



Phuong Lan Bach

**Redesigning academic library websites in small,
medium and large scale institutions: reasons and
solutions.**

Supervisor: As. Prof. Nils Pharo

ABSTRACT

Managing change always covers a large area in research. Many changes in academic library website have also been noticed. However, there is a gap in literature about the nature of the change in academic library website. In this research, based on factors found from literature review which influence on the academic library website, informants from three different scales of libraries were interviewed to investigate the influence of these factors on redesigning process. In this research, the reactions of each scale of institution are also studied. From the results of this research, it can be said that there is a relationship between the scale of library and how they are influenced by different factors. Either being small or medium or large institution, these libraries reacted differently when the change came. This research is also a good reference for not only researchers who look at the change in library but also managers of different scale of institution to have a proper solution in dealing with the change.

Keyword: change management, academic library, library website, library management

DECLARATION

“I certify that all material in this dissertation which is not my own work has been identified and that no material is included for which a degree has previously been conferred upon me”.

...Lan Phuong Bach.. (signature of candidate)

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LIST OF FIGURES

Figure 1: The J Curve of change	8
Figure 2: The process of redesigning the website.....	14
Figure 3: UO Library Analysis	38
Figure 4: The front page of Oslo School of Management Library website (Norwegian version)	40
Figure 5: The front page of Oslo University College Learning Centre website (Norwegian version)	41
Figure 6: The archived webpage of UO library in 1997	44
Figure 7: Archived webpage of the UO library on 15/05/2001	44
Figure 8: The current front page of University of Oslo Library website (Norwegian version)	45

LIST OF ABBREVIATIONS

IA = Information Architecture
OSM = Oslo School of Management
OUC = Oslo University College
UO = University of Oslo

TABLE OF CONTENT

ABSTRACT	i
DECLARATION	ii
ACKNOWLEDGMENTS	iii
LIST OF FIGURES	iv
LIST OF ABBREVIATIONS	iv
TABLE OF CONTENT	v
CHAPTER 1: INTRODUCTION	1
1.1. Research theme	1
1.2. Background and significance of the problem.....	2
1.3. Research questions.....	3
1.4. Theoretical framework.....	4
1.5. Methodology	4
1.6. Brief outline of thesis.....	5
CHAPTER 2: LITERATURE REVIEW	6
2.1. Change management and librarianship.....	6
2.2. Importances of academic library website.....	9
2.2.1. Roles of library website.....	9
2.2.2. Roles of academic library website	11
2.3. Academic library website redesign.....	13
2.3.1. Process of website redesigning projects.....	13
2.3.2. Usability methods used in redesigning projects	15
2.3.3. An alternative way of presenting information on library website - Mashup...	16
2.3.4. Challenges of redesigning projects	20
2.4. Nature of the change	22
2.5. Affecting factors on academic library website.....	23
2.5.1. Internal factors	23
2.5.2. External factors.....	26
CHAPTER 3: RESEARCH DESIGN	30
3.1. Introduction	30
3.2. Methodology	30
3.3. Sampling	31
3.3.1. Sampling techniques	32
3.4. Data collection method	33
3.4.1. Face-to-face interview.....	33
3.4.2. Participant observation.....	36
3.5. Ethical consideration.....	36
3.6. Data analysis.....	36
CHAPTER 4: DATA ANALYSIS	39
4.1. Presenting Oslo School of Management:.....	39
4.1.1. The library	39
4.1.2. The library website	39

*Redesigning academic library websites in small, medium and large scale institutions:
reasons and solutions*

4.2. Presenting Oslo University College.....	40
4.2.1. The learning centre	40
4.2.2. The learning centre website.....	41
4.3. Presenting University of Oslo library	41
4.3.1. The library	41
4.3.2. The library website	43
4.4. Factors affecting the redesigning process of the academic library website	45
4.4.1. Small scale institution	46
4.4.2. Medium scale institution	49
4.4.3. Large scale institution	50
4.5. Reactions and solutions.....	53
4.5.1. Small scale institution - Oslo School of Management library.....	53
4.5.2. Medium scale institution – Oslo University College learning centre.....	55
4.5.3. Large scale institution - University of Oslo library	55
CHAPTER 5: CONCLUSIONS	57
5.1. Research questions’ conclusions	57
5.1.1. RQ1: Which factors affect academic library websites?	57
5.1.2. RQ2: How do founding factors affect the decision of redesigning the website in small, medium and large scale institutions?.....	58
5.1.3. RQ3: How does each institution react with the need of redesigning the website?.....	60
5.2. Discussions.....	61
5.2.1. Limitations.....	61
5.2.2. Implications of the research.....	62
5.3. Reflections of the research.....	62
5.4. Future research ideas	63
REFERENCES.....	64
APPENDIXES	68
APPENDIX 1: Change management matrix.....	67
APPENDIX 2: Letter from Director of OSM library to OSM staff regarding internship task.....	70
APPENDIX 3: Email of recruiting informants for key informant interview	71
APPENDIX 4: Interview guide.....	72

CHAPTER 1: INTRODUCTION

As a requirement for graduating of the program International Master in Digital Library Learning which is delivered in cooperation between three universities: Oslo University College, Oslo, Norway; University of Parma, Parma, Italy and Tallinn University, Tallinn, Estonia, during spring 2010, I started working on my Master thesis. The primary topic was chosen is “Challenges and issues of mashing up academic library website: small, medium and large scale institution”. However, along the way of collecting data, I figured out that there are many different perspectives about this new topic which is “mashup”, it is hence difficult to get reliable data for mashup at this stage. On the other hand, another interesting topic has been arisen during the research is that all my samples are in the same situation which is changing library website. At that time, I decided to regenerate my research questions and include this changing situation into them. However, mashup is remained as one part of this topic, it is the reason why a large part in my literature review chapter is about mashup.

1.1. RESEARCH THEME

Change happens everywhere, from the daily life of a person to the management strategy of an organization. As defined by Jellison (2006), change is “about what happens to performance over time” (p. 5). Change process is diversity both in nature, pattern and sources. Either a positive or negative change can have bad and good influences on the organization. Hence it is important to understand or predict the change for a better preparation in facing with it. As a result, managing change is crucial in any field, library science is not an exception.

*Redesigning academic library websites in small, medium and large scale institutions:
reasons and solutions*

In the history of librarianship, many changes have taken place which put libraries in many different challenges and opportunities. From 1945 – 2005, as stated by Bobinski (2007), US librarianship has dealt with the change in information formats which are “a tremendous increase in the amount of material published in print and an explosion of new information medium formats”(Bobinski, 2007, p. 7). In parallel with information explosion is the change in organization of libraries. “Most have become more decentralized and less hierarchical”(Bobinski, 2007, p. 18). One important influence on the library change is technology. “The advent of the computer and its applications to librarians – automation, databases, online resources, the Internet, the World Wide Web, and e-mail – all changed the way libraries use and share information” (Bobinski, 2007, p. 19). Now libraries are more and more providing services and information through their electronic face – library website. Libraries have to organize and sharing information products and services in a way: the best is in the library but also not all the best is in the library. Together with the fast growth of easy used search engines like Google, users tend to find information from Google rather than library website. Moreover, with the tremendous growth numbers and formats of resources, library website is becoming outdated quickly. In that situation, the need of redesigning website is taken into consideration. Accordingly, the need of managing this sort of change is needed attention.

1.2. BACKGROUND AND SIGNIFICANCE OF THE PROBLEM

As stated by Herzog (2009, p. 59), “library websites are prime locations for thinking about information in context. Patrons come to us for information, so our websites should be able to guide to the resource they need – ideally, without navigation assistance from library staff”. However, it is not an easy mission in achieving users’ need through library website. Users always have diversity of needs and expectations. Libraries can only try to meet as much as possible their needs but not all.

In the internet era, “the academic library website is a key access point for information and services” (Manuel, Dearnley, & Walton, 2009, p. 68). The library website hence is very

important for the library in meeting users' needs. Changing in library website is also needed to manage for being used effectively. This issue then relates to the field of change management. Change management has been studied by many researchers. Change management in library science received concerns by researchers since early time. Underwood in 1990 had published a book with title "Managing change in library and information services: a system approach" in which he clarified change as a part of a management system in an organization (Underwood, 1990). Curzon (1989) in one of her series "How-To-Do-It Manual for Libraries", she wrote "Managing Change: A How-To-Do-It manual for planning, implementing and evaluating change in libraries". Although being published over ten years ago, the value of this book still remains. In this book, she discussed about change management in a sequence of events, from conceptualizing, preparing; organizing the planning group; planning; deciding; managing the individual, controlling resistance to implementing and evaluating. For each event, she indicated many implementing steps for managing change effectively.

Redesigning website also received a lot of concerns from researchers both in technical and content categories of the website. Many researchers have evaluated the features present on academic library websites, considering the design layout as well as other characteristics (Harpel-Burke, 2005; Manuel et al., 2009; Shelstad, 2005). The process of redesigning a library website and the methods by which this has been achieved has also been reported in the literature (King & Jannik, 2005; H. Liu, 2004; Rogers & Preston, 2009; Turnbow, Kasianovitz, Snyder, Gilbert, & Yamamoto, 2005). Problems in implementing this process are also indicated by some researchers (George, 2005; VandeCreek, 2005). However, the implication of reasons for this redesign process is not mentioned much in literature.

1.3. RESEARCH QUESTIONS

From the research problem above, three research questions are stated:

1) Which factors affect academic library websites?

- 2) How do founding factors affect the decision of redesigning the website in small, medium and large scale institutions?**
- 3) How does each institution react with the need of redesigning the website?**

However, the first question is expected to answer through Chapter 2: Literature review and the last two questions are expected to be clarified with the help of interviews and participant observation.

1.4. THEORETICAL FRAMEWORK

In order to keep the consistency of the research, some core concepts needed to be clarified.

Firstly, change management is needed to be defined. Change management is an issue of which theory is based on management science. However, change management happens in any field hence researches about change management can be either in business, environment, management, et cetera. In this study, change management is dealt with the change in library and information science.

Secondly, academic library is also needed to define. Brophy (2005) defined academic library as “the heart of a university” (p. 1) and “is entirely dependent upon its parent institution” (p. 1). He also emphasized: “It is not surprising, therefore, that the university library reflects its university” (p. 1). In this research, academic library refers to libraries of which host institutions are universities and colleges.

1.5. METHODOLOGY

With the aim of determining which factors have influence on the redesigning of the library website in various scales of institutions, I’m trying to determine a sample of some

universities and figuring out if there are some typical challenges and issues which appear in different context and how people react with this situation. My research hence is rather an interpretivism paradigm. In particular, it follows the empirical interpretivism when deals with investigation in the process of redesigning the library website.

Being a qualitative research, I'm correspondingly not intending to statistic or measure anything but just find a descriptive statement from three cases. The sample chosen are three university libraries in different scale: small, medium and large. However, by snowball sampling and key informant sampling, only 2 informants per each institution will be contacted for a semi-structure interview. Participant observation is also used as a supportive method for interview method in the case of small institution. However, a more detailed clarification of methodology will be stated Chapter 3: Research design which can be found below.

1.6. BRIEF OUTLINE OF THESIS

My thesis includes 3 main sections divided into 5 chapters. Details are follows:

- Describe the focus and background of my thesis, and clarify some core concepts together with my research questions (Chapter 1)
- Secondly, I prepared myself and readers for capturing general knowledge of this research theme by reviewing literature (Chapter 2). I also discuss the procedures of implementing my research including methodology used and sampling method and how data was analyzed (Chapter 3, 4).
- Thirdly, I state some findings and discussions about issues presented in this study with some recommendations of future research ideas (Chapter 5).

CHAPTER 2: LITERATURE REVIEW

In order to prepare myself knowledge and theoretical base for this research, a wide range of previous studies relating to the research theme were reviewed. In this chapter, works and studies relating to the framework of this research will be summed up and analyzed. Previous studies relate to the overall research theme of this research which is change management are conveyed below. The importance of academic library websites is also analyzed to prove the necessity of this research's topic of this research which is academic library website. Overall, this research deals with redesigning process of academic library website hence previous redesigning projects, their used methodologies and challenges is also stated in this chapter. Mashup – an alternative way of presenting information on the library website which is used by one case study in this research is also mentioned. Moreover, as mentioned above, the first research question could be clarified in this chapter hence affecting factors on academic library website are also reviewed and concluded in this chapter.

2.1. CHANGE MANAGEMENT AND LIBRARIANSHIP

Change can happen everywhere, at anytime, and may cause various results in different context. One day a housewife in a family had to change the menu of everyday meal for adapting to her husband's need of a diet. A child could decide to go to school in a different way from he did as usual for getting a new feeling. People can change from sadness to happiness, from being tired to being excited in a day because of surrounding life's influences. In an organization, staff can change their positions and tasks because of having a new boss. In a government, the policies can be changed to adapt to current situation of the nation. All those are change. Either appearing in this or that condition, being good or bad, having small or important influence on involved people or things, change is still happening. Hence it is because of the popularity and inevitable feature of change, people are trying to manage it in a beneficial way instead of being passive in

dealing with change. As Charles Darwin said: “It is not the strongest species that survive, nor the most intelligent, but the ones who are most responsive to change”.

Managing change hence always covers large area in researching world of any field. In business, Harding (2005) stated four success and four failure factors when implementing change in an organization. Accordingly, he regarded four important factors for success as being pressure for change; a clear, shared vision; capacity for change; and action. Whereas four factors which could be reasons for a failure change in organization are lack of consistent leadership; de-motivated staff kept in the dark; lack of capacity; and lack of initiative to “do something different”. From those factors, Harding built a “Change management matrix”(Appendix 1) with aim of supporting the organization to plot the progress and needed actions of change in a methodical and effective way (Harding, 2005).

In a very interesting book of Jellison, he illustrated the pattern of change progress through a J Curve (Figure 1). “The letter J approximates the path that most major changes follow” (Jellison, 2006, p. 4). Accordingly, in this path, after a drop in performance and following by a ragged period of limited progress, an improvement in performance will appear. As long as the manager understands which stage he and his employees are in, they can make sense of all changes, both in past and present.

In management science, Proctor and Doukakis (2003) addressed change in a specific context which is introducing change into management structure of a public sector organization. In their paper, they reviewed some resistances of introducing change into organization such as fear of failure, lack of information, threat to status, et cetera. Then they regarded an effective internal communication as a key for reducing these resistances.

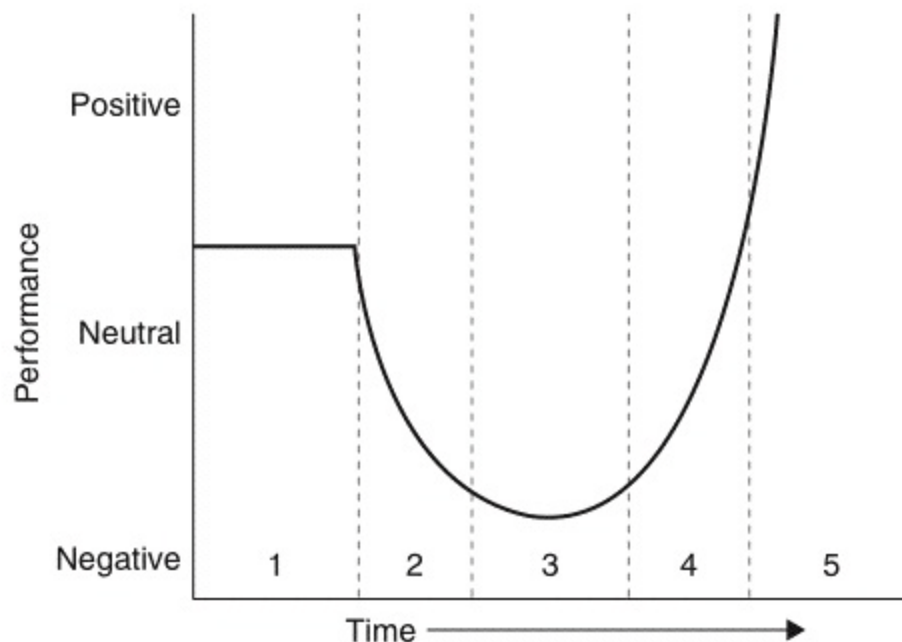


FIGURE 1: THE J CURVE OF CHANGE

In librarianship, history has experienced many changes from the growth in volumes, formats of materials to changes in services, types and system of libraries. In America, from 1945 to 2005, according to Bobinski (2007), there are fifteen major events and developments in libraries and librarianship. One of those is the tremendous growth in numbers of libraries, librarians, associations, and library building. Another event is the information explosion led to the quickly growth in volumes of print and other formats of sources. There are also other events which are the federal aid in funding to libraries and the founding of the council on library and information resources as well the produce of a plethora of library standards and so on.

Carr (2007) also stated many changes in academic research libraries in UK during the last ten years. The change noticeably is in the higher education environment in which academic research libraries are situated. These changes for instance relate to the speed of technological developments, the growth of library collections, the quality and performance assessment of library services and library funding resources. Moreover, at

the national level, UK has changed in policy, procedural and funding framework of higher education. All those affected librarianship in UK.

Change can have either positive or negative influence on the library. In a book mentioned above about managing change in library of Curzon, “Positive change is anything that will be either immediately or ultimately beneficial to the library” (Curzon, 1989, p. 22). In contrast to positive is negative change which is “anything that will be harmful for the library” (Curzon, 1989, p. 22). However, according to this author, there is no 100% positive or negative change, and “the skilful manager looks for the positive in the negative and the negative in the positive” (Curzon, 1989, p. 22).

Library change could be in a specific service (circulation, reference, et cetera) or in the organizational structure (for example, the change from one manager to management board, merging of two small libraries into one). Recently, a type of library change which is mentioned widely is academic library website redesign (George, 2005; King & Jannik, 2005; H. Liu, 2004; Rogers & Preston, 2005; VandeCreek, 2005). However, before investigating this change in academic library website, it is necessary to review the importance of the academic library website of which change is a critical issue for research.

2.2. IMPORTANCES OF ACADEMIC LIBRARY WEBSITE

2.2.1. ROLES OF LIBRARY WEBSITE

Academic library website is a specific type of library website. Its roles and issues then are influenced by library website’s ones in general. With the rapid development of Web, library community has long time been aware and taken advantage of this wealthy communication for developing alternatives information products and services through their libraries’ website. The role of library website was recognized from early stage.

Brinkley (1999) on her paper stated the reasons which make library website become an ideal connection between library and users: “Technically the Web is a perfect medium for providing easy, seamless access to information resources from any location”(Brinkley, 1999, p. 18). And the library sites, together with other archival websites, have “large amounts of great content, graphical user interfaces that encourage exploration”(Shelstad, 2005, p. 209).

Role of the library website has been regarded long time ago. Diaz (1998) had a very detail analysis on library website’s roles which can be summed up as follows:

- Firstly, the library has “the role a library workstation, both for the users and for the librarians serving them” (Diaz, 1998). According to Diaz, a good or a bad presentation and organization of a website or workstation could speed up or slow down the assistance in searching information of librarians towards users. It might either be an efficient tool to help users easily find what they want or an inefficient one that make users difficult to satisfy diversity of their needs. As a library workstation, a library website plays the role of delivering databases, electronic articles and library catalogue to users in a fast and efficient way.
- Secondly, Diaz also pointed out the second role of library website as “a way of making internal resources or products available” (Diaz, 1998). Internal resources and products are understood here as either digitized copies of special collections, including manuscripts, images, or even locally created databases. They might be products, such as instructional tools, class assignments, guides, and finding aids. The option of placing electronic reserve material in a copyright secure environment is being undertaken by many libraries. The Web has allowed librarians to find new roles as information generators, as well as to continue the functions of information gathering, organization, and access.
- Thirdly, library website plays a role of “an agent for archiving and retaining information that comes and goes on other sites” (Diaz, 1998).

*Redesigning academic library websites in small, medium and large scale institutions:
reasons and solutions*

- Additionally, he pointed out an important role of library website which is “a window to and a component of the Web at large”(Diaz, 1998). Libraries are making use of the great wealth of resources available on the Web at no cost and are examining the reliability, accuracy, and completeness of these vast resources. Where trust in a resource is engendered, and as it relates to the needs of a library's users, these resources are being incorporated into library sites as part of catalogs or in separate lists or databases created by bibliographers and reference librarians.
- Finally, Diaz (1998) stated that: “an all-important function of the library's Web site is to serve as a communication tool for a library and its users”. This function is proved by advertising and marketing function of the library website and the possibility of being an interacting tool with users.

The library website is really an important part of the library in the decade of internet. Understanding this situation, libraries are providing more and more services and resources through the library website. Academic library is not an exception.

2.2.2. ROLES OF ACADEMIC LIBRARY WEBSITE

In a report about the using of internet among college students, Jones and others stated that “Eighty-six percent of college students have gone online, compared with 59% of the general population” (Jones & Madden, 2002). It hence can be indicated that the easiest and most efficient way of interacting with this target group is through Internet. Academic libraries in which one of main target users are students hence cannot ignore this feature when developing alternative ways to provide services efficiently to users. As a result, library website becomes a very important provision for the academic libraries. Moreover, website might be the only interaction between library and students in a large institutions with thousands of students (Veldof & Nackerud, 2001).

*Redesigning academic library websites in small, medium and large scale institutions:
reasons and solutions*

So what is the main aim and objective of an academic library website? Unlike a business website, “An academic library website is very different” (H. Liu, 2004, p. 26). As indicated by H. Liu, the aim of designing process for an academic library is to meet user needs in contrast to the aim of business website which is to serve products or “selling” user needs. It is not by chance that academic libraries have to spend large amount of their budget on resources, it is because users need them. And over the last ten years, gradually the main access point for users to approach these resources is library websites. In other words, “Academic library websites are libraries’ virtual presentation to the world” (S. Liu, 2008, p. 6). As stated by Kaur (2009), many aspects of library works such as cataloging, interlibrary loan, reference service have benefited from the Internet. And academic library website plays an important role in navigating the organization of information and acts “as a source of information for teaching, research and study for their universities staff and students”(Kaur, 2009, p. 457).

Along with the fast development of information society, libraries always try to deliver to users as much as possible quality information and today is mostly through their websites.

Academic library website thus plays an important role in developing quality of library in internet era. However,

As libraries add an increasing number of often complex resources to their websites, it can become difficult for users to find what they need online. With the addition of databases and other resources, users are faced with searching through a barrage of search interfaces, which can lead to confusion and wasted time. – (King & Jannik, 2005)

It is the reason why many redesign projects for academic library website have been implemented recently.

2.3. ACADEMIC LIBRARY WEBSITE REDESIGN

2.3.1. PROCESS OF WEBSITE REDESIGNING PROJECTS

A redesigning process in library website can be implemented by different methods and for different expectations. From reviewing the process of redesigning projects, I generate the normal steps of redesigning into Figure 2 that can be seen below.

Firstly, the library is gradually aware of the need for redesigning the website through a wide range of signs. It could be the complaints from the users for irrelevant content or confused visual interface (VandeCreek, 2005), or the mismatch of information provided on the website with the users' needs (Shelstad, 2005), or the low speed of searching on the databases. After that, library by this method or another investigates the current situation of the website for planning a redesign project. At this stage, libraries can investigate users' needs, gather experiences from other institutions' websites or testing the usability of the current website. All data resulted from this step is summed up and combined with libraries' expectations to create rules for redesigning. Redesigning process is then implemented and evaluated after finishing. However, based on the situation of each library, this redesigning process is implemented in diversity of methods, but each library finally lists their aim and objectives of redesigning clearly.

With the project of the University of Wyoming's American Heritage Center (AHC), they set out clear priority audiences for the website then listed the requirements and expectations for the new website to adapt to these target users. These expectations are indicated through the matching of design and content of the website to user needs; what and how many categories should be placed on the homepage; understandable labeling for topics on the website; possibility of presenting website using guides to facilitate browsing; and the solution to make more visible the AHC faculty on the site (Shelstad, 2005).

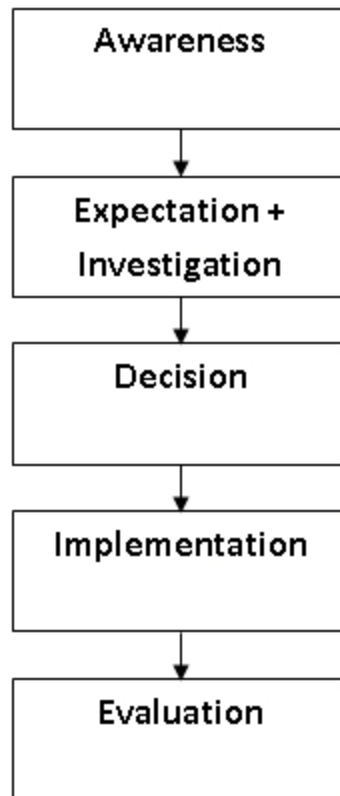


FIGURE 2: THE PROCESS OF REDESIGNING THE WEBSITE

In the redesign project of the University of New Orleans library website, the staff set out many principles and rules to follow in the changing process. Those range from general principles such as “the site has to be simple and straightforward in general, and it has to be user-centered”(H. Liu, 2004, p. 28); “the site will support both directed searching and casual browsing or “each screen will have a concise but descriptive title”(H. Liu, 2004, p. 28). Specific rules relating to graphical design as well as technical side are also listed: “Images will not be used unless they convey more information”(H. Liu, 2004, p. 28) or “Page downloading time will be limited to less than ten seconds for a network connection speed at 56Kbps” (H. Liu, 2004, p. 28).

From the general goals of redesigning the Carnegie Mellon University Libraries which are to create a user-centered interface, enhance usability, and expand resources of the Libraries' website, George (2005) depicted three design phases followed to achieve the aim. Those are:

- (1) ideation – creating a plan based on the client's resources and analysis and evaluation of options;
- (2) architecture – designing the technology, developing plans for building the elements, and systematically testing for usability; and
- (3) iteration – building and testing the systems and processes while acquiring feedback from users (p. 169).

2.3.2. USABILITY METHODS USED IN REDESIGNING PROJECTS

In order to redesign an academic library website successfully, wide range of methodologies has been implemented to solve as much as possible, the most used and efficient method is revising the current website. In doing that, usability testing is often chosen as a method of inventory the current site to gain experience for the new one. Usability testing is chosen for some reasons. By evaluating the webs usability, key challenges in designing will be identified which attract designers' attention and help the senior management understand the challenges for institutional branding. The web developers and senior managers also benefit from valuable information regarding "users' impressions, experiences and performances so that they can improve the quality of the web product/service of any organization" (Rogers & Preston, 2009, p. 200).

Usability from Usability.gov is defined as combining the following five aspects:

- “(1) ease of learning;
- (2) efficiency of use;
- (3) memorability;

- (4) error frequency and severity; and
- (5) subjective satisfaction”(Usability.gov, n.d.).

In order to test the usability of these factors in a library website, many different research methods have been used. Turnbow and colleagues used a combination of structured analysis of the previous library website, user surveys, a card sort protocol and a think-aloud protocol (Turnbow et al., 2005). Meanwhile, the Northern Illinois University Libraries made the usability testing by given task method in which volunteers used the library website to complete the 11-item task list. However, usability testing is just the first step of reviewing this website. In their project, other methods have also been implemented including focus group sessions and survey questionnaires (VandeCreek, 2005).

While in most of redesign projects, usability testing is implemented at the very beginning of the process, in the project of the University of New Orleans library, this method is used at the last step. After finishing the site redesign, library staff and library users are invited to participate in the test of using new website. Methods used for testing are interview, given task and follow up questionnaires (H. Liu, 2004).

Apart from using many methods to redesign a better academic library website, researchers also think about alternative way of presenting information on the website. One of those is using mashup in library website.

2.3.3. AN ALTERNATIVE WAY OF PRESENTING INFORMATION ON LIBRARY WEBSITE - MASHUP

After making the now necessary decision to "put up a Web site," libraries then face the real issue of what to put on the site. Apart from providing valuable information in an

accessible way and organizing the content on the website for clearance in searching and navigation, libraries are now looking for new ways to present information effectively but attractively on their website. Many alternative ways have been researched and implemented in order to reach users the most. One of those is called mashup. According to Wikipedia, “In web development, a mashup is a web page or application that uses or combines data or functionality from two or many more external sources to create a new service”(“Mashup,” 2010). Fichter (2009) defined mashup as “a web application that uses content from more than one source to create a single new service displayed in a single graphical interface” (p. 3). The originality of this term was borrowed from the music industry which refers to remixing process of vocals with tracks from different songs to create a new song (Fichter & Wisniewski, 2009, p. 54).

With the development of Web 2.0, mashup has the fruitful land to grow. “By bringing disparate data together in ways that enable users to do new things or accomplish common tasks with newfound efficiency, mashups are rapidly increasing in number” (M. Liu, Horton, Olmanson, & Wang, 2008, p. 243).

From combining open data from Chicago Police and Google Maps, a website can present crime data in different areas of Chicago. “Each of these is a product of the stunning growth in online materials available in reusable formats; each is energized by the character of digital culture; and each may be described as a *mashup*” (Lamb, 2007, p. 13).

Mashup is also received large concern from business field. As Fichter’s review, mashup is getting more and more serious among enterprises. According to Fichter, in a global survey of using Web 2.0 in business in 2008, 11% of the 2,847 responded companies said that they used mashup. Mashup is also analysed as one of the top 10 strategic technologies which are identified for most organizations. Moreover, Fichter cited from Gartner Group’s predictions for business intelligence for 2009-2013 that “coarse-grained

application mashups” will be used to deliver one-third of analytic applications applied to business processes. (Fichter, 2009, p. 54).

Educators also take advantage of mashup in enforcing teaching endeavors and creation of learning environment. Molecular Visualization Wiki is an example of mashup for educational purpose. One example is stated by M. Liu et al. (2008) is Molecular Visualization Wiki - “Asynchronous collaborative visualization systems merge existing interactive visualization programs with text-driven wikis” (p. 252). According to M. Liu and others, with this mashup, “the need for specialized software designed to support collaborative visualization is met with little additional development time and effort” (M. Liu et al., 2008, p. 252).

Government organizations take mashup into consideration when opening up their data. “The US Office of Management and Budget (OMB) have recently published APIs for access to the federal contracts and assistance databases at www.fedspending.org. Rhode Island was the first state government to offer an API to its databases at www.govTracker.org” (Warner & Chun, 2009, p. 79).

It is not by chance when mashup receives much concern in many fields like that. Mashup has some unique advantages that it is worth to try. Firstly, now many major internet companies have contributed into the mashup world. Both Yahoo! (www.yahoo.com), Google (www.google.com), and Amazon (www.amazon.com), make their data open for being used with other data sources without a lengthy licensing negotiation. Now you can reuse their data resources with little effort and time. Another reason that makes mashup develops all over the Internet is that everybody can now create mashups easily without much understanding of technical know-how by the advent of new tools.

Libraries who are owning large amount of valuable resources but with limited programming skill of course can not overlook this chance of using mashup. Brevik

(2009) regarded mashup as an advantage for both the library and the public. By opening up library data and update it, not only public has a chance to profit but also the library itself receive inputs in their own body of knowledge from both inside and outside the profession, “and by making this knowledge mashable, we contribute to new and surprising combinations of knowledge (Brevik, 2009, p. 51). There are two directions for libraries to mashup: make their data be available for other’s use and make use of other’s data.

Library can find their way to make for example their catalog reusable for other parties or patrons. Singer (2009) has a very technical explanation of making library’s data available to be mashed up with the contribution of HTML as the key. On the other hand, Engard (2009) recommended libraries to make use other’s data for library mashup and explained how they use Yahoo!Pipes – a tool of Yahoo allows users to “create mashups using a graphical interface made up of “pipes” that can flow to and from various different sources” (p. 87). Yahoo!Pipes in this context is used to merge feed of libraries’ news, blog spots page into one which save times for patrons using it. Examples of using library mashup is getting more and more which is summed up and published into a book - “Library mashup”(Engard ed., 2009).

However, mashups are not perfect. Fichter warned about some challenges that users should be aware in using mashup are privacy, rights management, reliability and provenance (Fichter, 2009). Warner and Chun (2009) also stated some risks of using mashup in government. According to them, “the ease of creating mashups can potentially result in the revelation of more information than one might like, creating possible breaches of individual privacy” (Warner & Chun, 2009, p. 77).

Although mashup is receiving high interest among enterprises, many challenges of using mashup is considered. Those are relating to the lack of supporting sources for mashup,

the reliability of mashup data, awareness and realization of the potential of mashups by the business community, et cetera (“The 10 top challenges,” n.d.).

In library field, mashup is mostly used for library websites and catalogues. However, library website plays an important part in creating the face of the library in digital environment and building the bridge between librarians who transfer knowledge and users who receive it. And the academic library websites of which serving environment is specialized for academic which is for high qualification users and requires high quality services hence are more strictly expected. Moreover, academic library is under the host university so it has been influenced by both policy and standard, academic library website mashups are hence needed careful choice from ideas to deliver services.

Whether it is just an addition of mashup into the website or redesigning the whole website, these projects for change had some challenges.

2.3.4. CHALLENGES OF REDESIGNING PROJECTS

Building a library website which is based on complex information architecture in order to ensure the quality and primary purposes of the library is not an easy task. Moreover, users’ needs are vary with different groups of users, meeting all users’ needs is also a challenge for academic library website.

From reviewing redesigning projects of library website, some challenges in this process were mentioned by researchers. King and Jannik (2005) pointed out in their paper two main issues for library web designers: currency and streamlining. Regarding currency issue, they said: “With the increased popularity of distance education and users’ demands for online research, it is essential that library websites meet their clients’ needs and provide access to a wide variety of information” (King & Jannik, 2005, p. 235). Due to

*Redesigning academic library websites in small, medium and large scale institutions:
reasons and solutions*

increasing number of complex resources from different interfaces of resource suppliers, streamlining issue refers to a logic and efficient organization of information on the website so that it can reduce branding changes and still maintain design consistency (King & Jannik, 2005).

It is the fact that academic library websites often contain large amounts of information, such as catalogs, indexes, collection information, electronic resources, as well as the services they provide. The more they want to provide, the more difficult they may have with managing and maintenance as well as organizing information in a less confusing way to users. In the field of designing website, IA was proved to be mentioned the most.

Turnbow et al. (2005), in their paper of redesigning the UCLA library website, stated some problems to their previous site which contributed in their decision of implementing this project. Those problems are relating to the IA of the website such as the organization of content, navigation system, search system, the inconsistency of the interface and the decentralized planning and management.

In the project of redesigning the University of New Orleans library's website, H. Liu (2004) also addressed some needs for change. According to H. Liu, due to the expanding of both electronic collections and library services, "the need for a major redesign of the library website became apparent" (H. Liu, 2004, p. 25). Main problems with old website which were indicated in H. Liu's paper are navigation system, labeling system, organization system and searching system of the previous website.

Unlike above academic libraries, the main reason of decision to change the website of NIU Libraries is primarily because they experienced from a previous fail redesign which based on theology of "librarians know best" instead of user-involved in redesigning. At the same time they received fund for assessment projects so the website had a chance to redesign one more time (VandeCreek, 2005).

According to literature review, it can be seen that there are little concerns about the reasons which led institution into the decision of redesigning the library website except for some mentions which are mostly about technical issue. However, apart from technical issues, are there any other reasons which enforce institutions to start this big process of change in their website? That is one of the questions that I want to find out during this research in three sample university libraries.

Another question is then emerged at this stage is that: Why studying about these reasons of change is necessary? In order to have a successful result, it is important to understand the nature of this process or change. From that investigation, a suitable managing plan would be used. In other words, change management for redesign project is needed. The nature of change is also stated by many researchers when dealing with the change.

2.4. NATURE OF THE CHANGE

“Change can come from many different sources. It can be externally motivated, internally motivated or a combination of both: it can be imposed upon the organization or initiated by the organization” (Curzon, 1989, p. 20). External change is usually social, political, economic or technological. In the situation of UK librarianship in previous decade, some changes which are external for libraries are the growth of the Internet and in particular are “rapid advances in microcomputer and digital communications technology” which put the library managers into a situation that they never foreseen before (Carr, 2007). In contrast, internal change is forced by internal issues of library itself. More often is combined forces of change. Library which has the parent entity usually has the imposed change. Initiated change might be the best when not only the managers but also supportive board can together decide for change (Curzon, 1989, p. 20).

For example, in the project of UCLA library, both the library staff who used the site daily, the members of the UCLA community and the library administration recognized

*Redesigning academic library websites in small, medium and large scale institutions:
reasons and solutions*

that they need to change due to the unsuitability of both content and technology of the current site. This is hence an internal change.

However, with the redesign project of Georgia Tech Electronic Library, because of the requirement from the host university for creating a consistency in the whole university website, the library had to redesign the website. Nevertheless, in this situation, the library itself also recognized the problem of the current website, so the decision from the host university is also a positive change for the library. This hence can be called a combination of both external and internal motivation rather than an imposed change.

For each source of change, there are different methods of managing it effectively. Hence researching about the reason of change is very important for an effective solution of change. However, according to literature review, there is a gap in studying this issue when implementing a redesign project. This is hence my main interest when doing this research in three different scale institutions: small, medium and large.

In order to understand the reason of the change in academic library website, it is important to look into factors that affect the academic library website itself.

2.5. AFFECTING FACTORS ON ACADEMIC LIBRARY WEBSITE

All web sites and intranets exist within a particular business or organizational context. Whether explicit or implicit, each organization has a mission, goals, strategy, staff, processes and procedures, physical and technology infrastructure, budget, and culture. This collective mix of capabilities, aspirations, and resources is unique to each organization (Morville & Rosenfeld, 2007, p. 26).

Thus an academic library website is influenced by certain factors under the context of an academic library.

2.5.1. INTERNAL FACTORS

a. Information architecture:

Being a library website, it is a website which is influenced by the information architecture (IA) of a website. Being an emerging field, there is no consistent definition of IA. There are hence different definitions of IA. “**In·for·ma·tion ar·chi·tec·ture**” is defined by Morville and Rosenfeld (2007) as the field including:

1. The structural design of shared information environments.
2. The combination of organization, labeling, search, and navigation systems within web sites and intranets.
3. The art and science of shaping information products and experiences to support usability and findability.
4. An emerging discipline and community of practice focused on bringing principles of design and architecture to the digital landscape (Morville & Rosenfeld, 2007, p. 4).

Morville and Rosenfeld (2007) also define IA of the website under some basic concepts, including information; structuring, organizing, and labeling; finding and managing; art and science.

However, they also warned that “The relationship between words and meaning is tricky at best” (Morville & Rosenfeld, 2007). It is because of the diversity in understanding of different readers when dealing with labels or words. Moreover, labels or words by themselves can not totally capture the author’s intended meaning. It is the reason why designing a good websites is a hard mission (Morville & Rosenfeld, 2007).

Gullikson et al. (1999) also had a paper on the impact of IA to academic website in which they surveyed users’ performance, perceptions and strategy on Dalhousie University website which had received awards for its design. However, the results gained from the survey indicated many problems from the users because “people experienced difficulty using a single pathway, distinguishing and interpreting among the choices at various levels and navigating the structure”(Gullikson et al., 1999, p. 302). Authors also had to claim that “The organisation of information, the labelling of concepts and the lack of

navigational aids clearly impacts the usability of this web site” (Gullikson et al., 1999, p. 303).

However, it is unarguable now that IA is the importance factor affecting how successful a website is, and of course academic library website as well!

b. People:

People are always an important factor in any activity because either directly or indirectly we are the ones who do the actions. With the situation of an academic library website, the people can be divided into two categories: library staff and users.

Library staff in the library is then divided into two groups: librarians and non-librarians. Literature has long time talking about the importance of the librarians in both traditional and digital environment. “Staff are responsible for delivering services to users and are probably the library’s most important asset” (Brophy, 2005, p. 98). A well skilled librarian who treats with the library website’s structure and content in a logical and easy to access way can bring about many benefits for users and vice versa. In a big academic library, IT staff could be involved. In the digital environment, the appearance of an IT staff in the library is really an advantage for the library. An IT educated staff always knows more about the system rather than even a well skilled librarian, then the cooperation between IT staff and librarians could be a perfect link for a usable website.

“Without users there is little point in having a library” (Brophy, 2005, p. 60). This is the unchanged statement both in traditional and digital library. In traditional, user needs affect to physical library’s stock, to how the stock is arranged. In digital environment, the library’s stock turns out to be the library website and the structure or content of the website is considered under users’ expectations.

c. Organization culture:

A short and easy understanding definition about organization culture of Marvin Bower, the long-time managing director of McKinsey and Company as “the way we do things around here” (as cited in Linn, 2008, p. 89).

Organization culture has a lot of influences on the institution. Lick and Kaufman (2000) indicated that many higher education institutions while attempting to change without an adequate plan to adjust the academic culture failed because of the strong and rigid influence from this organization culture.

Linn (2008) also regarded “When one wants to make modifications to an organization, it is important to understand its culture because, when it is not taken into account, the necessary changes can be rejected” (p. 91). The change of website is also a very central change in the library because it affects the e-face of the library. Organization culture is also worthy to taking into consideration when designing the website.

2.5.2. EXTERNAL FACTORS

d. Host university:

Academic library is usually a small institution in a big institution so the influence of the host university is inevitable. This can be easily seen in projects of redesigning the library website as stated in Chapter 2 – Literature review. With the case of Georgia Tech Library’s website, many redesigning projects of the website have been implemented. In the first project, it was the host university who demanded a change so that they can have a consistent university website. In the second project, it was still the host institution redesigned their campus site that lead to the change of the library website (King & Jannik, 2005).

*Redesigning academic library websites in small, medium and large scale institutions:
reasons and solutions*

With the case of Northern Illinois Libraries' website, in their second redesign project, although experiencing problem with the presentation of the website previously but it was only when the host university offered funding for assessment project that the usability testing which is a preparing step for redesigning the website was really implemented (VandeCreek, 2005).

The host university hence has a very important influence on the academic library website both in both policy and budget.

e. Content suppliers:

One thing that makes academic library being an exception from other types of libraries is that the library support for academic environment. As a result, academic library are providing more and more academic resources which are databases from other content suppliers. Now providing access to databases become a very important service of the academic library. The influence of content providers is hence increasing from time to time. In a research about the usage of the electronic journals provided within the ANKOS (Anatolian University Libraries Consortium), in which Ankara University also participates, it has been proved that there is a strong connection between the electronic journal usage and research activities so the ability of providing databases on the website could influence the research environment of the university.

In an evaluation of the second survey on electronic databases usage at Ankara University Digital Library, it was stated that different databases are used a lot among different groups of users in the academic library. This can prove the importance of databases nowadays in the academic library. On the other hand, the content suppliers who provide the databases are getting more and more influence on the academic library, especially the academic library website (Atakan, Atilgan, Bayram, & Arslantekin, 2007).

*Redesigning academic library websites in small, medium and large scale institutions:
reasons and solutions*

Moreover, in the context of using mashup in library website, content suppliers also cover data providers who make their data available for reuse. LibraryThing (www.librarything.com) is an example. “The idea behind LibraryThing was that regular people might want to catalog their personal libraries and make them available to share and discuss with others – and they did, in droves!” (Hastings, 2009, p. 243). Some libraries already had campaign to create mashup from data provided by LibraryThing such as University of Houston Libraries which was mentioned by Hastings (2009). Accordingly, by creating a widget which takes information from LibraryThing, the head of web services at this university successfully created a book information sidebar for a WordPress blog. However, using LibraryThing data means LibraryThing becomes a data provider for the library. Its influence hence increases on the library website.

Overall speaking, from literature review, the answer for the first research question which is: “Which factors affect academic library websites?” are also clarified. An academic library website is influenced by both internal and external factors. The external factors are the host university and content suppliers. On the other hand, the internal factors include IA, people and organizational culture.

Accordingly, good or bad IA could affect the usability and accessibility of a website. This hence affects directly how information is transferred to users. Although information itself might be valuable to users, as long as users couldn't find it and use it, it is just as worthless as invaluable information. Another factor is people which also have an important influence on the academic library website. Library staff who either directly or indirectly through technical platform provide services to users then contribute in the success or failure of services. Users whose needs are focus aim of the library and the library website in particular hence affect which and how information or services should be provided on the website. However, each institution has their own way of doing things or, in another word, has their own organization culture. The way they design the website then can not overlook this important factor.

*Redesigning academic library websites in small, medium and large scale institutions:
reasons and solutions*

Moreover, an academic library website has two external factors which interfere in its design. First and foremost is the host university. Academic library exists in the relationship with its host institution. The academic library serves for the general aim of the host university and together with other departments comply with the general standards of the host. Thus, the academic library website which is the e-face of the academic library also has to unite with this relationship. The design of the academic library website is then affected by this factor. Another factor that influences the academic library website is content suppliers. Content suppliers are defined in this research include databases suppliers and data providers. Academic library websites are either using or providing these suppliers' information, they are then affected by the data management of these suppliers.

Thus, academic library website is affected by many factors, these factors also somehow intervened into the challenges of above redesign projects. However, how this intervention is that was not mention in literature. It is hence needed to be investigated and is an interest of this topic.

CHAPTER 3: RESEARCH DESIGN

3.1. INTRODUCTION

This chapter starts with a brief discussion of the methodology used in this study, following with the discussion part of data collection method used to help answer the two last research questions. How and which samples were chosen will also be clarified in this chapter. The last part will be written about the data analysis process to achieve the purpose of the study.

With the aim of investigating change in academic library website in different scale institutions, the qualitative research method was chosen. In particular, face-to-face interview was proved to be a suitable method of collecting data from two informants per each of three sites. The informants were chosen either by key informants or snowball sampling. With the small scale site, Oslo School of Management library, participant observation was an aid method apart from interview because I took advantage of one month internship at this site.

3.2. METHODOLOGY

Being one of two methodologies in social researches which are qualitative and quantitative research, qualitative research has some strong benefits which persuaded me to use it for this study.

As stated by Gorman and Clayton (2005, p. 3): “The key assumption made by qualitative researchers is that the meaning of events, occurrences and interactions can be understood only through the eyes of actual participants in specific situations”. Looking into the change in academic library website and the reactions of each institution to this situation, it can be seen that the people inside the institutions are the only one who can understand clearly about their position hence can give the exact answers for these questions. Moreover, in this study, informants will be asked about their experiences and points of view about the change process of website through open-ended question. This is clearly

the ultimate goal of qualitative research which is “to understand those being studied from their perspective, from their point of view” (Gorman & Clayton, 2005, p. 3).

Accordingly, this study has taken the interpretivist paradigm of which empirical interpretivism is the main approach with the aim of investigating perspectives and viewpoints of library in its natural setting of redesigning the website (Pickard, 2007). According to Chapter 2: Literature review, the change happens in different organizations with diversity of aim, process, results and challenges, investigating the change from the related people’s experience and perspective in the institution is hence a suitable way of understanding the process happening in that institution.

In particular, the research method used is case study. Pickard (2007) stated that “the purpose of a case study is to provide a holistic account of the case and in-depth knowledge of the specific through rich descriptions situated in context” (p. 88). This study would like to choose three cases to investigate the nature of the changing decision in website of each case. By using data collection methods which are interview and participant observation, an in-depth understanding of the cases would be clarified.

In order to fulfill the research aim, I would like to look into the change process in three institutions of different scale to identify the reactions of each institution with ambition of finding their specific characteristics when they have to deal with this situation. In this study, I would like to learn about the situation of each institution through literature review and informant’s points of view then interpret how the change affects each institution. This study is hence a collective survey of which aim is to investigate the phenomena of three cases rather than just one case” (Pickard, 2007).

3.3. SAMPLING

*Redesigning academic library websites in small, medium and large scale institutions:
reasons and solutions*

With the aim of investigating change in academic library website in different scale institutions, I chose three universities representing for each scale: small, medium and large. I decided to choose institutions which stand in the same region for limiting the diversity in culture and qualification of people. Moreover, because of limited funding for the research, I preferred choosing institutions in one region for convenient research without having to travel too far from my place. Oslo turned out to be a good choice because of both being my current location and giving more options of recruiting various scale institutions. The first institution that came into my mind was Oslo School of Management where I was used to working for nearly half a year. It was hence easier for me to know whom I could contact for getting reliable information. I also had one month internship at that institution, from November 17 to December 18, 2009, with the task relating to the library website (Appendix 2). As a result I had chance to observe and had experience in how this library website was. And the most important reason that I decided to choose this institution is that their library website has just changed to the new one few months ago. This institution is also a typical small library so it was chosen without difficulty. Then I had to choose the medium scale institution. This was not a challenge for me as well. Oslo University College where I am studying is a typical medium institution and they have also experienced a change in library website. Moreover, with the help of my supervisor, I had contact with the persons who are in charge of library website. The last recruitment is also an easy decision. The biggest university in Oslo – University of Oslo gave me no embarrassing choice. The most important thing, I heard that they are also changing the website.

3.3.1. SAMPLING TECHNIQUES

Although having above advantages from choosing the three university libraries from each scale, who and how many people should be contacted for semi-structured interview was needed some techniques to achieve the research aim. In this study, the sample chosen differs in each scale as a result of features of each institution and the possibility of contact with possible interviewee.

However, understanding that the difference in scale of each institution can lead to the diversity in its situation, I have no aim of “generalizing from a research study to a wider population”(Pickard, 2007, p. 61) which is the feature of quantitative research, un-probability sampling was chosen for all the cases.

In OSM library, the body of library is not big and I used to be a part of it hence I knew the task and characteristics of each position in the library. Two key informants have been chosen because of their frequent task and responsibility with the library website. This method was also used in the case of OUC learning centre.

With UO library, because this is a very big institution with different departments which are in charge of specific category in the library, snowball interview has been chosen to find sample. It is because of the large body of library and it is hard to contact a suitable informant when I do not understand clearly about their specific task in the library, it is better to get recommendation from previous informant. Moreover, with aim of looking for two informants per each institution, after getting enough two people, the snowball choosing was stopped.

3.4. DATA COLLECTION METHOD

In this part, methods of data collection used in this study will be clarified. As mentioned in Chapter 1: Introduction, the main method used is face-to-face and semi-structure interview. However, with small scale case, taking advantage of one month internship, participant observation had a contribution in asserting the collected data.

3.4.1. FACE-TO-FACE INTERVIEW

How, and why things change or social and political processes can be easily described by qualitative interviewing projects (H. J. Rubin & I. S. Rubin, 2005). The change in

academic library website is a sort of this process. Moreover, according to Gorman and Clayton (2005), interview has two important advantages which proved to be a suitable method for this study. Firstly, with the help of open-ended questions or non-directive listening, interviewing encourages participants involved to express their perspectives about their issues and relationships in a self-perceived way. This hence is really suitable to investigate the true reactions of subjects when they have to deal with the change which is an issue they experienced by themselves. Secondly, the dialogue between interviewer and interviewees enforces the new and unexpected ideas of subjects to emerge. Understanding that the change can affect the subject but sometimes the interviewees themselves are not aware of this influence immediately but along the way of answering the questions from interviewers. This could be solved by emergent knowledge of interview. Eventhough some factors which were considered to influence the library website has been addressed from literature review, how these factors affect different scale institutions is still the question of this study.

The interview method was chosen is semi-structured interview. This is because after reviewing literature, some affecting factors were figured out and used as the ground knowledge for building questions in the interview. However, because the main aim is figuring out how these factors affect each institution which is an emergent results along conversations, follow up questions can be asked for in-depth investigating of information. The interview guide was hence created which included the necessary steps for the interview and prepared open-ended questions (Appendix 4).

All informants and researcher are non-native English speakers whom expressions could be limited when the language of interview is English. Hence I decided to use face-to-face interview because of its advantages. Through interview, interviewers will immediately recognize the misunderstanding through gesture, face of interviewee so that more expressions or clarification would be sent out. This can reduce any misunderstanding in an interview of which language is not the mother tounge of both researchers and subject.

In an interview method, pilot study is needed. Before doing the real interviews, pilot studies were carried out with two people to assess the possibility of the questions. The pilot study tested two categories of the questions which are structure and clarification of questions. One interview was implemented through Skype with an informant who is in charge of the library website in a small library in Vietnam because this library had also experienced a change in the library website. Besides, in this case, both researcher and subject are un-native English speakers which have the same feature with real informants. The interview was happened in English to remain this common feature of real interviews. However, understanding that there is the difference between a face-to-face interview and an indirect interview, one more informant was recruited for another face-to-face pilot study. In this case, a librarian student was chosen. Although this informant had not good command of library website but it was not the main focus for this second pilot study. Through this interview, the clearance of asked questions was tested.

After the pilot study, some questions were modified. Firstly, an email was sent out to five known subjects to ask if they are interested in participate the interview (Appendix 3). Because of careful choice with possible informants, all receivers accepted the invitation for an interview. In the case of UO library in which snowball interview was chosen, inside the invitation email of known informant, I ask for recommendation of other suitable person, one more informant was then recommended and contacted. This person is in charge of the content on the library website. Thus, with UO library, informants who are from both technical and content point of view on the library website was contacted.

The period of interview was from March 22 to April 29, 2010, and the average time of interview is 40 minutes. The interview was recorded and during the interview, the researcher took note important ideas. In the beginning of each interview, the aim of research and the anonymus issue for interviewee was clarified for subject. Subjects were also asked for permission of recording the interview. After each interview, some general ideas were summed up and used as an aid for the next interview.

3.4.2. PARTICIPANT OBSERVATION

Taking advantage of one month internship, from November 17 to December 28, 2009, I used participant observation as a method to support the results gained from interview in OSM library. With the task of creating mashup, any steps or challenges during the task which emerged was noted in field note. Feedback from other staff with the challenges was also noted. This can hence be used for confirming answering of what was asked in the interview.

3.5. ETHICAL CONSIDERATION

All informants were informed about the aim of the study in the invitation letter. In the end of each interview, all informants were asked to give comments or inquiry about the interview. In order to have true answers from informants, their identity is put under anonymous. Interviewee is numbered by the order of interviews which is Informant #[number]. After interview, clarification questions were sent to informants for making sure of provided information.

3.6. DATA ANALYSIS

Data analysis is implemented along with data collection process. After each interview, main ideas at that stage was summed up and used to supplement for the next interview. However, the main task of data analysis was done after all data has been collected for giving an overall picture of the situation in different scales. Transcription with categories is then implemented. However, the analysis approach method is focus on meaning, in particular is meaning coding. That is because from literature review, I already have some factors which might affect the change, the interview is then in the direction of investigating how these factors affect each institution. As stated by Kvale (1996) : “the meaning of long interview statements is reduced to a few simple categories” (p. 203). The method of analysis is hence open coding which goes from quotations of interviewers to

*Redesigning academic library websites in small, medium and large scale institutions:
reasons and solutions*

categories. An example of primary results from UO library below could be taken as an example for better understanding of the method (Figure 3).

The fruitfulness of the table was increased during the analyzing process. Information will then be summed up and compared between each case and report was then written.

Institutions	Technical	People	Host university	Organization culture	Content providers
University of Oslo	<p>-Interface: “For now it’s confusing when they navigate from the website of the portal”(Informant #6)</p> <p>-Structure: “Anything new is updated will overwrite the previous one” (Informant #6).</p>	<p>-Users’ needs: “Now you have Google that makes searching easy so they are expecting to have something very easy” (Informant #6)</p>	<p>Host university decided to change all the website of all faculties and library (Informant #5).</p>	<ul style="list-style-type: none"> - “The old site, people were allowed to do many different things because it was in the pioneer time of the website” (Informant #5) - Host university doesn’t have a rule to follow in designing website (Informant #6). - “Librarians don’t want to throw things so website is too large of information”(Informant #6). - Has a web group of both librarians and technical staff to contribute in designing process (Informant #5). 	<ul style="list-style-type: none"> - Bibsys: They are so large so you don’t have a specific person to ask(Informant #6). - Bibsys has their own way in decision-making (Informant #6). - Bibsys is going to change their organization. There is a big process of all different research library researches to create a new information system of the library(Infomant #5). - Databases’ providers: “That is very confusing for the users. We buy access to the databases but we don’t buy the interfaces (Informant #5)”

FIGURE 3: UO LIBRARY ANALYSIS

CHAPTER 4: DATA ANALYSIS

In this chapter, brief information about each case study which is the sample of this research is stated. Data collected from interviews is analyzed with the supportive information from participant observation in the small case study. The method of analyzing data is also mentioned. As mentioned in Chapter 1: Introduction, interview and participant observation was used to answer the two last research questions of this study, in this chapter, results from data analysis is summed up and answered under each research question.

4.1. PRESENTING OSLO SCHOOL OF MANAGEMENT:

4.1.1. THE LIBRARY

Oslo School of Management (OSM) is a private university college accredited by NOKUT (The Norwegian Agency for Quality Assurance in Education). OSM is part of the educational institution Campus Kristiania, which also includes NKS Distant Learning Programmes and Norwegian School of Creative Studies. Campus Kristiania is part of Ernst G. Mortensen's foundation. OSM has approximately 1,200 students which makes it a small scale institution. The OSM library works as the function of an academic library hence supports teaching and studying activities of the school.

4.1.2. THE LIBRARY WEBSITE

The library website of OSM library plays as a “portal function” as stated by the informant (Informant #4). The library of OSM provides both resources of the library as well as practical information for the users. The library website allows users to search on the library catalog through Bibsys which is a library system used among research libraries in Norway. Moreover, the library website allows users to connect to scientific databases that library buy access to. Besides, general information regarding the subject taught at the university is also provided on the website. Information about information literacy such as

*Redesigning academic library websites in small, medium and large scale institutions:
reasons and solutions*

how to search on the library website or databases is also presented. Information on how to write and cite in the essays or assignments are also supported on the website. It can be seen that the library website is a valuable resource for users to answer different type of information enquiries. The library website has just changed to a new interface which was captured at Figure 4 below.

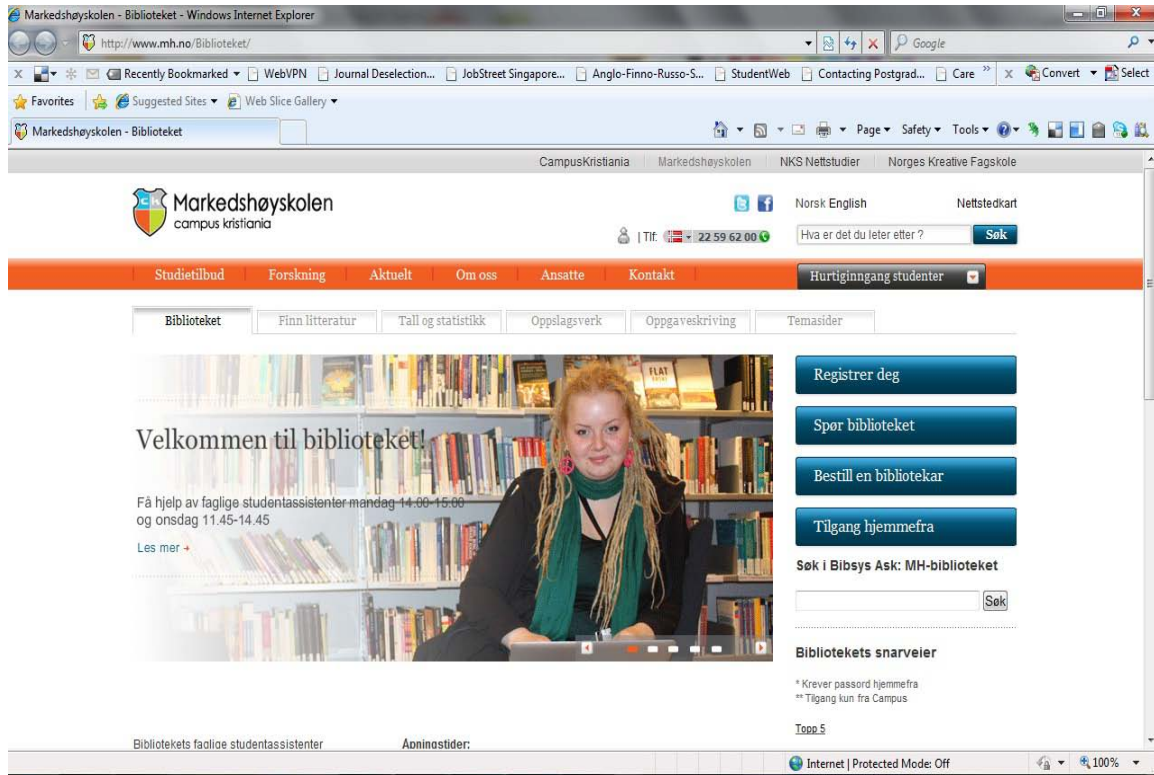


FIGURE 4: THE FRONT PAGE OF OSLO SCHOOL OF MANAGEMENT LIBRARY WEBSITE (NORWEGIAN VERSION)

4.2. PRESENTING OSLO UNIVERSITY COLLEGE

4.2.1. THE LEARNING CENTRE

In 1st August, 1994, the Norwegian college system was restructured and 18 smaller colleges in Oslo area merged into Høgskolen i Oslo or Oslo University College (OUC). OUC is now the largest state university college in Norway with over 12,000 students. OUC learning centre was established in the same year as a result of merging libraries and information centers of smaller colleges.

4.2.2. THE LEARNING CENTRE WEBSITE

OUC learning centre website is a portal of its information to users. Many different kinds of information can be found on the website. Information about resources of the centre, both information and facilities are provided on the website. Practical information is also presented such as contact address, opening hours, map of the library et cetera. The learning centre buys access to wide range of academic databases and provides access for users through their website. The current website of the learning centre is a result of one year changing in a long term redesign project which is still being improved by now (Figure 5).



FIGURE 5: THE FRONT PAGE OF OSLO UNIVERSITY COLLEGE LEARNING CENTRE WEBSITE (NORWEGIAN VERSION)

4.3. PRESENTING UNIVERSITY OF OSLO LIBRARY

4.3.1. THE LIBRARY

*Redesigning academic library websites in small, medium and large scale institutions:
reasons and solutions*

In 1811, the first and largest research university has been established in Norway named Det Kongelige Frederiks Universitet. This name was remained until 1939 before it was changed to the official name today which is University of Oslo with over 30,000 students. The University Library was also founded in the same year with the University. Together with the changing name of the University of Oslo, the library started to have the name Univetsitetsbiblioteket i Oslo. The library was also the first Norwegian state research library. At first, the library collections were collected by individual donations.

Today, the University of Oslo Library (UO) is one of the largest libraries in Norway. It consists of 4 libraries and a central administrative unit.

- Library of Humanities and Social Sciences
- Library of Medicine and Health Sciences
- The Faculty of Law Library
- Faculty of Mathematics and Natural Sciences Library(uio.no)

UO library serves a diversity of users, both in level of education and physical condition.

Main UO library users group are:

- Undergraduate students;
- Graduate students;
- Researchers and teachers at the university;
- Library employees;
- Users with the special needs.

Users with special needs are those who are physically disabled like:

- Cognitive impaired (dyslexia, memory loss);
- Hearing impaired (deafness, hard of hearing);
- Motor impaired (mobility impairments, difficulty using mouse or keyboard);

- Visually impaired (low vision, blindness, and color blindness) (Brzeska, 2005, p. 24).

About the collection, apart from physical collections which can be easily searched and borrowed through the library operation system named Bibsys, libraries also buy access to wide range of academic databases like EBSCO, ISI Web of Science, ScienceDirect etc... These databases can be easily searched and used through the portal X-port. Moreover, library has many other kinds of resources including DUO (the resources of digital publications), FRIDA (a system for research documentation intended especially for universities, university colleges, etc.), HK1 (Foreign literature from before 1966) and minuskel (the digitized material).

4.3.2. THE LIBRARY WEBSITE

The UO library website has gone through many redesign projects with variety of aims and changes. As mentioned by the interviewee, the webpage of UO library has experienced many changes (Informant #6). I attempted to view the archive of previous versions of UO website through Internet Archive (<http://www.archive.org>) which has captured some changes in the interface of the front page of library website. From the archived webpage in 1997, the website of UO library is really simple with little information on the front page (Figure 6). However, from the archive on 15th May 2001, the interface has changed a lot with much more information (Figure 7). Even though being added more information from that time together with the availability of different resources, the interface of the website has not changed much since then. And not until 2 years ago as told by the interviewee who is in charge of technical side of the library, they added a Search Box on the front page which can be seen on the current website (Figure 8). - “About 2 years ago, I was in the group who made Search Box in the middle of the page”(Informant #6).

*Redesigning academic library websites in small, medium and large scale institutions:
reasons and solutions*

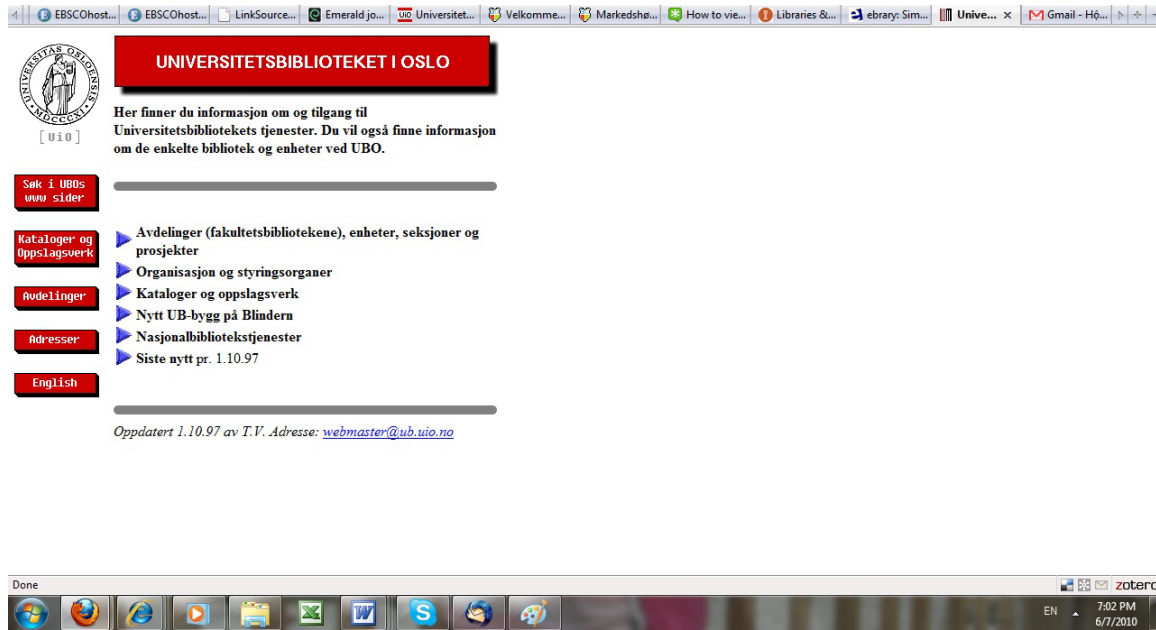


FIGURE 6: THE ARCHIVED WEBPAGE OF UO LIBRARY IN 1997

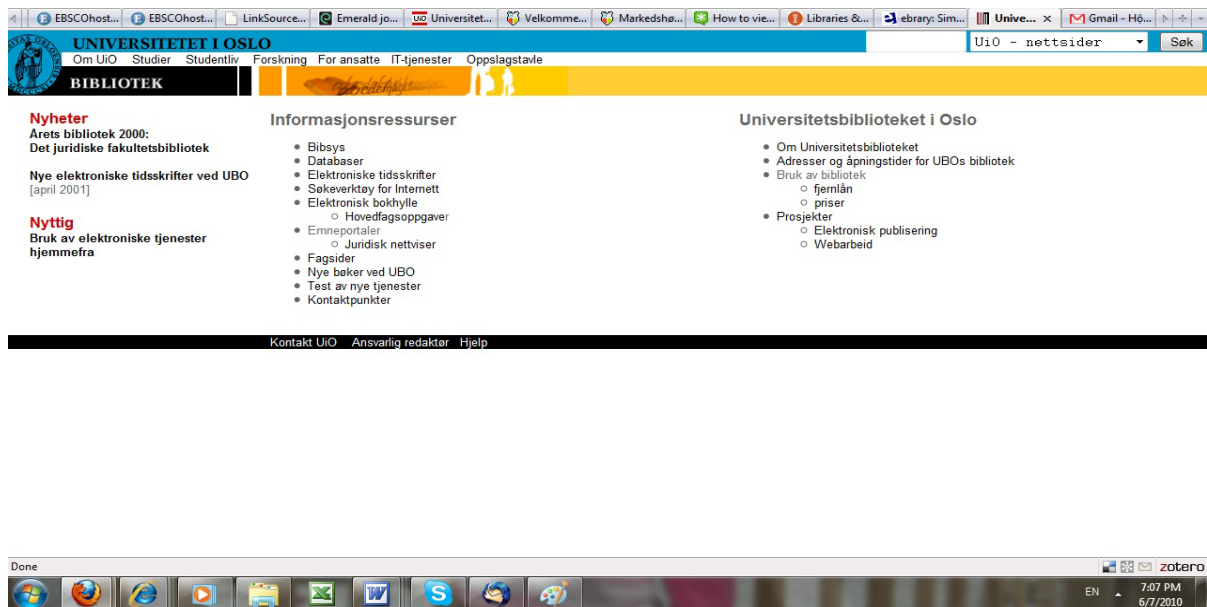


FIGURE 7: ARCHIVED WEBPAGE OF THE UO LIBRARY ON 15/05/2001

Redesigning academic library websites in small, medium and large scale institutions: reasons and solutions

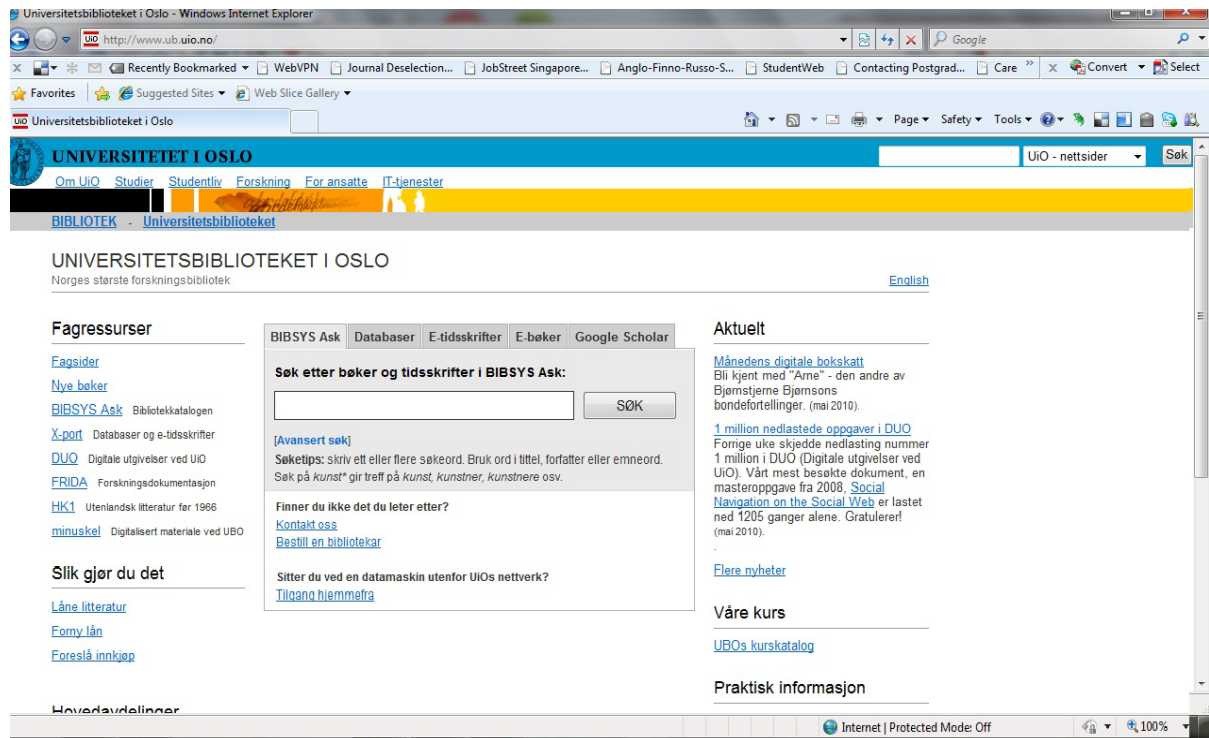


FIGURE 8: THE CURRENT FRONT PAGE OF UNIVERSITY OF OSLO LIBRARY WEBSITE (NORWEGIAN VERSION)

As mentioned in Chapter 1: Introduction, I stated three research questions. The two last questions are expected to be answered with the help of interviews and participant observation.

4.4. FACTORS AFFECTING THE REDESIGNING PROCESS OF THE ACADEMIC LIBRARY WEBSITE

Library website is the virtual face of the library in digital environment. Thus a successful website in which users can find what they want easily and fast as well as present effectively library's aims, resources, services are really important. It is the reason why libraries always try to design their website as effectively as possible. Along with the change of factors affecting the academic library website, many redesigning projects have to take into consideration when designing to adapt to new context as stated in literature review chapter above. However, depend on the situation of each library, the redesign

projects can vary in reasons and implementing steps. As mentioned in Chapter 1: Introduction, the influenced factors on academic library website were figured out in Chapter 2: Literature review for answering the first research question. The two last research questions are clarified with the help of used methodologies. This below part is hence to answer the second research questions:

RQ2: How do founding factors affect the decision of redesigning the website in small, medium and large scale institutions?

4.4.1. SMALL SCALE INSTITUTION

As stated above, one of important factors influenced the academic library website is technical problem. However, with the OSM, this is not a big issue when they have to change to the new website. That is because of the not complex structure and content of a small library website in a new school. The interviewee said: “our current library website is very much as a baby and I think it is the reflection of school being very new and the school is trying to redefine itself and this is a very small library so we don’t have a lot of stuff” (Informant #4). However, being a small library in a new school, the relationship between staff and students are really close hence librarians always have the chance to understand and meet all group of users’ needs. Students can easily meet in person with librarians to ask for assistance hence the previous library website is not the main gateway of all information for the users. As said by the informants “We had to focus on creating actually a physical environment to be attractive, we are creating a lot of truth with the students and I think we’ve done that” (Informant #4).

However, the main problem with the previous website might be the problem of adding new functions to the website, mashup could be a typical example. Having one month working as an assistant in creating mashup for the library website, I had a chance to observe and work directly with the content management system of the old website. My task was attempting to adapt mashup in a nice way into the website. That is what the library wants to do to attract more users. Using the same content management system to organize, present information on the website with the university which is EpiServer 4, the

*Redesigning academic library websites in small, medium and large scale institutions:
reasons and solutions*

functions of EpiServer 4 are based on overall needs of the university, not specifically on the library. Even though each department including library was provided the authority to edit the content in their own sub-site, mostly it allowed adding text but not HTML code. It hence raised a problem when I tried to integrate a small HTML code of mashup into the library website, EpiServer 4 did not recognize the code so it was impossible to integrate mashup into the website. This is why the librarians really look forward to the new website in which the university would use an update version of EpiServer. In many private conversations with the librarians at that time, we talked a lot about the new version of EpiServer if it could help us to make mashup be possible on the website.

Moreover, being a small library with a small staff, apart from managing content on the website, the librarians still have to do their daily tasks so time spent for website is also limited (Informant #3).

In general, the library has to change because of the need of standardizing the website of the whole university. A librarian who is in charge of the library website stated that “The whole school changed their website, so the library's website was changed as a part of this process”(Informant #3). As mentioned by the informant :

“The reasons for renewing the school web, was mainly two reasons, I think.

a) The school is establishing a new academic profile, with more focused studies in marketing, tourism and innovation. This new profile will be launched from this fall, and the new website is designed to reflect this new profile.

b) The school has changed their LMS (learning management system), and are planning to maintain a stricter separation between internal and external information, keeping information for staff and students on the LMS, and using the website to show a public, more PR focused profile” (Follow-up conversation with Informant #3).

*Redesigning academic library websites in small, medium and large scale institutions:
reasons and solutions*

Another important factor which covers the overall activities of the school and the library is the need of marketing from the university. This could be a very specialized cultural aspect of this institution. Unlike the other two universities which are public funded, OSM is a private university which means it costs money, the number of students hence play an important part in developing the school. Marketing strategy is really crucial to the university as a result. And the website is really a good medium to market. Marketing here is understood as “building up your reputation”(Informant #4). Marketing department is very central in school hence information on the website also has to be controlled by this department. Both informants when talking about what they want to have on the website mentions the attention of marketing department in what they are doing. One informant when talking about presenting mashup on the website also mentioned that “It is important to see how it looks” (Informant #3). Another when talking about the position of the library on the front page of new website stated: “We went from being on the front page to being not on the front page” so “right now I’d like to concentrate a lot on building up our content and hope that we can build up wealthiness so that we can send it back to the marketing department to have it on the front page” (Informant #4).

Being used the same technical platform with the college, while regarding the importance of having the same platform with the university which creates an union website and saves time for librarians when they do not have to develop everything by themselves, the informant also claimed: “you do not have freedom to do whatever you’d like to do, that is one thing I missed to have more attractively”. “It also makes it hard to do thing as exactly as you like, sometimes you have to fight to get functionalities that you want to have” (Informant #3).

Another problem with an academic library is the awareness of the host university about the library function. It is the fact that library is serving users with the aim of providing good services to users freely. However, sometimes the host university or the marketing department does not understand the importance of having specific function for the library on the website. “The marketing department is using the website in a completely different

way” (Informant #3). Besides, as an informant warned that the library provides free service so if the library provides too good service, others could “think that we are creating a revenue... People want to know why you are doing things extra special” (Informant #4).

Another factor which influences the library is data providers. In the case of OSM library, the library wants to create mashup for catalog with the data from LibraryThing. However, while library would like to create mashup, the library has a fear of losing the customers into information providers’ hands such as LibraryThing because of being influenced from the provided data and interface of these providers (Informant #3).

4.4.2. MEDIUM SCALE INSTITUTION

OUC is the sample of a medium scale institution with the number of 12,000 students. OUC is a typical of a change in the technical side. The old website is regarded as having many technical problems especially in the IA, specifically in structure of content. “There was lack of structure, they wanted more illustrating pictures, to develop in the layout... It was all ready for renew” (Follow up conversation with Informant #1). Those technical problems were from the inappropriate arrangement of content on the website. “Most of the space on the front page was giving shortcuts into facilities” (Informant #1) while the resources such as databases have to click onto few links to get into.

Besides, the library itself does not have a group of technical staff who are in charge of the library website but it is the IT department is responsible for the whole website of the university does. As a result, the need of the library always takes time and gain difficulties. As claimed by the informant : “We always have limitations in the system about where we can put things and the elements and what kind of spaces we get ...So you always have to work around to get it look the way you wanted” (Informant #2). And

“You can realize that people who program here has lots of stuff themselves” (Informant #2).

The library culture in OUC library might be the very focus on users. Before doing the redesign project, many workshop and campaigns were organized to find out about the users expectations towards the library website. And the fact is “the front page changed a lot and that’s because of the users” (Informant #1). Even though different users have different expectations, the library itself still tried to meet as many at these as possible. It is the answer why there are a lot of links on the front page of the library. (Informant #1).

Moreover, an external factor which also affect the way people design the website now is that the university will merge with the university in Akerhus so not many changes should be done at this stage. Informant #1 stated that: “the merging with University College in Akerhus. We are going to make a new website so I don’t think that we take the pin changes now for our website. We wait for how it would be with the new website for the university college” (Informant #1).

4.4.3. LARGE SCALE INSTITUTION

Unlike other two institutions, UO is the typical large scale institution with over 30,000 students. Being a large institution, UO has diversity of user groups with various needs and perspectives towards the library website. Bachelor students might not have much experience in using library website. Master students have a more understanding about what library website provides whereas Phd students are both students and researchers so it might be a bit complex in their needs (Informant #6). Informant also claimed that: “Very often the students don’t know what they want”(Informant #6). Another interviewee also confirmed: “for lower grade student, it’s good enough. But when they go to the Master level, they really need a better way of searching the literature and they know that it’s out there” (Informant #5). Based on that situation, the challenges of designing and redesigning a website which fits for all is not an easy task to the library.

On the other hand, the current website was regarded as having problems with the IA. The interviewee who is in charge of technical side of the website claimed that: “For now it’s confusing when they navigate from the website of the library to the portal and of course the portal is very difficult to use, the interface is very bad” (Informant #6). A Master thesis about the usability and accessibility of UO library in 2005 also pointed out many problems with the library website. The problems are from the inconsistency of the layout. “The same options are not presented in the same way on all way on all of the pages of the site ... Some of the services are only available on Norwegian homepage” (Brzeska, 2005, p. 29). The navigation of the website is also claimed as complex (Brzeska, 2005).

Moreover, being a large university library with a big collection, the library has both website and portal to provide information for the students. It provides users more choices in searching for information. “The website has two goals : Give people the opportunity to search for literature and giving them practical information about where we are, when we open and how they can contact us and the portal is to find the resources” (Follow up conversation with Informant #5). On the other hand, “the webpage is the entrance to the portal but also alternative way to find resources” (Follow up conversation with Informant #5). However, it also raised the confusing because of different interfaces. “For now it’s confusing when they navigate from the website of the library to the portal and of course the portal is very difficult to use, the interface is very bad” (Informant #6). The challenge of the designers is to make it as consistent as possible. “With the Search Box we tried to implement a part of the Portal into the site but it doesn’t work very very well in a way” (Informant #6).

A specialized aspect of the university and university library is that there is no official rule in designing the website. The technical interviewee told me that either the university or the library did not have any rule to follow (Informant #6). The interviewee who is in charge of web content also agreed: “The old site, people were allowed to do many different things because it was in the pioneer time of the website”(Informant #5). This is

also one of reason why there is no unity in the web pages of the library website. “There are many different types of web pages” (Informant #5).

An external factor that affects the library website is the databases and other content suppliers. Being a large university with various studying subjects, library has budget to spend on buying access to diversity of databases. However, all of these have different interfaces. “That’s very confusing for the users. We buy access to the databases but we don’t buy the interfaces. Whenever they feel of changing it, we just have to live with it. (Informant #5). This is really an external factor affecting the library website and it is the fact that the library cannot do much thing to deal with this because it is out of the library’s control.

Library website also has the competition which is Google. “Now you have Google that makes searching very easy so they (users) are expecting to have something very easy”(Informant #6). However, as another interviewee acquire: “You can’t just search in our resources as you search on Google because then it wouldn’t have the same hit” (Informant #5). The users have experienced searching on Google which is very easy so their expectations towards the library search also change to the direction of easy search. The interviewee also confirmed that the users now “tend to use our Search Box now as the Google search” (Informant #5). However, this raises a challenge for the library. Both of the informants insisted that there is a challenge in making searching easy but on the other hand, teaching users how to search is also really important (Informant #5 and #6).

Many research libraries in Norway use Bibsys as their library operation system. Through Bibsys, interlibrary loan throughout the libraries is enforced. However, it is a big organization which exists independently to any library, it is a system of research libraries (Informant #5). The libraries have their catalogue on Bibsys and use Bibsys to operate the catalogue. However, Bibsys is “so large that you don’t have a single person to ask” and “when you are at this level, very much part is much political in everything ... decision

making is very political” (Informant #6). Moreover, “there is a process of change in Bibsys” (Informant #5) so they have to wait for this change before making any big change to the website (Informant #5).

Even though there are many factors affecting to the redesigning a website, the main reason of the redesign project actually came from the host university. “This is not our decision, this is the university decision. They want to give the whole University of Oslo new webpages so they started with the Faculty of Law ... and now it’s our turn. That is not our decision of the Univesrity Library” (Follow up conversation with Informant #5). The reason is because “they were outdated, all the pages, and people made up over years and years without any forces of creating them. Now they would like to create a webpage for the whole university that look more like the university overall for graphic profile and everything ... and there were a lot of rotten links, outdated texts ... to make it more modern” (Follow up conversation with Informant #5). This is the typical of imposed change and the library accept this decision as an external influence. The need of the library which is:” “For the portal, there is a need to improve...but in this project of creating new webpages, we can’t really do much about the portal because there are no resources of the central project to do this”.

Thus, each institution has to deal with different challenges when dealing with the change in the website, however depend on the situation and need of their own, the way they react with the change is happening differently.

4.5. REACTIONS AND SOLUTIONS

RQ3: How does each institution react with the need of redesigning the website?

4.5.1. SMALL SCALE INSTITUTION - OSLO SCHOOL OF MANAGEMENT LIBRARY

Although this need of changing the website was coming from the host college but not the library’s urgent need itself, however, by that time, when the library had experience with

*Redesigning academic library websites in small, medium and large scale institutions:
reasons and solutions*

difficulties of making website more attractively, it turns out to be an expected change. On the other hand, this change can be seen as a positive change in the theory of change management. Even though it looks like being an imposed change when the decision of change came from the host organization, with the situation of this library, the change is received with many expectations from the library, the library rethought itself to take advantage of this chance and make their website more informative. The change at this time turned out to be combined forces of change, external force from the host organization but internal awareness from the library. It was proved by many conversations between the head and the staff in the library when they discussed what should be put on the new site and the possibility of having subject guide on the new side.

Academic library has the function of supporting teaching and studying activities of the host university, hence the change in the host university affects directly to the library. With the situation of OSM library, the university website needs to change to adapt to new aims of the university which is presenting public information or having more PR functions. It hence requires the academic library website to be in consistent with this overall objective of the school. In that situation, apart from attempting to ensure the basic functions of the library website, the library also managed to provide information and services in a way of more marketing for the library itself and its host university. Answers from both of informants at OSM library when talking about what they wanted to do in the new website ended up in this overall objective - "The marketing value right now that is the most important" (Informant #4). It might be also one of reasons why they chose to apply mashup in the library website because of its attractive way of presenting information. An interviewee talked that "I want to have more visibly attractive things on the web"(Informant #4) and "For example mashup with Library Thing has a lot to do really with visual"(Informant #4).

However, apart from positive reactions with the change, the librarians also have to deal with some issues that using the same technical platform with the university brought to them. That is the unbalance between the need of the school and the library. When talking

about the numbers of tabs on the front page of the library website which are from the website template of the school site, the informant said that: “I can live with that but I’d rather not have it more” (Informant #3).

4.5.2. MEDIUM SCALE INSTITUTION – OSLO UNIVERSITY COLLEGE LEARNING CENTRE

“The front page changed a lot because of the users and we thought that it was what users wanted”(The Informant #1). That is the way the learning centre deals with the need of changing. When the technical problem of the website was emerged, the learning centre was based on the users’ needs and try to design the website to achieve as much as possible their needs.

This change of website is more like an internal change because the learning centre itself was aware of the need for change. That is the answer why there were no one who disagreed with the change. That is because all the librarians have contact with students everyday and as the interviewee said: “We have feedback all the time and we have picture of what they need but the picture was not very different”. There might be discussions in how to present information which is “Where is that now? I’m used to use that one and go directly that way and that icon” (Follow up conversation with the informant #1). However, the overall change was received with positive response from the staff.

This change of the learning centre can also be an initiated change, because the learning centre did not decide to change by themselves but as said by the interviewee, they also has “quite a big reference group to the project which we asked and got feedback from them” (Follow up conversation with informant #1). This change hence has more chances of success as many initiated changes do.

4.5.3. LARGE SCALE INSTITUTION - UNIVERSITY OF OSLO LIBRARY

*Redesigning academic library websites in small, medium and large scale institutions:
reasons and solutions*

Dealing with the imposed change from the host university, even though it will create a more unity throughout the university website, the rule is now “tightened a bit”(Informant #5). The university will create many templates for departments including library to fill in their information so “now the freedom is a bit limited”(Informant #5). The librarians who are being changed from freely editing information on the web to fill in available template could find it uncomfortable. However, as the interviewee said: “We live in a relationship with the university”(Follow up conversation with Informant #5) so the librarians have to accept the change.

However, an urgent need of the library which is improving the portal and integrating portal with the webpage is not fulfilled at this stage. Even though this is a very important need because it could help users less confusing with too many interfaces as it is now, “there are no resources of the central project to do this” (Informant #5).

Thus it can be seen that this change of webpage is an imposed change which is an external change that the library has to adapt to and temporarily delay its other needs.

Thus, depend on the condition and expectation of each institution, the change of the website is vary in nature and influence, each institution hence has different reactions and solutions.

CHAPTER 5: CONCLUSIONS

In this chapter, the answers for each research question are concluded and compared to have the overall statement of this research. In this chapter, discussions about the limitations and implications of this study are also stated. My own reflections of this research process are then discussed here. In the last part of this chapter, some future research ideas based on this study are also recommended.

5.1. RESEARCH QUESTIONS' CONCLUSIONS

5.1.1. RQ1: WHICH FACTORS AFFECT ACADEMIC LIBRARY WEBSITES?

For the first research question which is: “Which factors affect academic library websites?” was clarified from literature review which include both internal and external factors. Internal factors are IA, people and organization culture. External factors include the host university and content suppliers.

Firstly, the factor of IA was proved to affect all kind of library website. A good or bad website is influenced by its IT. Accordingly, a bad IA website could make users confusing in looking for the information they need on the website. Although the website could have valuable information, this information could be difficult to find then it is worthless to users. On the other hand, a website with good IA could lead users to as much as possible information they need, hence users' needs are satisfied.

Another internal factor which influences on the website is people. Accordingly, library staff who provide services to users have affection on website in both content and interface of the website. Users are certainly another important factor. With the aim of satisfying users' needs, the designers of the website have to take into consideration users' expectations to the website, in both content and appearance.

The last internal factor is organization culture. Accordingly, the working manner of each institution could affect the website. An academic library website reflects the library hence reflects the culture of this library. This factor is hence unavoidable.

Apart from internal factors which influence on the library website, there are also another external factors. A very important factor which makes the academic library website be tightened into is the host university. The library website will have to design in the standard of the host university because it is a part of the host. The policy of this parent institution will also decide what and how things should be put on the website.

The other external factor is the content suppliers. Accordingly, this factor will affect the academic library website in a sense of using their data providing on the website. The library website present information or data from these providers hence is affected by the way these organizations treat their data.

**5.1.2. RQ2: HOW DO FOUNDING FACTORS AFFECT THE DECISION OF
REDESIGNING THE WEBSITE IN SMALL, MEDIUM AND LARGE SCALE
INSTITUTIONS?**

For this research question, with different scale of institution, situation of affecting is various.

With technical factor, the bigger scale institution is, the more problem they may have. With large scale library, UO library which have many resources and providing sources hence has the problem of integrating in a less confusing way for users. This website has been tested its usability of which results showed that it had many problems with IA. Being a large university library, providing both portal and website with different interfaces for finding many collections or resources with different interfaces also raise the confusion in users who use them, especially when the interface is difficult to use. OUC learning centre, on the other hand, has the problem of providing information to users for visible and easy use. According to users' need survey done by the library as said by informant, users found a lot of problems relating to the subject they needed is not accessible easily for them. However, OSM library does not have many problem with that.

*Redesigning academic library websites in small, medium and large scale institutions:
reasons and solutions*

This library just had the problem when they wanted to adapt mashup into the library website. This issue was because of the limitation of the old content management system (CMS) which was used as a standard for the whole university website. With the new website, an update version of CMS has been implemented hence the library was looking forward to the change in the website.

The factor of human being could give an important influence on all size of institution in which small library is more influenced by library staff factor while large institution has users as a challenge. With small library like OSM, the staff cannot concentrate on doing the website management a hundred percent because they also have to do other task in the library. This hence limits their ability of strict managing the website. However, with not much diversity in users' qualification and subject because of being a small institution, OSM library is not having many challenges with users' needs. Library staff is also an issue with medium scale institution which is OUC learning centre but only when they have to deal with technical side of the website. The lack of IT staff inside the library creates a gap between library's need and actual visibility of the website of which edited by the IT staff. With a large body of staff, UO library has both technical and content librarians which help to provide information in an effective way both in technical and content. Users are also a challenge for this big institution because of their diversity in needs and qualification.

Another factor, which is organizational culture, proved to affect all type independence of size of library. The marketing feature of OSM library affects the way of presenting information on the new website of the library which is for more PR feature. Whereas in OUC learning centre with a medium size of users, OUC learning centre always tried to design the front page that can capture as much as possible what they surveyed from users expectation. What users here want is to have all the information easily accessed right on the front page. As a result, the front page of learning centre includes many links. With UO library, either this university or the library had not instructions in designing website so the librarians freely designed the website in what they want.

Existing in a relationship with the host university, either small or medium or large scale institution was affected by the host university. In the case of OSM library, the host university is the one which affects directly to the change. It is the host university which decided to change to the new website for reflection of new studying programs and more PR function for the university website. With OUC library, the host university also affect the library in a sense that it is about to merge with another university which makes the library take caution when they want to make big change in the library site. The redesign project of UO library website is also decided and funded by the host university.

Some of the institutions were affected by content providers. In the case of OSM library, in this redesigning project, the need of mashing up the website for the library was also limited by the content provider which is LibraryThing provider. UO library also has to wait for the change in Bibsys to decide which changes they should do to the library website. In this specific project, only OUC learning centre were not affected by this factor because the change was mostly related to arrangement of information on the website without referring to copyright or information submission with the suppliers.

Thus, all institutions are affected by internal and external factors either in this or that level of influence.

5.1.3. RQ3: HOW DOES EACH INSTITUTION REACT WITH THE NEED OF REDESIGNING THE WEBSITE?

With the last research question, the reaction in each institution is also different.

In general, it could be said that in all these three cases, the change of the library website had positive influences. Even though in most of the cases, the decision of changing came from the host university, the academic library website of all these three cases had already issues which needed to be reviewed and upgraded. With OSM library, the problem was from the technical function of the old website which limited the library to add mashup. In

the case of OUC library, a problem in IA of the site proved that it should be changed. In UO library, there was also problem with the IA. Decision of changing hence came with positive influences.

However, depend on the situation of each case, the nature of the change could be combine forces of change with OSM library, internal change with the case of OUC learning centre and imposed change with UO library. The difference in the nature of change with each case affects how each case reacts with the change. In OSM library, because it was combine forces of change, the library received the change with expectations. In OUC learning centre, with the advantage of an internal change, the learning centre itself had taken advantage of this change to revise and redesign for a better website. However, in UO library, the change was imposed change, real needs of the library was not fulfilled at this stage hence with this library, the change also brings negative influence. The library had to do a lot of work to adapt to the new standard of the university while their factual needs could not be done at this stage.

Thus, all of these factors transparently affect various size of institution differently, the redesigning website process is needed to be take into consideration all of those variables in order to achieve the goal of a better redesign project.

5.2. DISCUSSIONS

5.2.1. LIMITATIONS

In order to make clear the scope of this research, some limitations of this study should be addressed. Firstly, the most suitable data collection method of this study is semi-structured interview. However, both interviewer and interviewees is not native English speaker then the expressions could sometimes not be clear and thoroughly understood by each other. Although this limitation was reduced by face-to-face interviews and follow-

up conversation after that for avoiding the misunderstanding, I understand that this is still an inevitable limitation of the study.

Moreover, the number of institutions for each scale is just one hence they cannot represent for the entire population. However, being a qualitative research, the representation is not the main aim. Furthermore, the people chosen for interviews had good command of their knowledge in library website of which was necessary for interviewer.

5.2.2. IMPLICATIONS OF THE RESEARCH

It appears that any scale of institution is differently influenced by a set of factors hence managing a redesign project must always take all of these factors into consideration. These factors can have positive and negative influence but if we understand and predict its influences, negative influence can still be managed in a positive way.

It also appears that the larger scale institution is, the more complex issues they have to deal with. Hence a redesigning project in large scale institution needs more preparation and considerations before implementing.

Managing the redesign project is hence needed careful preparation and implementation for success.

5.3. REFLECTIONS OF THE RESEARCH

This study was an interesting experience when I learnt that things do not go as they look. Even though interviewing informants with open mind in order to gain natural events and real perspectives from them, I could not refuse that some predictions unconsciously emerged in my brain. And it was surprising when fact did not convey what I thought. For example, with small library, the limitations in library staff, budget could be a resistance for a fruitful website. However, it is because of this limitation, their effort of finding new

way with low cost but effective results enforces them to approach new and interesting ideas like using mashup which was still a new concept to other bigger institutions.

Overall speaking, it is always important to keep your mind open when doing a research because sometimes your experiences might not help but be a resistance for you to understand the real issue.

5.4. FUTURE RESEARCH IDEAS

Base upon the results of this qualitative research, some future research ideas could be possible in order to get a depth understand in specific parts of this topic.

Firstly, this study can be a basic idea for other quantitative researches regarding the investigation the quality of redesigning website project in academic library. This can be done either by survey the users' satisfaction before and after the projects happened or the library staff's perspectives about the project.

Secondly, this study can be also a good reference for researchers to study about the building and maintaining digital libraries base on their scales. Because the library website can also be considered as a primary type of digital library, the factors affecting its can be somehow the same with digital libraries as well.

There are plenty of talented researchers in the scientific society today; I really hope this study can contribute any value for future successful researches.

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*Redesigning academic library websites in small, medium and large scale institutions:
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*Redesigning academic library websites in small, medium and large scale institutions:
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APPENDIXES

APPENDIX 1: CHANGE MANAGEMENT MATRIX

Plot in each column where the organisation stands and then try to make progress by moving up the matrix in a straight horizontal line, targeting the weaker areas first.

Awareness > Interest > Desire > Action

Pressure for change	Clear shared vision	Capacity (resources)	Action (and performance)
3 Policy and action plan in place Regular reviews Active commitment from top management	3 High level of awareness and support at all levels Staff highly motivated	3 Resources (staff and funding) routinely committed Cost savings re-invested for further improvements	3 Action being taken and embedded throughout the organisation Monitoring and reporting of progress
2	2	2	2

Policy agreed and communicated to all staff	Representatives from all levels of management chain involved in planning process and drawing up action plan(s) All staff given opportunity to make an input	Key staff working on plans and projects. Staffing and funding needs identified and resources becoming available	Wider engagement across the organisation 'Low-cost' and more 'no-cost' measures implemented
1 Board level "champion" appointed Drafting of policy	1 Key and supportive staff identified for assisting in drafting policy, taking action, and driving the process	1 "Champion" appointed at middle management level (to support the Board's "Champion"). Training & development needs assessment	1 Commencement of action at some levels of the organisation. Some 'no-cost' measures implemented
0	0	0	0

<p>No explicit policy</p> <p>'Business as usual', no forward planning</p> <p>Lack of consistent leadership & responsibility (buck-passing)</p>	<p>De-motivated staff kept in the dark</p> <p>No communication.</p> <p>General mistrust</p>	<p>No investment. High stress levels in over-worked and under-valued staff</p> <p>No training & development</p>	<p>Zero action</p> <p>(or limited to crisis management)</p>
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APPENDIX 2: LETTER FROM DIRECTOR OF OSM LIBRARY TO OSM
STAFF REGARDING INTERNSHIP TASK.

Hi!

I would like welcome Bach Lan Phuong, an HiO Erasmus student from Viet Nam. She is working on an MH Library project until 18th of December. She is interested in how HTML coding can better support library web services. She is helping us to integrate mashups into our website. In this case it will mean pulling together functionality, information and images from various book sites (amazon.com, bookelskere.no, and librarything.com). This is a programming challenge within many of the web editing tools that academic libraries are often forced to work within. Hopefully, with Phuong's help we will have a more colorful and informative presentation of our book collection in the New Year☺

Phuong will be working on the fifth floor in the office next to Helene.

Best regards.

Hilah Geer

Head Librarian | hovedbibliotekar

Oslo School of Management | Markedshøyskolen

Campus Kristiania

Kirkegata 24-26

PB 1195 Sentrum

0107 Oslo

hilah.geer@c-k.no

tlf:+4794208691

APPENDIX 3: EMAIL OF RECRUITING INFORMANTS FOR KEY
INFORMANT INTERVIEW

Dear Ms./Mr. X,

I'm Phuong Lan Bach, a Master student in the program International Master in Digital Library Learning which is offered in cooperation between 3 universities: Oslo University College (Norway), Tallinn University (Estonia) and University of Parma (Italy).

I'm doing a Master thesis for the final semester in Oslo University College under the supervision of Prof. Nils Pharo. My research aim is to identify practical issues of managing and organizing academic library website. Hence I want to talk to information professionals about their experiences and perspectives of providing and presenting content in a library website.

My main interests are about your opinions in how you want to present information or services on the library website in an attractive but doable way and what do you find difficult in doing that?

I'll therefore really appreciate if you can please spend time around 1 hour talking to me about that, preferably next week but anytime and anywhere which is convenient for you.

I'm looking forward to hearing from you soon!

Thank you very much for your time!

Best regards,

Phuong Lan Bach

Master student

International Master in Digital Library Learning

Oslo University College

+47 902 193 17

APPENDIX 4: INTERVIEW GUIDE

I. Introduction:

Introduce myself and topic

Thank you for participating

Present purpose of the interview

Stating recording issue: ask for acceptance

II. Interview questions:

Warming up question:

What is the role of the library website to the library face?

In your opinion, what kind of information should be put on the academic library website?

What do you think about your current website?

What do you think could be the most important information on the academic library website?

Specific questions regarding change process:

When did you decide to change to this new website?

What is the main reason of changing the library website?

What does other staff talk about this change?

What is the difference between the old website and the new website?

Which part on the website has changed the most? Why is that?

Whenever you want to add any new thing on the website, do you have any difficulties in doing that?

Is there any requirement from the host university when you design the website?

What are the most discussions when you design the new website?

Do you have to do anything with the database suppliers when you change the website?

Before doing the redesign, have you implemented any survey to ask for users' needs?

III. Conclusions:

Do you want to ask or comment anything about this conversation?

Please be assured that your information will be kept confidentially. I'll send you an email to ask for clarification of information when I finish analyzing the data.