of ATLAS/ti.
- The researcher's experience in software development and evaluation minimised the time.

The second possible disadvantage was about how easy it is to make changes in the data coding. The specific software in its development provided a user-friendly environment, providing easy methods for editing. Finally, the third possible disadvantage was about a tendency to impose specific approaches to data analysis. However, the researcher did not identify any evidence for that and literature review did not bring out relevant criticism.

The full content of the interviews was read carefully and the data for analysis was identified and marked in text passages (quotations). Each quotation was coded. The codes referred to the core message of the interviewees' words. Each quotation could be linked to more than one code according to the number of messages identified.

'The key process in the analysis of qualitative ... data is coding – classifying or categorizing individual pieces of data...' (Babbie c2008, p. 422)

Interlinking between codes applied when relations between them were identified, for example association, contradiction and cause. All codes were linked to subject categories (family codes), which referred to the questions posed or to new issues raised during interviews (see below, Figure 3.6). In other words, codes were the coded answers to the questions posed or coded opinions on a new significant issue, which was brought out during interviews.

The primary results of the analysis were the answers (codes) given for each of the questions (Code Family) and the opinions (codes) about the new issues raised (Code Family) – see, a demonstration in Appendix II.8. The aspect of codes frequency was also recorded; in other words, how many interviewees gave the same answer or expressed the

same opinion to each question or issue. This primary data analysis was the basis for the presentation and discussion of the results as developed in Chapter 4 (see, section 4.3).

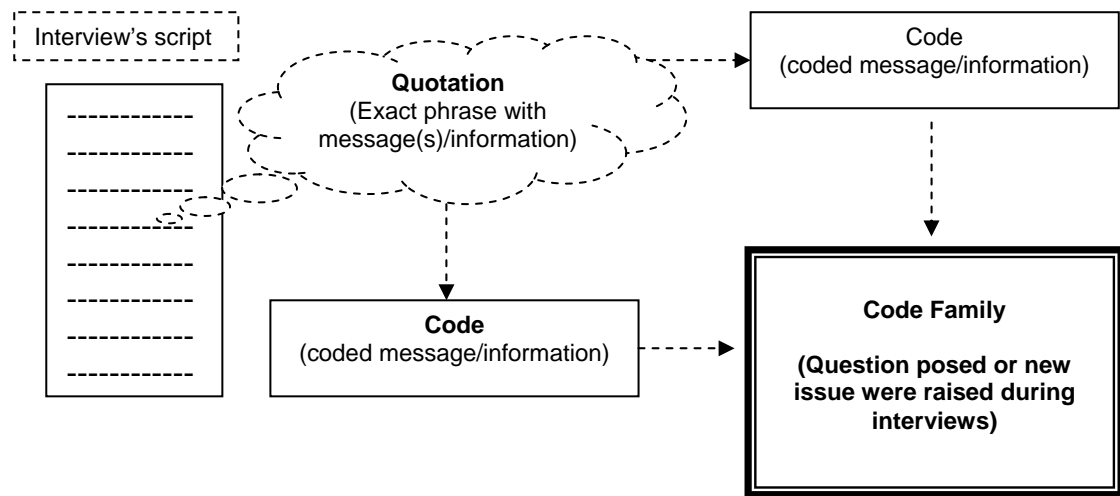


Figure 3.6: Components of the qualitative data analysis

Furthermore, the researcher, during the data analysis, took into account the issue of ethics, as ‘researcher bias is hardly an inevitable outcome... Experienced qualitative analysts avoid this pitfall in at least two ways: by cultivating a deliberate awareness of their own values and preferences, and by adhering to established techniques for data collection and analysis.’ (Babbie c2008, p. 439) In other words, the researcher analysed each script, trying not to think about the whole picture, which was formulated step-by-step, but she focused on the text and the messages in a very technical way without further considering these messages. This method helped the researcher to avoid any criticism of the interviewees’ answers at this research stage.

3.5 Summary

This chapter presented and discussed the research design of the study, including the research aims and objectives (see, section 3.2), the methodology (see, section 3.3) and the research instruments applied (see, section 3.4). The study aimed to investigate the LWS management undertaken by British university libraries, taking into account the LWS role as one of its crucial aspects, reviewing the LWS role, examining the application of the managerial processes for the LWS development and maintenance and the relation

between the LWS roles and the LWS management approaches and investigating factors which affected the formation of those two areas. Mixed quantitative and qualitative methods for collection and analysis of data were chosen. The methods for the quantitative data collection were survey, content analysis and desk research and an integrated and structural analysis was designed to work as the nodal procedure of all quantitative data analysis. Interviews were designed to collect and analysis qualitative data. Therefore, the results of the study are going to be developed into three sections, presenting firstly the results of the integrated analysis of the quantitative data (see, section 4.2), then the results of the qualitative data analysis (see, section 4.3) and finally summarising thematically the results of the quantitative and qualitative data analysis (see, section 4.4).

Chapter 4.

Results of data analysis

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4. Results of data analysis

4.1 Introduction

This chapter presents the results of the quantitative and qualitative data analysis, in three main sections. The first section includes the results of the integrated analysis of the quantitative data, based on the sample of 45 English and Scottish university libraries (see, section 3.4.5) and the second section includes the analysis of the qualitative data collected through 13 semi-structured interviews (see, section 3.4.6). Finally, there is a third section, which summarises the results of the quantitative and qualitative data analysis, thereby providing a link to the Discussion in chapter five.

Throughout the whole chapter common terms and abbreviations are used, like *LWS*, *LWS management*, *LWS uses*, *LWS staffing*, *library web staff* and *shared authority*, whose definition either has already been set, like *LWS* and *LWS management* or will be set once within the text, like in section 4.2.2.3 ‘the staff belonged only to other unit(s) of the university (Non-library staff)’. Moreover, the term *library* refers to each of the English and Scottish university libraries included in the sample. The abbreviation *NA* will be used in some of the tables in order to indicate “Not Applicable”, when a specific element examined was not applicable for some cases. In addition, the term *unit* refers to any organisational division within universities, like department, office or service. For the analysis and coding, the titles of the organisational *units* found in survey data were checked with the official university web sites, to improve understanding and to ensure accurate coding. The results were: the units of *IT* and *marketing*. (see, Appendix III.1; Question 13).

Nevertheless, the contextual aspect of the UK university types, based either on an evaluation or other basis/criterion, could be used in the analysis of the data about the LWS. This aspect could have added value for the understanding of the results. The British universities can be categorised or classified in a variety of ways, such as qualitative criteria (e.g. the “Russell Group”, the “1994 Group”, “University Alliance” and the “Million+” Group). Whilst the “Russell Group” is well established and widely understood, the other groupings are less well known and group membership is subject to change; for

example the universities of Bath¹ and Reading² left the “1994 Group” in 2012. Furthermore some universities, such as St. Andrews, are not in any of the recognised groupings. Another classification way is based on the date of their foundation (e.g. "ancient universities", the "civic universities" including the "red brick universities" and the "plate glass universities"). However, the foundation date is not a safe basis for evaluation, but a significant single change based on the date of foundation in university status occurred in 1992 when 30 then polytechnics were granted university status.

This study did not include in the data analysis the university grouping and this could be considered as a limitation regarding a qualitative approach of the research sample, even if there was not an accurate and absolute classification for the UK universities. A broad categorization of the research sample could be in four groups: “The Russell Group” – 7 cases -, “other pre-1992 universities” – 14 cases -, “new universities” or “post 1992 universities” (including universities designated in 1992 and more recently) – 18 - and “specialist institutions” (such as agricultural or music colleges) – 9 cases – (see, Appendix I.14, Table A1.19). This designation probably suggests a slight over representation of newer universities and specialist institutions and it indicates clearly that the research sample derived from a wider range of academic institutional types including seven from 24 of the Russell Group.

¹ University of Bath (30 October 2012). University of Bath withdraws from membership of the 1994 Group. [online] Available from: <http://www.bath.ac.uk/news/2012/10/30/1994press/> [Last accessed: 22 December 2012]

² Morgan, J. (19 December 2012). 1994 Group leaks yet another member. The Higher Education, [online] Available from: <http://www.timeshighereducation.co.uk/story.asp?sectioncode=26&storycode=422179&c=1> [Last accessed: 22 December 2012]

4.2 Analysis of quantitative data

4.2.1 Introduction

The purpose of this section is to present the results from the integrated and structural analysis of all the quantitative data (see, section 3.4.5), which had been collected through the research instruments of the survey (see, section 3.4.2), the desk research (see, section 3.4.3) and the content analysis (see, section 3.4.4). Therefore, in some cases the data source is indicated (e.g. “Data source: Survey; Question 22”). The primary results of the survey, the desk research about the first year of the LWS publications and the content analysis are presented in Appendix III (see, sections 1, 2 and 3); whilst the results of the desk research about the type of library organisation and the use of VLE systems are included in the present chapter (see below, sections 4.2.2.2 & 4.2.3.1). The structure of the integrated analysis, as described in the related section of the research design (see, section 3.4.5), builds step-by-step the framework of the LWS management undertaken by libraries, starting with contextual elements of LWS management (see, section 4.2.2), continuing with the examination of the LWS role (see, section 4.2.3), the involvement of libraries in the LWS management (see, section 4.2.4) and focusing on the managerial procedures undertaken by libraries (see, sections 4.2.5 & 4.2.6). However, in the last two sections (4.2.7 & 4.2.8), the analysis further examines further the subject area of the non-library involvement in the LWS management and the aspect of the authority over the LWS management because of the relatively low percentage of LWS cases (20%), in which the library was solely responsible for the LWS management.

4.2.2 Aspects of LWS context and LWS sources for development & maintenance

4.2.2.1 Time range of library web site publishing

The exploration of the LWS time-range showed that 73% (33 cases) of the libraries had launched their web sites during the 1990s and 27% (12 cases) during the first decade of 2000 (see, Table 4.1 & Appendix III.2). Considering the known year of each library’s web site’s first appearance and that the data presented here was collected in 2008, then

the majority of the cases had been publishing the LWS *from at least eight years to more than ten years*. In greater detail, 89% (47% and 42%) of the cases (40 in total cases) had LWS publishing practice from six to more than ten years and only 11% of them had relatively little practice (from two to five years) as can be seen in Table 4.1.

Table 4.1: Time range of LWS publishing

Time range		Total	
From at least 8 years to more than 10 years (during the 1990s)	More than 10 years	21 (47%)	33 (73%)
	From 6 to 10 years	19 (42%)	
from at least 2 years to at least 7 years (during the 2000s)	From 6 to 10 years	19 (42%)	12 (27%)
	From 2 to 5 years	5 (11%)	
Total		45 (100%)	

4.2.2.2 Library organisation

The analysis and coding of the data, collected from the survey and the desk research about the Library organisations of the 45 LWS cases (see, section 3.4.3.3), identified three categories of Library organisations – *library types* (see, Table 4.2):

- a. Library Service (in 34 cases – 76%);
- b. Converged Service (in seven cases – 16%), which consisted of sub-sections of library services and IT services. In some cases, sub-section of learning-training services was included too;
- c. Library & Archive Service (in four cases – 8%)

Table 4.2: Types of Library organisations

Library type coding	Total of cases	%
Converged Service ¹	7	16%
Library & Archive Service	4	8%
Library Service	34	76%
Total	45	100%
Notes:		
1. "Converged Services" refers to united services with sub-sections of library services and IT services or/and learning-training services.		

The detailed examination of the *library types* (e.g. “Library & Archive Services”) taking into account, on the one hand, the *status of library sites* (e.g. “Central library with branches (more than 8)”) and the *scale of library staff* (e.g. “001 to 050”) and, on the other hand, sample figure of the geographical region, did not elicit any significant pattern (see, Appendix III.6 - Detailed Examination: Library organisation type).

4.2.2.3 Staffing of library web site

a) Staff for LWS development and maintenance

The investigation of the staff (LWS staff)³, who worked regularly for the development and the maintenance of LWS (see, Survey; Question 22), showed that in the majority of cases (67%) the LWS staff belonged only to the library (*Only library staff*) - see, Table 4.3. Only in one case of LWS did the staff belong exclusively to other unit(s) of the university (*Non-library staff*). Whilst, in 31% of the cases the LWS staff was *mixed*; there were members of staff, who belonged either to the library or to other unit(s) of the university. A point for discussion is that none of the respondents referred to non-university staff working for the LWS; especially the LWS cases hosted on servers of an outsourcing Internet Service Provider - ISP (see, section 4.2.2.4 Hosting of library web site and Table 4.11).

Table 4.3: Regular staffing for the LWS development and maintenance (LWS staff)

Members of library staff	Members of other unit(s) within the University	Other staff	Total of cases	Coding of LWS staff
No	Yes	No	1 (2%)	Non-library staff
Yes	No	No	30 (67%)	Only library staff
	Yes	No	14 (31%)	Mixed staff
Total			45 (100%)	

(Data source: Survey; Question 22)

The LWS staff, which did not belong to the library, belonged only to other unit(s) within the university and not to any external organisation/company. Usually it belonged to one

³ This question did not seek to find out whether there was a web team, composed of library staff and/or/not other staff from university or outsource), but to find out the source of staff, who was involved in the LWS development and maintenance; even if it was one or more people.

unit, but there were some cases that derived from two or three units (see, Table 4.4). The analysis and the coding of the units showed that the external staff belonged to the units: IT (10 cases), Marketing (6 cases); eLearning (1 case), Off-campus support (1 case).

Table 4.4: Regular staffing for the LWS development and maintenance (LWS staff): staff belonged to other unit within the university than the library

Total of units	Coded unit(s) of university	Total of cases
<i>One unit</i>	IT	7
	Learning	1
	Marketing	3
<i>Two units</i>	Marketing & IT	1
<i>Three units</i>	Marketing - IT - eLearning	1
	Marketing - IT - Off Campus support	1
no details given		1
Total		15

(Data source: Survey; Question 22)

The staffing arrangement for the LWS development and maintenance was examined with the factor of time-range of LWS practice (Table 4.5). In other words, the potential relation between LWS staffing and the length of LWS practice was examined. The results showed that both categories of LWS staffing -*mixed staff* and *only library staff*- were found through all broad time periods. The single case for which there was no member of library staff working for the LWS (*non-library staff*) was of particular interest as it was a case where there has been LWS presence for more than 10 years, generating the assumption that this status was not temporary.

Table 4.5: LWS staffing and time-range of LWS practice

Time range of LWS practice	LWS staffing	Total of cases
from 2 to 5 years	Mixed staff	1
	Only library staff	4
from 6 to 10 years	Mixed staff	7
	Only library staff	12
more than 10 years	Mixed staff	6
	Non-library staff	1
	Only library staff	14
Total		45

b) Library staff worked for LWS development and maintenance

The investigation of the library staff, who worked for the LWS development and maintenance (library web staff), usually were only occupied *part-time* (PT) for the work-task of LWS (75%; 33 cases) having other duties too. In most of the cases, the staff scale was from one to ten people. One person was reported only in four cases. In 25% of the cases (11 of the total 44), apart from the PT library web staff, there consisted of members of staff, whose duties solely related to the LWS; *full-time* (FT) library web staff. Usually, one person occupied solely for the tasks of LWS (see, Table 4.6 and Appendix III.1; Section 6).

Table 4.6: Library staff worked the LWS development and maintenance (Library web staff)

Library web staff	Library web staff scale	Total of cases
FT & PT library web staff (Total 11 cases; 25%)	1 to 5	2
	6 to 10	3
	11 to 15	1
	16 to 20	2
	21 to 26	1
	1- 5 FT and many PT	2
only PT library web staff (Total 33 cases; 75%)	1 to 5	15
	6 to 10	9
	11 to 15	4
	16 to 20	1
	21 to 26	3
	many PT	1
Total of library cases		44
Keys: FT: <i>Full-Time</i> - Library staff working for the LWS solely PT: <i>Part-Time</i> - Library staff working for the LWS having additional duties as well		

c) Library web staff within total library staff

The number of library web staff was examined within the total number of library staff and it was presented as its percentage within total library staff. Below in the Table 4.7 the percentage of library web staff is presented from the smallest to the highest, also taking into account the aspect of library sites and the library staff scale in order to formulate a

picture of practise which is as accurate as possible. The percentage of the library web staff ranged from 3% to 61% within the library staff (see, Table 4.7)⁴, with an overall average of 18% (see, Appendix III.7). It is noticeable that three of the four highest percentages (61%, 33% & 20%) were found within the library staff scale “1 to 50”, but the library site status seemed that it was not a crucial factor for the percentage of the library staff working for the LWS.

Table 4.7: Average of the percentage of library web staff within the total library staff

Library sites status	Library staff scale	Total of cases	% of library web staff within library staff
Central library with branches (more than 8)	251 to 300	1	3%
Central library with one branch	51 to 100	1	4%
One site Library	101 to 150	1	5%
Central library with branches (2-8)	201 to 250	3	5%
Central library with one branch	151 to 200	2	8%
Central library with branches (2-8)	101 to 150	5	9%
One site Library	51 to 100	3	10%
Central library with branches (more than 8)	101 to 150	1	16%
Central library with branches (2-8)	151 to 200	1	17%
One site Library	1 to 50	9	20%
Central library with branches (2-8)	51 to 100	5	22%
Central library with branches (2-8)	1 to 50	4	33%
Central library with one branch	1 to 50	2	61%

d) Full-time (FT) library web staff

A detailed examination of the 25% of the libraries – 11 cases - (see, Appendix III.1; Section 6 & Appendix III.7), which occupied staff solely for the LWS work (FT library web staff) - apart from the FT library web staff - showed that:

- usually it was one person, with a maximum number of seven people (Appendix III.1);
- for about half of these cases (5 of 11), the *full-time* library web staff composed a group/team as part of a library section related to information systems and electronic services or they were a cross disciplinary group/team (Appendix III.1);
- the majority of these cases operated within a *Central library with 2 to 8 branches* (Appendix III.7);

⁴ Without the aspect of library sites, the average was ranged from 2% to 91% (see, Appendix III.7).

- the average of total library web staff percentages within the total library staff was 26.5% (Appendix III.7).

Nevertheless, the cross-tabulation in Table 4.8 showed that the existence of solely occupied library web staff (FT) - composing or not a team - was not related exclusively to any particular type of LWS staffing, type of library organisation and the time-range of LWS practice. In other words, FT library web staff:

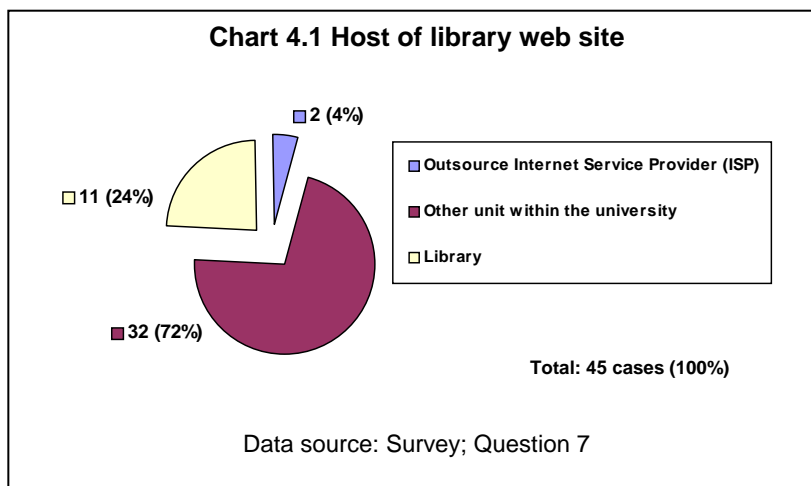
- were found in both LWS staffing (*mixed* and *only library staff*), but more frequently in the cases with *only library staff* (eight from the eleven cases);
- who composed a team, were found almost equally in both LWS staffing (*mixed* and *only library staff*);
- were found in all three *library types* (type of library organisation);
- were found in cases, which had variety of time-range of LWS practice (from two to more than ten years).

Table 4.8: Library web staffing (FT occupation), LWS staffing, library type & time-range of LWS practice – detailed cases examination

Library web staff	LWS staffing	Existence of team	Library type	Time range of LWS practice	Total of cases
FT & PT	Mixed Staff	No	Library Service	more than 10 years	1
		Yes	Converged Service	from 6 to 10 years	1
			Library & Archive Service	more than 10 years	1
	Only library staff	No	Converged Service	from 2 to 5 years	1
			Library Service	from 6 to 10 years	2
				more than 10 years	2
		Yes	Converged Service	from 2 to 5 years	1
			Library Service	from 6 to 10 years	1
				more than 10 years	1
Total					11

4.2.2.4 Hosting of library web site

The majority of library web sites were hosted on server(s) of other unit(s) within the university (72%); 24% of them were hosted on library's server(s) and for a small percentage of cases (4%), the host was an outsourcing Internet Service Provider (ISP) – see, Chart 4.1 & Appendix III.1



Cross-tabulations of *LWS hosting* status with *time-range of LWS practice* (see, Table 4.9) and with Library type (see, Table 4.10) showed that there was not any major impact in particular. However, especially in the two cases of libraries which hosted their LWS on server/s of an outsourcing Internet Service Provider (ISP) the long time-range of practice (from 6 to 10 years) showed that this decision could not be temporary and the fact that both those cases were not located in a *Converged service*, whose basic component was an IT section, could be related to the absence of technical specialised staff and equipment, but this assumption would have high risk when more than half of the LWSs hosted on library's server(s) related to organisations provided only library services (see, library type *Library Service*).

Table 4.9: LWS hosting & time-range of LWS practice

The LWS is hosted on server/s of:	Time range of LWS practice	Total of cases
an outsourcing Internet Service Provider (ISP)	from 6 to 10 years	2
of other unit within the university	from 2 to 5 years	3
	from 6 to 10 years	12
	more than 10 years	17
the Library	from 2 to 5 years	2
	from 6 to 10 years	5
	more than 10 years	4
Total		45

Table 4.10: LWS hosting & Library type

The LWS is hosted on server/s of:	Library type	Total of cases
an outsourcing Internet Service Provider (ISP)	Library Service	2
of other unit within the university	Converged Service	3
	Library & Archive Service	4
	Library Service	25
the Library	Converged Service	4
	Library Service	7
Total		45

The cross-tabulation of LWS hosting status with LWS staffing and the regular staff belonging to another unit within the university other than the library (see, Table 4.11) revealed that many survey respondents did not include in the staff working regularly for the LWS the people who worked exclusively with the LWS hosting: for all the cases with hosting by a ISP and for more than half of the cases with hosting by another unit within the university, the stated staff belonged only to the library.

Table 4.11: LWS hosting & LWS staffing

The LWS is hosted on server/s of:	LWS staffing	LWS staff belonged to:	Total of cases
an outsourcing Internet Service Provider (ISP) (total: 2; 4%)	Mixed staff	Library & Marketing	1
	Only library staff	Library	1
of other unit within the university (total: 32; 72%)	Mixed staff (total: 12)	Library & IT	6
		Library & Learning	1
		Library & Marketing	2
		Library & Marketing - IT	1
		Library & Marketing - IT - e-learning	1
		Library & no details given for the other university staff	1
	Non-library staff	IT	1
Only library staff	Library	19	
the Library (total: 11; 24%)	Mixed staff	Library & Marketing - IT - Off Campus support	1
	Only library staff	Library	10
Total			45

4.2.3 The role of library web site

a) Analysis of LWS mission statements

The data about LWS mission statements was extremely limited; therefore its analysis could provide only indicative information. Only 7% (three cases) of the survey’s respondents stated that a mission statement for LWS had been developed and the content of the mission statement was provided for two of those cases (see, also Appendix III.1; Questions 8 & 8.1). Both statements referred to the LWS as an alternative format of or tool for provision of library services to library’s “stakeholders” or “customers”. Below, the exact text of statements provided is presented:

Case 86: ‘Libweb is one of a range of formats the library offers to all its stakeholders, giving current information on library services & collections. Libweb seeks to be a concise, easily navigable & intuitive website complementing hard copy, word-of-mouth & learn.gold information sources. Libweb is a dynamic website that will continually adapt to the changing information needs of all of its users.’

Case 95: 'to provide our customers with a professional service through the effective and efficient use of the web as a communication tool.'

b) Analysis of LWS uses

The results of the content analysis of the library web sites (see, Table 4.12 & Appendix III.3) established seven categories of LWS uses:

Category A. Provision of electronic library and information services - (in 45 cases; 100%);

Category B. Provision of information about services and facilities hosted locally in the building/s of the library - (in 45 cases; 100%);

Category C. Provision of information about the character and the operation of the library as an organisation (e.g. mission, information about the staff, undertaken projects) - (in 38 cases; 84%);

Category D. Provision of an online "workstation" for the library staff (e.g. Intranet with informative and/or functional content) – (in 5 cases; 11%);

Category E. Provision of collection development functions open to the academic community (academic staff - students) – (in 5 cases; 11%);

Category F: Provision of information about library's commercial activities (e.g. books' sale) – (in 1 case; 2%);

Category G: Provision of cultural information about the town/city where the university library is placed – (in 2 cases; 4%)

The type of outcome (see, section 3.4.1.3.4) for most of the categories was *informative/referential* (see, Table 4.12). Specifically, from the seven identified categories of LWS uses,

- only *informative/referential* (content for provision of information about something) – four categories;
- only *functional* (content for action related to something) – two categories;
- *informative/referential* and *functional* – one category

Moreover, regarding the *stakeholders*, the *library users* were identified as the most frequent target-group. Analytically:

- three of them addressed only to the *library users*;
- three of them addressed to the *library users & the general public*;
- one of them addressed only to the *library staff*;

Table 4.12: LWS uses (categories)

Code	Use for provision of:	Total	Functional	Informative /Referential	Address to:
C	information about the character and the operation of the library as an organisation	38 (84%)	No	Yes	library users / general web public
F	information about library's commercial activities	1 (2%)			
G	cultural information about the town/city where the university library is placed	2 (4%)			
B	information about services and facilities hosted locally in the building/s of the Library	45 (100%)	Yes	No	library users
A	electronic library and information services	45 (100%)			
E	collection development functions open to the academic community	5 (11%)			
D	an online "workstation" for the library staff	5(11%)		Yes	Library staff

(Data source: Content analysis)

There were seven patterns found in the categories of LWS uses (Table 4.13). The key points of the analysis were:

- Common basis for all seven patterns was that all libraries (100%) at least used their LWS for provision of electronic library & information services and provision of information about library services & facilities in-house provided (see, above categories with code A and B, with further coding of the pattern as AB);
- The LWS was usually used (73%) for provision of electronic library & information services, for provision of information about library services & facilities in-house provided, and/or not for provision of information about the library as an organisation (coding of the patterns as ABC & AB) – *basis patterns*, with most frequent schema the ABC (58%), whilst the schema AB was 16%;
- The five *enhanced patterns* were found in 27% of the cases, but each single pattern of them was located in very small percentages: ABCD (9%), ABCE (9%), ABCG (4%), ABCF (2%) and ABCDE (2%);
- The web sites of libraries were always addressed to the library users (100%), mostly to the library users and the general web public (84%) and less additionally to the library staff (11%);

Table 4.13: Patterns of categories of LWS uses & target groups

Patterns ¹	Total	Group of patterns	Address to:		
			Library users	General web public	Library staff
ABCDE	1 (2%)	Enhanced (12; 27%)	Yes (45; 100%)	Yes (38; 84%)	Yes (5; 11%)
ABCD	4 (9%)				No (40; 89%)
ABCF	1 (2%)				
ABCG	2 (4%)				
ABCE	4 (9%)				
ABC	26 (58%)	Basic (33; 73%)	No (7; 16%)		
AB	7 (16%)				
Total	45 (100%)				

Notes:
1. for the patterns' coding, see Table 4.12

(Data source: Content analysis)

Nevertheless, examination of LWS uses with the aspects of *time-range of LWS practice* or *library type* (see, Appendix III.8) showed that the development of LWS uses was not related to the experience of libraries with LWS publishing or the type of library.

However, detailed examination of LWS uses within the eleven cases, which occupied FT library web staff (see, Table 4.14) showed that the enhanced LWS uses were proportionally higher (45.5%); whilst within whole sample the percentage was 27% (see, Table 4.13). Nevertheless, the examination of the existence of team consisting of the FT library web staff could not be related to the development of *basic* or *enhanced LWS uses*. However, the examination with the aspect of LWS staffing showed that *Enhanced LWS uses* were developed mostly in cases with *Only library staff*.

Table 4.14: Library web staffing (FT occupation) & LWS uses – detailed cases examination

LWS uses: group	LWS uses: pattern	LWS staffing	Team existence of FT library web staff	Total of cases
Basic (total: 6; 54.5%)	A-B	Mixed staff	No	1
		Only library staff	Yes	1
	A-B-C	Mixed staff	Yes	1
		Only library staff	No	3
Enhanced (total: 5; 45.5%)	A-B-C-D-E	Mixed staff	Yes	1
	A-B-C-E	Only library staff	No	1
	A-B-C-G		No	1
	A-B-C-D		Yes	2
Total				11

The examination of the patterns of uses of LWS taking into account the sampling unit of geographical regions, (see, Table 4.15) brought out two points:

- a) The Scottish Library cases presented a higher trend to *enhanced patterns*, related to the general trend; pattern “A-B-C-E” (37.5%), which within the total sample it has percentage only 9% and pattern “A-B-C-G” was found in 12.5%, when the general percentage was 4%.
- b) All the cases with pattern “A-B-C-D”, which in essence added the library staff as a target-group for the LWS, were found only in English Library cases.

Table 4.15: LWS uses & geographical regions

LWS uses:		ENGLAND	SCOTLAND	Sample	
group	pattern				
Enhanced	A-B-C-D-E	1 (2.7%)	0 (0%)	1 (2%)	
	A-B-C-F	1 (2.7%)	0 (0%)	1 (2%)	
	A-B-C-G	1 (2.7%)	1 (12.5%)	2 (4%)	
	A-B-C-E	1 (2.7%)	3 (37.5%)	4 (9%)	
	A-B-C-D	4 (10.8%)	0 (0%)	4 (9%)	
Basic	A-B	6 (16.2%)	1 (12.5%)	7 (16%)	
	A-B-C	23 (62.2%)	3 (37.5%)	26 (58%)	
Total		37 (100%)	8 (100%)	45 (100%)	

4.2.3.1 Change of LWS role in time

a) since the launch of the first version of LWS

The analysis of limited data (see, Appendix III.1; Questions 10 & 10.1) about the change of LWS uses since the first version of LWSs for 11% of the cases (5 cases of the total sample) showed that changes had been in the categories A (provision of electronic library and information services) or B (provision of information about services and facilities hosted locally in the building/s of the Library), either with addition or removal of related content. Respondents stated, as the reason for the library to decide to reduce content of LWS related to electronic library and information services, the provision of them through the university’s Virtual Learning Environment (VLE) – e.g. ‘We no longer put much info on our website, it is all provided via our VLE’.

Desk research in all LWS cases (see, section 3.4.3.5) showed that in 18% of them (8 cases) VLE or another intranet system existed and for one of these cases (2%) the system was not part of the LWS content, without any reference/interlinking from the LWS's web pages. In the rest seven cases, the VLE or intranet system included broad content for the university and the relation between LWS and that system was:

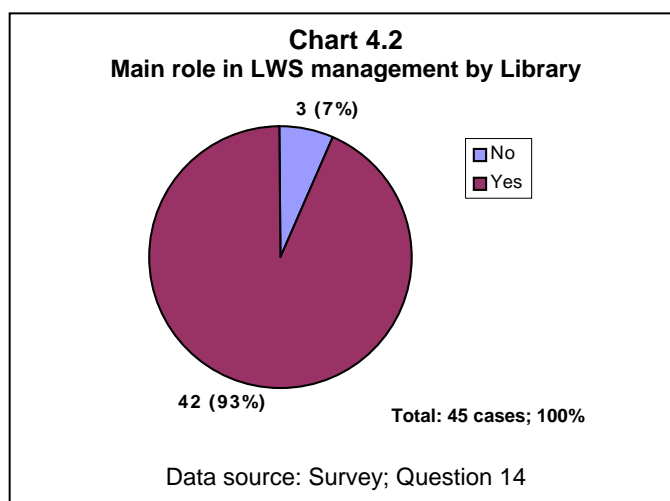
- either as interlinked content (9% - where the university's system was used for control of access to electronic library sources, operating between the free accessed LWS's web pages and the commercial information services subscribed);
- or as separate university's sub-sites (where LWS included limited content, like OPAC and general information about the library, whilst a whole section of university's VLE system hosted the main library related web content). In those three cases (7%) the web presence of the library took place in two sub-web sites; in the LWS for free access by general web public and in university's VLE for access only by the academic community.

b) future plans

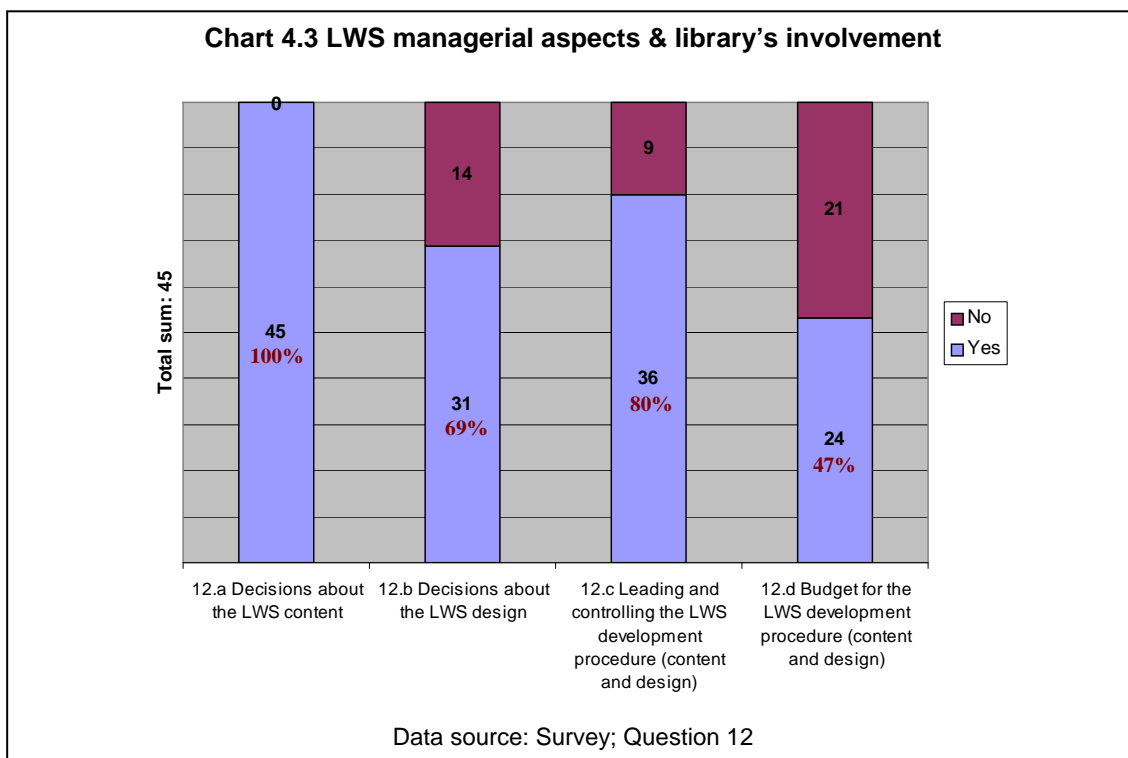
The analysis of data about future plans that would affect the role LWS indicated that the status of the LWS role was not going to be changing (see, Appendix III.1; Question 11 & Question 11.1).

4.2.4 Library's involvement in the management of library web site

The majority of librarians (93%) stated that the library had the main role in the LWS management (see, Chart 4.2 & Appendix III.1). However, the involvement of Libraries in areas of decision-making varied (see below, Chart 4.3). Libraries were involved in:



- decision-making about the content of LWS - 100% of the cases;
- leading and controlling the LWS development procedure (content and design) - 80% of the cases;
- decision-making about the design of LWS - 69% of the cases;
- budget for the LWS development procedure (content and design) - 47% of the cases.



The most common patterns of library's involvement in the above decision-making areas within the six in total identified (see, Table 4.16) were:

- involvement in all four areas (47%);
- involvement in three areas apart from budget (20%);
- involvement only in decision-making about the content of LWS (18%).

Table 4.16: Patterns of library's involvement in decision making areas

Decision-making about the content of LWS (YES in 45 cases)	Leading and controlling the LWS development procedure (content and design) (YES in 36 cases)	Decision-making about the design of LWS (YES in 31 cases)	Budget for the LWS development procedure (content and design) (YES in 24 cases)	Total	
Yes	No	No	No	8 (18%)	
		Yes	No	1 (2%)	
	Yes	No	No	No	3 (7%)
			Yes	Yes	3 (7%)
		Yes	No	No	9 (20%)
			Yes	Yes	21 (46%)
Total of library cases				45 (100%)	

(Data source: Survey; Question 12)

Comparison of the patterns of library's involvement in decision making areas with the groups of LWS uses' patterns (see, Table 4.17) showed that proportionally the most *enhanced* LWS uses identified in cases, in which library was involved in all four or the three decision-making areas.

Table 4.17: Library's involvement in decision making areas & LWS uses (groups of categories)

Decision making areas about:				LWS uses: group of patterns	Total
LWS content	Leading & controlling	LWS design	Budget		
Yes	No	No	No	Basic	7
			Yes	Enhanced	1
		Yes	No	Basic	2
			Yes	Enhanced	1
	Yes	No	No	Basic	3
			Yes	Basic	1
		Yes	No	Basic	6
			Yes	Enhanced	3
Total of library cases				45	

The patterns of library's involvement were also examined, taking into account the sampling feature of the geographical regions (see, Table 4.18). The cross-tabulation showed that in 87.5% of the Scottish LWS cases the library was involved in all four decision making areas, covering the 1/3 of the cases of this pattern (seven of the total 21); whilst this pattern was found in the almost 38% of the English LWS cases.

Table 4.18: Library's involvement in decision making areas & geographical regions

Geographical region	Decision making areas about:				% per Geogr. Region	Total	
	LWS content	Leading & controlling	LWS design	Budget			
ENGLAND (total: 37; 100%)	Yes	No	No	No	21,6%	8	
			Yes	No	5,4%	2	
		Yes	No	Yes	Yes	8,1%	3
				No	No	2,7%	1
			Yes	No	No	24,3%	9
				Yes	Yes	37,9%	14
SCOTLAND (total: 8; 100%)	Yes	No	Yes	No	12,5%	1	
		Yes	Yes	Yes	87,5%	7	
Total of library cases						45	

4.2.5 Managerial activities undertaken by the library

The most frequently occurring managerial activity undertaken by libraries (93%) was organising the LWS development and maintenance (see, Table 4.19). Activities for training and skills development for library staff working on LWS (73%) and planning processes (71%) were recorded also in high percentages, whilst performance measurement and monitoring processes were undertaken by almost half of libraries (49%). Development of specialised policies for LWS was one of the most frequent managerial functions (60%); marketing processes followed with 53%. Moreover, officially stated procedures and work schedule for LWS development and maintenance were developed by 22% of libraries. Process of annual budgeting was recorded in 7% of libraries and 20% of the libraries undertook externally funded projects for the development of particular web-based library services. In addition, 7% (3 cases) of libraries had developed a mission statement for LWS, when only 91% (41 cases) did not have a library's mission statement (see, Appendix III.1; Table A3.8).

Table 4.19: Managerial activities undertaken by library

Activity/Responsibility	Q ¹	Yes	No	Don't know	No answer	NA ²	Total
Planning processes	15	32 (71%)	9 (20%)	1 (2%)	0 (0%)	3 (7%)	45 (100%)
Responsibility for organising the LWS development & maintenance	25	42 (93%)	3 (7%)	0 (0%)	0 (0%)	-	45 (100%)
Activities for training and skills development for library staff worked for LWS	28	33 (73%)	8 (18%)	1 (2%)	0 (0%)	3 (7%)	45 (100%)
Performance measurement & monitoring processes	16	22 (49%)	20 (44%)	0 (0%)	0 (0%)	3 (7%)	45 (100%)
Development of mission statement for LWS	8	3 (7%)	41 (91%)	1 (2%)	0 (0%)	-	45 (100%)
Development of specialised policies for LWS	18	27 (60%)	15 (33%)	0 (0%)	0 (0%)	3 (7%)	45 (100%)
Official stated procedures and work schedule for LWS development and maintenance	27	10 (22%)	30 (67%)	1 (2%)	1 (2%)	3 (7%)	45 (100%)
Annual budget for LWS development and maintenance	20	3 (7%)	37 (82%)	2 (4%)	0 (0%)	3 (7%)	45 (100%)
Undertaking of external funded projects for development of particular web-based library services	21	9 (20%)	31 (69%)	2 (4%)	0 (0%)	3 (7%)	45 (100%)
Marketing processes	17	24 (53%)	18 (40%)	0 (0%)	0 (0%)	3 (7%)	45 (100%)
Notes: 1. Related question of the questionnaire (Data source: survey) 2. Respondents skipped question							

4.2.5.1 Library staff involved in managerial processes

The survey's respondents were asked to provide details about the job titles of staff involved in the managerial processes for the LWS related to the planning, marketing, performance measurement & monitoring and organising, when library undertook these processes (see, Table 4.20). The answers were analysed and their content was coded mainly as:

- *library web staff*: for the library staff, who worked regularly for the LWS development & maintenance;
- *members of library management team*: for the library staff, who had managerial responsibilities within library organisation (including the LWS management);

- *non-library web staff*: for the library staff, who worked mainly for other library function(s) apart from the LWS;
- *other university staff*: for staff, who worked in the parent institution, but did not belonged to the library

Table 4.20: Completion coding - details provided about staff involved in managerial processes

Activity/Responsibility	Q ¹	Provision of valid data	Provision of not valid data ²	No answer	Total ³
Planning processes	15.1	31	1	0	32
Organising the LWS development & maintenance	26	40	0	2	42
Performance measurement & monitoring processes	16.1	21	0	1	22
Marketing processes	17.1	22	1	1	24
Notes: <ol style="list-style-type: none"> 1. Related question of the questionnaire (Data source: survey) 2. When data was irrelevant with the question (e.g. The respondent described the procedure without mentioning the library staff was involved in it.) or it was not sufficient to be analysed or to be coded (e.g. the respondent wrote only "various") 3. Total of cases, for which the respondents answered "Yes" in the subject related question; Question 15, 25, 16 and 17 respectively. 					

a. Planning processes

The staff involved in planning processes belonged only to library (see, Table 4.21) and they were mainly *members of the library management team* with members of *library web staff* (42%) or only *members of library management team* (39%). In fewer cases, the staff consisted of:

- *only library web staff* (10%);
- *members of library management team, of library web staff and of non-library web staff* (6%);
- *members of library management team and non-library web staff* (3%)

The *non-library web staff* worked on library functions for the provision of library services and they were involved in planning for suggestions. Moreover, usually – in 16 of the 18 cases -, all members of library web staff were involved in planning processes. Regarding the members of library management team, in about 2/3 of the cases more than one person was involved, having responsibilities in various sections of the library, including the

manager of LWS and the library director. In one case, the marketing management team was leading the planning processes. In 1/3 of the cases with only one person responsible for the planning, his/her position title was related to information systems, electronic services and the LWS (like “web site manager”). Nevertheless, none was the library director.

Table 4.21: Staff involved in the LWS planning process

Member(s) of library management team	Library web staff	Non-library web staff	Total
No	Yes	No	3 (10%)
Yes	No	No	12 (39%)
		Yes	1 (3%)
	Yes	No	13 (42%)
		Yes	2 (6%)
Total			31 (100%)

(Data source: Survey; Question 15.1)

b. Organising processes

The analysis of the results of the question 26 (see, Table 4.22) showed four staffing schemas for the organising processes:

- for 67% of the libraries, the lead was based on one person, who was usually a member of the library management team occupied partially with LWS duties and for more than 1/3 of them his/her title indicated relation with IS and electronic services. In only 1/5 of the cases was his/her title directly related to the specific duties of LWS management (e.g. “Library Web Manager or Administrator” and “Libweb manager”);
- for 17% of the libraries, organising activities were undertaken by the entire library web staff based mostly on team-work without one-person leading (self-managed team);
- for 9% of the libraries, there was a co-ordination by one member of library management team with the library web staff; his/her role was more consultative rather than leading;

- for 2% of the libraries, there was a two-manager leading schema separating responsibility for technical and content aspects

These managerial arrangements for LWS organising were found to be unrelated to the number of library web staff (see, Appendix III.9).

Table 4.22: Library staff involved in the LWS organising process

Managerial arrangement	Position		Total	
One person (total: 28)	Member of library management team (total: 23)	Director of library	2	67%
		Web site manager	5	
		Management team (relation with IS and electronic services)	11	
		Management team	5	
	Member of library staff (total: 4)	Staff	2	
		Staff (relation with IS and electronic services)	2	
Position under review		1		
Self-managed team			7	17%
Co-ordination by one member of library management team with the library web staff (total: 4)	Management team (relation with IS and electronic services)		3	9%
	Management team		1	
Two-managers leading schema			1	2%
Non one-person based managerial arrangement (not details given)			2	5%
Total			42	100%

(Data source: Survey; Question 26)

The examination (see, Table 4.23) of the managerial arrangement for the LWS organising with aspects of LWS staffing showed that:

- the LWS staffing schemas (regarding the *mixed staff* and the *only library staff*) were not related to any particular managerial arrangement of LWS organising, as all five approaches occurred in both groups of cases;
- The existence of FT library web staff was found in the two most frequent practices; *One person* and *Non one-person based managerial arrangement*, but mostly under the first one (*One person*; 8 cases of the 11 ones);
- all five cases, where there was FT library web staff composing a team, had managerial arrangement based on *One person*;

Table 4.23: LWS organising & LWS staffing

LWS staffing	Library web staff	Team existence of FT library web staff	Managerial arrangement	Total
Mixed staff	PT & FT	No	Self-managed team	1
		Yes	One person	2
	FT	NA	Co-ordination by one member of management team	1
			NA	2
			Non one-person based managerial arrangement	1
			One person	6
			Self-managed team	1
Non-library staff	NA	NA	NA	1
Only library staff	PT & FT	No	One person	3
		No	Self-managed team	2
		Yes	One person	3
	PT	NA	Co-ordination by one member of management team	3
			Non one-person based managerial arrangement	1
			One person	14
			Self-managed team	3
			Two-managers leading schema	1
Total				45

c. Performance measurement and monitoring processes

The analysis of the results (see, Table 4.24) showed that there was a variety of staff involved in performance measurement and monitoring processes; *members of library management team, library web staff, non-library web staff* and other university staff. Nevertheless, it was noticed in some cases (13%) the exclusive involvement by *non-library web staff* and other university staff. Respondents wrote for the *non-library web staff* that it consisted of cross-section library staff and especially for the case in which only *non-library web staff* worked on this managerial area, the staff belonged to the “Enquiry desk staff (nine senior staff)”. In two of the three cases with participation from other university staff, respondents specified that this staff belonged to the university web team. However, the most frequent staffing consisted of either *only member(s) of library management team* (33%) or *only member(s) of library web staff* (29%). Usually, for both groups one person participated in these processes, specialised in IT.

Table 4.24: Staff involved in the LWS performance measurement and monitoring processes

Library staff			Other university staff	Total
Member(s) of library management team	Library web staff	Non-library web staff		
Yes	Yes	Yes	Yes	1 (5%)
		No	No	3 (14%)
	No	No	No	7 (33%)
	Yes	No	No	6 (29%)
No	No	Yes	No	2 (9%)
	No	No	Yes	1 (5%)
Total				21 (100%)

(Data source: Survey; Question 16.1)

d. Marketing processes

In marketing processes the most frequent staffing (see, Table 4.25) consisted of *members of library management team* and *non-library web staff* (27%). Moreover, in half of the cases the *non-library web staff* belonged to the library marketing section. However, it was noticed that the increased involvement of *non-library web staff* (in Total 12 cases - 55%), related to the small participation of *library web staff* (in total 7 cases - 32%), who participated with either one person or all. In addition, the involvement of management library team (in total 14 cases – 64%) took place either with one or with more than one member, who were not usually specialised in information systems or electronic services or the LWS. Nevertheless, in only one case the marketing processes were undertaken exclusively by “user consultations”, about whom the respondent did not provide further details about whether they were *members of library staff* or *members of university staff* or they worked for a private company.

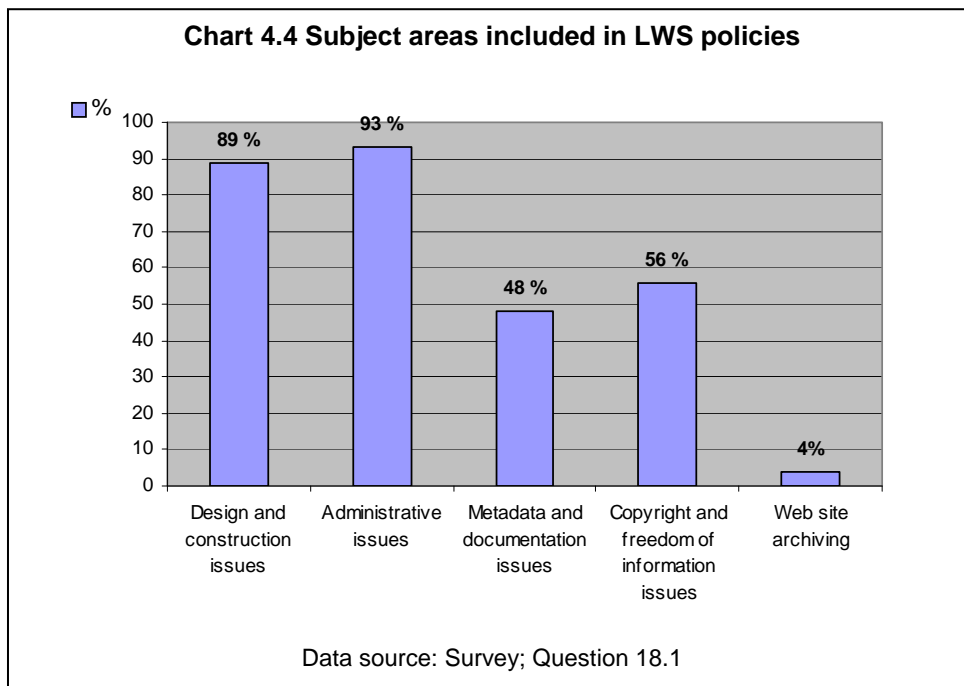
Table 4.25: Staff involved in the LWS marketing processes

Library Staff			User consultations (not specified)	Total
Member(s) of library management team	Library web staff	Non-library web staff		
Yes	No	Yes	No	6 (27%)
		No	No	4 (18%)
	Yes	Yes	No	2 (9%)
		No	No	2 (9%)
No	No	Yes	No	4 (18%)
		No	Yes	1 (5%)
	Yes	No	No	3 (14%)
Total				22

(Data source: Survey; Question 17.1)

4.2.5.2 Development of specialised policies for LWS

Specialised policies for the LWS were developed by 60% of libraries (see, section 4.2.5). The most frequent subject areas covered by policies were a) “administrative issues (responsibilities, procedures, aims/objectives, etc)” in 93% of those cases and b) “design and construction issues” in 89% of them (see below, Chart 4.4 & Appendix III.1; Question 18.1). The subject area of “copyright & freedom of information issues” was included in 56% of the policies and 48% of them covered issues about “metadata & documentation”. However, only one library respondent added one more subject area; the “Web site archiving”.



All four subject areas, excluding “Web site archiving”, were present in 30% of the policies, which was the most frequent pattern of subject areas (see, Table 4.26). The second more frequent pattern (22%) was the inclusion of “administrative issues”, “design & construction” and “copyright & freedom of information”. In addition, about 70% of library policies included issues of three or four subject areas. Finally, the subject area of “administrative issues” or “design & construction issues” was included in the few cases, whose policies focused on only one subject area.

Table 4.26: Patterns of subject areas covered by specialised policies for the LWS

Administrative issues (in 25 cases)	Design & construction issues (in 24 cases)	Copyright & freedom of information issues (in 15 cases)	Metadata & documentation issues (in 13 cases)	Web site archiving (in 1 case)	Total	%	
No	Yes	No	No	No	2	7%	
Yes	No	No	No	No	1	4%	
		Yes	Yes	No	1	4%	
		Yes	Yes	No	1	4%	
	Yes	Yes	No	No	No	4	15%
			No	Yes	No	1	4%
			Yes	No	No	3	11%
		Yes	No	No	6	22%	
		Yes	Yes	No	8	30%	
Total of library cases					27	100%	

(Data source: Survey; Question 18.1)

4.2.6 LWS management undertaken by libraries

The examination of the wide managerial processes of planning (P), organising (O), motivating (M) and controlling (C) undertaken by the libraries which had the main role in LWS management (42 of the 45; see, section 4.2.4), as reported through the answers of the survey (see, Table 4.27; supplementary see, section 4.2.5), showed that there were two frequent patterns:

- covered all four areas (43% - 18 cases; “POMC”);
- coverage of the three areas, except from the Controlling (19% - 8 cases; “POM”)

The remaining 38% of cases presented a variety of six patterns, with coverage of three to none of the managerial areas. Nevertheless, the absence of coverage in controlling was found in the highest percentage of 48% and in organising was found in the lowest percentage of 2%. Overall the notion of “controlling” was not present in 48% of cases (the highest percentage), whilst the notion of “organising” was present in almost all cases (98%).

Table 4.27: LWS management patterns

Patterns	Planning	Organising	Motivating	Controlling	Total of cases
none	No	No	No	No	1 (2%)
O	No	Yes	No	No	3 (7%)
OM	No	Yes	Yes	No	4 (9.5%)
OMC	Don't know	Yes	Yes	Yes	2 (5%)
	No	Yes	Yes	Yes	
PO	Yes	Yes	No	No	4 (9.5%)
POC	Yes	Yes	Don't know	Yes	2 (5%)
			No	Yes	
POM	Yes	Yes	Yes	No	8 (19%)
POMC	Yes	Yes	Yes	Yes	18 (43%)
Total					42 (100%)
	Planning	Organising	Motivating	Controlling	
Coverage	76%	98%	76%	52%	
Absence	24%	2%	24%	48%	

(Data source: Survey; Questions 15, 25, 28 & 16)

Cross-tabulations of LWS management patterns with other aspects did not reveal any particular relation (see, Appendix III.10). The examined aspects were: *time-range of LWS*

practice, type of library, library's involvement in decision-making and organising arrangement. However, the examination of LWS management patterns with the aspect of LWS uses and the sampling feature of geographical regions identified a key point. *Enhanced patterns* of LWS management, regarding the coverage of managerial areas (like POMC, POC and OMC), were located in higher percentages proportionally within the LWS cases with *enhanced patterns* of LWS uses (see, Table 4.28) and within the Scottish libraries (see, Table 4.29); for example these libraries had POMC pattern of 50%, when the general percentage was 43% and POC pattern in 12.5% when the general percentage was 5%. The English libraries presented similar percentages with those of the sample.

Table 4.28: LWS management & LWS uses (groups of categories)

LWS uses: group	LWS management patterns	Total
Basic	none	1
	O	2
	OM	4
	OMC	1
	PO	4
	POC	2
	POM	5
	POMC	12
Enhanced	O	1
	OMC	1
	POM	3
	POMC	6
Total		42

Table 4.29: LWS management patterns & geographical regions

LWS management patterns	ENGLAND		SCOTLAND		Sample	
none	1	(3%)	0	(0%)	1	(2%)
O	3	(9%)	0	(0%)	3	(7%)
OM	3	(9%)	1	(12.5%)	4	(9.5%)
OMC	2	(6%)	0	(0%)	2	(5%)
PO	3	(9%)	1	(12.5%)	4	(9.5%)
POC	1	(3%)	1	(12.5%)	2	(5%)
POM	7	(20%)	1	(12.5%)	8	(19%)
POMC	14	(41%)	4	(50%)	18	(43%)
Total	34	(100%)	8	(100%)	42	(100%)

4.2.6.1 Other managerial activities undertaken by libraries

Other managerial activities undertaken by libraries were examined (see, Table 4.30). The results showed that within the 42 LWS cases, for which the library had the main role in the LWS management, libraries usually developed LWS policies (64%) and marketing processes (57%). Development of work procedures & schedules was found in 24% of these cases and only 7% of these libraries developed a LWS mission statement or an annual LWS budget.

Table 4.30: Other LWS managerial activities undertaken by libraries

Managerial activity	Total		Within the 42 LWS cases, for which library had the main role in LWS management
	Total	%	
Development of LWS mission statement	3	7%	
Development of Marketing processes	24	57%	
Development of LWS policies	27	64%	
Development of annual LWS budget	3	7%	
Development of work procedures & schedules	10	24%	

(Data source: Survey; Questions 8, 17, 18, 20, & 27)

These managerial activities were also examined in the terms of their application within a planning process (32 cases; see, Table 4.20). The results showed that libraries usually developed most of them undertaking at the same time planning processes (see, Table 4.31). Specifically, in the terms of LWS planning, the activities were developed in the percentage of:

- 67% - Development of LWS mission statement;
- 88% - Development of marketing processes;
- 89% - Development of LWS policies;
- 100% - Development of annual LWS budget;
- 90% - Development of work procedures & schedules;

Table 4.31: Other managerial & planning procedures

Managerial activity	Application in LWS cases:	Application in cases, for which planning processes were undertaken too	
		Total	%
Development of LWS mission statement	3	2	67%
Development of Marketing processes	24	21	88%
Development of LWS policies	27	24	89%
Development of annual LWS budget	3	3	100%
Development of work procedures & schedules	10	9	90%

(Data source: Survey; Questions 8, 15, 17, 18, 20, & 27)

Cross-tabulation (see, Table 4.32) of their application showed that usually libraries undertook none or one or two of them at the same time; the four most frequent patterns of their application by the libraries referred to:

- development of LWS policies (21%);
- development of marketing processes & development of LWS policies (19%);
- none activity (17%);
- development of marketing processes (14.3%)

Table 4.32: Other managerial activities (patterns)

Development of LWS mission statement	Development of marketing processes	Development of LWS policies	Annual budget	Development of work procedures & schedules	Total
Yes	No	No	No	No	1 (2.4%)
No	Yes	No	No	Yes	1 (2.4%)
Yes	Yes	Yes	No	No	1 (2.4%)
No	No	Yes	Yes	Yes	1 (2.4%)
Yes	Yes	Yes	No	Yes	1 (2.4%)
No	Yes	Yes	Yes	Yes	2 (4.8%)
No	Yes	Yes	No	Yes	5 (11.9%)
No	Yes	No	No	No	6 (14.3%)
No	No	No	No	No	7 (17%)
No	Yes	Yes	No	No	8 (19%)
No	No	Yes	No	No	9 (21%)
Total					42 (100%)

(Data source: Survey; Questions 8, 17, 18, 20 & 27)

a) Development of LWS mission statement

The detailed examination (see below, Table 4.33) of the libraries, which had developed a LWS mission statement (7%; 3 cases) showed that:

- all of them referred to *library services* from England, with time-range in LWS practice from six to ten years or more than ten years;
- two out of the three of them had developed a LWS mission statement, in the terms of their planning processes, having developed specialised policies for their LWS in administrative issues and having presented that they undertook managerial processes for all four areas (POMC);
- one out of the three had developed a LWS mission statement, but without an undertaking of other relevant managerial activities, having organising as the sole main managerial activity;
- all of them referred to LWS cases with basic categories of LWS uses

Table 4.33: Cases developed LWS mission statement – detailed cases examination

LWS management pattern	Undertaking of planning processes	Development of specialized LWS policies in administrative issues	Existence of library mission statement	Library type	Geographical county	LWS uses: group	Time range of LWS practice	Total
O	No	No	Yes	Library service	England	Basic	from 6 to 10 years	1
POMC	Yes	Yes					No	more than 10 years
							from 6 to 10 years	1
Total								3

b) Undertaking external funded projects

The detailed examination (see, Table 4.34) of the libraries, which have undertaken externally funded projects in order to develop particular web-based library services (20%; 9 cases) showed that:

- there was no annual LWS budget for any of these cases;
- the library was involved in decision-making over the LWS budget for more than half of these cases;
- the library undertook planning processes for its LWS in almost all of these cases;
- there was variety of LWS management patterns, but in most of them the library undertook activities for three or for all four main LWS managerial areas.

Table 4.34: Cases undertaken external funded projects – detailed cases examination

Existence of planning processes	Library's involvement in the LWS budget	LWS management pattern	Existence of annual LWS budget	Total
No	No	O	No	1
Yes (total: 8; 89%)	No	POM	No	1
		POMC	No	2
	Yes (total 5; 56%)	PO	No	1
		POC	No	1
		POM	No	1
		POMC	Don't know	1
			No	1
Total				9 (100%)

c) Planning LWS work procedures

The detailed examination (see, Table 4.35) of the libraries which have developed officially stated procedures and work schedules for the LWS development and maintenance (24%; 10 cases) showed that:

- for all these cases, the library had organising and motivating processes;
- for almost all of these cases (9 of 10), the library had planning processes;
- for almost all of these cases (9 of 10), the library had covered either three or all four LWS management areas (POMC and POM);
- there was not any particular organising arrangement;

- usually the LWS staff consisted of only library staff, but their LWS was not usually hosted on library's servers (see, section 4.2.2.4);
- half of these cases (5 of 10) occupied PT & FT library web staff and for three of them the FT library staff composed a team, including in other words five of total 11 cases with PT&FT staff and three of the total five cases where the FT staff composed a team (see, section 4.2.2.3-d):
 - a) five of the total 11 cases occupied FT library staff
 - b) three of the total five cases composed of a team

Table 4.35: Cases developed LWS work procedures – detailed cases examination

Organising arrangement	LWS staffing	Library web staff	Team existence of FT library web staff	LWS management pattern	LWS hosting on library servers	Total
Co-ordination by one member of management team	Only library staff	PT	NA	POMC	No	1
Non one-person based managerial arrangement	Only library staff	PT	NA	POMC	No	1
One person	Mixed staff	PT & FT	Yes	POMC	No	1
	Only library staff	PT & FT	Yes	POM	No	1
					Yes	1
		PT	NA	OM	No	1
				POM	Yes	1
			POMC	No	1	
Self-managed team	Only library staff	PT & FT	No	POMC	Yes	2
Total						9

4.2.7 External involvement in the management of library web site

a) University policies & guidelines

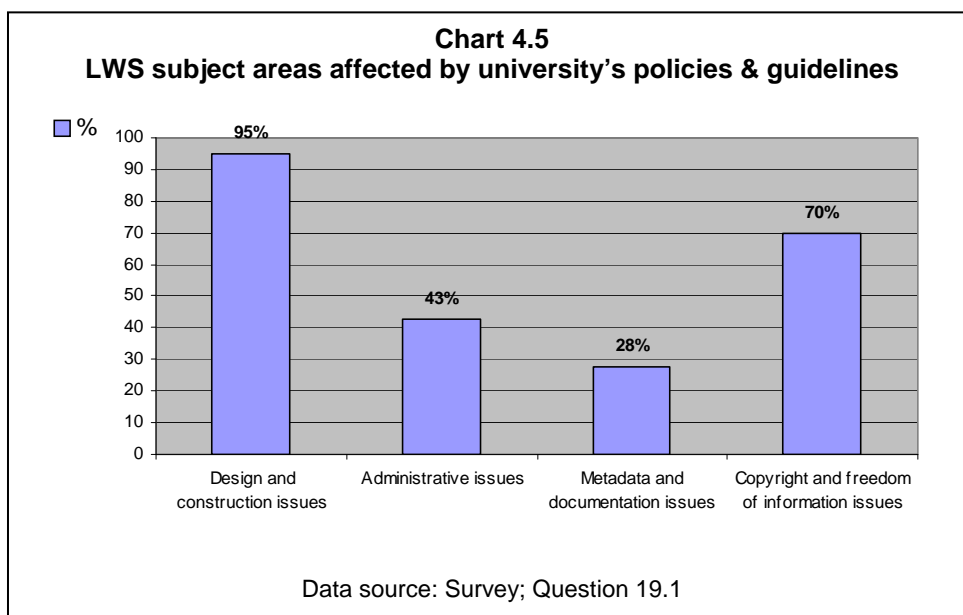
University policies and/or guidelines affected issues and aspects of LWS in 89% of the cases (see, Table 4.36). These aspects were related mostly to the subject areas “design & construction issues” (95%) and “copyright & freedom of information issues” (70%) and less with “administrative issues” (43%) or “metadata & documentation issues” (28%) – see, Chart 4.5 & Appendix III.1; Question 19.1.

Table 4.36: University’s policies/guidelines affected LWS

Activity	Q ¹	Yes	No	Don't know	No answer	NA ²	Total
University’s policies/guidelines affected LWS	19	40 (89%)	2 (4%)	0 (0%)	0 (0%)	3 (7%)	45 (100%)

Notes:

1. Related question of the questionnaire (Data source: survey)
2. Respondents skipped question



An interesting point was that for almost all libraries (26 of the 27 in total) which developed LWS policies, there was already an existing framework of policies and guidelines of their parent institution (see, Table 4.37).

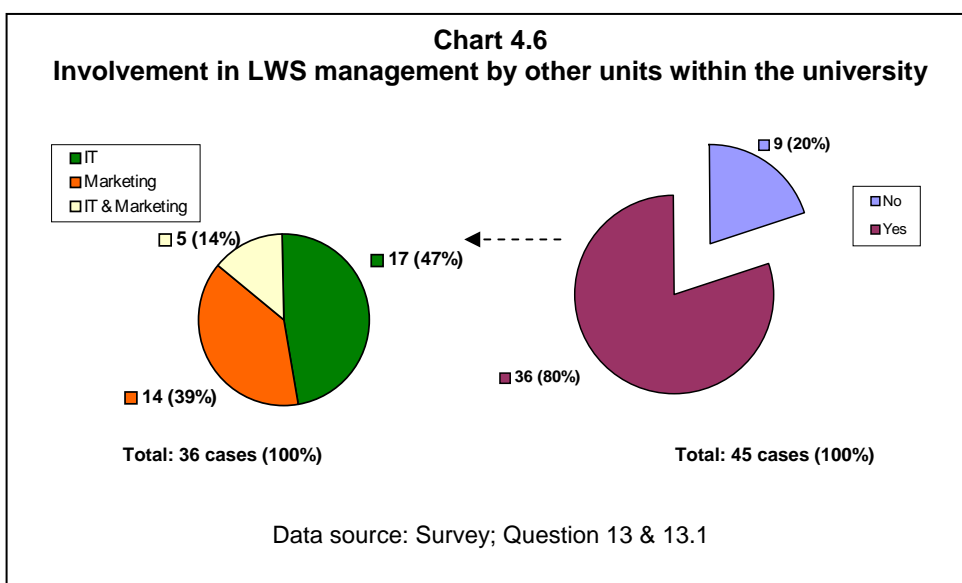
Table 4.37: Library’s web policies and university’s policies / guidelines affected LWS

University’s policies/guidelines affected LWS	Library’s web policies	Total
No	No	1 (2%)
	Yes	1 (2%)
Yes	No	14(31%)
	Yes	26 (58%)
NA ¹	NA ¹	3 (7%)
Total of Library cases		45 (100%)
Notes:		
1. Respondents skipped question		

(Data source: Survey; Question 18 & 19)

b) Non-library involvement in LWS management

Involvement in the management of LWS was recorded for 80% of the cases (see, Chart 4.6). Respondents identified the involvement only from other unit(s) of the university and not from other external public or private organisation(s). The analysis and coding of the details provided brought out involvement by the units of IT (47%) and marketing (39%), and both of them (14%).



4.2.8 Authority over LWS management

The cross-tabulation about the role of Libraries in LWS management and the involvement of other unit(s) within the university in LWS management (see, Table 4.38) showed that:

- for the 73% of the cases, the library and one or more university units were involved in the authority over LWS management (*shared authority*);
- for 20% of the cases, the library had sole authority over LWS management (*only library authority*);
- for 7% of the cases, the library did not have main authority over LWS management (*non-library authority*)

Table 4.38: Authority over LWS management (patterns)

Library had the main role in LWS management	Existence of involvement by other university unit	Pattern of authority over LWS management	Total of cases
No	Yes	Non-library authority	3 (7%)
Yes	No	Only library authority	9 (20%)
	Yes	Shared authority	33 (73%)
Total			45 (100%)

Data source: Survey; Questions 13 & 14

Cross-tabulation of the authority aspect with the LWS uses, also taking into account the university units involved did not reveal any particular relation between them (see, Appendix III.11; Table A3.45). However, the examination of the authority and the time-range of LWS practice (see, Table 4.39) showed that the newer established LWS cases were managed under the status of the *shared authority* and the *non-library authority* was not a temporary status for LWS management, as *the time-range of LWS practice* for those cases was from six to more than ten years. In addition, cross-tabulation between the aspect of authority only and the groups of LWS uses' categories identified that proportionally LWS cases with *only library authority* over LWS management had a higher percentage of *enhanced LWS uses* and a lower percentage of *basic LWS uses* related to the quota within total sample (see, Table 4.40).

Table 4.39: Authority over LWS management & time-range of LWS practice

Authority over LWS management	Time range of LWS practice	Total
Only library authority	from 6 to 10 years	5
	more than 10 years	4
Shared authority	from 2 to 5 years	5
	from 6 to 10 years	12
	more than 10 years	16
Non-library authority	from 6 to 10 years	2
	more than 10 years	1
Total		45

Table 4.40: Authority over LWS management & LWS uses (groups of categories)

LWS uses (group of categories)	Only library authority		Shared authority		Non-library authority		Sample	
	Total	%	Total	%	Total	%	Total	%
Basic	5	56%	26	79%	2	67%	33	73%
Enhanced	4	44%	7	21%	1	33%	12	27%
Total	9	100%	33	100%	3	100%	45	100%

The examination of the aspect of authority, taking into account the sampling feature of geographical regions, brought out two points (see, Table 4.41):

- All cases with *non-library authority* over LWS management were located in English cases.
- The group of *only library authority* was more frequent in Scotland than in England, proportionally with the total sample and reversely the group of *shared authority* was more frequent in England than in Scotland.

Table 4.41: Authority over LWS management & geographical regions of sample

Authority over LWS management	ENGLAND		SCOTLAND		Whole sample	
	Total	%	Total	%	Total	%
Only library authority	6	16%	3	37.5%	33	20%
Shared authority	28	76%	5	62.5%	9	73%
Non-library authority	3	8%	0	0%	3	7%
Total	37	100%	8	100%	45	100%

Cross-tabulation of the aspect of authority with the *type of library* and the involved university units (see, Table 4.42) did not identify any significant relation regarding the *library type* for all three groups of cases and regarding the involved unit for the group of cases with *only library* and *shared authority*. However, for the small group of the LWS cases with *non-library authority* over their management, it was found that the marketing unit was more involved in relation to the IT unit, whose involvement within the whole sample was higher (see, Appendix III.I; Table A3.14).

Table 4.42: Authority over LWS management, Library type & involved university unit(s)

Authority over LWS management	Library type	University unit(s) involved	Total of cases
Only library authority	Converged Service	None	3
	Library Service		6
Shared authority	Converged Service	IT	1
		Marketing	3
	Library & Archive Service	IT	1
		Marketing	2
		Marketing - IT	1
	Library Service	IT	15
		Marketing	7
		Marketing - IT	3
Non-library authority	Library Service	Marketing	2
		Marketing - IT	1
Total			45

4.2.8.1 Authority over LWS management & library's involvement in decision-making

The possible impact of authority over LWS management on the involvement of library in decision-making about LWS managerial aspects was examined and this cross-tabulation identified (see, Table 4.43) that:

- for the cases with *only library authority*, there was a trend for libraries to be involved in the decision-making about the LWS content, design, development procedure and budget;

- for the cases with *shared authority*, no particular trend was identified, as there were a proportional quota regarding all patterns of practice, related to the quotas within whole sample;
- for the cases with *non-library authority*, there was a trend libraries to be involved only in the decision-making about LWS content;

Simultaneously, the examination of library's involvement in the decision-making did not bring out any particular relation with the involvement in LWS management by a particular unit (see, Appendix III.11; Table A3.46).

Table 4.43: Authority over LWS management & library's involvement in decision-making

Decision-making areas (patterns)	Only library authority		Shared authority		Non-library authority		Whole sample	
	Total	%	Total	%	Total	%	Total	%
content – design	0	0%	1	3%	0	0%	1	2%
content - development procedure	0	0%	3	9%	0	0%	3	7%
content - development procedure – budget	0	0%	3	9%	0	0%	3	7%
content	0	0%	6	18%	2	67%	8	18%
content - design - development procedure	2	22%	6	18%	1	33%	9	20%
content - design - development procedure – budget	7	78%	14	43%	0	0%	21	46%
Total	9	100%	33	100%	3	100%	45	100%

4.2.8.2 Authority over LWS management & LWS management undertaken by libraries

The examination of the aspect of authority with the identified LWS management patterns (see, section 4.2.6) showed that the group of cases with *only library authority* almost entirely (89%) had the most frequent patterns identified already; POMC & POM, whilst in the 55% of the cases with *shared authority* these patterns were found. Furthermore, the variety of the other six patterns was grouped almost entirely within the remaining 45% of the cases with *shared authority* (see, Table 4.44). In addition, cross-tabulation based on the aspect of authority showed that there was not any particular relation between the LWS uses (group of categories) and LWS management patterns (see, Appendix III.11; Table A3.47).

Table 4.44: Authority over LWS management and LWS management patterns

Authority over LWS management	LWS management patterns	Total	
Only library authority	O	1 (11%)	
	POM	2 (22%)	8 (89%)
	POMC	6 (67%)	
	Total	9 (100%)	
Shared authority	none	2 (3%)	15 (45%)
	O	2 (6%)	
	OMC	2 (6%)	
	POC	2 (6%)	
	PO	4 (12%)	
	OM	4 (12%)	18 (55%)
	POM	6 (18%)	
	POMC	12 (37%)	
	Total	33 (100%)	

Cross-tabulations showed that the factor of authority could not be an obvious factor for the formation of a range of aspects examined in relation to LWS management. Specifically, it was found that authority was not related to the formation of:

- The library's organising arrangements, with the indirect exception of the group of library cases with non-library authority which usually did not have the responsibility for the organising within the terms of the LWS development & management (see, Appendix III.11; Table A3.48).
- The existence of FT library staff, with the exception that only establishment of team was found solely within cases with the status of *shared authority* (see, Appendix III.11; Table A3.49).
- The undertaking of externally funded projects by libraries. Detailed examination (see, Appendix III.11; Table A3.50) of the cases which undertook externally funded project for the development of web-based library services also did not identify evidence that connects the development of this managerial activity with

the authority of LWS management and library's involvement in decision-making about financial aspects of LWS (see, also section 4.2.6.1-b.).

- The development of LWS mission statement. The detailed examination (see, Appendix III.11; Table A3.51) of the cases which developed a LWS mission statement (7%; 3 cases) showed that none of the factors of external involvement or impact could have affected these libraries regarding the development of LWS mission statement (see, also section 4.2.6.1-a). The factors examined in cross-tabulation were: authority over LWS management, involved university unit(s) in LWS management and existence of university policies/guidelines in administrative issues affecting LWS.

However, authority over the LWS management was found to be related in some ways to aspects of LWS sources (see below, Table 4.45; also sections 4.2.2.3 & 4.2.2.4). Cases with *only library authority* had only library web staff; cases with *shared authority* had either *only library web staff* or mixed staff and finally within cases with *non-library authority* all three types of web staffing were found. However, the external staff (not belonging to library) was not exclusively related to the unit(s) involved in the LWS management. Nevertheless, the cases with LWS hosting on servers of an outsourcing Internet Service Provider (ISP) were located only in the group of non-library authority and the university unit involved in LWS management was the marketing unit; whilst correlation could not be found with LWS hosting and the other two groups of cases with *only library* and *shared authority*.

4.2.8.3 Questions raised by the aspect of authority over LWS management

The analysis found that the LWS management was not an exclusive matter for libraries for a very high percentage (80%; see section 4.2.8) and it identified that the aspect of authority over the LWS management could affect the extent of libraries' decision-making and the formation of the LWS management undertaken by libraries, as variety of patterns were identified, especially within the group of cases with shared authority.

Table 4.45: Authority over LWS management & LWS sources aspects

Authority over LWS management	University unit(s) involved in LWS management	LWS staffing	LWS staff belonged to:	LWS hosting on server(s) of:	Total
Only library authority	NA	Only library staff	Library	other university unit	4
				library	5
Shared authority	IT	Mixed staff	Library & IT	other university unit	5
		Only library staff	Library	other university unit	11
	library			1	
	Marketing	Mixed staff	Library & IT	other university unit	1
			Library & Learning	other university unit	1
			Library & Marketing	other university unit	2
			Library & Marketing - IT - Off Campus support	library	1
			no details given	other university unit	1
			Only library staff	Library	other university unit
	library	4			
	Marketing - IT	Mixed staff	Library & Marketing - IT	other university unit	1
			Library & Marketing - IT - e-learning	other university unit	1
			Only library staff	Library	other university unit
Non-library authority	Marketing	Mixed staff	Library & Marketing	Internet Service Provider (ISP)	1
		Only library staff	Library	Internet Service Provider (ISP)	1
	Marketing - IT	Non-library staff	Library & IT	other university unit	1
Total					45

Common practice within the groups of cases with *only library* and *shared authority* was the low percentage of cases which developed controlling processes, established official stated procedures and work schedule and had an annual budget for the LWS development and maintenance, developing however specialised policies for the LWS and undertaking marketing processes. Moreover, the library web staffing was based on a few people working PT for the LWS. In other words, the activities of LWS management, development and maintenance were not the responsibility of a specific section of the library. After a long *time-range of LWS practice* from six to more than ten years, questions were raised about which managerial perspective has formatted this organising practice and whether this practice was common place for other libraries functions. In addition, the high percentage of LWS hosting on other unit server(s) and of *mixed LWS staff* rose questions about the extent of library's involvement in the management of sources and publishing procedure.

Common practice also for all three groups of cases was that the LWS was found to be used almost exclusively as a tool for provision of electronic library & information services, for provision of information about services and facilities hosted locally in the building/s of the Library and for provision of information about the character and the operation of the library as an organisation, addressed mainly to the academic community (see, LWS categories of uses; A, B & C). However, additional LWS content was developed in connection to other uses again mainly addressed to the academic community, proportionally, mostly from the cases with *only library authority* and less from the other two groups (*share* and *non-library authority*). Consequently, a question was raised about the factors which impacted on that decision on the LWS content.

a) Only library authority over LWS management

The library cases with sole authority over the LWS management, usually, were involved in all main areas of decision-making about LWS and they developed activities for all four broad managerial areas. Furthermore, responsibility for the organising for these libraries was usually based on one member of the management team, whose duties for the LWS were in almost all cases in addition to others. At the same time, the remaining staff working for the LWS belonged only to the library. In addition, in the few cases where

there was also FT staff - except from the PT - they did not compose a team. Questions were raised over whether this managerial practice in LWS was common place in the library management in general.

b) Shared authority over LWS management

The library cases with *shared authority* over the LWS management presented a variety of patterns of library's involvement in decision-making, in LWS management patterns undertaken by libraries and in organising arrangements and LWS staffing. From the very few cases that occupied FT library staff, for some of them this staff composed a team which belonged to a section related to information or IT systems and electronic services. In addition, there was not exclusive relationship between the university units involved and the *mixed LWS staffing*. The questions raised were:

- what reasons caused the involvement in the LWS management by other university unit(s);
- whether the involvement by other university unit(s) in the management was common practice for other library functions – apart from the LWS;
- whether and in what aspects the involvement of the other unit(s) affected the LWS management undertaken by the libraries;
- whether the LWS management practice of shared authority was common place in the Library management in general;

c) Non-library authority over LWS management

The library cases with *non-library authority* over the LWS management were examined only in the areas related to the library's involvement in decision-making and the LWS sources. The LWS staffing included all three types (*only library, mixed* and *non-library*) and the LWS hosting was mostly on server(s) of an outsourcing ISP or of other university unit(s). The questions raised were:

- what reasons affected these libraries not having the main responsibility of the LWS;
- whether the involvement by other university unit(s) in the management was common practice for other library functions – apart from the LWS;

4.3 Analysis of qualitative data

4.3.1 Introduction

The purpose of this section is to present the results from the analysis of the 13 interviews with library professionals who worked in LWS management, who were included in the respondents to the survey and voluntarily also participated in the interviews. They worked either for cases with only library authority or shared authority over LWS management. Moreover, all interviewees made clear that they were talking specifically for their specific working place. For more information concerning the interviews, see section 3.4.6. The interview schedules can be found in Appendix II.4-5. The section is divided into three main sub-sections. The first sub-section presents the results of the discussion about general issues in LWS management. The second and third sub-sections cover the focused discussion on aspects of resource management and decision-making in LWS content and uses. The interviewees' comments were analysed according to the questions posed, taking into account subjectively related comments made and issues raised during the interviews.

4.3.2 Library web site management

4.3.2.1 Shared authority over LWS management

The interviewees of the group of cases with *shared authority* were asked about the factors which have impacted on the shaping of this practice; the *shared authority* over LWS management. The most frequent factor referred to by five of the nine interviewees was that the university management decided to develop one institutional web site including all sub-web sites of all academic departments and services, either for better controlling of information or for achievement of a common "look-and-feel" of the university web presence.

'...there is another aspect ... our web presence is structured into extranet and intranet. Extranet is handled by the department called external affaires and that's because it's about the public safe to get in the databases; it has to do basically with disciplines...' Interviewee6

'...a number of years ago there was an intension of university for all web sites to come under the university look-and-feel. They tried I mean there are still some sites around ... they don't...academics they have their own web sites and there is a recognition that academics

may be different, but we within the library we thought that it will be basically a good idea, because students used to the look of university's web site, then we fit in that and it makes as one institution.'
Interviewee5

Another interviewee mentioned precisely that the idea of a same university interface was derived from the library and not from the university management. Consequently, the library management decided, asked for and achieved the involvement of another unit. Nevertheless, Interviewee1 – in contrast – explained that her library had solely the management of their LWS because of the absence of pressure from the university management for another unit(s) to be involved.

'College management, College management seniors, is hugely concerned with selling courses, getting students; they concern in marketing. At the moment, they don't really care - they are not interfering with us and I don't know how long it will continue.'
Interviewee1

Three of the nine interviewees referred as a major factor, for the involvement of another unit in LWS management, the inadequacy or absence of specialist library staff in aspects of web development and maintenance. However, checking the statements of those three interviewees about the potential financial impacts on the LWS management and the staffing profile of their LWS cases (source: their statements in the questionnaire), financial inadequacy or small size of library staffing could not be a reliable assumption for the reason causing the inadequate number of specialist library web staff. For example, one of them had approximately 80 employees in four library sites and at the same time 14 of them worked for the LWS having other duties as well (PT occupation on LWS tasks) and, at the same time, recruitment of specialist staff was not included in the library planning – as the interviewee herself said. For more related reasons which caused inadequacy of library web staff, see below 4.3.2.4; see, low understanding of the special needs/requirements of (library) web publishing. On the contrary, the inadequacy of human resources on behalf of the university was mentioned by Interviewee1 as one of the reasons that the library had the sole authority over LWS management; '...the web team does not have the staff resource to possible manage it for us'.

In addition, Interviewee3, who worked for a LWS, for which the library had sole authority over its management, - in the terms of the final question for any additional

comment - shared a personal idea about a possibly beneficial involvement in the LWS management by a university committee with consultative role composed of academics, students, IT unit and marketing unit, in order for the library to have an overall input of stakeholders about the LWS. This idea was not found to be applied within the British academic libraries examined by the present study, but a similar practice was reported for American academic libraries; “website policy committees” for overseeing website policy on content, IT, graphics, and other topics, in which library staff participated (Academic library website benchmarks 2008) – see, section 2.3.4.

4.3.2.2 Managerial activities undertaken by libraries affected by the shared authority over LWS management

The interviewees of the group of cases with *shared authority* were asked about whether and which managerial activities were affected through the practice of this shared authority over LWS management. The analysis of the answers showed that the status of shared authority was not a crucial factor for the formation of the variety of LWS management patterns, which were identified through the quantitative data analysis and raised a relevant question (see, section 4.2.8.3-b). Taking into account the overall managerial profile of these library cases, which was formatted via the survey and the answers provided via the interview, for only two of them relation was partly identified between other unit’s involvement and absence of library’s involvement in decision-making and development of managerial processes undertaken by the library; whilst there was reported a range of uncovered managerial areas for all these cases. Specifically, the involvement in the decision-making in the design mentioned by an interviewee was verified by the relevant statement given through the questionnaire and the absence of performance measurements processes reported for a library case in the questionnaire was verified by the interviewee’s answer. Nevertheless, the results of the interviews showed that five areas were affected and three interviewees mentioned more than one area:

- decision-making in the design (for eight of the nine interviewees);
- decision-making in the content (for two of the nine interviewees);
- organising and leading web site development (for two of the nine interviewees);
- planning processes (for one of the nine interviewees);

- performance measurements processes (for one of the nine interviewees);

The interviewees mentioned a range of involvement in the decision-making in the design; from consultation in technical aspects to complete control of the lay-out and the information architecture. An example of limitations derived from this involvement was given by Interviewee6 saying that ‘...but when they [library web staff] want to change things in the design or the layout, they need some IT staff to assist in that. There is no way to have editorial authority there’. It was noted that the high involvement in this area was found in library cases not necessarily in small size libraries, but in cases for which staff belonged to other university unit working for the LWS development, the LWS was hosted on server(s) of other unit and there was inadequacy of specialist library staff. An example about problems that libraries encountered because of this complex situation was given by Interviewee13:

‘Our Communications Department has responsibility for whole web site, not only of the library. We have to make it in a similar style and we want to make some changes to the style to suit the library, because we found the navigation in the overall web site is not very good for us and that’s one problem. The other problem we have with the IT department is that we would like a number of links into the web site to other databases and we need their involvement in order to achieve this, because we don’t have technical expertise to build the search capacities to the databases and link them to the web site, so those are other problems we have with the web site.’ Interviewee13

This evidence in LWS staffing and LWS hosting was common practice for the two interviewees, who mentioned problems with consistency caused by the involvement in organising and leading web site development (see, more about it below in section 4.3.3.4).

An example of statement about consistency problems was:

‘it’s difficult because they (library staff) work part-time and from now it is more difficult, because they have moved in another building ... 20 min from there...actually they need to be together [staff from library, IT and marketing unit] when they need to do something complicated’ and ‘the problem is finding the staff of the IT department to make all these to work’. Interviewee13

Nevertheless, the involvement in decision-making in the LWS design can affect the control of libraries over the whole LWS publishing, regarding the implementation of library’s decisions in the LWS content development. None of the interviewees alluded to

that, although through the description of the practice by Interviewee11 this point was brought out. Specifically, she said:

'What would happen in real life...it would be we would ask it for the ICT department and either they would say that this is impossible or they would say that it would take a lot of time and effort and that would be a project and then they charge us.' Interviewee11

The involvement in decision-making in the LWS content was mentioned by two interviewees, highlighting the primary role of the marketing units in that; on the contrary for the decision-making in the LWS design both marketing and IT units were involved. Interviewee16, talking about the library whose staff who added content in the library web pages, noticed that: 'When they want to put anything within reasons then they have to make sufficient and put them down...' and Interviewee6 said that: 'We write the content, but the external affairs check it before publishing for whether it should be there or not'. However, Interviewee6 explained that this limited authority over the content and the fact that they did not have direct control of the content made the library attempt to keep the content very general and static in order to avoid updating and expanding it.

Finally, Interviewee5 referred to the involvement in the planning processes by the marketing unit, as this took decisions for when the university web site, including library's sub-site, should be redesigned, forcing library to follow this schedule. Specifically, she said:

'...because this seems more like marketing site - the university site - is to attract new students...they want to be very up to date; they want to change it very frequently, so typically they change the template every two years, which is quite fast for us really... sometime we are not in the same template as they are, because we don't have staff who could do that during the year...' Interviewee5

4.3.2.3 Involvement by other units in the management of other library activities-functions

The interviewees from the group of libraries with shared authority over the LWS management were asked whether involvement in management by other university units was common practice and for other library activities/functions too. More than half of the interviewees (five) stated that there was involvement only in the LWS management. For example, Interviewee13 said: 'Not really, no. I mean we have a lot of autonomy in those things...and I think otherwise normally we are free to operate as we want'. Two interviewees referred to the involvement of IT unit for network aspects, which was common for the whole university and not only for the library to be managed by the IT unit. Finally, two interviewees mentioned the university management's involvement in administrative and financial aspects, which was common practice for all university services and departments.

4.3.2.4 The LWS management approaches related to the general library management practice

All interviewees were asked whether the LWS management practice could be considered as common with the other library functions, in the terms of the general library management. Most of the interviewees stated that the LWS management was common or quite common for the general library management practice. Therefore, to a great extent the range of LWS management patterns - as they identified through the analysis (see, sections 4.2.6 & 4.2.8.2) - could reflect the general library management practice. However, to a limited extent interviewees pointed out that the LWS management practice was not common and it was secondary related to the general library practice. The two interviewees, who stated that it was not common, talked about a poor LWS management, which was also verified by their answers to the questionnaire. They rationalised that situation as a result of low understanding by the library management of the special needs and requirements for the management and development of a web site.

'As regards the LWS, I think that there is lack of understanding, to be honest, of the technicality, of what happens and therefore there is all ignorance...that somebody will do it...somebody will take care of it. But

because you only see that it is not working...that it is gone bad, then it is more difficult to sell it as it is keeping good...that's make sense? ... What I think is all about how [the library web site] is managed and it is a big change management process. Although, like I say, people do think that you do what I am saying and it's done. They don't recognise that actually there is an awful ongoing background to make that happened...' Interviewee10

4.3.3 Resources management issues

4.3.3.1 Human resource management (HRM)

All Interviewees were asked to point out factors affecting the shaping of HRM for the LWS. Common practice for the interviewees was the staffing for the LWS to consist of a few people from different library sections occupied with multi-tasks and the existence of one member of the library management team leading and working for the LWS development having other duties as well. Only one interviewee worked solely for the LWS management and development, having assistance from one other library staff.

Regarding the shaping of the group of people, who worked regularly in different library sections, interviewees mentioned as main factors:

a) Inadequacy of library web staff, who could work more hours for the LWS or solely for its tasks. Interviewees related that to the small size of the existing staff, financial limitations for new posts and the university and library managements' low understanding for the needs of LWS management and development.

'Another aspect...is it is also difficult to create new posts...We have budget for the existing (team)...I thinks it is difficult to find new money to create new posts.' Interviewee7

'Because we are very small institution we can not afford any extra staff. So all the staff involve ...they have much of work ... we have to find ways working and fitting in the work for the web site development along 6 millions other things.' Interviewee13

'I think because of the conflict things we talked about them before about people say library web site is the most important thing we have, but they don't support it as investment.' Interviewee10

'...we don't have actually a web team for the university either, so actually this is the problem there is not coherence strategy across the university using the web... Perhaps that's one of the key reasons that we don't have a team ...

So you could say that is not really sort of management for the library point of view; there is anything within the university; this is how the web is organized. We are trying to move old stuffs, but still there are {...} views for the importance of the web.' Interviewee3

Nevertheless, an interviewee expressed her thoughts about this inadequate number of library web staff as regards the future of the LWS, when current staff would change work tasks or be pensioned – like herself. However, at the same time the specific library case hired temporarily an out-source company to develop the current LWS design.

'...and also maintenance...I mean at this site at the moment I am the only person who can do more complicated stuff technologically, so I need to train the other liaisons subject librarians, ... I have not managed to do the training yet; we have not have time...
...before I leave even... who shall say, but my objective is to leave it in a state in which it can actually be simply maintained for a period of time ... a year maybe ... while new staff get in and ... because I think ... because we are a small institution, because probably we can not attract the most high flying staff I thing we have to look at to appoint people who you can develop, who will be trained ...' Interviewee1

Furthermore, one interviewee, discussing the financial limitation as factor, gave as an example the fact that the library used PT one person for LWS tasks, when that person was recruited full-time officially and worked in practice PT for the development of a web-based library service, in the terms of an external funded project that library undertook.

b) The variety of skills required, which at the same time could cause conflict within the staff derived from the possible different perspectives upon web publishing. Mainly, interviewees mentioned conflict between the technical staff and the librarians/front-desk staff for the content of LWS.

'I think because people have different skills, abilities and the technical people are very good at ...organising, writing html...but they are not necessarily very good at writing text and communicating with the users, so there are other people who are very good at writing text and understanding what kind of things users might looking for ...so they are working together as team, covering different sets.' Interviewee10

'...we have parts of IS that - the computing part and the library part - sometimes things they see things quite differently, so talking on behalf of one unit - IS, as one whole our policy - we talk about that but you have to know for your research that it is not easy and we disagree in several things, because we are a big division ... and the library culture and the computing culture are quite different about communicate...what communicate means and that some times causes ... friendly arguments, but arguments about the web.' Interviewee2

However, the conflict between staff worked for the LWS could be based on unofficial/underground perspectives about the ownership of the LWS content.

'... but what always felt very strongly is that the liaison librarians need to own the web site. You may you could employ specialist technical help ... to support, but the ownership, the decision making about the mode that you present the resources and the kinds of the information that the site carries ... has got to be in the ownership of the liaison librarians, because the other ones they have cold face ...'
Interviewee1

c) The direct control and develop of the LWS content from the same people who work in the related area.

'Partly, is about of control thing...certainty here that the people who work on the web site are the people who have contact with the students, so we have...we are the academic information team so do allies' work...we do information sections with students; we write fact sheets...so, in essence we have the message, so it is nice we have the control how the message (not said: is delivered via the LWS).'
Interviewee5

d) The historical background of the LWS development.

'For my perspective is that because when the LWS was started was small...generally smaller...you know, in 1992 it was a small web site...few pages and then it evolved along with the technology, but for reasons they need to employ some specialists in that technology does not seem that have been recognized in the library.'
Interviewee3

e) The amount of work, which affects the size and the type of occupation. Interviewees gave two different perspectives strongly related to their perspective about the LWS content. On the one hand, interviewees stated that the staffing with few "part-time" employees answered the fact that there was not enough work for one "full-time" employee and at the same time this schema provided back up as there were more than one staff working for the LWS (see below, example by Interviewee7). On the other hand, Interviewee6, whose library case – as an exceptional case - occupied seven FT people and two PT for the needs of the LWS, explained that the library organised the staffing because the large amount of work.

‘There is a lot of work for the set up of the library web pages, but when they have set up; the majority of them do not change very much, just only we look after keeping update there content, so there is not enough sufficient work for just one responsibility.’ Interviewee7

‘...now the most information resources are electronic - there is a lot of work... staff like to work electronically...’ Interviewee6

4.3.3.2 LWS staffing within the terms of the general library practice in HRM

All interviewees were asked whether the practice for the LWS organising and staffing was common taking into account the general library practice in HRM. As mentioned above, for almost all cases from which the interviewees derived, the LWS staffing consisted of few people from different library sections occupied PT for the LWS work tasks. Therefore, three interviewees said that it was the same for all library functions because the size of the library staff was too small. Interviewee13 said, for example, that: ‘Yes, for everything...I mean everybody has their own jobs, but everybody also does everything ... we are small staff’. However, the majority of the interviewees said that this practice was partly applied. Interviewee2 said about it: ‘Yes, we have a lot of matrix teams...you know working with ...yes, it is certainly common’. Five of those ten interviewees mentioned that this staffing schema was applied for projects that the library had undertaken. For example, Interviewee7 said: ‘In some areas, I think, yes. For example for the projects on the collection management where there are people from the technical services and the readers services’ and Interviewee11 said ‘there are various of team sizes within the library ... we do a lot of jobs and frequently review staffing ...we have cross-library projects’.

4.3.3.3 Interaction between library staff and library web staff

Almost all interviewees referred to the internal interaction between the library staff, who did not work for the LWS, and the people, who worked for it. Most of the interviewees talked about unofficial feedback that the library staff provided in voluntary basis about the LWS. This practice was encouraged mostly by the staff who worked for the LWS. Interviewee9 said about it that: ‘we ask for all the library staff to provide feedback and we

deliver almost from everybody...we are not asking them to be involved in the design of the LWS, but they use it everyday for their work'. Upon that point, Interviewee10 mentioned that her library decided to train the staff in the contents and the navigation of the LWS, when a new version was launched because as she said: '...because they will need to know the LWS upside-down ... to be familiar with it, before it even launched. Because, as soon we launch from the day somebody can ring you saying where can I find this'. In general, the library staff was presented by the interviewees within their words as source of information for the contents of the LWS, as carrier of feedback on behalf of other users, but as well as source of feedback having the role of user.

4.3.3.4 Non-library web staff & non-library based LWS hosting

The question about possible impacts upon the LWS management derived possibly from the hosting of the LWS on server(s) of other unit(s) or the existence of staff from other unit(s) working for the LWS was asked to 11 from the 13 interviewees, as it was applicable to their library cases. Five interviewees identified that there were some negative impacts derived from non-library based LWS hosting. They referred to limitations of library's access to the content and control over the time and the type of actions which had taken place by the *non-library staff* and about the development and maintenance of LWS, including the content's updating. Below, there are some examples of interviewees' phrases:

'I think that the problem is not where are the servers...[but] finding experts at the right time...' Interviewee13

'I think that it can be limiting, because some time development is very slow...' Interviewee11

'...for example, we used to find students were reporting access problems to us ... and they were to do with the security setting on folders ...we did not have control over that.' Interviewee1

'sometimes things don't go so quickly as we would do if it was in-house, but we have said that we don't have the experts to manage the servers or to do that more advanced programming anyway...' Interviewee3

The good relationship, which the library could develop with the coactive unit(s), was mentioned as a key point for balancing these kinds of problems. Interviewee3 said for example that: 'We very much rely on our relationship with IT to be able to get things

done...'. Moreover, there is relevant note above (see, 4.3.2.2) about problems with consistency caused by the involvement in organising and leading web site development; an important point is that it was not included in the answers of this question. Nevertheless most of the interviewees pointed out, focusing on the fact that library had access to the content, that it was beneficial for the library not having responsibility for the maintenance of the server and keeping back up, separating not only the work tasks of LWS publishing, but as well separating the LWS staff.

This perspective about the separation of the processes and aspects of the web publishing could be identified as well within the questionnaire's answers, where most of the library cases did not mentioned the existence of *non-library staff* working for the LWS, when their LWS was hosted on servers of another unit within university. Within these 11 interviewees, the seven had stated in the survey that the LWS staffing consisted of *only library staff* and at the same time the LWS was hosted on server(s) of another university unit.

'No, because I can separate the content from the technical side of thing, so I think is much more about we use some contributor or some other tool to update the information ourselves or we just pass content to the web services team to update. I feel does not really matters; it's about the content being in the right place. I don't think is an issue - I don't think so and because we don't even have the staff to look after the content, definitely we don't have the staff to look after the servers.' Interviewee10

'...that means that we don't need to worry about -you know- back up and security...' Interviewee12

'... it does not make any different to me, because I look after the content with a few other people ... it is about where the site is on, it is not about the content...it is not how the users see it ...it would not make any difference to our students or the staff...it would not make any difference to me...' Interviewee5

A clear example of limited understanding of the LWS publication management and development was given by two interviewees, who as LWS managers, on the one hand pointed out negative impacts because of the external hosting of the LWS, like delay in procedures and lack of content's control by the library, but on the other hand they referred to the above positive aspects, related to the library's release from part of responsibilities. Whilst, the same people stated in the questionnaire that *only library staff* working for the LWS development and maintenance and the library had sole authority over the LWS

management, when part of the LWS publication procedure was not under the library's control.

4.3.4 Decision making for the uses of LWS

All interviewees were asked to point out crucial factors affecting the decision making for the uses of their LWS. The major factor which determined the LWS uses - therefore its content and its role - was the library's perspective about what kind of tool the LWS was and should be for the library. It defined it as a perspective because usually it was not officially stated in the terms of library's strategy as the interviewees clarified. However, this perspective affected the LWS planning. All interviewees said that library was focused on covering the needs of its users (students and academics) and on promoting the library via the LWS. This perspective reflected the earlier finding about the use of the LWS for provision of electronic library and information services, for provision of information about services and facilities hosted in library' location(s) and for provision of information about the library as an organisation (see, section 4.2.3). Below, some examples are presented:

'...the main purpose is to provide information about the library services and resources. That is the main factor for making decisions about the content.' Interviewee7

'...it is what students need and what the staff need and if we think that they need this would become part of the web site.' Interviewee5

'...well, what users' tell us...actually this is the main thing; the users' needs.' Interviewee2

'... initially the LWS and my role was part of resources development so they would see the LWS as entry point to all our resources, but now it might it has been moved into the faculty support and I think now it's become a marketing tool...also as entry to library resources, but also as marketing tool...' Interviewee11

'I think that there are two roles. One for prospective students and a role for current students. For the prospective students information about the service itself ... to see what services are available and I think this helps the college in general and then for current students is to give different functions for them...' Interviewee8

Most of the interviewees mentioned some other factors, which impacted mostly negatively on the development of content supporting the current LWS uses. These factors

were: financial inadequacy, inadequate number of staff, limited time, inadequate number of specialist staff, limited web skills of staff, limited technological capabilities. Below, some examples are presented:

'...a mixture, because if you decide that we cannot develop it in-house or we don't have time to do it, we have to buy it...we have to get the money...' Interviewee5

'I think the main factor for us is the restrictions of the actual software...it can not be more interactive {...}. There are other restrictions by technical aspect...At the moment, we are not up to free to change it...is not that we don't want to change it, but we don't have enough money...in that moment we don't feel that it need enough change to worry about the money, but it something that we will think in five years time, when we will see that we can not do something that we want to do, but in the moment the budget is not an restriction aspect.' Interviewee8

'...we would like a number of links into the web site to other databases and we need their (IT unit) involvement in order to achieve this, because we don't have technical expertise to build the search capacities to the databases and link them to the web site, so those are other problems we have with the web site.' Interviewee13

Interviewee3 pointed out, as a factor for the limited perspective about the capabilities of web technology and therefore about the extent of LWS uses, the formal education of professional librarians, even at postgraduate level, and the educational background of managers who derived from older educational background. Specifically, she said:

'Perhaps, one main reason is about the training and the formal training we get. We still - is true to say - the generations of library staff come from very different formal library education backgrounds and even now formal training for web development in the library - according to my experience - has not been at all related to truth of ... and I think that the dealing with a complex subject area is not communicated well at postgraduate level and also dealing with different ... backgrounds ... technological backgrounds...

The people ..., which is the senior management level, maybe perhaps they ... may not even appreciate the possibilities and they are who is driving the vision ... let's say they have not driven the vision ...'
Interviewee3

The discussion with the interviewees, about the other LWS use identified via the previous stages of the study about the provision of library staff intranet, showed that the factors, which mainly discouraged its development, were inadequacy of staff's web skills and limited time, which could be connected with low priority for its development, the

unfamiliarity with the extent and breadth of technological capabilities, the existence of a university intranet and the library perspective that the LWS should include only free access content. Below, some examples are presented:

'...we don't do much in the intranet ... it is relevantly new in the institution.' Interviewee1

'...it (library staff intranet) has developed separately, but there are thought to move things to LWS pages ... intranet pages. ... a new staff intranet has not really achieved, because we did not have the time to or the skills to develop a new intranet for the library staff.' Interviewee7

'I suppose that is because we feel the LWS should be external facing, so for instance we ... apart of one or two stuffs have to be password protected everything is viewable to anybody...' Interviewee3

Finally, the existence of a university VLE and its impacts on the LWS content was discussed with two interviewees, for which this subject was applicable. Both of them pointed out that as the VLE was used by the library only as protected virtual space for access to electronic services (e.g. full-text to electronic resources) linked from the LWS, the LWS information architecture was not affected crucially. Interviewee2 said about it: 'not whole thing...this is only a sub-set of the web site, that it is particularly interesting for the students and linked to the VLE'.

4.4 Summary

The integrated and structural analysis of the quantitative data brought out facets and approaches of the practice in LWS management undertaken by English and Scottish university libraries, taking into account the aspect of LWS role and contextual aspects, like the time-range of the LWS publishing and resources and infrastructures for the LWS publishing. Moreover, the analysis of interviews examined selective aspects of the examined topic for deeper understanding of the recorded practice. Below, the results are summarised within five sections, covering the main subject areas examined. Nevertheless, the aspect of the sampling feature of the geographical regions was not found to be a crucial impact upon examined elements; whilst a trend for *only library's* involvement in the LWS management was found comparatively higher in the Scottish cases (see, sections 4.2.4 & 4.2.8).

4.4.1 Time range of LWS practice

Web presence of libraries was lengthy taking into account the duration of the web publishing in general⁵; 73% of LWSs had at least eight years to *more than ten years* publishing practice and for only 11% the time-range was *two to five years* (see, section 4.2.2.1).

4.4.2 LWS role

The role of LWS was examined through two sources: its mission statement and its contents. However, the results showed that only 7% of the libraries had developed mission statement for their web site (see, section 4.2.3-a) and this was not found to be affected by factors of external involvement or impact (see, section 4.2.8.2). On the contrary, interviewees referred to an officially stated perspective about what was the mission of LWS; specifically, they said that library - via the LWS - was focused on covering the needs of its users (students and academics) and on promoting the library (see, section 4.3.4). Nevertheless, the two mission statements, which were provided through the survey, referred to that framework in general terms (see, section 4.2.3-a).

The content analysis showed that the major patterns of uses of LWS from libraries were the provision of electronic library & information services, of information about services & facilities provided only in-house by the library and/or not information about the type of library organisation (73%; basic patterns of LWS uses). The remaining 27% of the other five *enhanced patterns of LWS uses*, which included the above categories and added one or two more categories, usually referred to the provision of information (*informative/referential uses*). Overall, the categories of LWS uses were more informative/referential, rather than functional, and they were addressed to the academic community (student & academics); only 11% of the LWSs provided content address to the library staff (see, section 4.2.3-b).

⁵ The introduction of WWW was in the early the 1990s (1991)

Evidence indicated that the formation of the LWS uses was not related to the type of library organisation or the time-range of LWS practice. There was a trend to *enhanced* LWS in cases, which library undertook processes for all or almost all broad LWS management areas (see, section 4.2.6) or PT & FT library web staff was occupied (see, section 4.2.3) or the library had *sole authority* over LWS management (see, section 4.2.6). Nevertheless, the major – in 89% of the cases - orientation of LWS uses (*basic* or *enhanced patterns*), which was addressed to the information needs of the academic community and to promote library organisation, was not affected by the university policy or other factors, like financial inadequacy, inadequate number of library web staff, limited time, inadequate number of specialist library web staff, limited web skills of library web staff and limited library's technological standards. These factors could have influenced the extent of the LWS content, but not its framework. The major factor for the formation of that orientation for the LWS content development, therefore the LWS uses and LWS role, was the library's perspective about what kind of tool the LWS was and should be for the library; a library service delivery tool and an informative tool about the library services and library organisation. This perspective – as mentioned previously - was not expressed officially in library strategy as interviewees said or in a LWS mission statement as only for 7% of the LWS cases mission statement was developed. However, this perspective determined eventually the orientation and the content of LWS planning and development in practice.

In addition, the frameworks of LWS – focused only on library users and general web public or on library users & library staff - seemed to have not evolved in time, without existence of evidence for future plans which could change it (see, sections 4.2.3.1 & 4.3.4). Probably, the content, that supported those frameworks, has been changed regarding its extent or the technologies used, but evidence showed that the framework itself has not been changed and it was not going to be changed under the existent infrastructures.

4.4.3 LWS management undertaken by libraries

The majority of libraries (93%) had the main role for the LWS management (see, section 4.2.4). The examination of the managerial processes undertaken by them for the needs of LWS development and maintenance showed eight patterns of management approaches (see, section 4.2.6). The two most frequent patterns of LWS management, which occurred in 62% of the cases, showed that libraries usually developed planning, organizing, motivating and/or controlling processes (POMC; 43% and POM; 19%), whilst the remaining 38% of the libraries presented a variety of six patterns covering from none management area (2%) to three, like organizing (O; 7%), planning & organizing (PO; 9.5%) and organizing-motivating-controlling (OMC; 5%).

Almost all libraries undertook organising processes (98%), but less developed planning (76%) and motivating (76%) and only 52% of them had controlling activities. From the other managerial activities examined (development of a LWS mission statement, marketing processes, LWS policies, annual budget and official stated procedures/work schedules - see, section 4.2.6.1), the most frequent were LWS policies (60%) and marketing (53%) and less frequent were LWS mission statement (7%) and annual budget (7%). Nevertheless, with exception the annual budget, the other activities were not developed 100% within the terms of the LWS planning process. The most frequent patterns of those activities were development of policies only (21%), development of marketing & policies (19%) and development of no activity (17%).

The LWS was a cross-library sections object of interest. The staff who were involved in planning, organising, controlling and marketing usually, except from members of library management, were also members of library web staff, but as well as from other library sections, especially regarding the marketing processes. Nevertheless, participation of other university staff was found only for controlling processes. Moreover, regarding organising usually one member of library management team was responsible staff (67%), but the second most frequent managerial arrangement (17%) was the self-managed team, where the library web staff worked on organising under a team-work basis (see, section 4.2.5.1). In general, the staffing schemas seemed to be adapted to the special requirements of each procedure as libraries perceived them. In addition, interviewees pointed out that

because the LWS was used as an every-day tool by many library staff, they were encouraged especially by the library web staff to provide unofficial feedback on a voluntary basis about the LWS, either transfer opinions of other library users or giving their opinions as users of the LWS themselves (see, 4.3.3.3).

The 60% of the libraries, which developed specialised policies for the LWS, usually covered administrative, design, copyright/freedom of information and metadata/documentation issues (30% of them). The second most frequent pattern of subject areas (22%) included the above issues excluding the metadata/documentation. Moreover, only one library had developed a policy for web site archiving (see, section 4.2.5.2). Nevertheless, university policies and guidelines affecting LWS were reported for 89% of the cases and only 2% of the libraries had developed LWS policies without the parallel existence of university policies. The university policies/guidelines referred mostly to design and copyright/freedom of information issues. In addition, the 1/3 of the library LWS policies covered the same subject areas with the policies of the university to which library belonged (see, section 4.2.7).

4.4.4 Authority over LWS management

The study was focused on and examined the LWS management undertaken by libraries. However, the results showed that the aspect of external/non-library involvement in LWS management was founded in 80% of the cases (see, section 4.2.8). For a small percentage of 7% of LWS cases, the library did not have the main responsibility for the LWS management, but for the remaining 73% the LWS management was shared between library and one or more university units. For only 20% of the cases, the library had *sole authority* over the LWS management. *Shared authority* was found exclusively in the LWS cases with the shorter time-range of publishing (from two to five years); whilst *non-library authority* was found in cases with time-range from six to more than ten years, indicating that it was not a temporarily status.

The external involvement in the LWS management was allocated only to other university unit(s) and not to other out-university organisations (see, section 4.2.7-b). For 86% of the

cases, the involvement was by one university unit; most of the times the IT unit (47%) and less often the marketing unit (39%). For 14% of the case, both units were involved. Any particular relation between shared authority status and specific unit was not identified. However, for the small group with *non-library authority*, it was found that the marketing unit was more involved in relation to the IT unit (see, section 4.2.8).

The involvement of other university unit(s) in LWS management was not related to the type of library organisation (see, section 4.27). The main reason for the formation of the practice at least for the LWS cases with *shared authority* over their management as interviewees mentioned (see, section 4.3.2.1) was the university policy for development of one institutional web site including all sub-web sites of all academic departments and services (including the LWS), in order mainly for a common “look-and-feel” of the university web presence to be achieved and less for information control. The inadequate number or complete absence of specialist library web staff was referred to as a reason too, but that it was not connected with small size library cases and financial limitations. Furthermore, the LWS was identified as almost the only library function for which there was involvement of other unit(s) of the university in its management (see, section 4.3.2.3).

Interviewees identified that shared authority mainly reduced library’s involvement in decision-making mostly about the LWS design and less about the LWS content. However, evidence showed the involvement by other unit(s) in the decisions about LWS design affecting as well as the planning and development processes undertaken by library (see, section 4.3.2.2). Survey’s results showed that 39% of these cases library was not involved in the LWS design decision-making, but in general within the group of cases with shared authority there was variety of patterns of library’s involvement in the decision-making about LWS, for which any particular relation with specific unit was not identified. On the contrary, for the group of cases with only library authority, library was involved in the decision-making about the content, the design, the development procedure and/or the budget. Nevertheless, for the cases with non-library authority, library was involved usually only in the decision-making about the content (see, section 4.2.8.1).

The survey’s results showed that libraries, which had *sole authority* over LWS management, usually developed planning, organizing, motivating and/or controlling

processes (POMC or POM; 89%), whilst for cases with shared authority libraries undertook similar processes in 55% and the remaining percentage presented a variety of patterns of LWS management covering from no process (3%) to three areas, like OM (12%) or POC (6%) – see, section 4.2.8.2. Interviewees indicated that this variety in patterns of LWS management was not derived from the involvement by other university units in LWS management. However, the factor, which influenced the formation of LWS managerial processes and activities undertaken by library, was the general management approach of the library. Interviewees said that usually the LWS management practice was not different from the management of the other library functions, but in the cases that there was difference the LWS management was secondary related to the general library practice, with poor development of managerial processes and support, as a result of low understanding by the library management of the special needs and requirements for the management and development of a web site (see, sections 4.3.2.2 & 4.3.2.4).

4.4.5 Resources and infrastructures for LWS publishing

This study examined two elements of resources and infrastructures for LWS publishing; the LWS staffing and the LWS hosting. Survey respondents stated that the staff working for the LWS development & management usually consisted of only members of library staff (67%). *Mixed staff* with members of library staff and other university unit(s) staff was found in 31% of the cases; and in 2% of the cases no member of library staff was working for the LWS. The formation of *LWS staffing* was not related to *the time-range of LWS practice* or the *type of library organisation*. Moreover, the staff that belonged to another university unit usually came from the IT and the marketing unit and about 1/3 of the cases they derived from two or three units (e.g. marketing-IT-eLearning). The examination of these staff with the involved units in the LWS management showed that there was not exclusively relation between them; for example a case had involvement by the marketing unit in LWS management and the staff, worked for the LWS and was from other university units, belonged to the units: Marketing-IT-Off Campus support (see, sections 4.2.1.3 & 4.2.8.2).

The majority of LWS cases was hosted on server(s) of another university unit (72%); 24% of them were hosted on library's server(s) and for a small percentage of cases (4%), the hosting was outsourced to an Internet Service Provider (ISP). The LWS hosting was not related to the time-range of LWS practice or the type of library organisation (see, section 4.2.2.4). However, the aspect of authority over LWS management was found to be related only to the status of non-library authority and the LWS hosting on server(s) of an ISP taking into account also that the involved university unit was the marketing unit. Moreover, respondents did not include in the LWS staffing the ISP staff, but they stated that it consisted of either only library staff or mixed staff (see, section 4.2.8.2). Similarly, for the 59% of the cases with LWS hosting on server(s) of other university units, the LWS staffing was defined as only library staff (see, section 4.2.2.4).

Discussion with interviewees revealed a related perspective, which could explain to an extent this paradox. LWS managers identified and separated the development process into two parts: the "content" and "technical" (including hosting and design issues). Therefore, the LWS hosting on server(s) of other university was considered as a beneficial status for the library because they did not have this part of the responsibility and the need to recruit specialist staff. Based on this logic they did not count into the regular LWS staffing those staff, who worked in the other university units but also worked on tasks of LWS publishing. They were more interested in their involvement and control in the "part" of LWS content. Nevertheless, they pointed out that good relationship, which library staff could develop with staff from the coactive unit(s), was key for balancing existent problems related to time production scheduling and consistency problems (see, section 4.3.3.4).

The library web staff usually consisted of one to ten people, including the person who could be given a title like web manager or he/she had responsibility for the organising of LWS – when this was applicable (see, sections 4.2.2.3 & 4.2.8.2). The average percentage of library web staff within the total library staff was ranged from 9% to 28%. For 75% of the cases the library web staff was occupied only PT and for 25% of the cases there were PT and FT staff; usually one person was occupied solely for work tasks of LWS with a maximum amount of seven people. Moreover, there was not any particular relation between the existence of PT & FT library web staff and the type of LWS staffing or the

type of library organisation or the time-range of LWS practice or the status of authority over LWS management. However, within only the cases with shared authority, the establishment of a team with the FT library web staff was found. About half of the cases with PT & FT staff, the FT staff composed a group/team as part of a library section related to information systems and electronic services or they were a cross disciplinary group/team. The FT occupation of staff and the establishment of a team with FT library web staff were found usually in cases where the LWS management patterns was either POMC or POM and the library had developed officially stated LWS work procedures and schedules (see, section 4.2.6.1-c). Regarding the organising/leading in this 25%, there was no relation with any particular managerial arrangement (e.g. one person or team-based working), but all the cases for which the FT staff composed a team always the managerial arrangement was based on one person (see, section 4.2.5.1-b).

Summarising, common practice for the LWS management undertaken by libraries was the library web staff to consist of PT occupied staff and to be lead by one person or to organise the work as a self-managed team. Nevertheless, this group of staff operated without organisational status within library. This practice was considered by most of the interviewees as common within the terms of the cross-library projects, which library undertook (see, section 4.3.3.2). For example, Interviewee2 said ‘Yes, we have a lot of matrix teams...’ and Interviewee7 said ‘there are various of team sizes within the library...we do a lot of jobs and frequently review staffing...we have cross-library projects’. However, for small size libraries the staffing and management of web team was common for all library functions.

Interviewees (see, section 4.4.3) identified various reasons for the recruiting group of people, who worked regularly in different library sections, for the work tasks of LWS. One factor was the historical background of the LWS development, which started as a project, but regardless of LWS evolution technologically and as regards its content amount, library management had not recognized the need for hiring specialist staff. Another factor was the variety of skills required for the LWS development, which could cause conflicts between mainly IT staff and librarians because of their different perspectives on web publishing. Moreover, because the content of LWS was related to

and derived from different library functions, the staff who provided this content wanted to have its direct control.

The inadequate number of available library staff to work more or solely for the LWS development was mentioned as well as a crucial factor for recruiting a small PT web team. Interviewees related that to the small size of the existent staff and the university and library management's low understanding for the needs of LWS management and development, but they connected it as well as to financial limitations for new posts. Indeed, in one case of library the undertaking of an externally funded project for development of particular web-based library service was the source of temporary staff recruited for the general tasks of LWS development. Finally, the amount of work was referred to as a factor affected the size and the type of occupation. On the one hand, interviewees stated that the staffing with few PT staff answered to the fact that there was not enough work for one FT employee and at the same time this staffing arrangement provided back up, as there was more than one staff working for the LWS. On the other hand, in one case the large amount of work was the reason that library recruited seven FT and two PT staff for the needs of the LWS.

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Chapter 5.

Discussion

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5. Discussion

5.1 Introduction

The crucial question for the study was how academic libraries have been managing the role of their web presence, as this practice has been shaped after, more or less, fifteen years¹. Poulter *et al.* (1999, p. 41) wrote that the academic libraries ‘were amongst the first wave of institutions to pioneer the development of Web pages’. In other words, this library sector had the opportunity to utilise the WWW as it operated in the well-established networked environment of universities. Therefore, the first versions of LWS were launched almost simultaneously with the introduction of WWW in the early 1990s. In Britain, the academic community – especially in the universities – begun connecting to the Web from 1991 and from 1993 onwards their libraries have been supported by national funded programmes, such as eLib, for developing web-based library and information services².

This study sought to investigate the library web site (LWS) management undertaken by British university libraries taking into account the LWS role as one of its crucial aspects. The study’s objectives pursued, in order to meet the needs of the above aim, were:

- to review, analyse and determine the range of LWS role³;
- to examine the application of the managerial processes for the LWS development and maintenance undertaken by the libraries within their context⁴;
- to examine the relation between the LWS roles and the LWS management approaches which were identified⁵;
- to investigate factors, which affected the formation of the management approaches and the LWS roles⁶

¹ see, section 1.2

² see, section 1.3

³ see, objective 3.2.1

⁴ see, objective 3.2.2

⁵ see, objective 3.2.3

⁶ see, objective 3.2.4

The study, in order to develop a primary, holistic and contextual investigation of the practice, was designed on the “mixed methods research” paradigm. “Triangulation” was applied as a methodological process using four methods. Quantitative data collected firstly and foremost via descriptive survey, content analysis and desk research, along with qualitative data via key informant interviews which supported the explanatory part of the study. The overview - as methodological approach - provided evidence supporting the general understanding of the phenomenon; it revealed for first time crucial issues about the role of the LWS in the terms of the library’s ICTs management, the authority over the LWS management, the status of LWS management within the general library’s management and the overall understanding of web publication by the professionals working on LWS management.

The purpose of this chapter is to discuss the study’s major findings, which have met the research objectives, as well as issues, which have risen during this research project, within their overall conceptual framework. The discussion is developed in three sections covering the subject areas of LWS role⁷, the management of LWS role⁸ and the LWS management⁹ in order to draw conclusions in the next chapter. In other words, the structure of the chapter merges the evidence of literature review and the research findings addressing to the research objectives. Because of this section 5.3 about the LWS role and its management will consider the lack of research identified during the literature review and the third research objective¹⁰. The findings referred to the LWS cases of the 1/3 of the research sample providing evidence for the practice as it has evolved after more or less ten years. Specifically, 73% of LWS cases had long experience in LWS publishing (from at least eight years to more than ten years publishing history) and for only 11% the time-range was from two to five years¹¹. The major findings and the issues are presented and related to findings of similar studies and theoretical approaches. However, as presented in Chapter 2, the related literature was limited. Furthermore, the meaning of the findings will be explained and placed within the conceptual framework of the topic.

⁷ see section 5.2; see also, objectives 3.2.1 & 3.2.4

⁸ see section 5.3; see also, objectives 3.2.3 & 3.2.4

⁹ see section 5.3; see also, objectives 3.2.2 & 3.2.4

¹⁰ see, objective 3.2.3

¹¹ see, section 4.2.2.1

5.2 Library web site role

The major findings of the study about the LWS uses confirmed and agreed with the major perspective about the role of LWS identified already through the literature review¹²; as provider of information about library (organisation & in-house library services and facility) and electronic information/library services, operating mostly as a *library's virtual front-desk* addressed to library users and general web public, but also including part of library staff in the target-groups as users. In details, the LWS content of the 73% of the cases¹³ referred exclusively to the provision:

- of electronic library & information services,
- of information about services & facilities provided in-house the library and/or not
- of information about the type of library.

This basis of *servicing* perspective or of *servicing & marketing perspective* about the LWS role was expressed as *a priori* framework by the majority of authors and researchers referred to the specific part of literature review. Alison (2001) and Stover (1997) described the core contents/objectives of a LWS by having as their starting point that the purpose of a LWS is the information delivery to users of library services (*servicing* perspective). Xiao *et al.* (1997), Diaz (1998) and Leigh (2000) approached the LWS role as a *multi-uses/multifunctional* tool of library to provide organised electronic library resources and referential information about its in-house library services and/ or not the library. Chisenga (1998) and Agingu (2000) selected and examined particular elements of LWS publications influenced by the perspective that the LWS role is to operate as a *library's virtual front-desk*. Cohen & Still (1999) and Sapa (2005) also studied the application of specific LWS uses, which all of them referred to the above framework for the LWS role. In addition, Travica (1999) studied the impacts of LWS role upon library organisation by having also as his starting point that the LWS focused on the provision of electronic information delivery services.

Whilst the users of library services was set as the main - if not the exclusive - target-group for the LWS, Diaz (1998) and Moen & Murray (2002) added to LWS users the library

¹² see, section 2.2

¹³ see, section 4.2.3-b; A-B-C: 58% and A-B: 16%

staff, who can use services and functions provided via LWS in order to serve the library's users directly or indirectly. Diaz points that the LWS can operate as a 'library workstation both for the users and for the librarians serving them'. Similar point of view was expressed as well as by interviewees¹⁴, who pointed out that the LWS was used as an every-day tool by many library staff and, for that reason, library staff working for the LWS encouraged them to provide unofficial feedback in voluntary basis about the LWS, either transferring opinions of other library users or providing their own opinions as users of the LWS themselves.

'we ask for all the library staff to provide feedback and we deliver almost from everybody...we are not asking them to be involved in the design of the LWS, but they use it everyday for their work'.
Interviewee9

'...because they will need to know the LWS upside-down ... to be familiar with it, before it even launched. Because, as soon we launch from the day somebody can ring you saying where can I find this.'
Interviewee10

Nevertheless, this study found that in only a small percentage (11%) additionally to the categories of LWS uses, which referred to the LWS role as *library's virtual front-desk*, one category addressed to library staff providing them an online "workstation" (library staff Intranet). This finding was also already known through literature review where few authors mentioned uses for the library staff, but this aspect was not included in the objectives of any undertaken study. Stielow (c1999, p. 25) suggested that librarians could include in the objectives for LWS publishing the use of provision of 'alternative sources of information for their job'. Moreover, Corral & Brewerton (1999) and Griffiths (2004) wrote about the use of a library staff Intranet for the provision of assistance to their duties and for the provision of alternative communication mediums. Moen & Murray (2002) also added in the LWS content - apart from the services addressed to library's users - the 'internal or foundation services, that are the behind-the-scenes services without which the patron-oriented services would be jeopardized' (Moen & Murray 2002, p. 97); these intranet's services address to the library staff.

¹⁴ see, 4.3.3.3

The methodological approach applied by this study in order to explore the LWS uses¹⁵, brought out more categories; new ones related to the evidence provided by literature. Previous studies (Chisenga 1998; Cohen & Still 1999; Agignu 2000; Sapa 2005) had limited from the beginning of the research the breadth of the possible results having as their starting point the particular perspective about the content of LWS role discussed above. Some of them (Cohen & Still 1999; Sapa 2005) also aimed to test specific LWS uses and they applied assessed *classification schemata* furthermore limiting the investigation of LWS role. Both methodological approaches - applied solely or in combination - have produced a particular overall picture of the practice, especially because the research on the topic carried out is so limited. This study developed *classification schema* – categories of LWS uses based on the collected data – and it did not collect data related to an assessed list of categories of LWS uses. This approach allowed the results of the study to find a group of enhanced patterns of LWS uses in 27% of the cases examined. This showed that the content of LWS role was not only as it was defined by literature “traditionally”, even if the major findings verified this framework with *basic patterns of LWS uses*¹⁶.

The *enhanced patterns of LWS uses*¹⁷ showed that the LWS role can include – apart from the categories of the *basic uses* - also additional uses related at least to:

- the library staff - see, above about the provision of an online “workstation” for library staff, like Intranet (category D – 11%);
- library’s collection development functions open to the academic community (category E – 11%)
- provision of local cultural information (category G – 4%)
- commercial activities undertaken by libraries (category F – 2%)

Moreover, the exploration of LWS uses took into account the aspect of the type of the outcome¹⁸; what the end-user can do by using each of the categories:

- to be informed about something (informative/referential outcome), for example, taking the information about the opening hours of library’s branches

¹⁵ see, sections 3.4.1 & 3.4.4

¹⁶ see, 4.2.3-b, Table 4.13: Group of patterns – *enhanced*: A-B & A-B-C

¹⁷ see, 4.2.3-b, Table 4.12 & 4.13

¹⁸ see, section 3.4.1.3.4

and/or

- to act related to something (functioning outcome), for example, retrieving and/or downloading an electronic information source.

The results showed that four out of seven in total categories of LWS uses were informative/referential¹⁹, without counting the amount of the content per type of outcome. A similar question - about whether LWS has functioning uses - was answered in Sapa's (2005) study. The researcher compared American to Polish academic LWSs, examining the application of specific/assessed LWS uses, which also expressed functioning and/or informative/referential outcome (e.g. 'access point to digital resources integrated with World Wide Web' and 'provider of information and reference services online'). In the paper's summary, Sapa writes that 'while the users of Polish Web sites are only informed about the services offered in "real life", those who use American Web sites – "virtual versions of libraries" – can complete their tasks and satisfy many of their information needs wholly on the Web' (Sapa 2005, p. 1).

The analysis of all seven categories of LWS uses showed that LWS was focused mainly on the target-group of the library users (students & academics). Analytically, the web sites were addressed²⁰ to:

- library users (100%);
- exclusively to library users and general web public (84%);
- library users and general web public and additionally to library staff (11%)

These findings reflected the impacts of the *servicing* perspective or the *servicing & marketing* perspective, which were discussed above, and supported the concept of LWS role as a *library's virtual front-desk*. Related to this perspective, Von Elm & Trump (2001) write that the LWS has to host user-centred services 'keeping pace with evolving technology and directing technology toward services that are relevant to the users; and maintaining the library's mission in a continually evolving environment' (Von Elm & Trump 2001, p. 35).

¹⁹ see, section 4.2.3-b, Table 4.12

²⁰ see, section 4.2.3-b, Table 4.13

5.3 Library web site's role and its management

Corrall & Brewerton (1999) and Griffiths (2004) underline that the clear determination of the LWS role, before the development of the publication through a planning process, is essential for an effective publication. The content of the LWS role is composed of the clear definition of its purposes (“What library wants to achieve via LWS?”) and its audience (“To whom the LWS addresses?”). However, Griffiths (2004, p. 27) notes that ‘many website owners undertake or commission considerable amounts of design and content collection work before they address this simple question, but if you do not know what audience you have in mind when you develop your site, it will lack purpose and cohesion’. This study was the first which worked on this research aspect; the mission statement as one of the LWS management issues and as a data source for the study of LWS role, but also it was worked on the relation between LWS role, LWS management and LWS as library function.

The results showed that only a very small percentage of British university libraries (7%) had developed a mission statement for their LWS and where the purposes were not defined in details and the audience were not defined clearly²¹ and qualitative application of *editorial* elements²² of a LWS publishing were included as objectives. In general terms, the LWS was referred as an alternative format/tool for provision of library services to library’s “stakeholders” or “customers”, which more or less approached the results of the analysis of LWS content for the identification of LWS role through its uses and the major perspective discussed above.

The term “customers” possibly referred to the people who deliver the services that library provides, in the terms of a business oriented approach; in other words the users of library services, excluding other types of library’s stakeholders like the library staff. Bryson & Alston (1996, p. 43) define a stakeholder as ‘any person, group or organisation that can place a claim on an organisation’s resources, attention or output, or is affected by its output’. The term “stakeholders” for the academic libraries, as it was discussed in the section 2.2.1, refers to a range of group of people (see, Brophy & Coulling 1996; Kuchi

²¹ see, section 4.2.3-a

²² e.g. ‘easily navigable’ and ‘a professional service through the effective and efficient use’

2006), from institution's students and library staff to the international academic community and library partners. Nevertheless, the LWS is able also to address to the general web public because its WWW presence.

Clyde (1996; 1999; 2004) indentified the importance of clear determination of purpose and users' needs in LWS publishing and she carried out the only studies related to the LWS role, as it was derived from its mission statement and other written evidence about its aims and objectives available within LWS content, examining mostly school libraries web sites²³. This study approached the LWS role of the academic libraries through two sources; the LWS mission statement, like Clyde, and the LWS content, as discussed above. The aims and the objectives of LWS can be one primary basis for the understanding of the LWS content/uses and their future development. However, on the one hand, a sole investigation of the LWS role through the LWS's mission statements has a high risk of failure as the development of mission statement may not be outcome of LWS planning processes eventually, as it happened for the cases examined in this study²⁴. On the other hand, the content of the LWS mission statements may not be sufficient or appropriate for analysis to provide results, which can be compared with results about the LWS contents/uses.

Evidence from the survey and interviews with practitioners in LWS management of the LWS cases examined showed that the decision-making about the LWS uses and therefore the LWS content development was not affected by university management or by the official library strategy, but it was impacted by the perspective that the role of the LWS is to work as a *library's virtual front-desk*, exclusively for the majority of libraries and with some additional facilities for the library staff for a minor part of them, as it was discussed above²⁵. In other words, the principal purposes and the prevalent target-groups among stakeholders were not objects of question for the LWS planning process.

Consequently, the results for the evolution of LWS role within the time²⁶ can be explained taking into account the above framework; the *servicing* perspective or the *service*

²³ see, section 2.2.1

²⁴ see, Table A3.51

²⁵ see, also section 4.4.2

²⁶ see, sections 4.2.3.1, 4.3.4 & 4.4.2

& *marketing* perspective upon the concept of LWS role. The role of the LWS has not been changed radically, within the rapidly changing environment of technology, and purposes or future plans, which would change it, were not stated. At the same time, this static status of LWS role evolution was supported by factors, which implicated the development of the extent of the LWS content, like financial inadequacy, inadequate number of library web staff and of specialist library web staff, limited time, limited existent library web staff' skills and limited library's technological standards²⁷.

'...we would like a number of links into the web site to other databases and we need their (IT unit) involvement in order to achieve this, because we don't have technical expertise to build the search capacities to the databases and link them to the web site, so those are other problems we have with the web site.' Interviewee13

In addition, the development of *enhanced LWS uses/content* was enforced by LWS infrastructures, which were found in small percentages in practice, like *sole authority* over LWS management by library²⁸, complete development of LWS management processes²⁹ and recruitment of library web staff occupied full time (FT)³⁰.

Common practice in libraries for the implementation of the LWS role, as it has been determined, was the recruitment of existing library staff – usually from one to ten people (9%-28% within the total library staff) -, most of whom were occupied only part time (PT) on the LWS publishing tasks (75%) and without regular and specialised financial planning³¹. This team of people either was managed by one person (67%) or it operated as a self-managed team (17%), without a particular organisational status within library. Similar picture was given by Shropshire (2003), who discovered that staff working for LWS management in USA academic libraries had responsibilities for the LWS, but they did not have the authority which would be derived from an organisational relevant position. A similar picture was updated later 2008 by Fagan & Keach (2011), who found that web projects in academic libraries continued to be informally defined, without an organisational chart, encountering challenges related to shifting or unclear priorities and inadequate staff/budget and resources.

²⁷ see, section 4.3.4

²⁸ see, section 4.2.8

²⁹ see, section 4.2.6

³⁰ see, section 4.2.3

³¹ see, sections 4.2.2.3, 4.2.8.2, 4.2.5 & 4.3.3

Usually, the function of LWS publishing was counted as one of the cross-library projects, which library undertook, or in particular for small size libraries this management style was common for all library functions. This practice of the LWS as a project approached the *one-off life cycle* perspective, as Shucha (2003) presented, and the example described by Fullington Ballard & Teague-Rector (2011)³². It can also be supported by the results of Bundza's *et al.* (2009) study, from which the results showed that the number of the staff worked for the LWS tasks was limited, considering that none had them as primary responsibility, the LWS management was distributed in the library organisation, and the redesign as procedure was periodical aspect of the LWS evolution³³. In the terms of this perspective about LWS publishing, the Interviewee7 stated that after the development period there was not enough work for *full-time* occupation by library web staff³⁴.

'There is a lot of work for the set up of the library web pages, but when they have set up; the majority of them do not change very much, just only we look after keeping update there content, so there is not enough sufficient work for just one responsibility.' Interviewee7

Moreover, the character of cross-library sections interest was also reflected on the staff, who were involved in other LWS managerial processes (planning, controlling and marketing), where except for members of library management, were also members of library web staff, but as well as from other library sections, especially regarding the marketing processes³⁵. Therefore, the role of LWS within library organisation could be characterised, using Travica's (1999) model systems, as a "Subsystem", interacting with library management partly, regarding its function mainly as a *virtual library's front desk*.

'Subsystem model: The VL may be treated as a system of a library organization, crossing the boundaries of departments but anchored to a set of technologies.' Downing (2001, p. 34)

However, in the cases that the content of LWS is limited mainly to the provision of electronic information services and mostly of them could be commercial then the "Disintermediation" model could express more accurately the status of LWS, reducing the functionality of the LWS to a portal to commercial information services.

'Disintermediation model: As the Internet enables publishers to communicate directly with information seekers and provides everyone with the potential to become a global information provider, the VL may

³² see, section 2.3.2

³³ see, section 2.3.4

³⁴ see, section 4.3.3.1.e

³⁵ see, section 4.2.5.1

reflect the elimination of the role of the library as intermediary in the traditional chain of information delivery. ' Downing (2001, p.34)

An expression of this practice and its consequences were identified in few cases of LWS, which had limited content, because the electronic information services were provided via university's Virtual Learning Environment (VLE) or other intranet environments³⁶. However, this perspective could be inaccurate, if interlinking services with the LWS's web pages, like commercial products/services and in this case part of university's VLE, identified as part of the LWS's content (see, section 1.4).

Decision-making, as regards the LWS role/content and organising the LWS publishing, and availability of resources (staff, budget & equipment) were interacting aspects of the LWS undertaking, whose balance was impacted crucially by library management understanding of web publishing³⁷. This study revealed evidence for some related issues. The skills and educational background of the library staff, including members of library management staff, were reported as a factor for the limited perspective about the capabilities of web technology and therefore about the extent of LWS uses³⁸. The combination of poor understanding on behalf of library management about the staffing needs of web publishing and the historical background of the LWS development, which had started as a project, limited the recognition for the need of hiring specialist staff³⁹. As an Interviewee said about it⁴⁰:

'For my perspective is that because when the LWS was started was small...generally smaller...you know, in 1992 it was a small web site...few pages and then it evolved along with the technology, but for reasons they need to employ some specialists in that technology does not seem that have been recognized in the library.'
Interviewee3

Moreover, the reason, which was indicated for the perspective that LWS management was identified as a secondary priority within the terms of the general library practice causing poor development of managerial processes and support, was the low understanding by the library management of the special needs and requirements for the management and development of a web site⁴¹.

³⁶ See, section 4.2.3.1.a

³⁷ see, about LWS publishing in section 1.4

³⁸ see, section 4.3.4

³⁹ see, section 4.4.3

⁴⁰ See, section 4.3.3.1.d

⁴¹ see, section 4.3.2.3

'As regards the LWS, I think that there is lack of understanding, to be honest, of the technicality, of what happens and therefore there is all ignorance...that somebody will do it...somebody will take care of it. But because you only see that it is not working...that it is gone bad, then it is more difficult to sell it as it is keeping good...that's make sense? ... 'What I think is all about how [the library web site] is managed and it is a big change management process. Although, like I say, people do think that you do what I am saying and it's done. They don't recognise that actually there is an awful ongoing background to make that happened...' Interviewee10

In addition, paradoxes identified in statements of library members of LWS management were derived from an incomplete understanding of web publishing and its management. Many libraries' web managers did not recognise in-depth impacts upon library's control in processes and procedures of LWS management and development by the status of *shared authority* over LWS management⁴². A high percentage of libraries' web managers (about 60%) did not count in the human resources for the LWS development staff, who worked for work tasks of LWS but belonged to other university units or an Internet Service Provider (ISP) because of the perspective that the LWS publishing can be split into two parts; the "content" and the "technical" one and for that cases the library was only responsible for the part of "content"⁴³.

'No, because I can separate the content from the technical site of thing, so I think is much more about we use some contributor or some other tool to update the information ourselves or we just pass content to the web services team to update. I feel does not really matters; it's about the content being in the right place. I don't thing is an issue - I don't think so and because we don't even have the staff to look after the content, definitely we don't have the staff to look after the servers.' Interviewee10

Similar evidence was provided by the survey of 80 Northern American academic libraries (Academic library website benchmarks 2008). Respondents reported - but they did not identify - two parallel developmental procedures from library staff and from university IT staff, separating the "technical work" (e.g. design task works, web pages and servers maintenance, etc.) and the "content".

'The majority of respondents (75.3%) answered that the library IT staff handles both web content and most web-related technical work. The remaining 25% reported that the college IT division does most of the technical work and that library staff handles the content.' (Academic library website benchmarks 2008, p. 30)

⁴² see, section 4.4.4

⁴³ see, section 4.3.3.4 & 4.4.5

5.4 Library web site management

5.4.1 Authority over LWS management

The study found the LWS was one of the few library functions, in whose management there was involvement by another university unit(s) (80%), mostly by IT unit or/and marketing unit, mainly because of the university concern either to present a common layout of its web presence and/or to control the information which was available online⁴⁴. For a small percentage of 7% of LWS cases, the library did not have the main responsibility for the LWS management, but for the rest 73% the LWS management was shared between library and one or more university units. For only 20% of the cases, the library had *sole authority* over the LWS management⁴⁵.

The aspect of authority over the LWS management or any involvement by another university unit(s) was not raised as crucial through the literature review in LWS management; at least during the period of the study design⁴⁶. In only two of the background studies on aspects of LWS management (Liu 1999; Ragsdale 2001) carried out in the terms of the American practice, there are reported only some related aspects, but in none of them the aspect of authority was examined. A survey of the Association of Research Libraries (ARL) in 1998 (Liu 1999) reported that in 1996 84% of the libraries managed solely their LWS and 13% of them managed it jointly with other university units. In Ragsdale's (2001) study, it is reported that the staff working for the LWS development and maintenance were only members of library staff, whilst in some cases "institutional systems staff", "graphic designers" and "consultants" found to assist LWS development too. In the study of Academic library website benchmarks (2008), data showed that the LWS budget was considered as part of university IT budget (35.14%), that 16.46% of cases had hired a consultant or consulting firm for advice on LWS development and that

⁴⁴ It is noted that the involvement by another university unit(s) in LWS management was not related to the type of library organisation (see, section 4.27).

⁴⁵ see, section 4.4.4

⁴⁶ see, section 2.3.4

there was mixed web staffing in 24.69% of the cases. In this study, mixed staffing⁴⁷ was found in 31% of the cases; with the reservation whether all library web managers had counted and reported as well the staff who belonged to other units, who worked at least on the LWS hosting, as was discussed in the summary of the chapter about the results⁴⁸.

Moreover, the aspect of authority over the management of universities sub-web sites by the university and its units have not risen as pivotal and it was not examined or discussed further related with the web presence of university units like library in Cox's studies (2007a; 2007b) about the UK university web presence⁴⁹. In addition, in Peterson's (2006) study a concern was reported about whether an academic library's web content could be adaptable within the university template, in order the university web presence to have a common "look-and-feel", concluding only that 'it can be very difficult to modify the template effectively for the library's purposes' (Peterson 2006, p. 218). However, further research or discussion about university's involvement in LWS management had not developed.

The study of Manuel *et al.* (2010), which was published after this research was designed, and is the sole study to investigate British university practice, examined - as one of the study aspects - whether there were impacts of the university policy on the decision-making about the LWS. This study showed that the university policy can be an influential factor and the marketing was a key driver upon university affecting the university web presence; issues that were confirmed by the results of this study. In addition, even if this is a pilot study (in six library cases), the results indicated especially that the decision-making areas of the design and budget were mostly affected by the university authority over LWS management and half of these cases had full control of their LWS, as regards the areas of decision-making on the maintenance, design, budget, content and development.

The results of the study presented the dimensions of the university involvement in the LWS management at least for the British practice. The majority of the LWS cases

⁴⁷ Mixed staff: members of staff, who worked for the LWS and they belonged either to the library or to other unit(s) of the university.

⁴⁸ see, section 4.4.5

⁴⁹ see, section 1.4

examined was operating under the status of *shared authority* over their management (73%). For those cases, limitations of library's involvement in decision-making were reported, in particular about the LWS design, but this affected as well as other decision-making areas and the progress of LWS development⁵⁰ unavoidably, as LWS publishing is one entire system and its aspects are interacting⁵¹. These impacts usually were not clearly identified by libraries' web managers, as it was discussed⁵². However, the status of *shared authority* referred in essence to a status of split LWS management into at least two sources of management (the library and at least one university unit), which operated concurrently for the production of the one LWS publication.

Libraries' web managers stated that in planning exclusively and in marketing and controlling processes almost exclusively only members of library staff participated⁵³, whilst at the same time other university units were involved too in the decision-making and development for whole parts of LWS publishing procedure, like design, hosting and maintenance, including their planning, marketing and controlling processes matters about LWS. In addition, libraries also developed specialised policies for the LWS (60%), when at the same time for almost all these libraries university policies/guidelines already have affected the LWS⁵⁴.

Libraries' LWS managers, also, did not take into account whole parts of LWS management within the LWS publishing undertaking because they had no responsibility for them. However, for these procedures another university unit took decisions, occupied and leading non-library staff. At the same time, the library web staff should co-operate with this non-library staff for the final outcome of the LWS publishing. Upon this status, libraries' web managers mentioned problems with:

- decision-making and planning conflicts, causing other problems too with content development, budget, organising issues⁵⁵;

'What would happened in real life...it would be we would ask it for the ICT department and either they would say that this is impossible or

⁵⁰ see, section 4.3.2.2

⁵¹ see, section 1.4

⁵² see, section 4.3 & 4.4.4

⁵³ see, section 4.2.5.1

⁵⁴ see, section 4.2.7-a

⁵⁵ see, section 4.3.2.2

they would say that it would take a lot of time and effort and that would be a project and then they charge us.' Interviewee11

'...because this seems more like marketing site - the university site - is to attract new students...they want to be very up to date; they want to change it very frequently, so typically they change the template every two years, which is quite fast for us really... sometime we are not in the same template as they are because we don't have staff who could do that during the year...' Interviewee5

- consistency in LWS development processes, for which key solution was the good relationship between staff of the cooperating units⁵⁶;

'I think that the problem is not where are the servers...[but] finding experts at the right time...' Interviewee13

'I think that it can be limiting because some time development is very slow...' Interviewee11

'...for example, we used to find students were reporting access problems to us ... and they were to do with the security setting on folders ...we did not have control over that.' Interviewee1

'sometimes things don't go so quickly as we would do if it [the LWS hosting] was in-house' Interviewee3

Nevertheless, the low percentage of the *only library authority* over the LWS management could be disputed at least for the 9% of the total cases. The 20% of the cases stated that no other university unit was involved in the LWS management, the library had the main role of the LWS management and only library staff worked on the LWS development and maintenance, whilst for almost half of them the LWS hosting was responsibility of another university unit⁵⁷. This paradox on the one hand could increase more the already very high percentage of the *shared authority* (73%), but on the other hand it reinforces the prospect that there was an incomplete understanding of web publishing and its management on behalf of library staff, who worked on the LWS management, as it was already discussed based on other questions raised from the results.

⁵⁶ see, section 4.3.3.4

⁵⁷ see, section 4.2.8.2 - Table 4.45

5.4.2 LWS managerial processes undertaken by libraries

For the majority of libraries (93%), libraries' web managers stated that library had the main role of the LWS management⁵⁸. The examination of the four broad areas of managerial processes undertaken by libraries [planning (P), organizing (O), motivating (M) and controlling(C)] brought out a variety of eight LWS management patterns (see, section 4.2.6). The two most frequent patterns of LWS management, which referred to the 62% of the cases, showed that libraries usually developed planning, organising, motivating and/or controlling processes (POMC; 43% and POM; 19%), whilst the rest 38% of the libraries presented a variety of six patterns covering from none area which were examined (2%) to three, like organising (O; 7%), planning & organising (PO; 9.5%) and organising-motivating-controlling (OMC; 5%). A first reading of these findings was that the management of LWS had complete structure regarding its broad areas in 43% of the cases and that many of the libraries did not develop controlling processes for their LWS management (48%). Nevertheless, the perspective that LWS publishing was a simple procedure of compiling some web page and launching them on the Web, expressed by Lester and Oaks (Bell 1995), seemed that it was not applied in the academic libraries after 13 years and the era of experimenting was part of the history of the LWS publishing, as McLeod & White (1995) and Guenther (2000) had already pointed out for the American library sector⁵⁹.

The cases with *only library authority* usually developed planning, organising, motivating and/or controlling processes (POMC or POM; 89%), whilst, for cases with status of *shared authority*, libraries undertook the same patterns of 55% and the rest presented the variety of the other six patterns of LWS management⁶⁰. For the LWS cases with status of *shared authority*, practitioners in LWS management did not refer to limitations caused by external involvement and considered the LWS management practice as common with the management practice for the other library functions⁶¹, therefore the variety in LWS management patterns possible was to a great extent a reflection of the general library management practice.

⁵⁸ see, section 4.2.4

⁵⁹ see, section 2.3.2

⁶⁰ see, section 4.2.8.2

⁶¹ see, section 4.3.2.4

Planning (P)

76% of the libraries undertook planning for their LWS publishing⁶². The staff involved in these processes usually consisted of members of library management team and the library web staff or only members of library management team⁶³. These figures showed on the one hand that the LWS was an object of concern for library management and on the other hand that the point of view of the library web staff was taken into account. Results of Academic library website benchmarks (2008) showed that about 16% of American libraries hired a consultant or consulting firm to advise (see, section 2.3.4), but in this study the assistance or support by “information consultants” was reported in only for one case, without clarifying whether they were other university staff or worked for a private company.

Planning processes play crucial and intersectional role related to the other managerial activities within the approaches for web publishing of Friedlein (2001) and for LWS publishing of Clyde (2000) and Ryan (2003)⁶⁴. However, on one hand, 24% of the libraries had not developed planning processes⁶⁵ and, on the other, several activities, tools and techniques, like development of LWS mission statement, marketing processes, development of policies and official stated work procedures & schedules, were not always developed and taken place within the terms of the planning procedures⁶⁶. In addition, usually libraries from the above activities, including the establishment of annual budget for the LWS, undertook either only development of LWS policies (21%) or development of LWS policies and marketing processes (19% or none activity (17%) or development of only marketing processes (14.3%).

Only 7% of libraries had developed LWS mission statement and 2/3 of them had planning processes too⁶⁷. The value of the determination and clarification of the aims and objectives of the LWS publishing, including the target-groups (audience), have been

⁶² see, section 4.2.6; Table 4.27

⁶³ see, section 4.2.5.1-a

⁶⁴ see, section 2.3.2

⁶⁵ see, section 4.2.6

⁶⁶ see, section 4.2.6.1

⁶⁷ see, section 4.2.6.1-a

discussed above⁶⁸. Marketing processes were developed by 57% of the libraries and 88% of them were taken place within the LWS planning⁶⁹. Nevertheless, in the literature, marketing activities and strategies are suggested as one of the cornerstones of good practice in web publishing and LWS publishing (Stielow c1999; Friedlein (2001); UNESCO 2005). The staff involved consisted usually of members of library management team and other library staff, which in most of the cases worked for the library marketing section⁷⁰. Furthermore, the library web staff was less often involved in marketing, in comparison with other activities, like planning and controlling.

Within total sample, only 47% of the libraries (25 from 45) were involved in the decision-making about budget for the LWS development and maintenance⁷¹ and only 3 libraries (7%) had established an annual budget in the terms of the planning processes⁷². The Academic library website benchmarks (2008) shows that none of the academic libraries had a separate line for their LWS in the library budget, but most of them (about 65%) considered the LWS budget as part of the library IT budget, whilst about 35% considered it mostly as part of university IT budget⁷³. However, the 20% of the libraries, which undertook externally funded projects for development of particular web-based library services, at the same time did not establish annual LWS budget⁷⁴. In other words, no library managed in parallel both financial sources.

Officially stated procedures and work schedules for the LWS development and maintenance were reported in 24% of cases and for almost all these cases planning processes took also place⁷⁵. This managerial aspect was developed usually in cases with high level of LWS management (POMC), with only library web staffing, but without relation with any particular organising arrangement (based on one person or self-managed team). In addition, in these cases were found almost the 50% of the total LWS cases, which was supported by a library web team⁷⁶.

⁶⁸ see, section 5.3

⁶⁹ see, section 4.2.6.1

⁷⁰ see, section 4.2.5.1-d

⁷¹ see, section 4.2.4

⁷² see, sections 4.2.5 & 4.2.6.1

⁷³ see, section 2.3.4

⁷⁴ see, section 4.2.6.1-b

⁷⁵ see, section 4.2.6.1

⁷⁶ see, section 4.2.6.1-c

Development of specialised policies was reported in 64% of cases and 84% of those cases the library had also planning processes for their LWS⁷⁷. Ryan (2003, p. 209) considers the web site policies as an outcome of the strategic planning process and he notes that ‘those [policies] developed outside a planning process are often arbitrary or contradictory to institutional missions and goals’⁷⁸. Moreover, for almost all cases, there were university policies/guidelines which affected LWS’s issues⁷⁹, mostly in design & construction and in copyright & freedom of information issues. The policies⁸⁰ developed by libraries covered the subject areas of:

- “administrative issues (responsibilities, procedures, aims/objectives, etc)” - 93%;
- “design and construction issues” - 89%;
- “copyright & freedom of information issues” - 56%;
- “metadata & documentation” - 48%

However, there is question about the disproportional figures of the development of LWS policies by the library (64%), the development of LWS mission statement (7%) and official stated procedures & work schedules for the LWS development and maintenance were reported (24%)⁸¹ and the very low percentage of libraries, which developed at the same time most of the above processes (2.4%-4.8%)⁸². Nevertheless only one survey respondent added another subject area: the “Web site archiving”, which showed that libraries - after more or less ten years of LWS practice - had not yet given this issue much consideration. Whilst wide range web archiving had been taking place from the Internet Archive even since 1996 and national related projects were undertaken by at least USA, UK and Australia too since 1996⁸³.

Development of policies has attracted academic interest. In five out of the ten studies in LWS management aspects, issues about it were found⁸⁴. The figures indicated that development of policies was common place for more that half libraries, but the university

⁷⁷ see, section 4.2.6.1

⁷⁸ see, section 2.3.2

⁷⁹ see, section 4.2.7-a

⁸⁰ see, section 4.2.5.2

⁸¹ see, section 4.2.6.1 (Table 4.31)

⁸² see, section 4.2.6.1 (Table 4.32)

⁸³ see, section 3.4.1.4.3

⁸⁴ see, section 2.3.4

policy was a strong influence on that. A survey of the Association of Research Libraries (ARL) in 1998 (Liu 1999) reported the existence of web site development guidelines (67% by library – 70% by university, indicating the strong influence of the university policy) and electronic collections development guidelines (37% by library). The survey of the Association of College and Research Libraries (Traw 2000) reported the existence of “policies to govern the college/university’s web site” (52%) and the existence of policies developed by libraries specifically for their LWS (21%); the majority of them covered subjects about design and content issues. Traw (2000, p. 5) explained that the low percentage of development of library’s policies derived from the fact that ‘library web site policies are a relatively new idea for most small college and university libraries’. Ragsdale (2001) found surveying ARL for LWS’s staffing issues that in 79% of libraries there existed LWS development guidelines. Hendricks (2007) reported again for American academic libraries that about 54% of libraries had developed a web policy with the note that the majority of respondents indicated that libraries should follow their university’s policy. Finally, in the pilot study on British academic libraries (Manuel *et al.* 2010), the issue of development of web policy documents was one of the aspects examined and the results showed that half of the libraries had developed web policy, but under strong influence of the university policy.

Organising (O)

Organising activities were undertaken by almost all libraries (98%)⁸⁵. These libraries were responsible for the organisation of the work of LWS development and maintenance; in other words they were responsible for ‘determining activities and allocating responsibilities for the achievement of plans; coordinating activities and responsibilities into an appropriate structure’ (Cole 2004, p. 10). The most common managerial arrangements was either based on one person (67%) responsible for the organising or based on a self-managed team (17%), which found that it was not related to any particular pattern of LWS management⁸⁶ or with any particular status of authority over LWS

⁸⁵ see, section 4.2.6

⁸⁶ see, section 4.2.6

management⁸⁷ or with any particular type of LWS staffing (mixed or only library staff)⁸⁸. Nevertheless, in all cases with PT&FT library web staff the managerial arrangement was based on one person.

The work for LWS development and maintenance was not the responsibility of a particular library section/division. Usually, the function of LWS publishing was counted as one of the cross-library projects. The only small scale evidence about a specific relationship between LWS work tasks and a library section was found referred to library section related to information systems and electronic services (for less than 10% of the sample), within it FT library web staff worked⁸⁹. Interviews brought out some evidence about conflict between librarians and IT/technical library staff, as members of LWS staffing, raising authority and control question possibly derived from a cultural difference related to the understanding about web publishing⁹⁰.

'...we have parts of IS that - the computing part and the library part - sometimes things they see things quite differently, so talking on behalf of one unit - IS, as one whole our policy - we talk about that but you have to know for your research that it is not easy and we disagree in several things, because we are a big division ... and the library culture and the computing culture are quite different about communicate...what communicate means and that some times causes ... friendly arguments, but arguments about the web.'
Interviewee2

'... but what always felt very strongly is that the liaison librarians need to own the web site. You may you could employ specialist technical help ... to support, but the ownership, the decision making about the mode that you present the resources and the kinds of the information that the site carries ... has got to be in the ownership of the liaison librarians, because the other ones they have cold face ...'
Interviewee1

Guenther (2000) refers to that question/conflict and specifically between usually the marketing and the IT section of the library for American academic libraries; whilst Roberts & Rowley (2004) allocate in a hierarchical structure the "Web Development" under the "ICT & Media services" library section, using a typical organisation structure for an academic library⁹¹.

⁸⁷ see, section 4.2.8.2

⁸⁸ see, section 4.2.5.1-c

⁸⁹ see, section 4.2.2.3-d

⁹⁰ see, section 4.3.3.1-b & c

⁹¹ see, section 2.3.2

McLeod & White (1995, p. 47) report that in 1994 ‘librarians [from their academic library] began experimenting with writing in HTML and creating actual Web home pages ... this small group formed an information Web Team...[which] quickly broke itself down into three subcommittees: technical, graphics, and policy and content’. Later on, Mach & Kutzik (2001, p. 32) set the issue of LWS’s place/status within the library organisation, suggesting that ‘it is no longer possible for many library web sites to be maintained by an individual or small group’⁹², and Church & Felker (2005) pointed out that, because of the greater complexity of an academic LWS, one person can not do all the work⁹³. Connell (2008) found that for almost its half sample of library cases (49%) the size of the Web team was one person and in approximately 28% of cases the Web teams were based on two or three people.

This study found that the library web staffing usually did not consist of only one person, but a small group⁹⁴. However, factors for the size of the LWS staffing, beyond of financial limitations for creating new posts and inadequacy of library staff, who could worked PT for the LWS’s work tasks, were brought out the historical background of the LWS publishing and the amount of work required for the needs of LWS⁹⁵. The historical background was referred as a factor for keeping the size small, as library management did not recognise that since the first launches of the LWS, developed from a small team, the requirements of a LWS publishing had been increased because the increase of the content’s amount and the continual changing technical requirements in staff’s skills.

‘For my perspective is that because when the LWS was started was small...generally smaller...you know, in 1992 it was a small web site...few pages and then it evolved along with the technology, but for reasons they need to employ some specialists in that technology does not seem that have been recognized in the library.’
Interviewee3

Moreover, the amount of work was referred as factor either for keeping the size small or increasing the size, but as well as the type of occupation (from PT to FT), always taking into account the work tasks for which libraries was not responsible, like in design and maintenance.

⁹² see, section 2.3.2

⁹³ see, section 2.3.3

⁹⁴ see, section 4.2.2.3

⁹⁵ see, section 4.3.3.1-d & e

'There is a lot of work for the set up of the library web pages, but when they have set up; the majority of them do not change very much, just only we look after keeping update there content, so there is not enough sufficient work for just one responsibility.' Interviewee7

'...now the most information resources are electronic - there is a lot of work... staff like to work electronically...' Interviewee6

However, this study did not take into account the aspect of the phase of the *one-off life cycle*, in which a LWS could be during the research period – as it was not raised as crucial issue in literature related with the LWS publishing procedure. Only, Wilson (2004)⁹⁶ differentiates the amount of staff worked on LWS during redesigning and maintenance period. In the cases that the LWS was managed as a periodical project, then the phase that the *one-off life cycle* of LWS can be crucial factor for the assessment and understanding of whole LWS management and its infrastructures. A relevant example is the study of Connell (2008) in which it was not clear whether the researcher examined the factor of redesign period and staffing or not. Nevertheless, the general picture of the results on the British university library web staffing indicated that the LWS management, development and maintenance were not responsibilities of a library section, staffed by people worked only on that and with identified organisational status.

Motivating (M)

Activities for training and skills development of library web staff were selected to examine the existence of motivating processes by libraries⁹⁷. The major results of the study showed that 76% of the libraries developed training activities⁹⁸. Web publishing is a complex undertaking with multi-tasks requiring skills in various areas (Rosenfeld & Morville 1998; Friedlein 2001)⁹⁹, whilst after more a decade of LWS presence Brophy (2007) notices that '...technology is complex and librarians have not developed the skills to understand it...' ¹⁰⁰. An interviewee introduced this issue, when she pointed out the formal education of professional librarians - even in postgraduate level - and the educational background of manager, who derived from older educational background.

⁹⁶ see, section 2.3.3

⁹⁷ see, section 3.4.2.4.1

⁹⁸ see, section 4.2.5

⁹⁹ see, section 1.4

¹⁰⁰ see, section 1.3

She encountered this issue as factor which limited the perspective of the capabilities of web technology and therefore about the extent of LWS' uses¹⁰¹. Specifically, she said:

'Perhaps, one main reason is about the training and the formal training we get. We still - is true to say - the generations of library staff come from very different formal library education backgrounds and even now formal training for web development in the library - according to my experience - has not been at all related to truth of ... and I think that the dealing with a complex subject area is not communicated well at postgraduate level and also dealing with different ... backgrounds ... technological backgrounds...

The people ..., which is the senior management level, maybe perhaps they ... may not even appreciate the possibilities and they are who is driving the vision ... let's say they have not driven the vision ...'
Interviewee3

Moreover, Johnson (1998) notes the critical role of training activities for supporting library web team in a rapidly changing environment, developing skills needed to increase productivity, but as well as for increasing employees' confidence within the team and within organisation, improving the communication and collaboration between the staff with different specialities¹⁰². Therefore, the training programmes addressed to the library web staff could play pivotal role, especially for the libraries examined in this study because their organisational status had not been established and conflicts between staff of different specialities were reported – as mentioned already. However, it is a question about the adequacy and stable provision of these motivating activities undertaken by libraries, when annual LWS budget was part of planning for only 7% of libraries¹⁰³.

Training issues were examined in few of the previous studies. Ragsdale (2001, p. 11) in her investigation about LWS's staffing found that 'a few libraries offer[ed] database management training, but most systems and software training [was] provided by the institution or outsource workshops'. In addition, Evans (1999) – as later Kneip (2007) did as well, but without discussing it further -, investigating the formal training and the self-instruction in authors of LWS pages for technological skills development, concluded that skills need to be continually upgraded with both ways, but always with organisation's support and she pointed out that:

'the investment in training has its payoff ... Institutional support for training will allow those ... both to create a more attractive, useful

¹⁰¹ see, section 4.3.4

¹⁰² see, section 2.3.1

¹⁰³ see, section 4.2.5

and functional presence for the library on the World Wide Web and to develop a larger pool of human resources for continuing to work in the virtual environment' (Evans 1999, p. 318).

Controlling (C)

Activities in performance measurement and monitoring were developed by 52% of the libraries¹⁰⁴. Usually the staff involved in these processes belonged to library management team (33%) or to the library web staff (29%). Usually, for both groups one person was involved and he/she was specialised in IT. Nevertheless, in this managerial area, involvement by university staff (e.g. from the university web team-IT) was reported (10%) and for half of them these staff exclusively were involved and were responsible for controlling processes¹⁰⁵.

The involvement of library staff specialised in IT could be grounded from the technical nature of the techniques could be used for these processes. The involvement of university staff from the IT unit, also, could be rationalised from the high involvement of the university IT unit in the LWS management and that many LWS cases were hosted on servers of another university unit. However, this managerial broad area was the least developed in the terms of the LWS management and the possible involvement of other university units could not reduce the interest of library management in this aspect of LWS publishing, setting procedures, collecting and analysed data – even if this data derived from non-library staff. In addition, the techniques for performance measurement and monitoring are not exclusively related to exports of log files, for example about how many users visited the LWS, but they can include a wide range of processes for monitoring qualitative and quantitative aspects of LWS publication and the functions are hosted on it, like the electronic services.

Performance measurement and monitoring processes play a critical role for an “alive”, well-maintained and strategically planned LWS publication¹⁰⁶. They are a vital and stable part of the management of the whole publishing procedure of a web site as ‘a living and

¹⁰⁴ see, section 4.2.6

¹⁰⁵ see, section 4.2.5.1-d

¹⁰⁶ see, section 2.3.2

evolving “creature”, with no end’ Friedlein (2001, p. 10), a “digital branch” (King 2009; 2012) and ‘not as one-off project’ Clyde (2000, p. 107), regardless of the major redesign projects, which can take place within the long time-range of a web publication. The absence of this part of the LWS management could be referred to an approach like that, which is presented by Shucha (2003), about a *closed cycle of life* for each LWS’s version; a *one-off life cycle* approach. According to this approach the LWS publishing consists of periodical redesign projects, with in-between periods of basic maintenance of the LWS content and the design, which had developed from the previous redesign project. Within this cycle of life of an LWS’s version, performance measurements and monitoring processes are not included or they do not play vital role for the LWS publication.

Nevertheless, this approach minimises or debases too the other managerial processes and activities, like planning, organising, motivating, marketing and development of policies because this *one-off life cycle* transforms or formulates the web publishing to a non-regular short-period developmental project with a period of maintenance. Very briefly, within this framework, the planning can be only short-term, without stable marketing activities, without establishment of annual budget and without official regular work procedure; the motivating processes can not be organised in a regular basis, especially for a web team, which is occupied PT and possibly its size is changing in the period of redesign and the period of maintenance; like in the example presented by Fullington Ballard & Teague-Rector (2011), where during the redesign process the library hired a project manager and composed a core implementation team, only for the period of the redesign project¹⁰⁷.

¹⁰⁷ see, section 2.3.2

5.5 Anti-summary

This study investigated the practice of LWS management, seeking crucial factors for the formatted of the identified management approaches. The LWS role was set as a crucial aspect and it was reviewed and examined with the LWS management approaches. The *a priori* limited LWS role in the terms of the *servicing/marketing* perspective seemed that it operated harmoniously with the quite poor management practices, operating usually the LWS publishing as a project under a possible *one-off cycle* perspective, and the relatively poor understanding of the web publishing on behalf of library web managers or library administration. The investigation of the context brought out a crucial factor - the involvement of the parent institution in the management of the LWS -, which was not taken into account by previous studies and to this initial research design; whilst it seems essential for the understanding of the practice.

Chapter 6.

Conclusions, limitations, contribution to knowledge & recommendations

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6. Conclusions, limitations, contribution to knowledge & recommendations

Web technology in the terms of the ICTs in the library practice remains a strong and evolutionary force. It can work as a driver of change and as a tool to handle/manage change. The library web site (LWS) especially for the academic libraries, which had the opportunity very early to utilise the Web technology, it could technically become the platform for the online presence and workstation for the library and its stakeholders, impacting to a greater or lesser extent the library work tasks and the library management. This study sought to investigate the library web site (LWS) management undertaken by British university libraries taking into account the LWS role as one of its crucial aspects.

6.1 Conclusions

The investigation based on the overview - as methodological approach – succeeded in providing evidence for the general understanding of the phenomenon, but also identified additional crucial aspects beyond those which were included in the research design. The stereotypes and perspectives about the LWS role and about the LWS as library function in the terms of library organisation, and the knowledge and understanding of the web publishing on behalf library managers can affect basically the LWS management. In addition and in correlation, the aspect of the authority over the LWS management was brought out as equally crucial aspects in the LWS management practice.

The major results of the study lead to the following conclusions:

- a) The LWS management undertaken by a big majority of British university libraries to a great extent operated concurrently with at least another one management process undertaken by another university unit for the production and the maintenance of the same LWS publication. This status did not affect crucially the formation of the major LWS role, but it impacted on the extent and efficiency of the library's decision-making, with further implications in LWS management undertaken by them. Nevertheless, the extent and the depth of these implications

could not be identified by the professionals in their whole range because of possible limited understanding of the web publishing undertaking on behalf of the library web manager (see, section 5.3 & 5.4.1). Figure 6.1 below, based on the Figures 1.2 & 2.2 about the LWS publishing, shows additionally the factor of authority over LWS management and its practice, as it was identified in a raw level through this study; as at least another one concurrent management process (beyond library's one) undertaken by another university unit(s).

- b) The development and completeness of LWS management processes undertaken by libraries was affected negatively by the factor of *shared authority* over LWS management, but as well as by the factor of *one-off life cycle* approach for the LWS publication. The combination of poor understanding about web publishing, relatively basic content requirements for the achievement of the main LWS role and an approach for LWS re-development as an “*one-off project*” (see, *one-off life cycle* approach) formatted to a great extent the library's function for LWS publishing to a cross-library project (without distinctive organisational status; whilst library web presence has been established) managed under variety of incomplete LWS management patterns, especially during the period between redesigns – when this is applied -, excluding or reducing planning, controlling processes and motivating (see, section 5.4.2).

- c) The *servicing perspective or servicing & marketing* perspective (especially the second one, which was supported by university policies) limited the content of LWS role, impoverishing its role in library management and operation, especially when the authority over the LWS management was not exclusively library's responsibility and matter. In other words, the LWS was not used as the integrated platform for ICTs utilisation and management on behalf of the library – see, an *organisational* perspective for the LWS role. Nevertheless, the aspect of LWS role, when it was presented in more enhanced and wider concept, was related to more complete patterns in LWS management, with more efficient infrastructures and library's involvement in the LWS management (see, section 5.2).

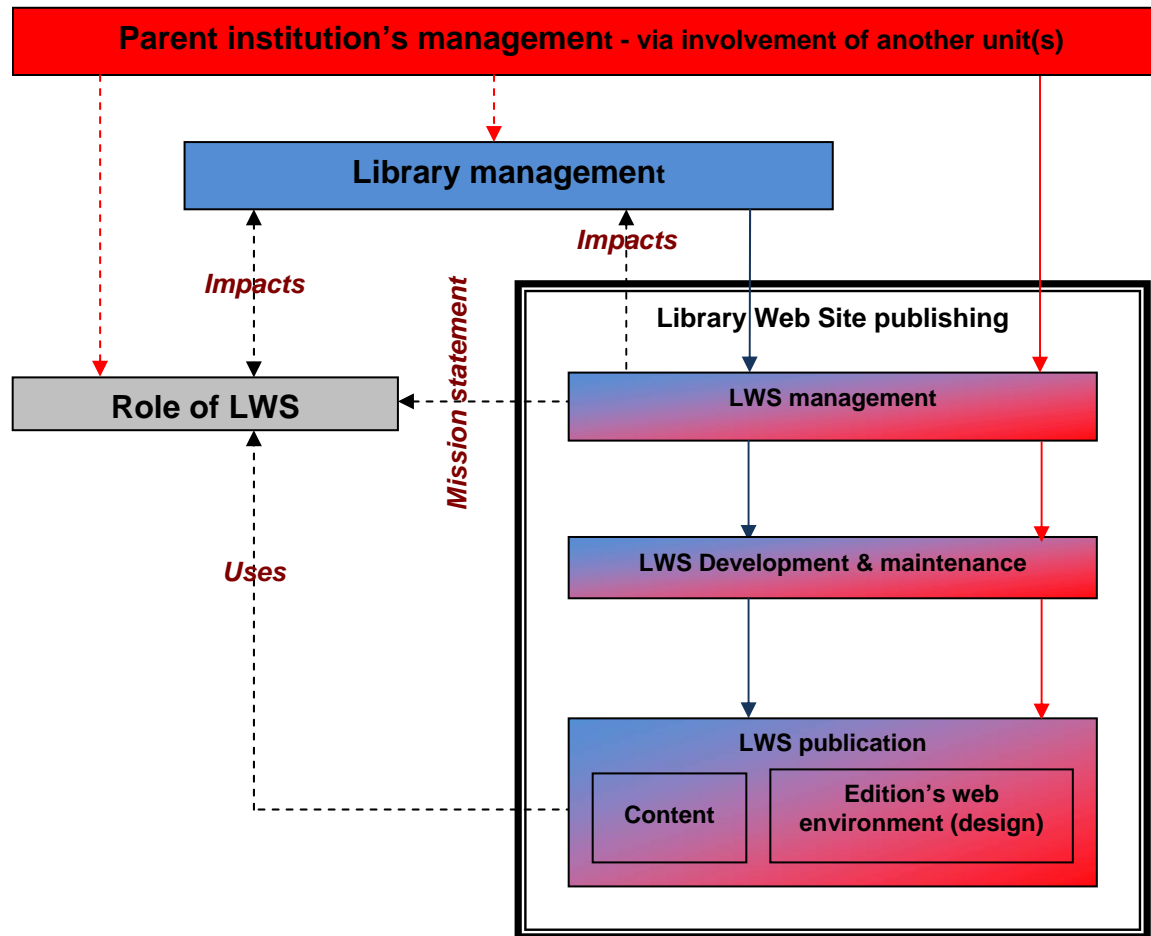


Figure 6.1: Interrelations of the library web site's role with library management & aspects of LWS publishing, taking into account the factor of authority over LWS management and its practice as at least another one concurrent management process undertaken by another university unit(s).

- d) As the concept of LWS role remains limited within the terms of the *servicing* perspective or *servicing & marketing* perspective, then the LWS is going to remain as an assistant extension of existing library services. Therefore, it is going to remain as a temporary platform for publicising information about library to library users and general public and library services addressed to library users. The management approach can be the *one-off life cycle* one with the framework of the periodical cross-library project, with or without assistance or leading by another university unit (see, sections 5.3 & 5.4.2).

6.2 Limitations

The study investigated the LWS management undertaken by British university libraries within their context. Its strength was based on its methodological stance (see, section 3.3), but at the same time its limitation derived from it too. The comprehensive data, which collected for each one of the LWS cases, for which there was response to the survey, and the structural analysis of all these data, which examined interrelations between relevant aspects and key factors, provided a composite investigation in a large scale of examined cases based on *cross-tabulation examination*. However, this case-profile examination was limited by the limited rate response to the survey (see, section 3.4.2.5) and the smaller authorisation for further contact provided by the respondent (see, section 3.4.6.8). In other words, the research could not increase the research data, including fragmentary data from other LWS cases beyond the research sample or to approach library managers of LWS cases out of the research sample for interviewing (see, section 3.3). Furthermore, whilst the study approached its topic examining and its context, the aspect of the university type (the parent institution grouping) was not including in the data analysis (see, section 4.1).

6.3 Contribution to knowledge

The study contributes to the knowledge about the evolution of ICTs in library practice and its management, focusing on the LWS; as one of the major applications of the library's Web presence. Specifically, the study investigated the core of that practice; the

LWS management. The LWS management consists of crucial aspects in planning, organising, motivating and controlling, which affect practice's outcome; the LWS as web publication. Moreover, it opens widely the research on this field in the British academic library sector¹, picturing the LWS status regarding its position within the library practice as library function and the position of the LWS within the library management, revealing possible different LWS management approaches. However, the study identifies additional crucial aspects affecting LWS management apart from those which literature review had revealed; for example the authority over LWS management, the understanding by the librarians of the web publishing as procedure and the LWS role. Finally, a major contribution of this study is that a wide research field has been opened with a lot of questions requiring further and specialised research (see, section 6.3).

Nevertheless, the study applied new practice on data collection and analysis tools, and criteria for investigation about the library web publishing as library procedure in general and in particular regarding its management and its role. Firstly, the study examined LWS cases, composing their profile using triangulation and analysed them through mainly a cross-tabulation examination, identifying patterns and interrelations. Secondly, this study in order to approach its topic developed theoretical background (organised knowledge) on:

- the LWS publishing, identifying and picturing relations between its components (LWS management, LWS development & maintenance, LWS publication (including the content & the design) – see, section 1.4;
- the LWS role, its facets, approaches for their investigation and their relations with the components of the LWS publishing (see, section 2.2.4);
- the LWS management in the terms of an abstractive framework (see, sections 2.3.1 & 3.4.2.4.1);

Thirdly, the study developed a systematic and accurate method of content analysis of LWS content, based on theoretical background, aiming to investigate the LWS role through the LWS uses, which could be identified, and at the same time avoiding bias caused by fault utilizing (see, sections 3.4.1.2 & 3.4.1.3). Fourthly, the study tested (see, section 3.4.1.4) and used (see, sections 3.4.3 & 3.4.4) for first time in library science the

¹ See, for instant below in section 6.4, future research possibilities.

Internet Archive Wayback Machine as data collection source for documentary data for desk research and for content analysis.

6.4 Recommendations

a) to LIS researchers

This study pictured the British academic practice, opening a further dialogue for comparative studies with academic library sectors of other nations, especially those which have long and rich practice, like the American academic and research library sector. Moreover, the study showed that there was conflict between the high interest in library web presence and the limited support on behalf the library management and almost the organisational absence of the LWS as library function. For example, limited and usually not exclusively occupied library web staffing, lack of any clear line in the library budget, limited utilisation of the web capabilities/uses and operation of the LWS most like as a library project are only some weak practices (see, sections 5.3 & 5.4). Especially, the practice of the *one-off life cycle* as a style (management approach) of web publishing for a non-regular short-period developmental project with a period of maintenance raised (research) questions related to the reasons caused it.

Does this LWS publishing style (*one-off life cycle*) derive from a low level of understanding about the web publishing? Does this LWS publishing style (management approach) derive from a perspective for a limited importance of LWS as web publication? If yes, can the hypothesis, that a strategic LWS publishing style would not be cost-effective for the library, be stand? Do academic libraries adapt and utilise web technologies or they are just consumers of commercial products hyper-linking them on the LWS's web pages? Furthermore, the issue of redesign, not as a regular procedure for the technological upgrade of the LWS's platform, but as a periodical procedure of the LWS revision including scope and information architecture, can become a starting point for the investigation of the *one-off life cycle* as a style (management approach) of a web publishing.

The involvement of the parent institution must be from here a stable aspect of the LWS publishing. Crucial question become whether the practice identified with the two concurrent management processes for the LWS publishing undertaken by library and by another university unit(s) is the only one pattern of practice or there are other patterns/models too. In this point, a reference to the results (see, section 4.3.2.2) can be relevant providing a step for further thought and study. The Interviewee3, who worked for a LWS case, for which the library had *sole authority* over its management, - in the terms of the final question for any additional comment - shared a personal idea about a possibly beneficial involvement in the LWS management by a university committee with consultative role composed of academics, students, IT unit and marketing unit, in order for the library to have an overall input of stakeholders about the LWS. This idea was not found to be applied within the British academic libraries examined by the present study, but a similar practice was reported for American academic libraries; “website policy committees” for overseeing website policy on content, IT, graphics, and other topics, in which library staff participated (Academic library website benchmarks 2008) – see, section 2.3.4.

Finally, there are research questions:

- about the possible relation between the LWS publishing approach/management style (e.g. *one-off life cycle*) and the aspect of the authority over the LWS management;
- about the aspect of authority over the management of ICTs in the library organisation and the role of the LWS in the ICTs’ management of the library.

b) to LIS educators & library managers

The understanding and knowledge of the ICTs by the library sector, even if their application has been fixed, still remains as a need and requirement for improvement of practice. The lack of understanding on the web publishing on behalf of libraries raises educational issues for library schools and training issues for library managers, related to the ICTs and their understanding, handling and management by librarians (see, section 5.3).

The LWS, even if its role seems to be limited because of the *servicing* perspective or *servicing & marketing* perspective, it remains a different web site from the other departmental ones within the university web presence, especially because the increased need for updating. Therefore, its respective autonomy, within the university web framework, in management, development and maintenance could allow library to provide high quality information, services and other functions through its LWS. Of course, it remains crucial preposition for the libraries to understand the benefits and capabilities of the web publication under a strategic approach and to develop this library function within the terms of a library function, rather than a project.

However, the web presence of academic libraries is an integral part of the institutional web presence, although its operational character distinguishes it from the another university sub-web sites. Therefore it is a fact the involvement in its management by the university. Then, the LWS publishing has to be planned and organised from a single management undertaken exclusively by library and driven by a university based strategy. The establishment of a university committee for the LWS strategy, which would be consisted of representatives of library management and selective - according to the LWS role - university based stakeholders, could give the answer to the common interest about the library web presence. Nevertheless, pivotal requirement on behalf of the library management is the improvement of understanding (through self-educations and educational/training programs) about web publications and web publishing, as undertaking and as integral part of library organisation's function, within the terms of library's management of ICTs. Consequently, libraries, which want to cope and participate in the changing environment, should obtain the appropriate and efficient infrastructures (management and implementation staff, equipment, budget and organisational status), embodying them in library organisation.

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Appendix I. Descriptive survey

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Appendix I.1: Definition of sample population: examination of sources about the UK academic institutions

Related section: 3.4.2.2.b

Date of data access: 25-01-2008

UK countries	Sources						
	UUK		Funding Councils		HERO	DFES	HESA
	Universities	Higher education institutions	FE	HEI	A-Z list		
England	88	132	135	131	151	-	-
N. Ireland	2	4	43	18	4	-	-
Scotland	13	20	7	13	21	-	-
Wales	3	12	6	4	13	-	-
UK total	106	168	191	166	189	-	-

Memo:

DFES: Department of Children, School and families – Higher Education - <http://www.dfes.gov.uk/hegateway/index.cfm>. It provided links to relevant resources with the higher education in UK, but it did not provide a list of institutions.

FE: Further Education Colleges that offer Higher Education courses

Funding Councils:

- Higher Education Funding Council for England (HEFCE) - <http://www.hefce.ac.uk/>
- North Ireland Higher Education Council (NIHEC) - <http://www.delni.gov.uk/>
- Scottish Further and Higher Education Funding Council (SFC) - <http://www.sfc.ac.uk/>
- Higher Education Funding Council for Wales (HEFCW) - <http://www.hefcw.ac.uk/>

HEI: Higher Education Institutions

HERO: Higher Education & Research Opportunities in the United Kingdom – “A to Z listings : Universities & HE colleges” - http://www.hero.ac.uk/uk/universities_colleges/index.cfm

HESA: Higher Education Statistics Agency - www.hesa.ac.uk. It provided links to statistical information about students and other elements, but not for the total number of the academic institutions.

UUK: Universities UK (formerly CVCP) - <http://www.universitiesuk.ac.uk/>

Appendix I.2: Sample – English & Scottish HEI

Related section: 3.4.2.2.c

Note: The asterisk (*) indicates that the academic library of the institution responded to the survey

Title of HEI	Country	Region	Web site
Anglia Ruskin University	England	Eastern	http://www.anglia.ac.uk/
Aston University	England	West Midlands	http://www.aston.ac.uk
Bath Spa University	England	South-West	http://www.bathspa.ac.uk
Birkbeck, University of London	England	London	http://www.bbk.ac.uk
Birmingham City University	England	West Midlands	http://www.bcu.ac.uk/
Bishop Grosseteste University College Lincoln *	England	East Midlands	http://www.bishopg.ac.uk/ http://www.bishopg.ac.uk/
Bournemouth University	England	South-West	http://www.bournemouth.ac.uk
Brunel University	England	London	http://www.brunel.ac.uk
Bucks New University	England	South-East	http://www.bcuc.ac.uk/
Canterbury Christ Church University *	England	South-East	http://www.canterbury.ac.uk/
Central School of Speech and Drama, University of London	England	London	http://www.cssd.ac.uk
City University, London *	England	London	http://www.city.ac.uk
Conservatoire for Dance and Drama	England	London	http://www.cdd.ac.uk/
Courtauld Institute of Art	England	London	http://www.courtauld.ac.uk
Coventry University *	England	West Midlands	http://www.coventry.ac.uk
Cranfield University *	England	Eastern	http://www.cranfield.ac.uk
Dartington College of Arts	England	South-West	http://www.dartington.ac.uk
De Montfort University	England	East Midlands	http://www.dmu.ac.uk
Durham University	England	North-East	http://www.durham.ac.uk
Edge Hill University *	England	North-West	http://www.edgehill.ac.uk
Edinburgh College of Art	Scotland	---	http://www.eca.ac.uk
Glasgow Caledonian University	Scotland	---	http://www.caledonian.ac.uk
Goldsmiths *	England	London	http://www.goldsmiths.ac.uk
Guildhall School of Music and Drama	England	London	http://www.gsmd.ac.uk/
Harper Adams University College	England	West Midlands	http://www.harper-adams.ac.uk
Heriot-Watt University *	Scotland	---	http://www.hw.ac.uk
Heythrop College	England	London	http://www.heythrop.ac.uk http://www.heythrop.ac.uk
Imperial College London *	England	London	http://www.imperial.ac.uk
Institute of Education, University of London	England	London	http://ioewebsserver.ioe.ac.uk/
Keele University *	England	West Midlands	http://www.keele.ac.uk
King's College London	England	London	http://www.kcl.ac.uk
Kingston University *	England	London	http://www.kingston.ac.uk
Lancaster University *	England	North-West	http://www.lancs.ac.uk
Leeds College of Music *	England	Yorkshire & Humber	http://www.lcm.ac.uk/
Leeds Metropolitan University	England	Yorkshire & Humber	http://www.leedsmet.ac.uk
Leeds Trinity and All Saints *	England	Yorkshire & Humber	http://www.leedstrinity.ac.uk
Liverpool Hope University	England	North-West	http://www.hope.ac.uk

Title of HEI	Country	Region	Web site
Liverpool Institute for Performing Arts	England	North-West	http://www.lipa.ac.uk/
Liverpool John Moores University	England	North-West	http://www.ljmu.ac.uk
London Business School	England	London	http://www.london.edu
London Metropolitan University	England	London	http://www.londonmet.ac.uk/s
London School of Economics and Political Science	England	London	http://www.lse.ac.uk/
London School of Hygiene and Tropical Medicine	England	London	http://www.lshtm.ac.uk
London South Bank University *	England	London	http://www.lsbu.ac.uk
Loughborough University	England	East Midlands	http://www.lboro.ac.uk
Manchester Metropolitan University	England	North-West	http://www.mmu.ac.uk
Middlesex University	England	London	http://www.mdx.ac.uk
Napier University	Scotland		http://www.napier.ac.uk
Newcastle University	England	North-East	http://www.ncl.ac.uk/
Newman University College, Birmingham	England	West Midlands	http://www.newman.ac.uk
Northumbria University (University of Northumbria at Newcastle)	England	North-East	http://www.northumbria.ac.uk
Norwich School of Art & Design	England	Eastern	http://www.nsad.ac.uk/
Nottingham Trent University	England	East Midlands	http://www.ntu.ac.uk
Open University	England	South-West	http://www.open.ac.uk
Oxford Brookes University	England	South-East	http://www.brookes.ac.uk
Queen Margaret University *	Scotland	---	http://www.qmu.ac.uk/
Queen Mary, University of London *	England	London	http://www.qmul.ac.uk
Ravensbourne College of Design and Communication	England	London	http://www.ravensbourne.ac.uk
RCN Institute	England	London	http://www.rcn.org.uk
Robert Gordon University *	Scotland	---	http://www.rgu.ac.uk
Roehampton University	England	London	http://www.roehampton.ac.uk
Rose Bruford College	England	London	http://www.bruford.ac.uk
Royal Academy of Music	England	London	http://www.ram.ac.uk
Royal Agricultural College *	England	South-West	http://www.rac.ac.uk
Royal College of Art	England	London	http://www.rca.ac.uk/
Royal College of Music *	England	London	http://www.rcm.ac.uk
Royal Holloway, University of London	England	South-East	http://www.rhul.ac.uk/
Royal Northern College of Music *	England	North-West	http://www.rncm.ac.uk
Royal Scottish Academy of Music and Drama	Scotland	---	http://www.rsamd.ac.uk
Royal Veterinary College	England	London	http://www.rvc.ac.uk
School of Oriental and African Studies *	England	London	http://www.soas.ac.uk
School of Pharmacy	England	London	http://www.pharmacy.ac.uk
Sheffield Hallam University	England	Yorkshire & Humber	http://www.shu.ac.uk
Southampton Solent University	England	South-East	http://www.solent.ac.uk
St George's, University of London	England	London	http://www.sgul.ac.uk/
St Mary's College	England	London	http://www.smuc.ac.uk
Staffordshire University	England	West Midlands	http://www.staffs.ac.uk
Thames Valley University	England	London	http://www.tvu.ac.uk

Title of HEI	Country	Region	Web site
The Arts Institute at Bournemouth	England	South-West	http://www.aib.ac.uk/
The Glasgow School of Art *	Scotland	---	http://www.gsa.ac.uk
The Institute of Cancer Research	England	London	http://www.icr.ac.uk
The University of Birmingham *	England	West Midlands	http://www.bham.ac.uk
The University of Manchester	England	North-West	http://www.manchester.ac.uk
Trinity Laban *	England	London	http://www.trinitylaban.ac.uk
UHI Millennium Institute	Scotland	---	http://www.uhi.ac.uk/
University College Birmingham (Birmingham College of Food, Tourism and Creative Studies)	England	West Midlands	http://www.bcftcs.ac.uk
University College Falmouth	England	South-West	http://www.falmouth.ac.uk
University College for the Creative Arts at Canterbury, Epsom, Farnham, Maidstone and Rochesters *	England	South-East	http://www.ucreative.ac.uk
University College London (UCL)	England	London	http://www.ucl.ac.uk
University College Plymouth St Mark & St John	England	South-West	http://www.marjon.ac.uk
University of Aberdeen *	Scotland	---	http://www.abdn.ac.uk/
University of Abertay Dundee	Scotland	---	http://www.abertay.ac.uk
University of Bath	England	South-West	http://www.bath.ac.uk/
University of Bedfordshire	England	Eastern	http://www.beds.ac.uk/
University of Bolton	England	North-West	http://www.bolton.ac.uk
University of Bradford	England	Yorkshire & Humber	http://www.bradford.ac.uk
University of Brighton	England	South-East	http://www.brighton.ac.uk
University of Bristol *	England	South-West	http://www.bristol.ac.uk
University of Cambridge	England	Eastern	http://www.cam.ac.uk
University of Central Lancashire	England	North-West	http://www.uclan.ac.uk/
University of Chester	England	North-West	http://www.chester.ac.uk
University of Chichester	England	South-East	http://www.chiuni.ac.uk
University of Cumbria *	England	North-West	http://www.cumbria.ac.uk
University of Derby *	England	East Midlands	http://www.derby.ac.uk
University of Dundee *	Scotland	---	http://www.dundee.ac.uk/
University of East Anglia *	England	Eastern	http://www.uea.ac.uk
University of East London *	England	London	http://www.uel.ac.uk
University of Edinburgh *	Scotland		http://www.ed.ac.uk/
University of Essex	England	Eastern	http://www.essex.ac.uk
University of Exeter	England	South-West	http://www.exeter.ac.uk/
University of Glasgow *	Scotland	---	http://www.gla.ac.uk
University of Gloucestershire	England	South-West	http://www.glos.ac.uk
University of Greenwich *	England	London	http://www.gre.ac.uk
University of Hertfordshire	England	Eastern	http://www.herts.ac.uk
University of Huddersfield *	England	Yorkshire & Humber	http://www.hud.ac.uk
University of Hull	England	Yorkshire & Humber	http://www.hull.ac.uk
University of Kent	England	South-East	http://www.kent.ac.uk/
University of Leeds	England	Yorkshire & Humber	http://www.leeds.ac.uk
University of Leicester *	England	East Midlands	http://www.le.ac.uk
University of Lincoln	England	East Midlands	http://www.lincoln.ac.uk

Title of HEI	Country	Region	Web site
University of Liverpool	England	North-West	http://www.liv.ac.uk
University of London	England	London	http://www.lon.ac.uk
University of Northampton	England	East Midlands	http://www.northampton.ac.uk
University of Nottingham	England	East Midlands	http://www.nottingham.ac.uk
University of Oxford	England	South-East	http://www.ox.ac.uk/
University of Plymouth *	England	South-West	http://www.plymouth.ac.uk/
University of Portsmouth	England	South-East	http://www.port.ac.uk
University of Reading *	England	South-East	http://www.rdg.ac.uk
University of Salford	England	North-West	http://www.salford.ac.uk
University of Sheffield	England	Yorkshire & Humber	http://www.sheffield.ac.uk/
University of Southampton *	England	South-East	http://www.soton.ac.uk
University of St Andrews	Scotland	---	http://www.st-andrews.ac.uk
University of Stirling *	Scotland	---	http://www.stir.ac.uk
University of Strathclyde	Scotland	---	http://www.strath.ac.uk
University of Sunderland	England	North-West	http://www.sunderland.ac.uk/
University of Surrey	England	South-East	http://www.surrey.ac.uk
University of Sussex *	England	South-East	http://www.sussex.ac.uk
University of Teesside *	England	North-East	http://www.tees.ac.uk/
University of the Arts London *	England	London	http://www.arts.ac.uk
University of the West of England, Bristol *	England	South-West	http://www.uwe.ac.uk/
University of the West of Scotland (University of Paisley)	Scotland	---	http://www.paisley.ac.uk
University of Warwick	England	West Midlands	http://www.warwick.ac.uk
University of Westminster	England	London	http://www.westminster.ac.uk
University of Winchester	England	South-East	http://www.winchester.ac.uk
University of Wolverhampton	England	West Midlands	http://www.wlv.ac.uk
University of Worcester	England	West Midlands	http://www.worcester.ac.uk/
University of York	England	Yorkshire & Humber	http://www.york.ac.uk/
Writtle College *	England	Eastern	http://www.writtle.ac.uk
York St John University *	England	Yorkshire & Humber	http://www.yorks.ac.uk

Appendix I.3: Self-administered questionnaire (cover letter included)

Related section: 3.4.2.4

07th of April 2008

Managing the changing role of the library web sites: a study into UK academic libraries

Dear sir/madam

I am a research student currently working on my PhD in the Department of Information and Communication at Manchester Metropolitan University (MMU). My research will investigate the intersection of the library web site management, the virtualisation of library services and functions and the management of change. This research will be the first exploration and analysis of this inter-relationship for library practice.

The research is focused on the UK academic libraries and it will be completed in three stages; this survey is part of the first stage. All questionnaire responses will be treated according to the ethical policy of the MMU (<http://www.red.mmu.ac.uk/>).

Your participation would be appreciated in order to contribute to the implementation and the quality of the research. I intend to provide an abstract of the final findings to any of the participants wishing to follow the progress of this study.

In addition, if you would be willing to **participate further in this study**, please indicate so at the last section "Respondent's details" providing contact details.

Please return the questionnaire attached to the e-mail address: ioanna.zorba@student.mmu.ac.uk by **18th of April 2008**.

Yours sincerely

Ioanna Zorba

P.S.: The format of the questionnaire is electronic; MSWord file (.doc) format protected. If you encounter any problem, please do not hesitate to contact me or if you wish other information.

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Section 1: Information about the Library

This section is about general information for the Library, focusing on its mission and its staffing. The term “**Library**” is used for any organisational structure providing library services to the particular academic community (e.g. Library, Information Services, Learning and Information Services, Library & Archives Service, Information Services and Technical Support).

1. Library identity:

1a. Title of the university:

1b. Title of the Library:

2. What is the mission statement of your Library?

3. How many sites does the Library have?

4. How many members of Library staff are:

a. Librarians:

b. Information Technology (IT) staff:

c. Archivists:

d. Administrative staff:

e. OTHER:

Please, specify the ‘OTHER’:

Section 2: Basic information for the Library web site (LWS)

This section is about basic information for the library web site. The term “**Library web site**” with the abbreviation “**LWS**” refers to the official web presence of your Library.

5. Home page of LWS: http://

6. In which year was the LWS first available?

7. Where is the LWS hosted?

Please, tick the most appropriate statement (one choice).

- a. The LWS is hosted on server/s of the Library:
- b. The LWS is hosted on server/s of other unit within the university:
- c. The LWS is hosted on server/s of an outsource Internet Service Provider (ISP):
- d. The LWS is hosted on server/s of OTHER:
Please, specify the ‘OTHER’:

Section 3: The role of the Library web site (LWS)

This section is about the role of the LWS as it can be identified via its mission statement and its uses.

8. Is there a mission statement for the LWS?

Please, tick the statement that applies.

Yes

No

Don't know

8.1 If YES, what is it?

9. How is the LWS used?

Please, tick all statements that apply (multiple choices).

- a. The LWS is used for provision of electronic library and information services.
- b. The LWS is used for provision of information about services and facilities hosted locally in the building/s of the Library.
- c. The LWS is used for provision of information about the character and the operation of the Library as organisation (e.g. mission, information about the staff, undertaken projects).
- d. The LWS is used for provision of information for the professional interests of the library staff.
- e. The LWS is used for provision of an online "work station" for the Library staff (e.g. Intranet for the staff with password protected access to library automated systems).
- f. The LWS is used for OTHER uses.
Please, specify the 'OTHER':

10. Have the uses of the LWS been diversified since the first LWS was available?

Please, tick the statement that applies.

Yes

No

Don't know

10.1 If YES, please give details

11. Are there any future plans that will affect the role of LWS?

Please, tick the statement that applies.

Yes

No

Don't know

11.1 If YES, please give details

Section 4: Management of the Library web site (LWS)

This section is about the responsibility for the decision making about the LWS.

12. In which of the following managerial aspects of the LWS is the Library involved?

Please, tick all statements that apply (multiple choices).

- a. Decisions about the LWS content
- b. Decisions about the LWS design
- c. Leading and controlling the LWS development procedure (content and design)
- d. Budget for the LWS development procedure (content and design)

13. Are there others (e.g. other unit within the university) who are involved in the LWS management?

Please, tick the statement that applies.

Yes

No

Don't know

13.1 If Yes, please give details

14. Taking into account the above answers, has the Library the main role for the management of the LWS?

Please, tick the statement that applies.

Yes

No

Don't know

If "NO", please skip to the **Section 6** of the questionnaire.

Section 5: Library web site planning, controlling and achieving

This section is about the Library's involvement in the LWS managerial aspects of planning, controlling and achieving.

15. Is there an LWS planning process?

Please, tick the statement that applies.

Yes

No

Don't know

15.1 If **YES**, which Library staff (position titles) are involved in this process?

16. Are there LWS performance measurement and monitoring processes?

Please, tick the statement that applies.

Yes

No

Don't know

16.1 If **YES**, which Library staff (position titles) are involved in these processes?

17. Are there LWS marketing processes?

Please, tick the statement that applies.

Yes

No

Don't know

17.1 If **YES**, which Library staff (position titles) are involved in these processes?

18. Has the Library developed specialised policies for the LWS?

Please, tick the statement that applies.

Yes

No

Don't know

18.1 If **YES**, which of the stated subject/issues cover?

Please, tick all statements that apply (multiple choices).

a. Design and construction issues.

b. Administrative issues (responsibilities, procedures, aims/objectives, etc).

c. Metadata and documentation issues.

d. Copyright and Freedom of Information issues.

e. OTHER issues/subjects.

Please, specify the 'OTHER':

Section 5 (continued)

19. Are there university policies and/or guidelines, which affect to the LWS?

Please, tick the statement that applies.

Yes

No

Don't know

19.1 If **YES**, which LWS aspects are affected?

Please, tick all statements that apply (multiple choices).

- a. Design and construction issues.
- b. Administrative issues (responsibilities, procedures, aims/objectives, etc).
- c. Metadata and documentation issues.
- d. Copyright and Freedom of Information issues.
- e. OTHER issues/subjects.
Please, specify the 'OTHER':

20. Is there an annual budget for LWS development and maintenance?

Please, tick the statement that applies.

Yes

No

Don't know

21. Does the Library undertake external funded projects for the development of particular web-based library services?

Please, tick the statement that applies.

Yes

No

Don't know

Section 6: Library web site human resources

This section is about the involvement of the Library staff in the procedure of LWS development and maintenance.

22. The staff who works regularly on the LWS development and maintenance are members of staff of:

Please, tick all statements that apply (multiple choices).

- a. the Library *
- b. other unit(s) within the university
If 'Yes', which is the title(s)?
- c. OTHER
Please, specify the 'OTHER':

* If the option **a. the library** has **not** been selected, please skip to the **Section 7** of the questionnaire.

23. How many members of Library staff work **solely** on the LWS?

23.1 Do they compose a particular Library unit/team?

Please, tick the statement that applies.

Yes

No

Don't know

If **YES**:

- which is the title of this unit/team?

- which is the position of the unit/team within the Library organisation?

23.2 How many of them are:

- a. Librarians:
- b. Information Technology (IT) staff:
- c. Archivists:
- d. Administrative staff:
- e. OTHER:
Please, specify the 'OTHER'?

Section 6 (continued)

24. How many members of Library staff are **not** occupied solely on the LWS, but they have **additional duties** as well?

24.1 How many of them are:

- a. Librarians:
- b. Information Technology (IT) staff:
- c. Archivists:
- d. Administrative staff:
- e. OTHER:
Please, specify the 'OTHER'?

Section 7: Organising and leading library web site development

This section is about the responsibility for organising and leading the LWS operations and some aspects of this management area.

25. Is the Library responsible for the organisation of the work of the LWS development and maintenance?

Please, tick any statement that apply

Yes

No

Don't know

If "NO", please skip to the end of the questionnaire 'Respondent's details'.

26. Is there **ONE** person of the members of Library staff who is responsible for organising the work for the LWS development and maintenance?

Please, tick the statement that applies.

Yes

No

Don't know

If **YES**, please give details for:

Title of the position:

Please, allocate the position within the structure of the Library organisation:

Speciality:

Occupation (Full-time or Part-time):

Please, tick the statement that applies.

Full-time

Part-time

If **NO**, please, describe under what managerial arrangement the work of the LWS is organised:

27. Are there officially stated procedures and work schedule for the LWS development and maintenance?

Please, tick the statement that applies.

Yes

No

Don't know

28. Are there activities for training and skills development of Library staff who works for the LWS?

Please, tick the statement that applies.

Yes

No

Don't know

Respondent's details

Thank you for replying to the questionnaire. Your contribution is valued for this research progress and quality.

Date of questionnaire completion:

Personal details for statistical purposes:

Respondent's title of position:

In case that more than one person contributed to completion of the questionnaire, please add their titles of position:

If you are willing to be contacted for further information, please fill the following personal details:

Contact details - Name:

Contact details - e-mail:

Contact details - office tel.:

If you would like to make any comment or to give any further information about the issues mentioned, please feel free to do so below:

*Thank you very much
for your co-operation
&
for your contribution*

Ioanna Zorba

Appendix I.4: E-mail cover letter: 1st dispatch

Related section: 3.4.2.5

Dear sir/madam

I am a research student currently working on my PhD in the Department of Information and Communication at Manchester Metropolitan University (MMU). My research will investigate the intersection of the library web site management, the virtualisation of library services and functions and the management of change. This research will be the first exploration and analysis of this inter-relationship for the library practice.

The research is focused on the UK academic libraries and it will be completed in three stages; this survey is part of the first stage. All questionnaire responses will be treated according to the ethical policy of the MMU (<http://www.red.mmu.ac.uk/>).

Your participation would be appreciated in order to contribute to the implementation and the quality of the research.

Please return the questionnaire attached to the e-mail address: ioanna.zorba@student.mmu.ac.uk by 18th of April 2008.

The format of the questionnaire is electronic; MSWord file (.doc) format protected. If you encounter any problem, please do not hesitate to contact me or if you wish more or other information.

Yours sincerely

Ioanna Zorba
Doctoral Research Student
Department of Information and Communications
Manchester Metropolitan University
Geoffrey Manton Building
Rosamond Street West Off Oxford Road
Manchester
M15 6LL
UK

Note: in the few cases that there were not found personal contact details...
“Please, forward the e-mail to the director of the library Service.”

Appendix I.5: E-mail cover letter: 1st and 2nd reminder

Related section: 3.4.2.5

Dear sir/madam

This is a reminder for the survey about the management of the library web site by UK academic libraries.

Please, reply to or forward the e-mail to the appropriate member of library staff.

Your participation would be appreciated in order to contribute to the implementation and the quality of the research.

Yours sincerely

Ioanna Zorba
Doctoral Research Student
Department of Information and Communications
Manchester Metropolitan University
Geoffrey Manton Building
Rosamond Street West Off Oxford Road
Manchester
M15 6LL
UK

Appendix I.6: E-mail cover letter: 3rd reminder

Related section: 3.4.2.5

Dear colleagues from the¹,

This is a reminder for the survey about the management of the library web site by UK academic libraries.

The participation of your service would be appreciated in order to contribute to the implementation and the quality of the research. This research will be the first exploration and analysis of this inter-relationship for the library practice. All questionnaire responses will be treated according to the ethical policy of the MMU (<http://www.red.mmu.ac.uk/>).

This reminder is addressed to more members of staff of your department than the previous reminders were. Please, reply to or forward the e-mail to the appropriate member of staff.

The contact details were located from:

- <http://.....>²
- the directory "Libraries in academic institutions in the United Kingdom" in the Libraries and information services in the United Kingdom and the Republic of Ireland 2007-2008. 34th ed., London: Facet, 2007.²

The format of the questionnaire is electronic; MSWord file (.doc) format protected. If you encounter any problem, please do not hesitate to contact me or if you wish more or other information (ioanna.zorba@student.mmu.ac.uk).

Yours sincerely

Ioanna Zorba
Doctoral Research Student
Department of Information and Communications
Manchester Metropolitan University
Geoffrey Manton Building
Rosamond Street West Off Oxford Road
Manchester
M15 6LL
UK

Notes:

1. Title of the library accompanied by the title of the parent institution
2. Web page source (when it was applicable)
3. When it was applicable

Appendix I.7: Reply e-mail to respondents

Related section: 3.4.2.5

Dear,

Thank you for your participation. I appreciate it a lot.

Yours sincerely

Ioanna Zorba
Doctoral Research Student
Department of Information and Communications
Manchester Metropolitan University
Geoffrey Manton Building
Rosamond Street West Off Oxford Road
Manchester
M15 6LL
UK

Appendix I.8: Progress of survey response

Related section: 3.4.2.5

Table A1.1: Survey; Questionnaire dispatch, reminders and responses

Actions	Date	Sum of library cases recipients	Sum of library cases respondents
Dispatch of questionnaire	7/4/2008	149	10
1st reminder	18/4/2008	139	7
2nd reminder	27/4/2008	132	6
3rd reminder	28/5/2008	126	25

Appendix I.9: Survey response

Related section: 3.4.2.5

The questionnaire was distributed via e-mail to members of staff of 149 UK academic libraries, during the period April-June of 2008. From the 149 Libraries (100%) 48 of them (32%) completed and sent back the questionnaire via e-mail (Table A1.2). One case returned the questionnaire by post, print and handwritten. Moreover, one more case

responded via e-mail stating that: ‘We don't have a library website per se. We have pages on the main School one which are managed by our Marketing Department.¹’, without completing and sending back the questionnaire. More than half of the respondent libraries (26 of the 48 cases) expressed their willingness to be contacted for further information, providing personal contact details. In addition, almost all of the respondent libraries (45 of 48 cases) provided information about the title of position of the persons, who completed the questionnaire.

Table A1.2: Survey response

Sent back questionnaires		Positive cases for further contact ¹		Provision of respondents' statistical data ¹	
Yes	48 (32%)	Yes	No	Yes	No
		26 ²	22	45	3
No	101 (68%)	NA			
Sum of survey sample	149 (100%)				
Notes:					
1. Appendix I.3, p. 11					
2. After the control of questionnaire (see, below Appendix I.12), the total number was reduced to 25					

Appendix I.10: Geographical profile of respondent libraries

Related section: 3.4.2.5

The responses by the geographical sampling units were 39 (30%) from the 131 (100%) English and 9 (50%) from the 18 (100%) Scottish Libraries.

Table A1.3: Survey respondent Libraries' geographical profile

Country	Survey response		Sum
	No	Yes	
England	92	39 (30%)	131 (100%)
Scotland	9	9 (50%)	18 (100%)
Grand total:	101 (68%)	48 (32%)	149 (100%)

¹ Exact phrase

Appendix I.11: Respondents' profile

Related section: 3.4.2.5

The general respondents' profile for the most of the cases indicated that the questionnaires were completed by members of library staff, who had access to or knowledge of the information requested (see, section 3.4.2.2-a). Most of the respondents, who completed the questionnaire, were members of the management team of their library (37/45); seven were directors of Library. Three had title position related to LWS management (Libweb manager, Library Website Administrator and Library Web Manager) and from the rest 27 cases belonging to management team 12 cases were managers of units related to information systems (IS) and electronic services. For one only case, it was stated that more than one person contributed to the completion of the questionnaire. The primary person was a librarian involved with IS and electronic services and a member of the library management team contributed to the questionnaire's completion. In addition, from the seven cases, for which the respondents were members of library staff, three of them were librarians involved with IS and electronic services. (Table A1.4)

Table A1.4: Survey respondents' position within library

Provision of respondents' statistical data		Categories of respondents' position		Sum of cases
True	45	Library management team (sum: 37)	Director	7
			Management team	15
			Management team (relation with IS and electronic services)	12
			Web site manager	3
		Library management team & Library Staff (sum: 1)	Management team & Staff (relation with IS and electronic services)	1
		Library Staff (sum: 7)	Staff	4
Staff (relation with IS and electronic services)	3			
False	3	NA		
Sum of survey responses				48

The comparison of the data for the respondents' title position with the corresponding data for the title of the position of the cases, which stated that there is one person responsible for organising the work for the library web site development and maintenance (see, Question 26), showed that for 18 of the 27 comparable cases the person was the same (Table A.1.5). The 21 non-comparable cases consisted of:

- three cases where no information was provided about the respondent's title position;
- one case without information provided about the title position in the Question 26;
- 17 cases, which did not answer "Yes" in Question 26, consequently related information was not provided.

Table A1.5: Survey respondents and "LWS managers"

Data comparability		Data comparison	
Yes	27	Same person	18
		Different person	9
No	21	NA	
Sum of survey responses	48		

Appendix I.12: Control of questionnaires

Related section: 3.4.2.4.1, 3.4.2.4.3.a & 3.4.2.5

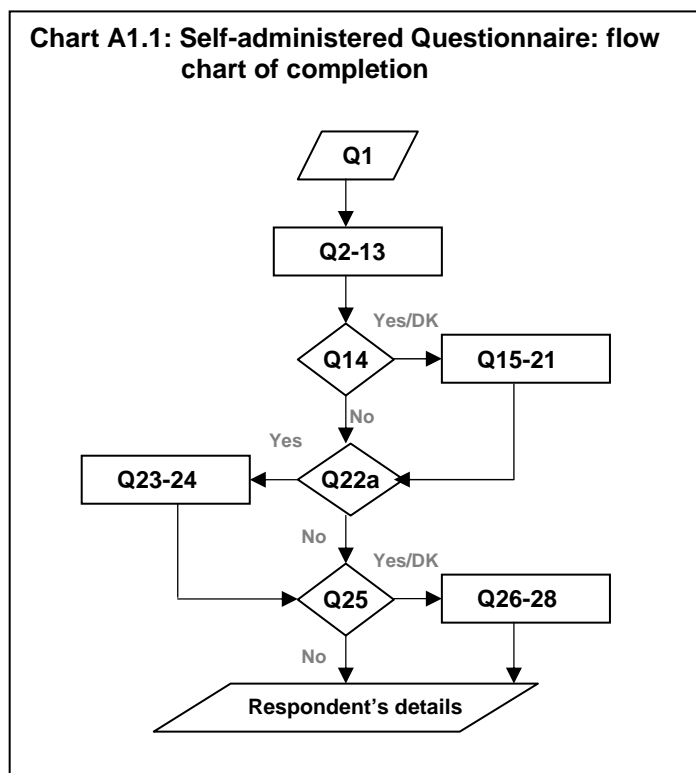
The questionnaires of the 48 library cases responded to the survey were checked in order to detect contradictory, unclear or missing statements causing insufficient overall LWS profiles, which would cause obfuscation to the overall results of the integrated analysis. This control aimed to detect and exclude these cases from the study's analysis and it consisted of the following processes and brought out three cases (Case id: 66, 91 & 133):

- a) check of completion patterns;
- b) check of lack of data;
- c) check of frequency of "Don't Know" answer;
- d) check of thematic and logical related elements for contradictory statements

a) Control of questionnaire's completion patterns

According to the flow chart of the questionnaire completion (Chart A1.1), the respondents were expected to fill in the questionnaire with the following patterns following the instructions in the pivotal questions no 14, 22 and 25:

- A. Questions: 1-28
- B. Questions: 1-22-25
- C. Questions: 1-25
- D. Questions: 1-22, 25-28
- E. Questions: 1-14, 22-28
- F. Questions: 1-14, 22-25
- G. Questions: 1-14, 22, 25-28
- H. Questions: 1-14, 22, 25



The Question 14 was asking the respondents to skip to the Section 6 (Q22), if they had stated that the library did not have the main role for the management of the LWS (Answer = No).

The Question 22 was asking the respondents to skip to the Section 7 (Q25), if they had stated that there was not members of the library staff, who worked regularly on the LWS development and maintenance (22a = not ticked).

The Question 25 was asking the respondents to skip to the end of the questionnaire (Respondent's details), if they had stated that the library was not responsible for the organisation of the work for the LWS development and maintenance (Answer = No).

The above logic split the questions in 4 groups:

- Group A: Section 1 (Questions 1-4), Section 2 (Questions 4-7), Section 3 (Questions 8-11), Section 4 (Questions 12-14)
- Group B: Section 5 (Questions 15-21)
- Group C: Section 6 (Questions 22-24)
- Group D: Section 7 (Questions 25-28)

The completion analysis (see, Table A1.6) showed that 46 of the total 48 cases followed the above instructions. Most of them 42 cases completed the questionnaire according to the pattern A. Questions: 1-28. 6 cases followed singularly the other patterns, apart from the patterns C and G. Nevertheless, 1 case did not fill in completely the Group of questions C, as well as without filling in the pivotal Question 22 (Case id: 133).

Table A1.6: Survey; Questionnaire – Control of completion patterns

Completion patterns	Sum of cases
A. Questions: 1-28	42
B. Questions: 1-22-25	1
C. Questions: 1-25	0
D. Questions: 1-22, 25-28	1
E. Questions: 1-14, 22-28	1
F. Questions: 1-14, 22-25	1
G. Questions: 1-14, 22, 25-28	0
H. Questions: 1-14, 22, 25	1
Lack of Group C (Section 6 - Q 22-24): Questions: 1-21, 25-28	1
Grand total	48

b) Control of lack of data

The control showed that only for the case with id: **133** presented noticeable lack of data, as whole the Section 6 (see, above) and other 5 questions were not completed in the control for lack of data; it was returned almost empty. Not answers of questions - regarding the main questions - were found in other 20 cases (see below, Table A1.7). This lack of data was located from one up to three questions per case and this did not make the general profile ambiguous, with exception the case with id: **91**, which - apart from the three unanswered questions – presented high frequency of “Don’t Know” answers (see below, Table A1.8).

c) Control of “Don’t Know” frequency

The control “Don’t Know” answers frequency per questionnaire aimed to identify cases for which the respondent was not familiar with the LWS management topic. Only one case (id: **91**) was identified through this control and the particular questionnaire was completed by a member of library staff and not of the library management team. Other 20 cases were located with usually one or two “Don’t Know” statements (see below, Table, A1.8) and the questions referred mostly to the first year of LWS publication (Q6) and to the diversion of LWS role in time (Q10 & Q11).

Table A1.7: Survey; Questionnaire – Lack of data per case (not answered questions)

Questions			Cases ID																				
			42	157	36	91	45	47	133	54	66	129	33	161	175	180	43	84	181	56	69	95	154
Group A	Section 1	1b			Y	Y							Y										
		2				Y						Y	Y	Y	Y	Y			Y	Y	Y	Y	Y
		4							Y								Y	Y					
	Section 2	6		Y		Y				Y		Y	Y	Y	Y								
Group C	Section 6	22							Y														
		23							Y														
		23.1								Y													
		23.2								Y													
		24								Y													
		24.1								Y													
Group D	Section 7	Q26	Y	Y			Y																
	Section 7	27			Y																		
Not answered questions per case			1	2	2	3	1	1	5	1	1	2	2	3	2	1	1	1	1	1	1	1	

Table A1.8: Survey; Questionnaire – Frequency of “Don’t know” statements per case

Questions			Cases ID																						
			36	91	45	63	47	54	170	14	86	129	30	42	53	138	24	39	61	67	78	140	180		
Group A	Section 2	6										Y			Y	Y	Y	Y	Y	Y	Y	Y	Y		
	Section 3	8		Y				Y																	
		10			Y			Y	Y	Y	Y	Y	Y	Y	Y										
		11		Y	Y																				
Section 4	14		Y																						
Group B	Section 5	15	Y																						
		16		Y																					
		17		Y																					
		18		Y																					
		19		Y																					
		20		Y		Y	Y																		
Group D	Section 7	21					Y	Y																	
		25		Y																					
		26		Y																					
		27		Y			Y																		
		28		Y	Y																				
Frequency per case			1	12	2	2	1	1	3	1	1	1	2	1	1	2	1	1	1	1	1	1	1		

d) Control of thematic and logical related elements for contradictory statements

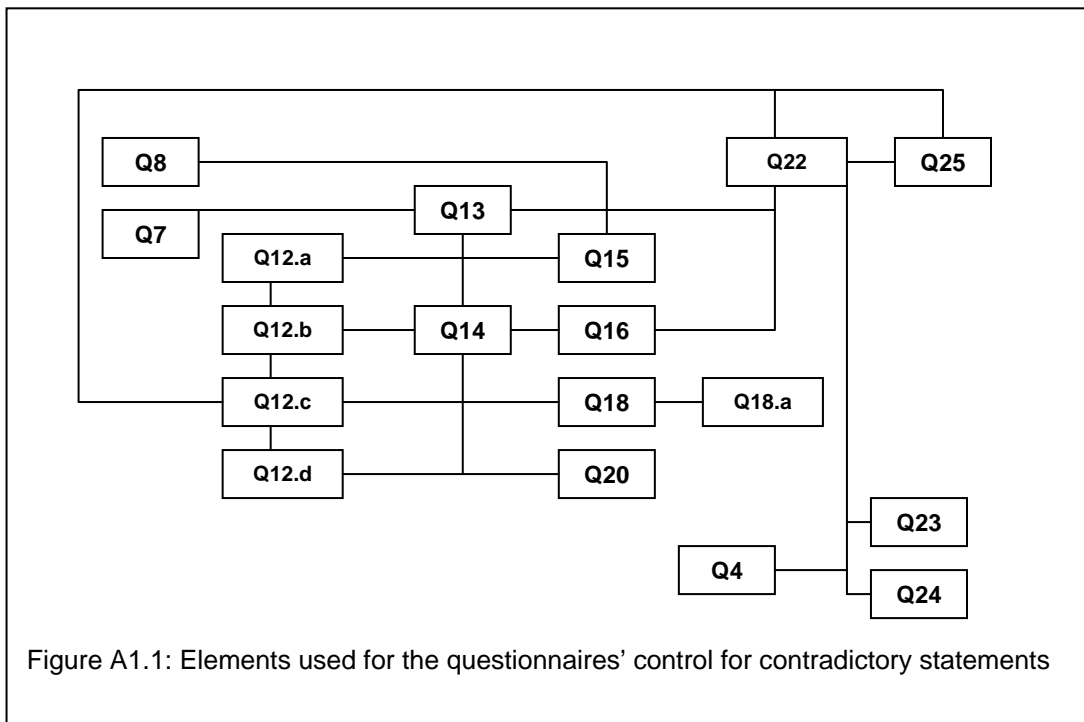
This control of the cases was focused on a range of thematic and logical related elements, aiming to detect potential insufficient cases for the analysis, which would cause obfuscation to the final results of the integrated analysis. The two cases identified above as provided unclear or missing statements were already excluded; thus the check referred to 46 cases. For the cases' profile control, 18 data elements derived from the answers to 14 questions of the survey (see, Figure A1.1) were used within nine cross-tabulations. The data from the questions Q7, Q13, Q14, Q18, Q22.a and Q25 was used in some controls in order to explain the absence or otherwise of data or to provide information for better understanding of the cross-tabulations; they are presented below within brackets.

The logical relation controls were:

1. the role of library on the LWS management (Q14) and the involvement in LWS management by other university unit/s (Q13);
2. the role of library in the LWS management (Q14) and library's involvement in decision making and organising (Q12) – [Q13];
3. leading & organising by the library (Q12.c) and staff that worked for the LWS development and maintenance (Q22) – [Q14, Q25];
4. the involvement in LWS management by other university unit/s (Q13) and the staff that worked for the LWS development and maintenance (Q22) – [Q7, Q14];
5. controlling & monitoring (Q16) and existence of library's staff worked for the LWS development and maintenance (Q22.a) – [Q14, Q25];
6. decision making by the library about the LWS design (Q12.b) and existence of library policies on LWS design (Q18.a) – [Q14, Q18];
7. planning (Q15) and mission statement for the LWS (Q8) – [Q14];
8. financial decision making (Q12.d) and planning (Q20) – [Q14];
9. number of library staff (Q4) and number of library staff worked for the LWS development and maintenance (Q23 & Q24) - [Q22.a].

The combinations of the element of the Q22.a with the Q27 or Q28 were not checked because contradictory statement was already not found between the Q22.a and Q25 (see, above 3rd control); the question 25 was “control question” for the filling in of questions Q26 – Q28 (see, above completion patterns). In other words, it was not checked whether

the respondents, who stated that there was not members of their library staff worked for the LWS (Q22.a) and at the same time they stated either that their library had either officially stated procedures and work schedule for the LWS development and maintenance (Q27) or that there were activities in their library for training and skills development of the library staff worked for the LWS (Q28) because there was none case for which the library had the responsibility for the organisation of the work of the LWS development and maintenance (Q25), but without the existence of members of their library staff worked for the LWS (Q22.a).



The results of the nine controls are presented below. Summarising, in five of the nine controls ten cases in total were bought out for further lookout separately. The case by case control took place by the researcher reviewing entirely the questionnaires had as result the identification of one of them as insufficient case for the analysis, which would cause obfuscation to the final results of the analysis and which was excluded from the total sample of cases further analysed. The case with id **61**, which as the respondent informed in the last part of the questionnaire for comment and additional information that the library as an unit was under transition for being merged with the Computing Centre. Consequently, the responsibilities and the activities of the LWS management were under

review and the reported situation, on the one hand it was not representative either for the recent past, but as well as for the toward future of the specific case of LWS management, and on the other hand there were basic contradictory statements related to the library’s involvement in the LWS management.

Control 1: The role of library on the LWS management and the involvement in LWS management by other university unit/s.

The combinations of statements found were three (see, Table A1.9):

- a) Library without having the main role in LWS management (Q14 = No) and existence of involvement in LWS management by other unit(s) of the university (Q13 = Yes) – three cases;
- b) Library having the main role in LWS management (Q14 = Yes) and not involvement in LWS management by other unit(s) of the university (Q13 = No) – nine cases;
- c) Library having the main role in LWS management (Q14 = Yes) and existence of involvement in LWS management by other unit(s) of the university (Q13 = Yes) – 34 cases.

None of the patterns identified raised contradictory statements, as it would be the combination of two negative statements, where neither the library would have had the main role in the LWS management (Q14 = No) nor any other unit(s) of the university would have had involvement in LWS management (Q13 = No).

Table A1.9: Cases’ profile control – Q13 & Q14

Q14	Q13	Sum of cases
No	Yes	3
Yes	No	9
	Yes	34
Total sum of cases		46
<p><u>Keys:</u> Q14: Question 14. “Taking into account to the above answers, has the library the main role for the management of the LWS?” Q13: Question 13. “Are there other (e.g. other unit within the university) who are involved in the LWS management?”</p>		

Control 2: The role of library on the LWS management and library's involvement in decision making and organising

All most all Libraries (43 of the 46 cases) stated that they had the main role in the management of the LWS (Q14). This statement was cross-checked with the related statements of the grouping sub-questions of Q12 about the involvement of the library in the managerial aspects of decision-making about the LWS content (Q12.a), the LWS design (Q12.b), the LWS budget (Q12.d) and about the involvement in the leading and controlling the LWS development procedure (Q12.c). The data from the Question 13 about the possible involvement in LWS management by others provided addition information for better understanding of the examined elements' relation. From the identified combinations (see below, Table A1.10) two groups of cases raised question for further lookout:

- I.** One case (with ID 167): library which had involvement in three of the four managerial aspects, but stated that it did not have the main role in the LWS management.
- II.** Question and need for further check was raised for the 6 cases (with ID 31, 86, 138, 142, 154, and 170): Libraries who had involvement only in the decisions about the LWS content (Q12a) and stated that they had the main role in the LWS management.

Table A1.10: Cases' profile control – Q12 & Q14

Q14	Q13	Q12.a	Q12.c	Q12.b	Q12.d	Sum of cases	Groups for lookout				
No	Yes	Yes	No	No	No	2					
			Yes	Yes	No	1	I				
Yes	No	Yes	Yes	Yes	No	2					
					Yes	7					
	Yes	Yes	Yes	No	No	No	6	II			
					Yes	No	3				
				Yes	Yes	Yes	Yes	Yes	3		
								No	No	1	
								No	No	6	
									Yes	15	
Grand total						46	7 cases				
<p><u>Keys:</u> Q14: Question 14: "Taking into account the above answers, has the library the main role for the management of the LWS?" Q13: Question 13. "Are there other (e.g. other unit within the university) who are involved in the LWS management?" Provided statements for the Question 12: "In which of the following managerial aspects of the LWS is the library involved?" Q12.a: "Decisions about the LWS content" Q12.b: "Decisions about the LWS design" Q12.c: "Leading and controlling the LWS development procedure (content and design)" Q12.d: "Budget for the LWS development procedure (content and design)"</p>											

Control 3: Leading & Organising by the library and staff worked for the LWS development and maintenance

The control of the statements per case given about the involvement of the library in the leading and organising with combination the staff worked for the LWS brought out two cases for lookout with id 167 and 61 (see below, Table A1.11). In the one case (with id: 167), the library did not have the main role for the LWS management (Q14), but at the same time the library was involved and responsible for the leading and controlling of the LWS development and maintenance (Q12.c & Q25) and the staff worked for the LWS belonged only to the library (Q22). In the second case (with id: 61), the library had the main role for the LWS management (Q14) and it was involved in (Q12.c), but not responsible (Q25) for the leading and controlling of the LWS development and maintenance and none member of library staff worked for the LWS (Q22).

Table A1.11: Cases' profile control – Q12.c & Q22

Q14	Q12.c	Q25	Q22 (coded)	Sum of cases	Groups for lookout
No	No	No	MIXED STAFF	1	
			NON LIBRARY STAFF	1	
	Yes	Yes	ONLY LIBRARY STAFF	1	✓
Yes	No	No	MIXED STAFF	1	
		Yes	MIXED STAFF	4	
			ONLY LIBRARY STAFF	2	
	Yes	No	NON LIBRARY STAFF	1	✓
		Yes	MIXED STAFF	8	
			ONLY LIBRARY STAFF	27	
Grand total				46	2 cases
<p><u>Keys:</u> Q14: Question 14: "Taking into account the above answers, has the library the main role for the management of the LWS?" Provided statements for the Question 12: "In which of the following managerial aspects of the LWS is the library involved?" Q12.c: "Leading and controlling the LWS development procedure (content and design)" Q25: Question 25: "Is the library responsible for the organisation of the work for the LWS development and maintenance?" Q22 (coded): staff worked for the LWS development and maintenance: - mixed staff: belonged to the library and other unit(s) of the university - non library staff: belonged only to other unit(s) of the university (not to the Library) - only library staff: belonged only to the Library</p>					

Control 4: The involvement in LWS management by other university unit/s and the staff worked for the LWS development and maintenance

A further investigation focused on the Q13 took place examining whether there was the contradictory combination of statements Q13 = No and Q22 = "Non library staff". In other words, the examination aimed to find out whether any case stated that there was not any member of library staff worked for the LWS development and maintenance and at the same time only library was involved in the LWS management. Nevertheless, the data from the question 7 about the hosting of the LWS used to check the potential impact of an outsource Internet Service Provider (ISP) in staffing. The results (see below, Table A1.12) showed that there was none contradictory or questioning case as regards the specific investigation.

Table A1.12: Cases' profile control – Q13 & Q22

Q22 (coded)	Q13	Q14	Q7 The LWS is hosted on server/s of:	Sum of cases
MIXED STAFF	Yes	No	an outsourcing Internet Service Provider (ISP)	1
		Yes	other unit within the university	12
			the Library	1
NON LIBRARY STAFF	Yes	No	other unit within the university	1
		Yes	other unit within the university	1
ONLY LIBRARY STAFF	No	Yes	other unit within the university	4
			of the Library	5
	Yes	No	of an outsourcing Internet Service Provider (ISP)	1
		Yes	of other unit within the university	15
			of the Library	5
Grand total				46
<p><u>Keys:</u> Q22 (coded): staff worked for the LWS development and maintenance: - mixed staff: belonged to the library and other unit(s) of the university - non library staff: belonged only to other unit(s) of the university (not to the Library) - only library staff: belonged only to the Library Q13: Question 13. "Are there other (e.g. other unit within the university) who are involved in the LWS management?" Q14: Question 14: "Taking into account the above answers, has the library the main role for the management of the LWS?" Q7: Question 7: "Where is the LWS hosted?"</p>				

The absent of any statement related to potential impact of an outsourcing Internet Service Provider (ISP) in staffing guided to an investigation on hosting as an essential element for the LWS development and maintenance, which is connected with the management of sources (staff and equipment), but as well with the procedure of publishing. The element was examined with the data about staff worked regularly for the LWS development and maintenance (Q22) taking into account the LWS management authority status (Q13 & Q14). The investigation focused mainly on the cases which hosted the LWS on server(s) of other unit within the university and of an outsourcing ISP and these cases were about the 75% of the total sample (34 cases of the total 56). The cross-tabulation (see below, Table A1.13) brought out a question for 20 cases, which stated that only staff belonged to the library worked regularly for the LWS, but they have not mentioned in the Question 22 at least the staff worked on the hosting, when the hosting was not on library's server(s); especially for one case of them, in which only the library had the LWS management authority (Q13 = No; Q14 = Yes).

Table A1.13: Cases' profile control – Q7 & Q22

Q7	Q13	Q13.1	Q14	Q22 (coded)	Q22.b (coded)	Question on Q22	Sum of cases		
c	Yes	Marketing	No	Mixed staff	Marketing	No	1		
				Only library staff	NA	Yes	1		
b	No	NA	Yes	Only library staff	NA	Yes	4		
				IT	Yes	Mixed staff	IT	No	5
						Non library staff	IT	No	1
	Only library staff	NA	Yes			11			
	Yes	Marketing	Yes	Mixed staff	Learning	No	1		
					Marketing	No	2		
					no given details	No	1		
					IT	No	1		
				Only library staff	NA	Yes	2		
				Marketing - IT	No	No	Non library staff	IT	No
	Yes	Mixed staff	Marketing - IT				No	1	
Only library staff	NA	Yes	2						
a	No	NA	Yes	Only library staff	NA	No	5		
				Marketing	Yes	Mixed staff	Marketing - IT - Off Campus support	No	1
	Only library staff	NA	No			4			
	Yes	IT	Yes	Only library staff	NA	No	1		
Grand total							46		

Keys:

Q7: Question 7: "Where is the LWS hosted?"

The LWS is hosted on server/s of:

- a. the Library
- b. other unit within the university
- c. an outsourcing Internet Service Provider (ISP)

Q13: Question 13. "Are there other (e.g. other unit within the university) who are involved in the LWS management?"

Q13.1: Question 13.1. space for details when the Q13 = Yes

Q14: Question 14: "Taking into account the above answers, has the library the main role for the management of the LWS?"

Q22.b (coded): coded details given for the Question 22.b, when the option was checked

Control 5: Controlling & Monitoring and existence of library’s staff worked for the LWS development and maintenance

The statements about the LWS performance measurements and monitoring controlling given through the question 16 were examined per case taking into account the existence or not of library’s staff worked for the LWS development and maintenance (Q22.a) and the library’s role in the LWS management (Q14), but as well its responsibility for the organisation of the work for the LWS development and maintenance (Q25). The cross-tabulation (see, Table A1.14) brought out one case (id: 61) for further lookout. In that case the library carried out controlling activities (Q16 = Yes) and at the same time it had the main role for the LWS management (Q14 = Yes), without having the responsibility for the managerial group of activities in organizing (Q25 = No) and any member of the library staff did not take part in the LWS development and maintenance (Q22.a = No).

Table A1.14: Cases’ profile control – Q16 & Q22.a

Q14	Q16	Q22.a	Q25	Sum of cases	Groups for lookout
No	NA	No	No	1	
		Yes	No	1	
			Yes	1	
Yes	No	Yes	No	1	
			Yes	19	
	Yes	No	No	1	✓
		Yes	Yes	22	
Grand total				46	1 case
<p><u>Keys:</u> Q14: Question 14: “Taking into account the above answers, has the library the main role for the management of the LWS?” Q16: Question 16. “Are there LWS performance measurement and monitoring processes?” Q22: option for the Question 22: For the LWS development & maintenance the staff belonged to the Library Q25: Question 25: “Is the library responsible for the organisation of the work for the LWS development and maintenance?”</p>					

Control 6: Decision making by the library about the LWS design and existence of library policies on LWS design

The cross-tabulation of the given statements related to the library’s involvement in the decision making about the LWS design (Q12.b) and the development by the library of policies covered aspects and issues for the LWS (Q18.1a) design pointed out one group of cases for further lookout (see, Table A1.15). The cases with id 39, 86, 138 and 154 stated that the library has developed policies covering issues for the LWS design and construction, but it was not involved in the decision making about this issue. The case with id 167 has already been marked above as a case for lookout as within and this cross-tabulation there is question about the logical relation between the statements about library’s involvement in decision making and library’s role in LWS management (in the table is marked with asterisk).

Table A1.15: Cases’ profile control – Q12.b & Q18.a

Q12.b	Q14	Q18	Q18.1a	Sum of cases	Groups for lookout	
No	No	NA	NA	2		
	Yes	No	NA	6		
		Yes	No	No	2	
			Yes	Yes	4	✓
Yes	No	NA	NA	1	*	
	Yes	No	NA	10		
		Yes	No	No	1	
			Yes	Yes	20	
Grand total				46	4 cases	

Notes:

* case with id 167: question for the combination of statements in Q12 & Q14

Keys:

Provided statements for the Question 12: “In which of the following managerial aspects of the LWS is the library involved?”

Q12.b: “Decisions about the LWS design”

Q14: Question 14: “Taking into account the above answers, has the library the main role for the management of the LWS?”

Q18: Question 18. “Has the library developed specialised policies for the LWS?”

Q18.1a option of the Question 18.1 – Specialised policies for the LWS developed by the Libraries covering the subject/issue of LWS design and construction

Control 7: Planning and mission statement for the LWS

The existence of LWS mission statement (Q8) was examined (see, Table A1.16) with the statement about the existence or not of planning processes by the library (Q15). The aspect of library's involvement in the decision making about the LWS content, which is strongly related to the role of LWS, was not added in the cross-tabulation because for all cases positive statement (Q12.a = Yes) was given. From the three cases stated that there was mission statement for the LWS (Q8 = Yes), one case with id **66** raised question as the respondent stated that there were not planning processes by the library (Q15 = No). A further check showed that this case was the only for which it was not filled in the question 8.1 with the content of the mission statement.

Table A1.16: Cases' profile control – Q8 & Q15

Q14	Q15	Q8	Sum of cases	Groups for lookout
No	NA	No	3	
Yes	Don't know	No	1	
	No	No	8	
		Yes	1	✓
	Yes	Don't know	1	
		No	30	
		Yes	2	
Grand total			46	1 cases
<p><u>Keys:</u> Q14: Question 14: "Taking into account the above answers, has the library the main role for the management of the LWS?" Q15: Question 15. "Is there an LWS planning process?" Q8: Question 8. "Is there a mission statement for the LWS?"</p>				

Control 8: Financial decision making and planning

The statement about the existence of annual budget for the LWS development and maintenance (Q20) was checked with the element of library's involvement in the budget for the LWS development procedure (Q12.d). The patterns derived from the cross-tabulation (see below, Table A1.17) did not bring out any group of case for lookout, as all Libraries having annual budget were involved as well in the related managerial activity.

Table A1.17: Cases' profile control – Q20 & Q12.d

Q14	Q12.d	Q20	ID case
No	No	NA	3
Yes	No	No	18
	Yes	Don't know	2
		No	19
		Yes	4
Grand total			46
<p><u>Keys:</u> Q13: Question 13: "Are there others (e.g. other unit within the university) who involved in the LWS management?" Provided statements for the Question 12: "In which of the following managerial aspects of the LWS is the library involved?" Q12.d: "Budget for the LWS development procedure (content and design)" Q20: Question 20. "Is there an annual budget for LWS development and maintenance?"</p>			

Control 9: Sum of the members of library staff and sum of members of library staff worked for the LWS development and maintenance

The figures given from the 44 cases stated that there were members of library's staff worked for the LWS development and maintenance (Q22.a) were checked with the respective figures given for the total library's staff (Q4). Three cases did not provide number of staff, but they gave descriptive answers like "all librarians" or "many librarians", were excluded from the control, as well as another three cases for which the responded did not answer the question about the library's staff (Q4). The control of the 38 final cases did not show any contradictory figure, as it would be if the sum of members of library's staff worked for the LWS was greater than the sum of library's staff in total.

Appendix I.13: Research sample

Related section: 3.4.2.5

The final research sample, after the control of the questionnaire, was 45 LWS cases (30%) of the total survey sample (see, Table A1.18). The cases by geographical sampling units were 38 (83%) English cases and 8 (17%) Scottish cases.

Table A1.18: Research sample and its geographical profile

Country	Research sample	Sum
England	38 (83%)	46 (30%)
Scotland	8 (17%)	
Grand total:	46 (100%)	149 (100%)

Appendix I.14: Research sample grouped by parent institution type

Related section: 4.1

Table A1.19: Research sample: grouping of parent institutions

University Group	University	Sum
other pre-1992 universities	City University, London	14
	Cranfield University	
	Goldsmiths	
	Heriot-Watt University	
	Keele University	
	Lancaster University	
	School of Oriental and African Studies	
	University of Aberdeen	
	University of Dundee	
	University of East Anglia	
	University of Leicester	
	University of Reading	
	University of Stirling	
University of Sussex		

University Group	University	Sum
post 1992 universities	Bishop Grosseteste University College Lincoln	18
	Canterbury Christ Church University	
	Coventry University	
	Edge Hill University	
	Kingston University	
	Leeds Trinity and All Saints	
	London South Bank University	
	Queen Margaret University	
	Robert Gordon University	
	University of Cumbria	
	University of Derby	
	University of East London	
	University of Greenwich	
	University of Huddersfield	
	University of Plymouth	
	University of Teesside	
	University of the West of England, Bristol	
	York St John University	
	Russell Group	
Queen Mary, University of London		
The University of Birmingham		
University of Bristol		
University of Edinburgh		
University of Glasgow		
University of Southampton		
specialist institutions	Leeds College of Music	9
	Royal Agricultural College	
	Royal College of Music	
	Royal Northern College of Music	
	The Glasgow School of Art	
	Trinity Laban	
	University College for the Creative Arts at Canterbury, Epsom, Farnham, Maidstone and Rochesters	
	University of the Arts London	
	Writtle College	
Grand Total		48

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Appendix II. Interviews

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Appendix II.1: Interviews – email (call for participation)

Related section: 3.4.6, 3.4.6.5 & 3.4.6.9

Subject: Call for participation

Dear Mrs./ Mr. (the specific name of the contact person)

I am the research student currently working on my PhD in the Department of Information and Communication at Manchester Metropolitan University (MMU), for whom you completed in and sent back a survey questionnaire about the management of library web sites last (the specific month and the date).

Once more, I would like to thank you for your participation in the survey and for providing contact details for further information. With this e-mail I would like to call you for participation in the next stage of my study, which consists of interviews. The interview should take approximately 30 minutes and its content will be an open discussion on issues derived from the survey's results. The information provided will be treated according to the ethical policy of the MMU (<http://www.red.mmu.ac.uk/>). Naturally, your identity as person, as well as institution, will be confidential, and you can end the interview at any time. The results will be presented with the use of a code name (e.g. Interviewee 1). The schedule and the content of the interview will be sent to you before the prearranged interview. For any questions, please contact with me directly.

Please, let me know within next days whether you be willing to take part and make an appointment for an interview at convenient date and time for you within the period from to The interview can be conducted in your place of work or it can be conducted by telephone. Your participation will be greatly appreciated.

Thank you in advance,

Ioanna Zorba
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Appendix II.2: Accompanying Memo (sent by post) and Consent form

Related section: 3.4.6, 3.4.6.9

MEMO

TO:

FROM: IOANNA ZORBA

SUBJECT: CONSENT FORM

DATE:

The present memo accompanies the ethical consent form for the prearranged interview with the research Ioanna Zorba.

Please, read the information of the consent form, sign it and post it back using the prepaid envelope to the address is printed on it.

RESEARCHER'S DETAILS:

Ioanna Zorba
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Tel.: 07828067306

Skype name: iazorba

CONSENT FORM

I have volunteered/agreed to participate in a research project, where I understand that the purpose of this study is to investigate the management of library web site by British academic libraries.

My participation in the study will involve interview with the researcher Ioanna Zorba, PhD student of Manchester Metropolitan University.

I have been informed that any questions I have about the interview will be answered by the researcher (Ioanna Zorba).

I understand that the issue of confidentiality will be addressed – names will be changed to ensure anonymity and workplace identity will be concealed. The PhD thesis and any academic papers consequently will be written carefully to ensure the identity of participants is not revealed. I understand that information provided by me will only be accessed by Ioanna Zorba.

I have been made aware of my right to withdraw my participation at any time without objection.

I have read the above information. The purpose of the study has been explained to me and I agree to participate.

Name

Signature

Date:

Appendix II.3: Introduction of interview (before recording)

Related section: 3.4.6, 3.4.6.9

- Greet and verify the identity of the person interviewed
- Introduce interviewer (name and university)
- Thank and note the importance of interviewee's participation

For the telephone interviews:

- verify the quality of sound
- clarify that the discussion was not recorded
- Verify that the interviewee has looked through the interview's schedule-content sent before the prearranged meeting¹.
- Ask interviewee if he/she want to make any question about the interview's procedure
- Remind some points on the interview's process (interview's purpose, interviewee's authority to stop any time the interview and confidentiality issues)
- Ask interviewee to sign the consent form (for the in-person interviews)
- Ask interviewee's permission to record the interview and mention that recorder will be turned off at any stage interviewee will wish so.
- Ask permission to proceed with the interview

¹ In case, that the interviewee would not had read the interview's schedule-content, the researcher was prepared to provide a spare copy to the interviewee or to send it via e-mail (for the telephone interviews), presenting orally the framework and the term definitions (see, pp. 1 & 2 of Interview schedule and content). However, this steps never used because all the interviewees were aware of the interview schedule. In addition for the telephone interviews, the researcher verified whether the interviewee had received the letter with the consent form.

Appendix II.4: Interview schedule (Group: Only library authority)

Related section: 3.4.6, 3.4.6.2 & 3.4.6.4

INTERVIEW SCHEDULE

ISSUES IN MANAGEMENT OF LIBRARY WEB SITES IN UK ACADEMIC LIBRARIES

RESEARCHER'S DETAILS:

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Manchester 2009

INTERVIEW FRAMEWORK

- The purpose of this interview is to discuss some issues derived from the survey's¹ results on the library web site management.
- Criteria of selection: Your library was selected, taking into account the permission of contact for further information, as one of the cases, for which it was stated that the library had sole authority of its LWS management. Based on this particularity the related results will be presented for discussion.
- The interviewee will be asked to express his/her opinion upon the results, taking into account his/her experience in the academic libraries, emphasising the reasons affect the practice was reported.
- Length: The interview will take about 30 minutes to complete.
- Procedure: The interview will cover three (3) subject areas (see, pp. 3-5). For each one a brief synopsis of related survey's results is given, from which the discussion will begin.
- For the purposes of the study, some specific terms will be used with specific content, which is given below (see, p. 2)
- The interview can be stopped any time by the interviewee.
- The identity of the interviewee and the institution for which he/she works will be confidential. At no time, will the information provided be associated with personal details (name or institution). In the results presented in the PhD thesis and in any academic papers the interviewee will be referred with a numeral ID (e.g. Interviewee 1) and the name of institution will be concealed.
- The information provided will be treated according to the ethical policy of the MMU (<http://www.red.mmu.ac.uk/>).
- Permission will be asked for recording of the interview. The reason for recording the interview is the achievement of high objectivity for the analysis, but as well as for time management purposes (detailed notes will be not needed to be written by the researcher).
- The interviewee will be asked to express freely any questions about the interview, to which the researcher will answer.

¹ The research study aims to examine the managerial operations for the library web site development and maintenance taken place within the academic library practice and to investigate the correlation between management frameworks and the final outcomes (end uses) of the library web sites. For the needs of the study a questionnaire survey carried out during the period April-June 2008.

DEFINITION OF TERMS

For the purposes of the study, some specific terms will be used with specific content:

Library: any organisational unit providing library services to the particular university (e.g. Library, Information Services, Learner Support Services, Library and Learning Resource etc).

Library web site (LWS): the official presence of/for the “Library” on the Web; the sub-site or the web pages of the official web site of Library’s parent institution.

Management of library web site: the managerial activities, which are undertaken for the development and maintenance of the library web site. These activities are grouped as:

- A. Planning activities are determined as: 1) Decision making about the LWS’s aims and the objectives, plans, policies, content of the LWS, development (design) specifications for its publication mean, sources required in staffing, hardware and software, budget, working structuring and 2) Marketing.
- B. Organising activities are determined as organisation and coordination of tasks and the sources needed to carry them out, according to the planning specifications.
- C. Motivating activities are determined as leading the members of library staff, who work for the LWS development and maintenance. One relevant aspect is the training and skills development of library staff on issues about this field of work.
- D. Controlling activities are determined as measuring progress and performance, reporting errors and correcting deviations.

PART I: MANAGERIAL ACTIVITIES BY THE LIBRARY

Brief synopsis of survey's results:

For the libraries having the responsibility of their LWS management:

- The general managerial frame of activities which libraries undertook for their LWS covered - for most of the cases - planning, organising, motivating and controlling. However, in a small percentage of cases the activities especially of controlling were not undertaken.

- For the majority of the libraries official stated procedures and work schedules and an annual budget for the LWS development and maintenance were not reported.

- Marketing processes and development of specialised policies for the LWS in particular areas (e.g. design and copyright issues) were reported in most of the cases.

Question: In your opinion can this practice be considered as characteristic for the general Library management practice as regards the other functions/sections as well?

- [If not] Which reasons do you think affect to the formulation of this management practice for the LWS?

PART II: ORGANISING/LEADING ASPECT AND STAFFING

Brief synopsis of survey's results:

For the libraries having the responsibility of their LWS management:

- The leading-organising responsibility was mostly based on one member of the management team, whose duties were not in nearly all cases sole on the LWS.
- The members of library staff were working on the LWS employed by the library. In most of the cases they had additional duties except from those related with the LWS. In the few cases found members of library staff worked solely on the LWS, there was no case for which that staff composed an entire team/unit.

In other words, the activities of LWS management, development and maintenance were not sole responsibility of a section of the library organisation.

Question: In your opinion which factors have impacted on the shaping of this practice?

Question: Do you consider this practice as common for other library activities-functions too?

- o [If not] Why do you think this happen?

Only if applicable for the case

Question: Do you consider that the management of sources (equipment – human resources) and/or the whole publishing procedure can be impacted in any particular way by the hosting of the LWS on server(s) of other unit(s)?

PART III: USES OF LIBRARY WEB SITES

Brief synopsis of survey's results:

The LWS was found to be used almost exclusively as a tool for the provision:

- of electronic library and information services;
- of information about services and facilities hosted locally in the building/s of the Library and;
- of information about the character and the operation of the Library as an organisation.

In only a few cases additional uses were found, such as for provision of:

- intranet for the Library staff;
- collection development functions and;
- information about library's commercial activities.

Question: Which factors do you consider impact upon the decision making about the content development of the library web site?

Alphabetic list of possible factors:

- Financial sufficiency / budget
- Library's human resources management policy
- Library's planning
- Staff's existence of skills
- Staffing' sufficiency
- Technological capabilities
- University's policy

- Other?

ADDITIONAL INFORMATION

Question: Do you have anything else to add, or any other comments to make in any of the above subjects that we discussed?

Thank you, once more, for your participation in the interview. The data (information) provided by you will be very important for the investigation of the management of library web sites within the British academic libraries and very helpful to complete my study.

Appendix II.5: Interview schedule (Group: Shared authority)

Related section: 3.4.6, 3.4.6.2 & 3.4.6.4

INTERVIEW SCHEDULE

ISSUES IN MANAGEMENT OF LIBRARY WEB SITES IN UK ACADEMIC LIBRARIES

RESEARCHER'S DETAILS:

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Manchester 2009

INTERVIEW FRAMEWORK

- The purpose of this interview is to discuss some issues derived from the survey's¹ results on the library web site management.
- Criteria of selection: Your library was selected, taking into account the permission of contact for further information, as one of the cases, for which it was stated that other unit(s) within the university was/were involved in the management of the library web site except from the library. Based on this particularity the related results will be presented for discussion.
- The interviewee will be asked to express his/her opinion upon the results, taking into account his/her experience in the academic libraries, emphasising the reasons affect the practice was reported.
- Length: The interview will take about 30 minutes to complete.
- Procedure: The interview will cover three (3) subject areas (see, pp. 3-5). For each one a brief synopsis of related survey's results is given, from which the discussion will begin.
- For the purposes of the study, some specific terms will be used with specific content, which is given below (see, p. 2)
- The interview can be stopped any time by the interviewee.
- The identity of the interviewee and the institution for which he/she works will be confidential. At no time, will the information provided be associated with personal details (name or institution). In the results presented in the PhD thesis and in any academic papers the interviewee will be referred with a numeral ID (e.g. Interviewee 1) and the name of institution will be concealed.
- The information provided will be treated according to the ethical policy of the MMU (<http://www.red.mmu.ac.uk/>).
- Permission will be asked for recording of the interview. The reason for recording the interview is the achievement of high objectivity for the analysis, but as well as for time management purposes (detailed notes will be not needed to be written by the researcher).
- The interviewee will be asked to express freely any questions about the interview, to which the researcher will answer.

¹ The research study aims to examine the managerial operations for the library web site development and maintenance taken place within the academic library practice and to investigate the correlation between management frameworks and the final outcomes (end uses) of the library web sites. For the needs of the study a questionnaire survey carried out during the period April-June 2008.

DEFINITION OF TERMS

For the purposes of the study, some specific terms will be used with specific content:

Library: any organisational unit providing library services to the particular university (e.g. Library, Information Services, Learner Support Services, Library and Learning Resource etc).

Library web site (LWS): the official presence of/for the “Library” on the Web; the sub-site or the web pages of the official web site of Library’s parent institution.

Management of library web site: the managerial activities, which are undertaken for the development and maintenance of the library web site. These activities are grouped as:

- A. Planning activities are determined as: 1) Decision making about the LWS’s aims and the objectives, plans, policies, content of the LWS, development (design) specifications for its publication mean, sources required in staffing, hardware and software, budget, working structuring and 2) Marketing.
- B. Organising activities are determined as organisation and coordination of tasks and the sources needed to carry them out, according to the planning specifications.
- C. Motivating activities are determined as leading the members of library staff, who work for the LWS development and maintenance. One relevant aspect is the training and skills development of library staff on issues about this field of work.
- D. Controlling activities are determined as measuring progress and performance, reporting errors and correcting deviations.

**PART I: AUTHORITY OVER LWS MANAGEMENT & MANAGERIAL ACTIVITIES BY
THE LIBRARY**

For the group of cases, in the management of the LWS there was involvement by the library and other unit(s) with the university.

Question: In your opinion which factors have impacted on the shaping of this practice for the LWS management?

Question: Does this involvement affect the managerial activities undertaken by the library?

- [If yes] With which ways?

Question: Do you consider this involvement in LWS management as common practice for other library activities-functions too?

- [If not] Why do you think this happen?

Question: In your opinion the managerial activities undertaken by the Library for the LWS can be considered as characteristic for the general Library management practice as regards the other functions/sections as well?

- [If not] Which reasons do you think affect to the formulation of this management practice for the LWS?

PART II: ORGANISING/LEADING ASPECT AND STAFFING

Brief synopsis of survey's results:

For the group of cases, in the management of the LWS there was involvement by the library and other unit(s) with the university:

- The leading-organising responsibility was mostly based on one member of the management team, whose duties were not in nearly all cases sole on the LWS.
- The members of staff working on LWS employed either only by the Library or by the Library and other unit(s) within the university. In most of the cases the duties of library's staff were not sole on the LWS.
- There were few cases for which some of the library's staff worked on the LWS had only duties related with the LWS composing a team within a wider section of the service. However, the activities of LWS management, development and maintenance were not sole responsibility of a section of the library organisation.

Question: In your opinion which factors have impacted on the shaping of this practice?

Question: Do you consider this practice as common for other library activities-functions too?

- o [If not] Why do you think this happen?

Only if applicable for the case

Question: Do you consider that the management of sources (equipment – human resources) and/or the whole publishing procedure can be impacted in any particular way by:

- the existence of staff working on the LWS employed by other unit than library and/or
- the hosting of the LWS on server(s) of other unit(s)

PART III: USES OF LIBRARY WEB SITES

Brief synopsis of survey's results:

The LWS was found to be used almost exclusively as a tool for the provision:

- of electronic library and information services;
- of information about services and facilities hosted locally in the building/s of the Library and;
- of information about the character and the operation of the Library as an organisation.

In only a few cases additional uses were found, such as for provision of:

- intranet for the Library staff;
- collection development functions and;
- information about library's commercial activities.

Question: Which factors do you consider impact upon the decision making about the content development of the library web site?

Alphabetic list of possible factors:

- Financial sufficiency / budget
- Library's human resources management policy
- Library's planning
- Staff's existence of skills
- Staffing' sufficiency
- Technological capabilities
- University's policy

- Other?

ADDITIONAL INFORMATION

Question: Do you have anything else to add, or any other comments to make in any of the above subjects that we discussed?

Thank you, once more, for your participation in the interview. The data (information) provided by you will be very important for the investigation of the management of library web sites within the British academic libraries and very helpful to complete my study.

Appendix II.6: Interview schedule (Group: Non library authority)

Related section: 3.4.6, 3.4.6.2 & 3.4.6.4

INTERVIEW SCHEDULE

ISSUES IN MANAGEMENT OF LIBRARY WEB SITES IN UK ACADEMIC LIBRARIES

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Manchester 2009

INTERVIEW FRAMEWORK

- The purpose of this interview is to discuss some issues derived from the survey's¹ results on the library web site management.
- Criteria of selection: Your library was selected, taking into account the permission of contact for further information, as one of the cases, for which it was stated that the library did not have the main role in its web site management. Based on this particularity the related results will be presented for discussion.
- The interviewee will be asked to express his/her opinion upon the results, taking into account his/her experience in the academic libraries, emphasising the reasons affect the practice was reported.
- Length: The interview will take about 30 minutes to complete.
- Procedure: The interview will cover three (3) subject areas (see, pp. 3-5). For each one a brief synopsis of related survey's results is given, from which the discussion will begin.
- For the purposes of the study, some specific terms will be used with specific content, which is given below (see, p. 2)
- The interview can be stopped any time by the interviewee.
- The identity of the interviewee and the institution for which he/she works will be confidential. At no time, will the information provided be associated with personal details (name or institution). In the results presented in the PhD thesis and in any academic papers the interviewee will be referred with a numeral ID (e.g. Interviewee 1) and the name of institution will be concealed.
- The information provided will be treated according to the ethical policy of the MMU (<http://www.red.mmu.ac.uk/>).
- Permission will be asked for recording of the interview. The reason for recording the interview is the achievement of high objectivity for the analysis, but as well as for time management purposes (detailed notes will be not needed to be written by the researcher).
- The interviewee will be asked to express freely any questions about the interview, to which the researcher will answer.

¹ The research study aims to examine the managerial operations for the library web site development and maintenance taken place within the academic library practice and to investigate the correlation between management frameworks and the final outcomes (end uses) of the library web sites. For the needs of the study a questionnaire survey carried out during the period April-June 2008.

DEFINITION OF TERMS

For the purposes of the study, some specific terms will be used with specific content:

Library: any organisational unit providing library services to the particular university (e.g. Library, Information Services, Learner Support Services, Library and Learning Resource etc).

Library web site (LWS): the official presence of/for the “Library” on the Web; the sub-site or the web pages of the official web site of Library’s parent institution.

Management of library web site: the managerial activities, which are undertaken for the development and maintenance of the library web site. These activities are grouped as:

- A. Planning activities are determined as: 1) Decision making about the LWS’s aims and the objectives, plans, policies, content of the LWS, development (design) specifications for its publication mean, sources required in staffing, hardware and software, budget, working structuring and 2) Marketing.
- B. Organising activities are determined as organisation and coordination of tasks and the sources needed to carry them out, according to the planning specifications.
- C. Motivating activities are determined as leading the members of library staff, who work for the LWS development and maintenance. One relevant aspect is the training and skills development of library staff on issues about this field of work.
- D. Controlling activities are determined as measuring progress and performance, reporting errors and correcting deviations.

**PART I: AUTHORITY OVER LWS MANAGEMENT & MANAGERIAL ACTIVITIES BY
THE LIBRARY**

For the group of cases that library did not have the main role in the management of its LWS.

Question: In your opinion for which reasons a Library may not have the main role in the management of its web site?

Question: Do you consider this involvement in LWS management as common practice for other library activities-functions too?

- [If not] Why do you think this happen?

PART II: ORGANISING/LEADING ASPECT AND STAFFING

Brief synopsis of survey's results:

For the group of cases that the library did not have the main role in its web site management:

- For almost all the cases, the library was not responsible for the leading-organising. In the cases that the library undertook these managerial activities there was one member of management team responsible for organising the work on the LWS.
- For most of the cases there was library's staff worked on the LWS development and maintenance solely or having other duties as well.
- The activities of LWS management, development and maintenance were not sole responsibility of a section of the library organisation.
- It was noticeable that the hosting on server(s) of an outsource Internet Service Provider was common place for most of the libraries.

Question: In your opinion which factors impacted on the shaping of this practice?

Question: Do you consider this practice as common for other library activities-functions too?

- o [If not] Why do you think this happen?

Only if applicable for the case

Question: Do you consider that the management of sources (equipment – human resources) and/or the whole publishing procedure can be impacted in any particular way by:

- the existence of staff working on the LWS employed by other unit than library and/or
- the hosting of the LWS on server(s) of other unit(s) or of an outsource Internet Service Provider (ISP)

PART III: USES OF LIBRARY WEB SITES

Brief synopsis of survey's results:

The LWS was found to be used almost exclusively as a tool for the provision:

- of electronic library and information services and;
- of information about services and facilities hosted locally in the building/s of the Library

Question: Which factors do you consider impact upon the decision making about the content development of the library web site?

Alphabetic list of possible factors:

- Financial sufficiency / budget
- Library's human resources management policy
- Library's planning
- Staff's existence of skills
- Staffing' sufficiency
- Technological capabilities
- University's policy

- Other?

ADDITIONAL INFORMATION

Question: Do you have anything else to add, or any other comments to make in any of the above subjects that we discussed?

Thank you, once more, for your participation in the interview. The data (information) provided by you will be very important for the investigation of the management of library web sites within the British academic libraries and very helpful to complete my study.

Appendix II.7: Demographic analysis of interviewees

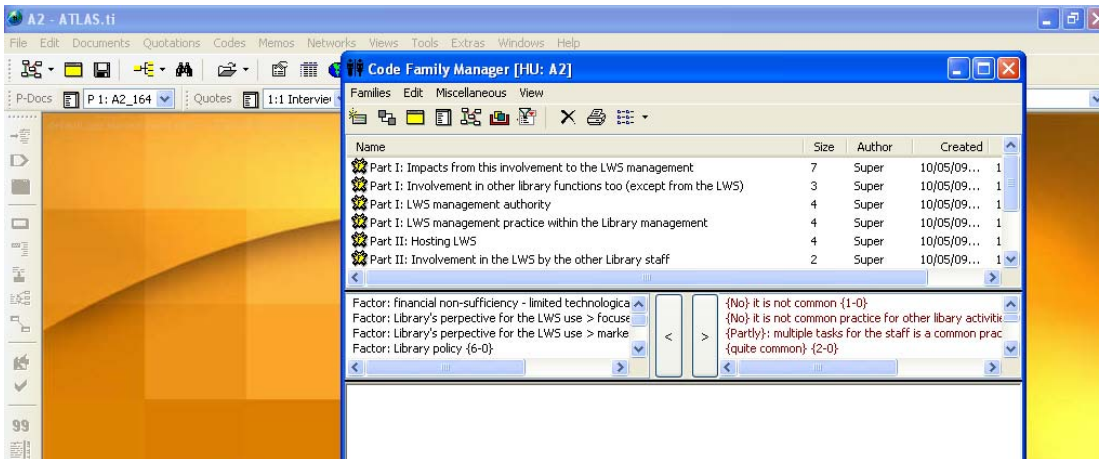
Related section: 3.4.6.8

Interviewee ID	Group	Country
Interviewee1	Only library authority	ENGLAND
Interviewee2	Only library authority	ENGLAND
Interviewee3	Only library authority	ENGLAND
Interviewee4	Only library authority	ENGLAND
Interviewee5	Shared authority	ENGLAND
Interviewee6	Shared authority	ENGLAND
Interviewee7	Shared authority	SCOTLAND
Interviewee8	Shared authority	ENGLAND
Interviewee9	Shared authority	ENGLAND
Interviewee10	Shared authority	ENGLAND
Interviewee11	Shared authority	ENGLAND
Interviewee12	Shared authority	ENGLAND
Interviewee13	Shared authority	ENGLAND

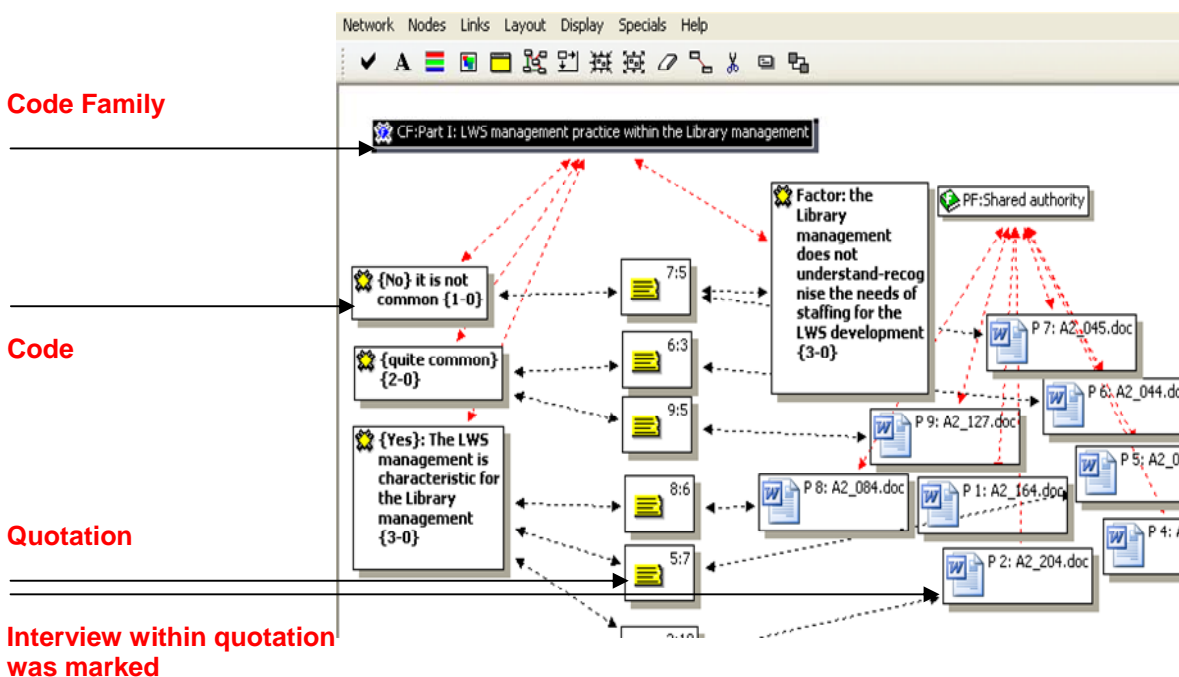
Appendix II.8: Demonstration of primary results of interviews analysis

Related section: 3.4.6.10

Screen shot with the window of Code Families, which referred to the questions posed or to new issues raised during interviews. Each Code Family (question/issue) was linked with codes.



Screen shot with the window of a network view (example): Question set in the first part of interviews. The question (Code Family) is linked with coded messages (Codes) derived from data (see, Quotations). The Quotations were linked with codes and with the documents-interviews, from where they were marked.



Appendix III. Quantitative data collection methods: results

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Appendix III.1: Descriptive survey¹

Related section: 3.4.2 & 4.2

Section 1: Information about the Library (Questions 1-4)

Question 1.a “Title of the university”: All 45 respondents answered the question. The data was cross-checked with the collected data for the needs of the compilation of Libraries’ list (see, section 3.4.2.2-d), the respondents’ e-mail address and the data of the Question 5 “Home page of LWS”. The cross-checked showed that there was not controversy for any one of the cases.

Question 1.b “Title of the Library”: 42 of the 45 respondents answered the question with a title consisted usually of two parts: a) the institution title or type (e.g. university) and b) words related to the information and learning sector. Two cases re-typed the title of the university as well as in the Question 1a and finally two cases did not answer. The qualitative data of the second part was analysed and coded (see, Table A3.1). Four types of library titles (in six cases) were not include words based on the stem of “library” (e.g. “library”, “libraries”), but most of the types identified the title included the word “library/es” and indeed for the half of all titles examined “Library” or “Libraries” (24 cases; 57.14%) was the only component.

Table A3.1: Survey; Question 1b – Library title analysis

Library title coding	Total of cases	%
Information and Library Services. Learning Services	1	2.38%
Information Services	1	2.38%
Information Services & Libraries	1	2.38%
Learning & Information Services	1	2.38%
Learning Resource Centre	3	7.15%
Learning Support Service	1	2.38%
Library & Archive	1	2.38%
Library & Historic Collections	1	2.38%
Library & Information Services	2	4.76%
Library & Learning Resources	2	4.76%
Library & Learning Services	1	2.38%
Library Service/s	3	7.15%
Library/ies	24	57.14%
Total	42	100%

¹ See also, Appendix I.3: Self-administered questionnaire (cover letter included)

Question 2. “What is the mission statement of your Library”: Ten cases (22%) did not answer this question (see, Table A3.2). Five cases (11%) stated that there was not mission statement of the library and one case (2%) that it was under review. The rest 29 (64%) cases provided the mission statement either as plain text typed within the questionnaire or via a reference URL to the relevant web document and the case mail print the questionnaire attached copies of the library mission statement.

Table A3.2: Survey; Question 2 – completion coding

Completion coding		Total	
Answered	There was not mission statement	5 (11%)	35 (78%)
	Existence of library mission statement	29 (64%)	
	Mission statement under review	1 (2%)	
No answer		10 (22%)	
Total		45 (100%)	

Question 3. “How many sites does the library have?”: The majority of the cases (65%) had from one to three library sites, with the most frequent practice (38%) the existence only one site (see, Table A3.3).

Table A3.3: Survey; Question 3 – Library sites

Number of sites per Library	Total of cases	%
1	17	38%
2	5	11%
3	7	16%
4	3	7%
5	4	9%
6	3	7%
7	1	2%
9	1	2%
10	1	2%
13	1	2%
14	1	2%
16	1	2%
Total	45	100%

Question 4. “How many members if library staff are: a) Librarians, b) Information technology (IT) staff, c) Archivists, d) Administrative staff and e) other staff”: The respondents in their majority did not provide detailed data (see, section 3.4.2.4.3). Consequently, the data derived from the answers from the 42 of the 45 cases referred to the estimated total of library staff on the one hand it was guided to the use only of the total of the members of library staff (see, Table A3.4).

Table A3.4: Survey; Question 4 - Library staff

Estimated total of staff per Library	Total of cases
7	1
8	2
9	2
11	2
12	1
13	2
19	1
24	1
28	1
30	1
31	1
36	1
45	1
49	1
51	1
53	1
54	1
56	1
57	1
71	1
74	1
80	2
95	1
107	1
109	1
112	1
114	1
120	1
124	1
130	1
151	1
154	1
168	1
238	1
240	1
250	1
291	1
No Answer	3
Total	45

Section 2: Basic information for the Library web site (LWS) (Questions 5-7)

Question 5. “Home page of LWS”: All 45 respondents provided the home page’s URL of their LWS. The cross-check with the data of the libraries’ list (see, section 3.4.2.2-d) did not bring out any controversial case.

Question 6. “In which year was the LWS first available?”: Data provided only from 67% of the respondents, whilst 20% of them stated that they did not know the year of the first LWS publication and 13% of the respondents did not answer the question (Table A3.5). The data from the 30 respondent (67%), who provided the information of the year that the LWS was first available, showed that most of the cases published their web site within 1990s (23 cases; 77% - see, Table A3.6).

Table A3.5: Survey; Question 6 – completion coding

Provision of answer	Type of answer	Total of cases	%
Yes	Year	30	67%
	Don't know	9	20%
No	NA	6	13%
Total		45	100%

Table A3.6: Survey; Question 6 – First year of LWS publication

Year	Decade	Total of cases
1991	1990s (23 cases; 77%)	1
1992		2
1993		1
1994		1
1995		8
1996		2
1997		1
1998		4
1999		3
2000		2000s (7 cases; 23%)
2002	2	
2003	1	
2005	1	
2006	1	
Total		

Question 7. “Where is the LWS hosted?”: All 45 respondents answered the question. The results (Table A3.7) showed that the majority of LWS were hosted on server(s) of other unit within the university (32 cases; 72%). The second more frequent practice was the hosting on library’s server(s) (11 cases; 24%) and for a small percentage of cases (4%; two cases), the host of the LWS was an outsourcing Internet Service Provider (ISP).

Table A3.7: Survey; Question 7 – Hosting of LWS

Hosting of LWS	Total of cases	%
The LWS is hosted on server/s of the Library	11	24%
The LWS is hosted on server/s of other unit within the university	32	72%
The LWS is hosted on server/s of an outsourcing Internet Service Provider (ISP)	2	4%
The LWS is hosted on server/s of OTHER	0	0%
Total	45	100%

Section 3: The role of the Library web site (LWS) (Questions 8-11)

Question 8. “Is there a mission statement for the LWS?”: All 45 respondents answered the question. The grand majority of them (41 cases; 91%) stated that there was not mission statement for the LWS. In only 7% (3 cases) a mission statement had been developed and in one case, the respondent did not know if there was a mission statement for the LWS (Table A3.8).

Table A3.8: Survey; Question 8 – Existence of mission statement for LWS

Completion coding	Total	%
Yes	3	7%
No	41	91%
Don't know	1	2%
Total	45	100%

Question 8.1 “If YES, what is it?”: Two of the three respondents, who stated that there was a mission statement for the LWS, provided the text of mission statement. Below, the exact text of statements provided is presented:

Case 86: 'Libweb is one of a range of formats the library offers to all its stakeholders, giving current information on library services & collections. Libweb seeks to be a concise, easily navigable & intuitive website complementing hard copy, word-of-mouth & learn.gold information sources. Libweb is a dynamic website that will continually adapt to the changing information needs of all of its users.'

Case 95: 'to provide our customers with a professional service through the effective and efficient use of the web as a communication tool.'

Question 9. "How is the LWS used": All 45 respondents answered the question. The results per option/provided statement (Table A3.9) showed that the most frequent LWS uses were the:

- **9.b** "The LWS is used for provision of information about services and facilities hosted locally in the building/s of the Library." in 98% of the cases;
- **9.a** "The LWS is used for provision of electronic library and information services." in 89% of the cases;
- **9.c** "The LWS is used for provision of information about the character and the operation of the library as an organisation (e.g. mission, information about the staff, undertaken projects)." in 76% of the cases;

At the contrary the other provided statements were checked by very few respondents:

- **9.e** "The LWS is used for provision of an online "workstation" for the library staff (e.g. Intranet for the staff with password protected access to library automated systems)." in 16% of the cases;
- **9.d** "The LWS is used for provision of information for the professional interests of the library staff." in 11% of the cases;

The analysis of the "other" uses of LWS (see, option 9.f) in nine cases brought out two additional categories of LWS uses:

- **9.f1** "The LWS is used for provision of library collection development activities open to academic community (e.g. book suggestions, orders)." in 2% of the cases;
- **9.f2** "The LWS is used for provision of cultural information about the town/city where the university library is placed (e.g. London -- Galleries, museums, etc)." in 2% of the cases;

Table A3.9: Survey; Question 9 – LWS uses

Provided statements		Checked by Cases	
		Total	%
9.a	The LWS is used for provision of electronic library and information services.	40	89%
9.b	The LWS is used for provision of information about services and facilities hosted locally in the building/s of the Library.	44	98%
9.c	The LWS is used for provision of information about the character and the operation of the library as an organisation (e.g. mission, information about the staff, undertaken projects).	34	76%
9.d	The LWS is used for provision of information for the professional interests of the library staff.	5	11%
9.e	The LWS is used for provision of an online “workstation” for the library staff (e.g. Intranet for the staff with password protected access to library automated systems).	7	16%
9.f1	The LWS is used for provision of library collection development activities open to academic community (e.g. book suggestions, orders).	1	2%
9.f2	The LWS is used for provision of cultural information about the city where the university library is placed (e.g. London -- Galleries, museums, etc).	1	2%

Six respondents filled in as “other” uses the provision of specific library & information services, whilst they had already checked the statement 9.a (e.g. ‘registration of guest users, support for off campus users, etc’). Therefore, these six answers were not included in the further results’ analysis. In addition, one case used the space for the details to make a note about non-selection of the statement/option 9.e: ‘Depends what you mean by LWS. We have a separate Intranet website for supporting library staff. I wouldn't count that as part of the LWS’.

The results about the LWS uses per case showed that the most frequent patterns of LWS uses were (see below, Table A3.10):

- a) The combination of uses: **9.a-9.b-9.c** (21 cases; 48%)
- b) The combination of uses: **9.a-9.b** (7 cases; 16%)

The other nine patterns ranged over 2% and 7%.

Table A3.10: Survey; Question 9 – Patterns of LWS uses

9.b	9.a	9.c	9.e	9.d	9.f1	9f.2	Total of cases	%			
No	No	Yes	No	No	No	No	1	2%			
Yes	No	No	No	No	No	No	2	4%			
		Yes	No	No	No	No	2	4%			
	Yes	No	No	No	No	No	No	7	16%		
			Yes	No	No	No	No	2	4%		
		Yes	No	No	No	No	No	No	21	2%	
					Yes	No	No	No	1	2%	
					No	Yes	No	No	1	48%	
			Yes	Yes	No	Yes	No	No	No	3	7%
						No	No	No	No	3	7%
						Yes	No	No	No	2	4%
Total							45	100%			
<p>Keys: Provided statements for the Question 9: “How is the LWS used?” 9.b: The LWS is used for provision of information about services and facilities hosted locally in the building/s of the Library. 9.a: The LWS is used for provision of electronic library and information services. 9.c: The LWS is used for provision of information about the character and the operation of the library as an organisation (e.g. mission, information about the staff, undertaken projects). 9.e: The LWS is used for provision of an online “workstation” for the library staff (e.g. Intranet for the staff with password protected access to library automated systems). 9.d: The LWS is used for provision of information for the professional interests of the library staff. 9.f1: The LWS is used for provision of library collection development activities open to academic community (e.g. book suggestions, orders). 9.f2: The LWS is used for provision of cultural information about the city where the university library is placed (e.g. London -- Galleries, museums, etc).</p>											

Question 10. “Have the uses of the LWS been diversified since the first LWS was available?”: The question was not answered by one respondent. 26 respondents filled in the option “Yes”; 13 ones the option “No” and five respondents the option “Don’t Know”. (Table A3.11)

Question 10.1. “If YES, please give details”: The question was filled in by 26 cases. However, the 24 of them gave details following the relevant instruction because they had answered “Yes” in the Question 10; whilst the rest two respondents had answered “No” in that question. Nevertheless, the analysis of the data completed in the space of question 10.1 showed that the data provided only by six respondents was valid for the study.

Table A3.11: Survey; Question 10 – Library web site uses’ diversification since the first LWS was available.

Provision of answer	Provided statements	Total of cases	Q10.1 filled in	Valid data
Yes	Don't know	5	0	NA
	No	13	2	1
	Yes	26	24	5
No	NA	1	NA	NA
Total		45	26	6

The examination of the two answers in the question 10.1 from the cases in which the answer in the Question 10 was “No” brought out that only one of them was valid, as the statement of no diversifications in the LWS uses (Q10 = No) and the content of the details in the question 10.1 raised a logic conflict for one of the two cases. Specifically, the respondent provided details in the question 10.1 explaining that the LWS uses have been reduced, whilst he/she stated in Question 10 that the LWS uses have not diversified. The respondent wrote: ‘We no longer put much info on our website, it is all provided via our vle’. In the Question 9, also, only the category 9.b² was selected as the current LWS uses category. The content analysis of the specific web site showed that indeed the extent of the LWS content was limited and there was a reference for the students and academic staff for visiting the Virtual Learning Environment (VLE) of the university in order to have access to electronic library and information services. However, a brief visit to archived versions of the specific LWS retrieved through the Internet Archive collection from two randomly selected previous years verified that the contents of specific category of LWS uses was reduced after the transfer of content from the LWS to the university VLE. However, this perspective could be fault, if interlinking services with the LWS’s web pages, like commercial products/services and in this case part of university’s VLE, identified as part of the LWS’s content (see, section 1.4).

The examination and analysis of the data provided in the question 10.1 by the 24 respondents from the 27, who answered in Question 10 “Yes”, identified only five valid statements, which referred to diversifications in the LWS uses. The 19 of the 24 cases referred either to content enhancement for existent uses or to LWS design improvements. On the contrary the five cases mentioned above referred to either additions or removals of

² 9.b: The LWS is used for provision of information about services and facilities hosted locally in the building/s of the Library.

the LWS uses; specifically of the categories of LWS uses 9.a³ & 9.b. One case of them reported that the LWS uses were enhanced with the category 9.a (provision of electronic library and information services), writing that: ‘The site originally just hosted basic information about the library itself, but has since developed into a gateway to our electronic journals and databases, and has also become a key tool in providing subject-specific information and support for all members of the University.’ Another case referred to the enhancement of the LWS uses with the category 9.b (provision of information about services and facilities hosted locally in the building/s of the library), mentioning that: ‘Only very basic details, mainly access to Internet resources was initially available. The move to the Learning Centre brought about a rethink of the web changes to promote other services and facilities in the building.’ Finally, the other three cases reported a reduction of the LWS uses as regards the category 9.a because the library currently provided its online services via the university VLE for the academic community.

Question 11. “Are there any future plans that will affect the role of LWS?”: Thirty-one (31) of the respondents stated and provided relevant details that there were plans affecting the LWS role (Table A3.12). However, the content analysis of the question 11.1 (“If Yes, please give details”) showed that all respondents referred to plans either for content enhancement for the existent LWS uses or for LWS design upgrades.

Table A3.12: Survey; Question 11 – Future plans affected the LWS role

Provision of answer	Provided statements	Total of cases	Q10.1 filled	Valid data
True	Don't know	6	0	NA
	No	8	0	
	Yes	31	31	0
Total		45		NA

³ 9.a: The LWS is used for provision of electronic library and information services.

Section 4: Management of the Library web site (LWS) (Questions 12-14)

Question 12. “In which of the following managerial aspects of the LWS is the Library involved?” : (Table A3.13)

- Decisions about the LWS content: in 45 cases (100%);
- Decisions about the LWS design: in 31 cases (69%);
- Leading and controlling the LWS development procedure (content and design): in 36 cases (80%);
- Budget for the LWS development procedure (content and design): in 24 cases (47%)

Table A3.13: Survey; Question 12 – Library’s involvement in managerial aspects

Managerial aspects, in which library had involvement		Checked for “YES”	
		Total	%
12.a	Decisions about the LWS content	45	100%
12.b	Decisions about the LWS design	31	69%
12.c	Leading and controlling the LWS development procedure (content and design)	36	80%
12.d	Budget for the LWS development procedure (content and design)	24	47%
<u>Note:</u> Total of cases: 45 (100%)			

Question 13. “Are there others (e.g. other unit within the university) who are involved in the LWS management?”: All respondents answered the question 13 and all respondents, who stated that there was involvement (YES), filled in the question 13.1 (“If Yes, please give details”). The results showed that for 36 of the cases (80%) there was involvement in the LWS management by others (Table, A3.14). In all those cases, the involvement derived from other units⁴ within the university. The analysis and coding of the details provided showed that those units were: IT (in 17 cases; 47%), marketing (in 14 cases; 39%) and for 5 cases (14%) the involvement derived from both units (IT & Marketing).

⁴ The term *unit* refers to the any organisational division within universities, like department, office and service.

Table A3.14: Survey; Questions 13 & 13.1 – Involvement in LWS management by others

Existence of involvement in LWS management by others ¹					
Provided statements	Total of cases	%			
Yes	36	80%	Involvement in LWS management by other university units ²	Total	%
			IT	17	47%
			Marketing	14	39%
			IT & marketing	5	14%
			Total	36	100%
Don't know	0	0%			
No	9	20%			
Total	45	100%			
Notes: 1. Question 13 2. Question 13.1					

For the analysis and coding, the titles of the organisational *units* found in survey data were checked with the official university web sites, to improve understanding and to ensure accurate coding. The results were: the units of *IT* and *marketing*. In *IT* unit included references to “university web team”, “graphic designers” and “web development unit”. In the *marketing* unit included alternative titles, like “External Affairs”, “Communications & Development” and “External relations department”. The 36 exact answers and its coding for the university units are presented in table A3.15.

Table A3.15: Survey; Question 13.1 – Coding of university units

Involvement in LWS management by other university units	Coding of university units
University web team	IT
A Web Development Group is responsible for setting up the new Library web-site. This includes 2 web developers from IT services. A consultant from the Marketing and Online Communications division has also advised on the design. The web team (In IT services) are responsible for the UCMS, and provide training on this too.	IT & marketing
The University College's Web Developer (based in IT Services)	IT
Web Development Unit	IT
University Marketing & Recruitment, University Web Team	IT & marketing
University's Web development team	IT
University marketing department impose branding on design of the site	Marketing
The is a web team with overall responsibility for the cohesive design and look and feel of the University College website, monitoring broken links,	IT

...continues

Table A3.15: Survey; Question 13.1 – Coding of university units

Involvement in LWS management by other university units	Coding of university units
management of servers, etc.	
design is controlled by Marketing	Marketing
Marketing lead on design. We follow their template.	Marketing
Graphic Designers	IT
University web team	IT
IT Services	IT
Marketing Dept have overall management of the university site	Marketing
UICS (University Information & Computing Services)	IT
marketing	Marketing
External relations dept	Marketing
IT Services web development team, audio visual services design team	IT
Central marketing department	Marketing
ICT	IT
College web team	IT
To some small extent the University Marketing unit have input.	Marketing
Information Services	IT
We use University templates designed by the University's IT Services Department. They were customised in collaboration with us. No one else is involved in the management of the content of the site.	IT
Overall design is led by Marketing team	Marketing
Communications Dept. and IT Dept.	IT & marketing
Library pages are a section of whole College website. Communications Manager has overall responsibility for whole website	Marketing
The LWS is hosted on the University's content management system. As a result, the design of the LWS has to match the University's website design - which is controlled by the marketing department.	Marketing
template is designed/enforced by uni webmaster	IT
webteam	IT
LWS uses same template as main university website, devised by Corporate Communications. ICT systems currently look after the server.	IT & marketing
Marketing and Communications	Marketing
Department of Communications & Development	Marketing
IT Services	IT
IT department, marketing	IT & marketing
External Affairs (Marketing)	Marketing

Question 14. “Taking into account the above answers, has the Library the main role for the management of the LWS?”: All respondents answered the question and the grand majority (93%) stated that library had the main role for the management of their LWS (Table A3.16).

Table A3.16: Survey; Question 14 – completion coding

Main role for the LWS management by library	Total	%
Yes	42	93%
No	3	7%
Don't know	0	0%
Total	45	100%

Section 5: Library web site planning, controlling and achieving (Questions 15-21)

The respondents, who answered in the question 14 “No” (that Library did not have the main role in the LWS management), were asked to skip the Section 5.

Question 15. “Is there an LWS planning process?”: Planning processes were undertaken by 71% of the libraries, in the terms of the LWS management undertaken by the library; 20% of the respondents stated that there were not planning processes and one of them stated that he/she did not know if there were planning processes (Table A3.17).

Table A3.17: Survey; Question 15 – completion coding

Managerial activities undertaken by library		Yes	No	Don't know	No answer	NA ¹	Total
Planning processes	Total	32	9	1	0	3	45
	%	71%	20%	2%	0%	7%	100%
Notes: 1. Respondents skipped the question because they answered “No” in question 14							

Question 15.1 “If YES, which Library staff (position titles) are involved in this process?”: From the 32 respondents, who answered “Yes” in the question 15, 31 answered the question. The data analysis identified one case, for which the data was not valid because it did not provide sufficient information (exact phrase: “Various”). The results of the analysis and coding showed that the staff, who were involved in the planning processes, were:

- “*Member(s) of library management team*” and “*Library web staff*”: in 13 cases (42%);
- Only “*Member(s) of library management team*”: in 12 cases (39%);
- Only “*Library web staff*”: in 3 cases (10%);
- “*Member(s) of library management team*”, “*Library web staff*” and “*Non library web staff*”: in 2 cases (6%);
- “*Member(s) of library management team*” and “*Non library web staff*”: in 1 case (3%);

Question 16. “Are there LWS performance measurement and monitoring processes?”:

Performance measurement and monitoring processes were undertaken only by 49% of the libraries, in the terms of the LWS management undertaken by the library (Table A3.18).

Table A3.18: Survey; Question 16 – completion coding

Managerial activities undertaken by library		Yes	No	Don't know	No answer	NA ¹	Total
Performance measurement & monitoring processes	Total	22	20	0	0	3	45
	%	49%	44%	0%	0%	7%	100%
<p><u>Notes:</u> 1. Respondents skipped question because they answered “No” in question 14</p>							

Question 16.1 “If YES, which Library staff (position titles) are involved in this process?:

From the 22 respondents, who answered “Yes” in the question 16, 21 answered the question. The results of the analysis and coding showed that the staff, who were involved in the planning processes, were:

- Only “*Member(s) of library management team*”: in 7 cases (33%);
- Only “*Library web staff*”: in 6 cases (29%);
- “*Member(s) of library management team*” and “*Library web staff*”: in 3 cases (14%);
- Only “*Non library web staff*”: in 2 cases (9%);
- “*Member(s) of library management team*”, “*Library web staff*”, “*Non library web staff*” and “*Other university staff*”: in 1 case (5%);
- “*Member(s) of library management team*”, “*Library web staff*” and “*Non library web staff*”: in 1 case (5%);
- Only “*Other university staff*”: in 1 case (5%);

Question 17. “Are there LWS marketing processes?”: Marketing processes were undertaken by 53% of the libraries, in the terms of the LWS management undertaken by the library; 40% of the respondents stated that there were not marketing processes (Table A3.19).

Table A3.19: Survey; Question 17 – completion coding

Managerial activities undertaken by library		Yes	No	Don't know	No answer	NA ¹	Total
Marketing processes	Total	24	18	0	0	3	45
	%	53%	40%	0%	0%	7%	100%
<u>Notes:</u> 1. Respondents skipped question because they answered “No” in question 14							

Question 17.1 “If YES, which Library staff (position titles) are involved in this process?:

From the 24 respondents, who answered “Yes” in the question 17, 23 answered the question. The data analysis identified one case, for which the data was not valid because it did not provide relevant information, as the respondent described the procedure without mentioning the library staff was involved in it. The results of the analysis and coding showed that the staff, who were involved in the planning processes, were:

- “*Member(s) of library management team*” and “*Non library web staff*”: in 6 cases (27%);
- Only “*Member(s) of library management team*”: in 4 cases (18%);
- Only “*Non library web staff*”: in 4 cases (18%);
- Only “*Library web staff*”: in 3 cases (14%);
- “*Member(s) of library management team*”, “*Library web staff*” and “*Non library web staff*”: in 2 cases (9%);
- “*Member(s) of library management team*” and “*Library web staff*”: in 2 cases (9%);
- Only “*User consultations (not specified)*”: in 1 case (5%);

Question 18. “Has the Library developed specialised policies for the LWS?”: Specialised policies were developed by 60% of the libraries, in the terms of the LWS management undertaken by the library (Table A3.20).

Table A3.20: Survey; Question 18 – completion coding

Managerial activities undertaken by library		Yes	No	Don't know	No answer	NA ¹	Total
Development of specialised policies for LWS	Total	27	15	0	0	3	45
	%	60%	33%	0%	0%	7%	100%
<p><u>Notes:</u> 1. Respondents skipped question because they answered “No” in question 14</p>							

Question 18.1 “If YES, which of the stated subject/issues cover?: All of the respondents, who answered in question 18, that library had developed specialised policies for its LWS, specified the subject areas/issues covered. Apart from the four provided areas, one respondent added a new one, filling in the option for specification of “Other issues/subjects”, with the “Web archiving”. The results per subject areas were:

18.1-a. Design & construction issues: 24 cases (89%);

18.1-b. Administrative issues (responsibilities, procedures, aims/objectives, etc): 25 cases (93%);

18.1-c. Metadata and documentation issues: 13 cases (48%);

18.1-d. Copyright and Freedom of Information issues: 15 cases (56%);

18.1-e. Web archiving: 1 case (4%);

The patterns of subject areas/issues identified per cases were:

- **a-b-c-d**: in 8 cases (30%);
- **a-b-d**: in 6 cases (22%);
- **a-b**: in 4 cases (15%);
- **a-b-c**: in 3 cases (11%);
- **a**: in 2 cases (7%);
- **b**: in 1 case (4%);
- **b-c**: in 1 case (4%);
- **b-c-d**: in 1 case (4%);
- **a-b-e**: in 1 case (4%);

Question 19. “Are there university policies and/or guidelines, which affect to⁵ the LWS?”:

89% of the respondents stated that university policies affecting the LWS (Table A3.21).

Table A3.21: Survey; Question 19 – completion coding

Managerial activities undertaken by university		Yes	No	Don't know	No answer	NA ¹	Total
University's policies/guidelines affected LWS	Total	40	2	0	0	3	45
	%	89%	4%	0%	0%	7%	100%

Notes:
1. Respondents skipped question because they answered “No” in question 14

Question 19.1 “If YES, which of the stated subject/issues cover?: All of the respondents, who answered in question 19 “Yes”, specified the subject areas/issues. None of them added subject areas, selecting the option “Other”. The results per subject areas were:

19.1-a. Design & construction issues: 38 cases (95%);

19.1-b. Administrative issues (responsibilities, procedures, aims/objectives, etc): 17 cases (43%);

19.1-c. Metadata and documentation issues: 11 cases (28%);

19.1-d. Copyright and Freedom of Information issues: 28 cases (70%);

19.1-e. Other issues/subjects: 0 cases (0%);

⁵ Exact phrase of the formal questionnaire

Question 20. “Is there an annual budget for LWS development and maintenance?”: Only 7% of the libraries had annual budget for the LWS development and maintenance; whilst the 82% of them did not have it. Moreover, 4% of the respondent did know whether annual LWS’s budget existed (Table A3.22).

Table A3.22: Survey; Question 20 – completion coding

Managerial activities undertaken by library		Yes	No	Don't know	No answer	NA ¹	Total
Annual budget for LWS development and maintenance	Total	3	37	2	0	3	45
	%	7%	82%	4%	0%	7%	100%
<u>Notes:</u> 1. Respondents skipped question because they answered “No” in question 14							

Question 21. “Does the Library undertake external funded projects for the development of particular web-based library services?”: 20% of the libraries undertook externally funded projects for development of particular web-based library services; whilst the 69% of them did not undertake any one. Moreover, 4% of the respondent did know whether the library any project like that was undertaken by the library (Table A3.23).

Table A3.23: Survey; Question 21 – completion coding

Managerial activities undertaken by library		Yes	No	Don't know	No answer	NA ¹	Total
Undertaking of external funded projects for development of particular web-based library services	Total	9	31	2	0	3	45
	%	20%	69%	4%	0%	7%	100%
<u>Notes:</u> 1. Respondents skipped question because they answered “No” in question 14							

Section 6: Library web site human resources (Questions 22-24)

Question 22. “The staff who works regularly on the LWS development and maintenance are members of staff of:”

- the **library**, in 30 cases (67%);
- the **library and other unit(s) within the university**, in 14 cases (31%);
- **other unit(s) within the university**, in one case (2%)

All 45 respondents answered the question and the option “Other” (22.c) was not selected by anyone of them; 14 of the 15 respondents, who stated that the staff belonged to other unit(s) within the university, specified these units (Table A3.24). The analysis and coding of these answers showed that usually the staff belonged to one unit (in 11 cases of the 14) and the units identified were:

- IT (in ten cases);
- Marketing (in six cases);
- eLearning (in one case);
- Off-campus support (in one case)

Table A2.24: Survey; Question 22.b – coding of titles of other units within the university

Total of units	Coded unit(s) of university				Total of cases
	IT	Marketing	eLearning	Off Campus support	
One unit	Yes	No	No	No	7
	No	No	Yes	No	1
	No	Yes	No	No	3
Two units	Yes	Yes	No	No	1
Three units	Yes	Yes	Yes	No	1
	Yes	Yes	No	Yes	1
<i>no given details</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>	1
Total	10	6	1	1	15

Question 23. “How many members of Library staff work solely on the LWS?”: In 11 library cases (25%) of the 44 ones, which stated that staff of library worked regularly on the LWS development and maintenance (see, question 22), there was staff, whose duties were only about the web site (Table A3.25). In most of the cases (six), the full-time library web staff consisted of one person; the maximum number was seven.

Table A3.25: Survey; Question 23 – Total of members of library staff, which worked solely on the LWS development and maintenance [Full-time]

Total of staff	Total of cases
1	6
2	1
3	1
5	2
7	1
Total	11¹

Notes:

1. Within the 44 cases, which stated that staff of library worked regularly on the LWS development and maintenance (Question 22).

Question 23.1 “Do they compose a particular library unit/team?” and in positive answer (Yes),

- “Which is the title of this unit/team?”
- “Which is the position of the unit/team within the library organisation?”

From the 11 cases with staff with full duties in the LWS development:

- Two cases did not give any answer in that group of questions
- three cases answered “No”: this staff did not compose a particular library unit/team
- Five cases answered “Yes”: this staff composed a group as part of other library department related to information systems and electronic services or they were a cross disciplinary group.
- One case answered “Don’t know”, giving further details about their position within the organisation, which was “part of Systems team”.

Question 23.2 How many of them are:

- a. Librarians:
- b. Information Technology (IT) staff:
- c. Archivists:
- d. Administrative staff:
- e. OTHER:
Please, specify the ‘OTHER’?

Most of the respondents did not filled in the options **23.2.a.** to **23.2.d.**, but they preferred to use the space for the details of the option **23.2.e** “Other” in order to give information about the staffing composition. Therefore, specific picture about the staff specialities was not possible to be drawn (see, section 3.4.2.4.3).

Question 24 “How many members of Library staff are not occupied solely on the LWS, but they have additional duties as well?”: All 44 cases, which stated that staff of library worked regularly on the LWS development and maintenance (Question 22), provided details for members of library staff, whose additional duties were about the web site (Table A3.26). Cross-checking of the answers in Question 24 with the answers of the question 24.1 about the speciality of that staff, showed that the total number was from one to 26 people and for three cases the answer was not number, but phrase like ‘all or many librarians’ or ‘Any member of the library team could be ask to work on aspects of the web site’, without any clear pattern. Almost half of the respondents (26) did not fill in the question of 24.1, whilst they preferred to use the space for the details of the option 24.1.e “Other” in order to give information about the staffing composition. Therefore, specific picture about the staff specialities was not possible to be drawn (see, section 3.4.2.4.3).

Table A3.26: Survey; Question 24 – Total of members of library staff, which worked on the LWS development and maintenance having additional duties as well [Part-time]

Total of staff	Total of cases
1	4
2	3
3	4
4	3
5	4
6	1
7	1
8	2
9	4
10	3
11	2
14	1
15	3
18	2
21	1
25	1
26	2

...continues

Table A3.26: Survey; Question 24 – Total of members of library staff, which worked on the LWS development and maintenance having additional duties as well [Part-time]

"All librarians" ²	1
"Any member of the library team could be ask to work on aspects of the web site." ²	1
"Many librarians" ²	1
Total	44 ¹
<p><u>Notes:</u></p> <p>1. 44 of the 45 cases, which stated that staff of library worked regularly on the LWS development and maintenance (Question 22).</p> <p>2. Exact phrases as they provided by respondents.</p>	

Section 7: Organising and leading Library web site development (Questions 25-28)

Question 25. “Is the Library responsible for the organisation of the work of the LWS development and maintenance?”: All respondents answered the question. Almost all of them (93%) stated that library was responsible for the organising of the LWS development and maintenance. (Table A3.27).

Table A3.27: Survey; Question 25 – completion coding

Managerial activities undertaken by library		Yes	No	Don't know	No answer	Total
Responsibility for organising the LWS development & maintenance	Total	42	3	0	0	45
	%	93%	7%	0%	0%	100%

Question 26. “Is there ONE person of the members of Library staff who is responsible for organising the work for the LWS development and maintenance?”: All respondents, who answered “Yes” in the question 25 (42), answered this question (Table A3.28).

The results showed that 62% of the libraries had one-person based managerial arrangement for the organising of the LWS development & maintenance. The analysis of the details provided for this case of managerial arrangement showed that for usually that one person was member of library management team occupied partially with LWS duties and more that 1/3 of them his/her title indicated relation with IS and electronic services. In only 1/5 of the cases his/her title was directly related to the specific duties of LWS management (e.g. “Library Web Manager or Administrator” and “Libweb manager”).

The analysis of the information provided by 12 respondents of the 14 ones, who stated that the managerial arrangement of leading was not based on one-person, showed that

- in seven cases of the libraries organising activities undertaken by whole library web staff based mostly on team-working without one-person based leading duties (self-managed team);

- in four of the cases there was a co-ordination by one member of library management team with the library web staff; his/her role was more consultative rather than leading;
- in one case there was a two-managers leading schema separating responsibility for technical and content aspects

Table A3.28: Survey; Question 26 – completion coding

Managerial arrangement		Yes	No	Don't know	No answer	NA ¹	Total
Responsibility for organising the LWS development & maintenance by ONE person	Total	28	14	0	0	3	45
	%	62%	31%	0%	0%	7%	100%
Notes: 1. Respondents skipped question because they answered "No" in question 25							

Question 27. "Are there officially stated procedures and work schedule for the LWS development and maintenance?": Only 22% of the libraries had developed official stated procedures and work schedule for the LWS development and maintenance; whilst the 67% of them did not do it. Moreover, 2% of the respondent did know whether the library had developed this managerial activity (Table A3.29).

Table A3.29: Survey; Question 27 – completion coding

Managerial activities undertaken by library		Yes	No	Don't know	No answer	NA ¹	Total
Official stated procedures and work schedule for LWS development and maintenance	Total	10	30	1	1	3	45
	%	22%	67%	2%	2%	7%	100%
Notes: 1. Respondents skipped question because they answered "No" in question 25							

Question 28. “Are there activities for training and skills development of Library staff who works for the LWS?”: Most of the libraries (73%) had developed activities for training and skills development for the library web staff; whilst the 18% of them did not do it. Moreover, 2% of the respondent did know whether the library had developed this managerial activity (Table A3.30).

Table A3.30: Survey; Question 28 – completion coding

Managerial activities undertaken by library		Yes	No	Don't know	No answer	NA ¹	Total
Activities for training and skills development for library staff worked for LWS	Total	33	8	1	0	3	45
	%	73%	18%	2%	0%	7%	100%
<u>Notes:</u> 1. Respondents skipped question because they answered “No” in question 25							

Appendix III.2: Desk research: Year of the first publication of the library web site

Related section: 4.2.2.1

The desk research within the Internet Archive's collection (see, section 3.4.3.4) collected complete and valid data for all the 45 LWS cases examined. According to the results (Table A3.31), 73% of the LWSs have been published for first time within the decade of 1990s and 27% of them during the 2000s.

Table A3.31: Desk research (Internet Archive) – First year of LWS publication

Desk research results				Total of cases
Year	Period until 2008	Coded time-range	Decade	
1996	12	More than 10 years (21 cases; 47%)	1990s (33 cases; 73%)	3
1997	11			18
1998	10	From 6 to 10 years (19 cases; 42%)		11
1999	9			1
2000	8			2
2001	7	From 2 to 5 years (5 cases; 11%)	2000s (27%)	3
2002	6			2
2003	5			1
2004	4			1
2005	3			1
2006	2			2
Total				45

Appendix III.3: Content analysis

Related section: 3.4.1.3, 3.4.4 & 4.2.3-b

The content analysis for the identification of the LWS uses within the research sample brought out:

1. that one category from the core list (see, 3.4.1 Pilot content analysis) was not located (Table A3.32). Specifically, the category had the title: “The LWS is used for provision of information for the professional interests of the library staff.” and it was used in the Question 9 of the survey as the provided statement **9.d** (see, Appendix I.3);
2. three new categories of LWS uses, which were formatted as:
 - N.a)** “The LWS is used for provision of library collection development functions open to the academic community (academic staff - students), with free or restricted access”
 - N.b)** “The LWS is used for provision of cultural information about the town/city where the university library is placed”.
 - N.c)** “The LWS is used for provision of information about library's commercial activities”; for example books’ sale.

Analytically, the results per category were that the LWSs were used for provision of:

- Category A. [9.a of survey]** electronic library and information services - (in 45 cases; 100%);
- Category B. [9.b of survey]** information about services and facilities hosted locally in the building/s of the library - (in 45 cases; 100%);
- Category C. [9.c of survey]** information about the character and the operation of the library as an organisation (e.g. mission, information about the staff, undertaken projects) - (in 38 cases; 84%);
- Category D. [9.e of survey]** an online “workstation” for the library staff (e.g. Intranet with informative and/or functional content) – (in 5 cases; 11%);
- Category E. [N.a]** collection development functions open to the academic community (academic staff - students) – (in 5 cases; 11%) type of outcome:
functional;

Category F: [N.c] information about library's commercial activities (e.g. books' sale)
 – (in 1 case; 2%);

Category G: [N.b] cultural information about the town/city where the university
 library is placed – (in 2 cases; 4%)

The patterns of the categories of LWS uses (Table A3.32), which were found, were:

- **ABC**: in 26 cases (58%)
- **AB**: in 7 cases (16%)
- **ABCD**: in 4 cases (9%)
- **ABCE**: in 4 cases (9%)
- **ABCG**: in 2 cases (4%)
- **ABCD-E**: in 1 case (2%)
- **ABCF**: in 1 case (2%)

Table A3.32: LWS content analysis – Patterns of LWS uses

Categories of LWS uses ¹								Total of cases (%)	
A	B	C	D	E	F	G	9.d ²		
Yes	Yes	No	No	No	No	No	No	7 (16%)	
		Yes	No	No	No	No	No	26 (58%)	
						Yes	No	1 (2%)	
					Yes	Yes	No	Yes	No
			Yes	No			No	No	4 (9%)
			No	No			No	No	4 (9%)
			Yes	Yes	Yes	Yes	No	No	No
Yes	No	No					No	1 (2%)	
Total of library cases								45 (100%)	

Keys & Notes:

1. Categories of LWS uses:

- A:** The LWS is used for provision of electronic library and information services.
- B:** The LWS is used for provision of information about services and facilities hosted locally in the building/s of the Library.
- C:** The LWS is used for provision of information about the character and the operation of the library as an organisation (e.g. mission, information about the staff, undertaken projects).
- D:** The LWS is used for provision of an online "workstation" for the library staff (e.g. Intranet for the staff with password protected access to library automated systems).
- E:** The LWS is used for provision of collection development functions open to the academic community (academic staff - students), with free or restricted access.
- F:** The LWS is used for provision of information about library's commercial activities (e.g. books' sale).
- G:** The LWS is used for provision of cultural information about the town/city where the university library is placed.

2. Category used in the survey as optional statement: 9.d "The LWS is used for provision of information for the professional interests of the library staff."

Appendix III.4: First year of LWS publishing: data comparison

Related section: 3.4.3.4

The comparison of the data (see, Table A3.33) derived from the survey (see, Appendix III.1; Question 6 - Table A3.6) to the data derived from the desk research (see, Appendix III.2; Table A3.31) confirmed the unavoidable limitation of the Internet Archive collection as data source. The comparable data referred only to 17 cases. From the 30 cases of the survey with stated first year, 13 cases referred to years before 1996; period that the Internet Archive collection does not cover. Finally, only for four comparable cases there was the data was the same and the differences for the rest of the cases varied from one to eight years.

Table A3.33: First year of LWS publishing - comparison of results

1 st year: desk research	1 st year: survey	Variation in years	Total of cases		
1997	1997	0	1	17 cases	
1998	1998	0	2		
2002	2002	0	1		
1997	1996	1	2		
1999	1998	1	1		
2001	2000	1	1		
1997	1999	-2	1		
1996	1999	-3	1		
1997	2000	-3	1		
1998	2002	-4	1		
2001	2005	-4	1		
2004	1999	5	1		
1996	2003	-7	1		
2006	1998	8	1		
1998	2006	-8	1		
1997	1991	NA	1		13 cases
2002	1992	NA	1		
1997	1992	NA	1		
1997	1993	NA	1		
1998	1994	NA	1		
1996	1995	NA	1		
2005	1995	NA	1		
1997	1995	NA	3		
1998	1995	NA	2		
2000	1995	NA	1		
2003	D/K	NA	1	28 cases	
2001	D/K	NA	1		
1998	D/K	NA	3		
1997	D/K	NA	4		
2006	no answer	NA	1		
2000	no answer	NA	1		
1998	no answer	NA	1		
1997	no answer	NA	3		
		Total	45		

Appendix III.5: LWS uses: data comparison

Related section: 3.4.2.4.2

The primary sources of data about the LWS uses were:

- a) the survey (see, Appendix III.1; Question 9);
- b) the content analysis (see, Appendix III.3)

The comparison (see below, Table A3.34) of the results per each case from the data derived from the survey to the data derived from the content analysis showed that for less than the half of the cases (20) the LWS uses were the same. The varieties identified were in one to three categories from the total eight ones, but in most of the cases (19 from the 25) the varieties referred to one category only.

The category with the most differences (in 10 cases) was the “9.c The LWS is used for provision of information about the character and the operation of the library as an organisation.”, usually because some of the respondents did not count the related information “units”, which were found during the content analysis to be scattering within the library web sites, without composing whole web page/s content.

The next category with high number of differences (in six cases) was the “9.e The LWS is used for provision of an online “workstation” for the library staff” (e.g. Intranet for the staff with password). For four of them through the content analysis none access link to library staff intranet found, whilst the respondents were checked this statement. In two cases through the content analysis a clearly labelled link to library staff intranet found (“IS staff area”, where IS “Information Services” and “ILS Staff Intranet”, where ILS “Information and library Services”) and in the home page, but the respondents did not check the statement 9.e. In all cases found Intranet for the library staff the URL syntax of the link referred to a sub-folder of the LWS (e.g. <http://www.university-name.ac.uk/LWS-folder/intranet>). Nevertheless, the content analysis of the web site of the case noted above - that they had separate Intranet for the staff, but it was not part of the LWS - verified the absent of any reference or link to this type of use.

In the results of the content analysis the category “9.d The LWS is used for provision of information for the professional interests of the library staff.” was not identified in any of the web sites examined. However, in five cases of the survey, the respondents checked this option.

The differences in the category “9.a The LWS is used for provision of electronic library and information services.” were for all five cases in that the respondents did not check this statement in the questionnaire sent back, even if the content analysis found for the three of the cases plenty of electronic services provided and for the other two at least the online library catalogue.

Table A3.34: LWS uses - data comparison

N.b	9.b	N.c	N.a	9.a	9.d	9.e	9.c	Varieties	Total of cases
TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	0	20
TRUE	TRUE	TRUE	FALSE	TRUE	TRUE	TRUE	TRUE	1	4
TRUE	TRUE	TRUE	TRUE	FALSE	TRUE	TRUE	TRUE	1	2
TRUE	TRUE	TRUE	TRUE	TRUE	FALSE	TRUE	TRUE	1	3
TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	FALSE	TRUE	1	3
TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	FALSE	1	7
TRUE	TRUE	FALSE	TRUE	FALSE	TRUE	TRUE	TRUE	2	1
TRUE	TRUE	TRUE	TRUE	TRUE	FALSE	FALSE	TRUE	2	2
TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	FALSE	FALSE	2	1
TRUE	FALSE	TRUE	TRUE	FALSE	TRUE	TRUE	FALSE	3	1
TRUE	TRUE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE	3	1
Total of library cases									45

Keys:

TRUE: concurrence of results

FALSE: variation of results

Provided statements for the Question 9: “How is the LWS used?” and the new categories reported:

N.b: The LWS is used for provision of cultural information about the town/city where the university library is placed.

9.b: The LWS is used for provision of information about services and facilities hosted locally in the building/s of the Library.

N.c: The LWS is used for provision of information about library's commercial activities (e.g. books' sale).

N.a: The LWS is used for provision of collection development functions open to the academic community (academic staff - students), with free or restricted access.

9.a: The LWS is used for provision of electronic library and information services.

9.d: The LWS is used for provision of information for the professional interests of the library staff.

9.e: The LWS is used for provision of an online “workstation” for the library staff (e.g. Intranet for the staff with password protected access to library automated systems).

9.c: The LWS is used for provision of information about the character and the operation of the library as an organisation (e.g. mission, information about the staff, undertaken projects).

Appendix III.6: Detailed Examination: Library organisation type

Related section: 4.2.2.2

Table A3.35: Library type – Library site status - Library staff scale

Library type	Library sites status	Library staff scale	Total of cases
Converged Services	One site Library	001 to 050	1
		no data	1
	Central Library with branches (2-8)	001 to 050	1
		051 to 100	1
		101 to 150	1
	Central Library with branches (more than 8)	251 to 300	1
no data		1	
Library & Archive Services	One site Library	001 to 050	1
	Central Library with branches (2-8)	051 to 100	1
		201 to 250	1
	Central Library with branches (more than 8)	101 to 150	1
Library Services	One site Library	001 to 050	10
		051 to 100	3
		101 to 150	1
	Central Library with one branch	001 to 050	2
		051 to 100	1
		151 to 200	2
	Central Library with branches (2-8)	001 to 050	3
		051 to 100	4
		101 to 150	4
		151 to 200	1
		201 to 250	2
Central Library with branches (more than 8)	no data	1	
Total of library cases			45

Table A3.36: Library type – Geographical region

Library type	Sample's geographical regions		Total of cases
	England	Scotland	
Converged Services	5 (14%)	2 (25%)	7 (16%)
Library & Archive Services	3 (8%)	1 (12.5%)	4 (8%)
Library Services	29 (29%)	5 (62.5%)	34 (76%)
Total of library cases	37 (100%)	8 (100%)	45 (100%)

Appendix III.7: Library web staff in library

Related section: 4.2.2.3-c & d

Primary data source: Survey Analysis of data (actual numbers) derived from the answers to the Question 4 (library staff) and the Questions 23 & 24 (library web staff).

Table A3.37: Percentage (%) of Library web staff within total library staff taking into account the elements of library sites status, library staff scale and existence of full-time Library web staff

Library sites status	Library staff scale	% of LWS staff	Existence of "FT" ¹ staff	Total of cases	Average of %
One site Library	1 to 050	7%	No	9	20%
		8%	No		
		10%	No		
		11%	Yes ²		
		13%	No		
		25%	No		
		26%	No		
	33%	No			
	43%	No			
	51 to 100	5%	No	3	10%
11%		No			
14%		No			
101 to 150	5%	No	1	5%	
Total of cases				13	16%
Central Library with one branch	1 to 050	31%	No	2	61%
		91%	Yes ²		
	51 to 100	4%	No	1	4%
	151 to 200	4%	No	2	8%
12%		No			
Total of cases				5	28%
Central Library with branches (2-8)	1 to 050	18%	No	4	33%
		22%	No		
		44%	Yes ²		
		45%	Yes ²		
	51 to 100	5%	Yes ²	5	22%
		11%	Yes ²		
		18%	No		
		28%	No		
		48%	No		
	101 to 150	4%	No	5	9%
		7%	No		
		7%	No		
		10%	No		
	151 to 200	17%	Yes ²	1	17%
		17%	No		
2%		No			
201 to 250	4%	Yes ²	3	5%	
	11%	Yes ²			
Total of cases				18	18%
Central Library with branches (more than 8)	101 to 150	16%	No	1	16%
	251 to 300	3%	No	1	3%
Total of cases				2	9%
Total				38³	18%
Notes:					
1. "FT" (Full-Time): Library staff working for the LWS development and maintenance solely					
2. Average of all cases with FT library web staff: 26.5%					
3. From the 45 LWS cases, seven cases could not be examined because there were not both needed amounts for Library staff and Library web staff, either because one of them was not given or it was not countable (use of phrase, e.g. "All librarians") or respondent skipped Section 6.					

Appendix III.8: Detailed examination: LWS uses

Related section: 4.2.3-b

Table A3.38: LWS uses & time-range of LWS practice

LWS uses: group	Time-range of LWS practice	LWS uses: pattern	Total of cases
Basic (33; 73%)	from 2 to 5 years (total: 4)	A-B	1
		A-B-C	3
	from 6 to 10 years (total: 13)	A-B	2
		A-B-C	11
	more than 10 years (total: 16)	A-B	4
		A-B-C	12
Enhanced (12; 27%)	from 2 to 5 years (total: 1)	A-B-C-F	1
	from 6 to 10 years (total: 6)	A-B-C-D	1
		A-B-C-D-E	1
		A-B-C-E	2
		A-B-C-G	2
	more than 10 years (total: 5)	A-B-C-E	2
		A-B-C-D	3
	Total		

Table A3.39: LWS uses & Library type

LWS uses: group	Library type	LWS uses: pattern	Total of cases
Basic (33; 73%)	Converged Service (total: 4)	A-B	1
		A-B-C	3
	Library & Archive Service (total: 2)	A-B-C	2
	Library Service (total: 27)	A-B	6
A-B-C		21	
Enhanced (12; 27%)	Converged Service (total: 3)	A-B-C-D	1
		A-B-C-D-E	1
		A-B-C-E	1
	Library & Archive Service (total: 2)	A-B-C-D	1
		A-B-C-G	1
	Library Service (total: 7)	A-B-C-F	1
		A-B-C-G	1
		A-B-C-D	2
		A-B-C-E	3
Total			45

Appendix III.9: LWS organising and library web staff

Related section: 4.2.5.1-b

Table A3.40: LWS organising & Library web staff scale

Managerial arrangement	Library web staff scale	Total
Co-ordination by one member of management team	1 to 5	2
	11 to 15	1
	21 to 26	1
NA ¹	1 to 5	2
	NA	1
Non one-person based managerial arrangement	1 to 5	1
	11 to 15	1
One person	1 to 5	12
	1 - 5 FT and many PT	1
	11 to 15	2
	16-20	2
	21 to 26	1
	6 to 10	9
	many PT	1
Self-managed team	1 - 5 FT and many PT	1
	11 to 15	1
	16-20	1
	21 to 26	2
	6 to 10	2
Two-managers leading schema	6 to 10	1
Total		45
<p><u>Notes:</u> 1. Respondent skipped the question 26 rightly</p>		

Appendix III.10: Detailed examination: LWS management (patterns)

Related section: 4.2.6

Table A3.41: LWS management & time-range of LWS practice

Time-range of LWS practice	LWS management patterns	Total
from 2 to 5 years	OMC	1
	PO	1
	POM	1
	POMC	2
from 6 to 10 years	none	1
	O	3
	OM	2
	OMC	1
	PO	1
	POM	4
	POMC	5
more than 10 years	OM	2
	PO	2
	POC	2
	POM	3
	POMC	11
Total		42

Table A3.42: LWS management & Library type

Library type	LWS management patterns	Total
Converged Service	OMC	1
	PO	1
	POM	2
	POMC	3
Library & Archive Service	none	1
	POM	1
	POMC	2
Library Service	O	3
	OM	4
	OMC	1
	PO	3
	POC	2
	POM	5
	POMC	13
Total		42

Table A3.43: LWS management & Library’s involvement in decision-making

Decision making areas about:				LWS management patterns	Total		
LWS content	Leading & controlling	LWS design	Budget				
Yes	No	No	No	none	1		
				OM	1		
				PO	1		
		Yes	No	POMC	3		
				OMC	2		
				PO	1		
	Yes	Yes	No	No	PO	2	
					POM	1	
			Yes	Yes	No	OM	1
						O	2
						POM	2
						POMC	4
						O	2
						O	1
Yes	Yes	Yes	OM	2			
			POC	2			
			POM	5			
			POMC	11			
Total					42		

Table A3.44: LWS management & organising arrangement

LWS management pattern	Organising arrangement	Total
Co-ordination by one member of management team	OM	1
	POM	2
	POMC	1
NA	none	1
Non one-person based managerial arrangement	PO	1
	POMC	1
One person	O	3
	OM	2
	OMC	2
	PO	2
	POC	2
	POM	4
	POMC	12
Self-managed team	OM	1
	PO	1
	POM	1
	POMC	4
Two-managers leading schema	POM	1
Total		42

Appendix III.11: Detailed examination: Authority over LWS management

Related section: 4.2.8

Table A3.45: Authority over LWS management, LWS uses & university unit(s) involved

Authority over LWS management	University unit(s) involved	LWS uses: groups	LWS uses: patterns	Total
Only library authority	None	Basic	A-B	1
			A-B-C	4
		Enhanced	A-B-C-D	1
			A-B-C-E	3
Shared authority	IT	Basic	A-B	1
			A-B-C	12
		Enhanced	A-B-C-E	1
			A-B-C-G	1
	A-B-C-D		2	
	Marketing	Basic	A-B	3
			A-B-C	7
		Enhanced	A-B-C-D-E	1
			A-B-C-F	1
	Marketing - IT	Basic	A-B-C	3
Enhanced		A-B-C-D	1	
Non library authority	Marketing	Basic	A-B	1
		Enhanced	A-B-C-G	1
	Marketing - IT	Basic	A-B	1
Total				45
<p><u>Keys:</u></p> <p>A: The LWS is used for provision of electronic library and information services. B: The LWS is used for provision of information about services and facilities hosted locally in the building/s of the Library. C: The LWS is used for provision of information about the character and the operation of the Library as an organisation (e.g. mission, information about the staff, undertaken projects). D: The LWS is used for provision of an online "workstation" for the Library staff (e.g. Intranet for the staff with password protected access to library automated systems). E: The LWS is used for provision of collection development functions open to the academic community (academic staff - students), with free or restricted access. F: The LWS is used for provision of information about library's commercial activities (e.g. books' sale). G: The LWS is used for provision of cultural information about the town/city where the university library is placed.</p>				

Related section: 4.2.8.1

Table A3.46: Authority over LWS management, Involvement in LWS management by other university unit(s) & library's involvement in decision-making

Other university unit(s) involved in LWS management	Authority over LWS management	Library's involvement in decision-making about LWS:				Total	
		Content	Design	Development procedure	Budget		
IT	Shared authority	Yes	No	No	No	2	
				Yes	No	2	
			Yes	No	No	1	
				Yes	No	4	
Yes	Yes	Yes	8				
Marketing	Shared authority	Yes	No	No	No	4	
				Yes	No	1	
			Yes	Yes	Yes	2	
				Yes	No	1	
	Non library authority	Yes	No	No	No	1	
			Yes	Yes	No	1	
Marketing - IT	Shared authority	Yes	No	Yes	Yes	1	
			Yes	Yes	Yes	No	1
				Yes	Yes	Yes	2
	Non library authority	Yes	No	No	No	1	
Total					36		

Related section: 4.2.8.2

Table A3.47: Authority over LWS management, LWS management patterns & LWS uses (groups of categories)

Authority over LWS management	LWS uses: group	LWS management pattern	Total
Only library authority	Basic	O	1
		POM	1
		POMC	3
	Enhanced	POM	1
		POMC	3
Shared authority	Basic	none	1
		O	1
		OMC	1
		POC	2
		PO	4
		OM	4
		POM	4
		POMC	9
	Enhanced	O	1
		OMC	1
		POM	2
		POMC	3
	Total		

Table A3.48: Authority over LWS management & library's organising arrangements

Authority over LWS management	Library's organising arrangement	Total
Only library authority	One person	5
	Self-managed team	3
	Two-managers leading schema	1
Shared authority	Co-ordination by one member of management team	4
	NA	1
	Non one-person based managerial arrangement	2
	One person	22
Non library authority	Self-managed team	4
	NA	2
	One person	1
Total		45

Table A3.49: Authority over LWS management & LWS staffing

Authority over LWS management	LWS staffing	Library web staff	Team existence of FT library web staff	Total
Only library authority	Only library staff	PT &FT	No	2
		PT	No	7
Shared authority	Mixed staff	PT &FT	No	1
			Yes	2
		PT	No	10
	Only library staff	PT &FT	No	2
			Yes	3
		PT	No	15
Non library authority	Mixed staff	PT	No	1
	Non library staff	NA	No	1
	Only library staff	PT &FT	No	1
Total				45

Table A3.50: Authority over LWS management & cases undertaken external funded projects – detailed cases examination

Authority over LWS management	Library's involvement in the LWS budget	Total
Only library authority	No	1
	Yes	3
Shared authority	No	3
	Yes	2
Total		9

Table A3.51: Authority over the LWS management & cases developed LWS mission statement – detailed cases examination

Authority over LWS management	Involved university unit(s)	LWS management pattern	Existence of library mission statement	Development of specialized LWS policies in administrative issues	Existence of university policies affected LWS	Existence of university policies in administrative issues affected LWS	Total
Only library authority	NA	O	Yes	No	Yes	No	1
		POMC	no answer	Yes			1
Shared authority	IT	POMC	Yes				
Total							3

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