CONTEXTUAL FACTORS AFFECTING THE DEVELOPMENT OF DIGITAL LIBRARY EDUCATION IN VIETNAM

By

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To mom - For your love and sacrifice

In loving memory of dad

Abstract

In Vietnam the need for digital library education (DLE) has increased significantly in the last two decades. Educating staff to establish and manage digital libraries has become a critical issue. However, there are no DLE programmes offered by library and information management (LIM) education providers in Vietnam and we do not know why this is the case. The aim of this study is to investigate and understand the factors affecting the development of DLE for LIM practitioners in Vietnam.

The interpretive study employed a qualitative approach and its findings are based on the analysis of data gathered in 17 individual interviews and 11 focus groups with key stakeholders, as well as from documentary evidence. The stakeholders involved in this study include LIM practitioners, LIM managers, LIM lecturers, library school deans, government policy makers, academic library directors, professional association chairpersons and LIM students. To guide the data gathering and analysis, an initial conceptual model of factors affecting DLE was developed from three sources: Fullan's Educational Change theory, Nowlen's Performance Model in continuing education for practitioners, and Rogers's Diffusion of Innovations theory.

The study found seven major factors were affecting the development of DLE in Vietnam: the government, the information technology infrastructure, the prevailing social and cultural values, the efforts of change agents, the attitudes of key stakeholders, the characteristics of DLE design, and the nexus of the educational needs of library staff and the libraries in which they were working. Of these the government factor was the most influential. These factors were inter-related and affected DLE development at different levels.

The initial conceptual model was revised based on the study's findings. The revised model provides a contribution to educational change theories relevant to the identification and understanding of factors affecting professional educational programmes in universities in developing countries. The study's findings are also of value to governments, libraries, library schools and library associations for developing relevant policies and new curricula for DLE, and for establishing new professional development programmes in DLE for library staff.

Keywords: Digital library education, digital library, digital librarian, LIM practitioner, educational change, library and information management, Vietnam

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List of Abbreviations

CPD	Continuing Professional Development
CPE	Continuing Professional Education
CS	Computer Science
DL	Digital Library
DLE	Digital Library Education
DLF	Digital Library Federation
ICT	Information and Communications Technology
IFLA	International Federation of Library Associations and Institutions
IT	Information Technology
LIM	Library and Information Management – *This name is used as the same meaning with names "Library and Information Science" and "Library and Information Studies"*
MCST	Ministry of Culture, Sports and Tourism
MIC	Ministry of Information and Communication
MOET	Ministry of Education and Training
MOST	Ministry of Science and Technology
NAV	National Assembly of Vietnam

Chapter 1 Introduction

> *"Educational change is technically simple and socially complex. In the process of examining the individual and collective settings, it is necessary to contend with both the "what" of change and the "how" of change."*
>
> (Fullan, 2007, pp. 8, 84)

In this chapter I present an overview of this study which is aimed at understanding the factors affecting the development of digital library education (DLE) in Vietnam. The motivation for the research is explained, and the research problem is stated in terms of a perceived gap in existing knowledge. The research questions are then stated, followed by discussion of the research objectives as well as the significance of the research. The research design is also described.

1.1 Motivation

Digital libraries (DLs) are a key element of educational and training development in the information age. As Witten (2005) noted, "libraries are pillars of education, and it is natural to expect that digital libraries will provide new opportunities for innovative educational practices" (p. 192). This statement is relevant for education in Vietnam. Since 1986 this country has experienced a revolution of innovation in most areas, including economics, agriculture, industry, education, and administration systems (Political Institute, 2008). Libraries and information organisations are considered to be essential tools of change in Vietnam, especially in education (Standing Committee of National Assembly - SCNA, 2001). The Vietnamese government has emphasised that high quality human resources play an important role in national development, thus education and training are the highest priority in the planning of national development, and the best solution for developing human resources in Vietnam (National Assembly of Vietnam, 1992). With developing technologies and changes in the library and information field, especially the development of DLs, there is a need for educating library and information management (LIM) practitioners in their new roles in the information age.

The number of DLs has increased significantly around the world in the last two decades. During this time more information in libraries has become available in digital form and

many libraries have begun to create their own digital collections of important cultural heritage resources. This trend has occurred in both developed countries and developing countries. In developed countries, digitisation projects began in the 1990s: for example, the VD17 project in Germany digitized all 17th century printed publications in the German language; the DL project implemented by the National Diet Library in Japan focused on digitising children's books published in Japan in the 19th Century; in the U.S., the Library of Congress carried out a digital library (DL) project which stored historical and cultural collections in digital format (C. R. Arms, 1996). In 2006, Europe started an ambitious DL project to build a European DL, the goal of which is to preserve and introduce the culture of all members in Europe (Calhoun, 2014; The European Library, 2015).

In developing countries, many digital projects have been undertaken. Grace (2009) has identified a range of DL projects in Asian nations. For example, in India, the National Library has converted 25 million pages of selected books into digital form, and some libraries have implemented DL projects supported by the government. In Malaysia, a national DL system is being developed which aims to share the digital resources of all the libraries in Malaysia. China started DL projects in 1996, which involved cooperation by libraries, universities, research institutions and Internet-based companies. These projects aim to create and distribute digital resources, construct standardised DLs, and educate librarians to become digital librarians. Other countries such as Thailand and Philippines have also implemented a number of DL projects which aim to establish national digital library systems and share information among members.

The development of DLs has led to the need for LIM practitioners with appropriate knowledge and skills to manage them. To meet the demand, many educational institutions have begun to offer DLE programmes. Consequently, the number of DLE programmes around the world has increased, though none of these are in Vietnam. The surveys and research about DLE by Spink and Cool (1999), Saracevic and Dalbello (2001), Liu (2004), Perry (2005), Singh and Wijetunge (2006), Murray and Welch (2009), Johnson (2009), Phuritsabamand Devi (2009) , Nieuwenhuysen (2011), S.H. Nguyen & Chowdhury (2011, 2013), and Myburgh & Tammaro (2013) show that the number of educational institutions which offer DLE (including integrated and independent DL programmes) has been increasing, and there is the need for digital librarians who play an important role in the development of DLs.

There are current developments in DLs in Vietnam, and a growing need for LIM practitioners who can work in the digital environment. Most university libraries and many major public libraries and information centres have developed IT systems with library software, and their printed collections are being converted to digital format. These organisations are challenged by the lack of staff for their DL projects (T.Q. Tran & V. H. Do, 2014). Applying new technology to modernise the library sector with a particular focus on DL development and the digitisation of highly valued materials are objectives stated in the approval document for the Master Library Development Plan (Ministry of Culture, Sports and Tourism [MCST], 2007a). In addition, improving the quality of human resources for the LIM field is the main priority in Vietnam's library development master plan (MCST, 2007a) and in other relevant government documents (Ministry of Education and Training [MOET], 2009; Standing Committee of National Assembly, 2001). However, there is a lack of staff with sufficiently developed competencies to work in DLs. (T. D. Nguyen, 2009; T. M. N. Tran, 2009; T. Q. Tran, 2009), and there are no complete DLE programmes offered by LIM education providers in Vietnam. A recent report on LIM human resources showed that 49 percent of LIM practitioners do not have DL competencies (T.Q. Tran & V. H. Do, 2014). Educating staff to establish and manage DLs has emerged as an important issue in Vietnam. From this situation, therefore, the present research has sought to fill a gap not only in our knowledge of DLE in Vietnam, but also to contribute to developments in this area.

While the need for DLE in Vietnam is clear, developing DLE is a complex task that involves many issues. As noted by Saracevic and Dalbello (2001), DLE is affected by many factors:

> Education for digital libraries is a complex proposition, in part because it involves so many layers of technology and at the same time so much that is new in creation, content, representation, organisation, access, and use, and in social, legal, and cultural issues (p. 15).

Educational developments are affected by social trends and technology (Ma, Clegg, & O'Brien, 2009), and therefore may be affected by existing factors in the environment where the change or development occurs. These factors may relate to technology, to the people involved in the change, to policies, finances and culture. They may act as enablers or barriers affecting the change process. Therefore, it is important to identify and

understand these factors before making efforts for change or developing an educational programme.

Using the above statement by Saracevic and Dalbello (2001) as a starting point, I designed this study based on an assumption that a variety of contextual factors affects the development of DLE in Vietnam. The primary aim of the study is not to develop a DLE programme for Vietnam; rather it is to identify and understand the contextual factors affecting the development of DLE in Vietnam.

1.2 The research problem

The introduction of information technologies in Vietnamese libraries over the last two decades has led to a need for LIM practitioners who are capable of working effectively in the digital environment. However, with regard to DL development in Vietnam, LIM practitioners and university students have little opportunity to attend DLE programmes because there are none offered in Vietnam.

As a result of the situation described above, people with an interest in the development of DLE in Vietnam can logically ask "Why are no DLE programmes offered in Vietnam despite the need for these programmes?" Education for digital librarianship in Vietnam may involve many factors related to the technological, social, cultural, legal, economic, political, and educational environments. However, at this time, we are uncertain which factors they are and how they affect the development of DLE.

Therefore, given this situation, the research problem investigated in this research is that we lack understanding of the contextual factors affecting the development of DLE in Vietnam. The process of developing a model which identifies these factors will contribute to our understanding and knowledge of the development of DLE in Vietnam.

1.3 Research questions

To address the research problem, the study has two main research questions:

- What are the contextual factors affecting the development of digital library education in Vietnam?

- How do these contextual factors affect the development of digital library education in Vietnam?

1.4 Research objectives

The research focuses on identifying the contextual factors affecting DLE development in Vietnam. A model of potential contextual factors was established based upon concepts suggested in the relevant theories.

The objectives set out for the study are:

1. to identify the contextual factors affecting the development of DLE in Vietnam.
2. to understand how these factors are affecting the development of DLE in Vietnam.
3. to develop, test and, if necessary, revise the contextual model to explain the factors that are affecting the development of DLE in Vietnam.

It is hoped that this model will help illustrate and explain the complex relationships that occur among the various factors affecting DLE development, and therefore be of use to the individuals and organisations developing and providing DLE programmes for LIM students and professional development for LIM practitioners in Vietnam and other developing countries.

1.5 Significance of the research

The outcome of this research provides a model which incorporates the contextual factors affecting DLE development in Vietnam. To that extent, it contributes to our knowledge of DLE in general, especially in regard to developing countries and more specifically to Vietnam. And, it is hoped that it will assist those developing or researching educational programmes such as for DLE to use it as a contextual framework for their work.

This study has sought to raise awareness among academics about DLE development in Vietnam. It appears that no previous research has been conducted about DLE development in Vietnam, even though DLE is a growing phenomenon in library and information management. Thus, the research provides a foundation for future study in DLs and DLE, and calls attention to specific issues in these areas.

By developing of a contextual model relevant to DLE for academics and practitioners, this research provides a comprehensive understanding of the current situation, especially the contextual factors affecting the development of DLE. An acknowledgement of these factors will encourage more researchers to study DLE in order to transform LIM education in Vietnam.

The experience in developing the theoretical framework and model for DLE contributes to the educational system and LIM education in Vietnam. The Vietnamese government is aware that the goals, curricula, methods and strategies in higher education must be reformed in order to improve the quality of human resources for national development in the 21st century (MOET, 2010a). The application of the model and theories in this research can be used as an example for developments in higher education, especially for social sciences.

The aim of this research is also for its outcomes to be useful to LIM practitioners and LIM educators in Vietnam and other developing countries. It is hoped that the findings of this research will be of value to those responsible for developing undergraduate and postgraduate LIM educational programmes in DLs and for professional development programmes focusing on DLs. Such programmes help prepare LIM students for their future careers and provide current LIM practitioners with the opportunity to update and enhance their skills and knowledge in order to fill the gap between their present level and the higher level of competence required for the tasks that they will be undertaking in the future in DLs.

This research has offered a genuine opportunity to develop knowledge and understanding about the issues associated with the topic, which can then underpin future curriculum development for DLE. It is worth noting here that the research activity itself has raised the awareness of the importance of DLE development among the diverse stakeholders in Vietnam.

This research was prompted by the fact that LIM education in Vietnam must change to address the demands raised by the rapid growth of the digital environment with which it has so far failed to fully engage. The findings from this research will hopefully be an encouragement for LIM schools take to action to develop DLE and for LIM educational change.

1.6 Background of Vietnam and the LIM field

1.6.1 An overview of Vietnam

The Socialist Republic of Vietnam is a developing country, located in Southeast Asia. Hanoi is the capital. According to the World Factbook (2013) the mainland area of Vietnam is approximately 331,210 square kilometres. There are 64 provinces and 54 ethnic groups in Vietnam (Vietnam Government, 2013a) with the Kinh people (or Viets) accounting for more than 85 percent of Vietnam's total population (World Factbook, 2013). Vietnamese is the official language. English is increasingly favoured as a second language (Vietnam Government, 2012a). Vietnam has a big and young population with around 92 million people and a median age of 28.7 years (World Factbook, 2013). Life expectancy is 72.65 years and 93.4 percent of the population over the age of 15 years are literate (World Factbook, 2013).

The South and the North of Vietnam reunited in 1975 after the end of a lengthy civil war, with the victory of the North. During the first decade after the war, "many socio-economic targets were not achieved ... Vietnam's economy fell into crisis and stagnation and people's lives were difficult" (Vietnam Government, 2013b, para. 15). In 1986 the Vietnamese government introduced reforms that led the country away from a "system of bureaucratic centralised management based on state subsidies … to a multi-sector, market-oriented economy" (Arkadie & Mallon, 2004, p. 68). The reform, labelled "doi moi" (renovation), committed the government to increased economic liberalisation and to enact structural changes needed to modernise the economy and to produce more competitive and export-driven industries. This reform has helped the country achieve significant goals in economics, education, agriculture and industry (Adams & Tran, 2010). According to The World Bank (2013), the changes have transformed Vietnam "from one of the poorest in the world into a lower middle-income country" (para. 1) with the per capita income increasing from $100 in 1986 to $1,755 in 2012 (World Bank, 2013b).

While economic progress in Vietnam has been rapid since the "doi moi" reforms, Vietnam nonetheless is still considered a developing country. The World Bank defines a developing country as "one in which the majority lives on far less money - with far fewer basic public services - than the population in highly industrialised countries" (World Bank, 2013a, para. 1). Many institutions use the World Bank's definition, including the Library

of Congress which refers to it in its collection policy statement relating to developing countries (Library of Congress, 2008).

In terms of the nation's political system, Vietnam is governed by the Communist Party of Vietnam (CPV). The National Assembly which is elected for a five year term is the highest representative body of the Vietnamese people. The Vietnam government controls and governs all areas of the society in terms of economics, education, culture and other social aspects (Vietnam Government, 2013a).

Education development is stated as a primary national policy and a crucial tool for the country's development (National Assembly of Vietnam - NAV, 2013). The government strongly encourages organisations and individuals to invest in education. The state governs the national education system in terms of objectives, curricula, subject matter, planning, teaching methods and examination regulations (NAV, 2009). The national education system consists of four levels: early childhood education, compulsory education (primary and secondary), professional education, and tertiary education. About 6.8 percent of GDP was invested in education in 2010 (World Bank, 2013d). Most schools and universities are publicly funded. The size of the education system has been continuing to expand every year, reaching 23 million students in 2013. There are 461 universities and around 29,000 schools in Vietnam (MOET, 2013).

1.6.2 The library and information field

In this section, I provide a brief overview of some of the key components of the LIM field in the Vietnamese context.

Legal framework and administration

The highest legislation pertaining to the Vietnamese LIM field is the Ordinance on Libraries which was promulgated by the National Assembly of Vietnam in 2001. All library and information systems operate under that legislation (Standing Committee of National Assembly, 2001).

The Library Department of the Ministry of Culture, Sports and Tourism governs the libraries and information centres in terms of professional and technical standards. Other issues, such as finance, staff development, strategy, and information resources are managed by functional ministries or the organisations to which the libraries and

information centres belong (SCNA, 2001). The Ministry of Education and Training (MOET) governs curricula, quality of education and lecturers of the LIM schools (NAV, 2012).

According to the Ordinance on Libraries (2001), the Vietnamese government provides most of the funds for running the libraries and information centres. The budget covers all activities of the organisations including staff salaries, system maintenance, information resource development and other issues. The libraries and information centres also receive occasional funding from NGOs, private companies and individuals. However, these funds are focused on certain projects and activities such as helping an organisation to establish a multimedia room, digitise a number of books, or build infrastructure. After the project finishes, the organisation has to try to find funds to keep the systems running.

Structure of the system

There is no general agreement about the classification and categorisation of the libraries and information centres in Vietnam. In the Ordinance of Libraries (2001), the library system is divided into two groups: public libraries and special purpose libraries such as university libraries, school libraries, libraries of institutes and research centres, army libraries, libraries of functional ministries and libraries of other organisations. The categories below are based on information in the Ordinance on Libraries, and my own experience in the LIM field in Vietnam.

The library and information system of Vietnam is divided into three main categories:

- Public libraries: There are 17,316 public libraries, including: The National Library of Vietnam (NLV)[1], provincial libraries district libraries and communal and village libraries (MCST, 2013).

- Special purpose libraries: There are 461 academic libraries; 17,459 school libraries, and 2,740 military libraries (MOET, 2013).

- Other types: There are thousands of special libraries, private libraries, information centres and reading rooms established by individuals, community groups, NGOs

[1] The NLV is considered to be a leading member of Vietnam's public library system.

or other organisations, and 278 libraries and information centres in research institutes, Ministries and other governmental agencies (MCST, 2013).

Human resources of the library and information management field

According the latest national report there are over 25,000 LIM practitioners in Vietnam (NLV, 2008). A considerable number of these practitioners lack professional training (B. Thomas, 2009). They have different backgrounds and levels of knowledge and skills; some of them are educated in library and information science, while others have backgrounds in linguistics, IT, business and so on. The number of LIM practitioners is continually increasing because of the establishment of new libraries and information centres.

According to Cao & T. T. Nguyen (2011), the LIM field lacks qualified staff. Similarly, T. Q. Tran (2009) pointed out that there is a significant need for LIM practitioners to acquire new knowledge and skills which relate to IT, the Internet and digital information.

Education of library and information management

Formal LIM education in the area of library and information science began more than 50 years ago in Vietnam. In the two last decades, the number of institutions that teach library and information science has increased significantly. In recent years, ten universities and over 60 colleges have offered LIM education and training, covering a range of levels from undergraduate to doctoral (NLV, 2008). Five schools have a long history in this area and are well known as providers of library and information science education. The schools are governed by MOET in terms of curricula, quality of lecturers and quality of education.

Information technology application in the LIM field

In the early 2000s, the LIM profession started a national project applying IT to modernise libraries and information centres (NLV, 2008). As a result, almost all academic libraries, provincial libraries, information centres and major army libraries have transformed from traditional working environments to IT-based environments. These organisations developed IT infrastructures, internet connections and library software. They now provide basic online services such as: online catalogue, book reserves and limited digital resources. However, there are thousands of small libraries that still work without any IT applications.

1.7 Organisation of thesis

This thesis consists of nine chapters. The present chapter gives an overview of the project by presenting the motivation, research problem, research questions, and significance of the study and structure of the study.

Chapter 2 contains the literature review, providing background knowledge on DLE in terms of DL definition, competencies for digital librarians, changes in LIM education, and DLE development. Importantly, it identifies possible factors affecting DLE.

Chapter 3 provides a discussion of the theoretical frameworks of Fullan (2007), Nowlen (1988) and Rogers (2003) that have helped me investigate the research problem. Based on the frameworks and the literature review, an initial model of potential factors affecting DLE development was established.

Chapter 4 provides an explanation of the choice of the epistemology and research methods. It explains the reasons for adopting the interpretivist perspective, and for using interviews and documentary evidence as sources of data. The research sample and data analysis methods are presented, as are the issues of validity and reliability and the steps followed to ensure ethical consideration were taken into account.

The next three chapters present the findings about the contextual factors affecting DLE development in Vietnam. Chapter 5 focuses on examining internal factors existing within the LIM field in Vietnam including stakeholder attitudes, characteristics of DLE, and the personal and organisational nexus of learning needs. Chapter 6, in contrast, explores contextual factors outside the LIM field including information technology infrastructure, the government with its policies, funding, laws and management, and social and cultural values. Chapter 7 explores change agents and examines their characteristics and roles in developing DLE in Vietnam.

In Chapter 8 the initial model is revised, based on factors identified in Chapters 5, 6 and 7. Chapter 8 provides an analysis of the effects of and relationships among the contextual factors affecting the development of DLE in Vietnam.

Finally, Chapter 9 provides conclusions based on the key findings, establishes the contributions to practice and theory, then identifies the limitations of the research and concludes with recommendations for future research.

Chapter 2 Literature review

> *"Education for digital libraries is a complex proposition, in part because it involves so many layers of technology and at the same time so much that is new in creation, content, representation, organisation, access, and use, and in social, legal, and cultural issues."*
>
> Saracevic and Dalbello (2001, p. 15)

In this chapter I review the relevant research and literature about digital libraries (DLs) and education for digital libraries. I examine literature that defines what DLs are, and discuss the new roles of digital librarians and their needs in digital library education (DLE). I then provide an overview of DLE around the world, and review current literature about DLE and the research on DLE in Vietnam. I also review the issues and challenges of developing DLE which have been explored by other researchers. Finally, I identify the gap in knowledge in existing research.

2.1 Digital libraries

This section explores the concept of DLs to clarify both the nature of the DL itself and the kind of education required by those who work in such libraries.

"Digital library" is a term with different definitions that come from computer scientists, library practitioners, scholars and information users. There is no simple definition for DLs (Lin, 2007a). Some definitions emphasise digital information archiving (Altman, 2006; W. Y.Arms, 2000; Borgman, 1999, 2000, 2003; Lesk, 1997; C. Lynch, 2002), while others focus on human and social and organisational factors (Ackerman, 2009; Atkinson, 1996; Chowdry, G., 2014; Cleveland, 1998; Saracevic, 2001; Saracevic & Dalbello, 2001; Theng & Foo, 2005; Witten & Bainbridge, 2003; Witten, Brainbridge, & Nichols, 2010).

In a broader sense, DLs have changed our understanding of the traditional roles performed by libraries, that is, collecting, processing, archiving and delivering information. A significant change has been that users can access library services at anytime and anywhere through the Internet, and changes are still occurring. As Ioannidis et al. (2005) stated "digital libraries can become the universal knowledge repositories and communication

conduits of the future, a common vehicle by which everyone will access, discuss, evaluate, and enhance information of all forms" (p. 265).

The Digital Library Federation (DLF) provides a definition of a DL which is commonly used by academics and practitioners. This definition accounts for the key factors of DLs such as information resources, structure, human resources and users of digital libraries. The definition includes the functions that can be found in a traditional library.

> Digital libraries are organisations that provide the resources, including the specialized staff, to select, structure, offer intellectual access to, interpret, distribute, preserve the integrity of, and ensure the persistence over time of collections of digital works so that they are readily and economically available for use by a defined community or set of communities. (Digital Libraries Federation, 2015)

This is a thorough definition and quite different from the digital archiving definitions proposed by Lesk (1997), Borgman (1999), W. Y. Arms (2000) and Lynch (2002) because it encompasses many aspects of DLs. It considers DLs to be organisations that provide the resources including the professional staff who undertake the tasks required to collect, preserve and make accessible collections of digital works for specific user groups.

More recently, Calhoun (2014, p. 18) offered a two-part definition of DLs. The first part identifies DLs "as a field of research and practice" while the second part characterises them as "systems and services" that:

> (a) support the advancement of knowledge and culture; (b) contain managed collections of digital content… intended to serve the needs of defined communities; (c) often use an architecture… that typically features a repository, mechanisms supporting search and other services, resource identifiers, and user interfaces (human and machine).

Calhoun (2014) also examined definitions that have arisen from a variety of perspectives and have thus emphasised different aspects of DLs. Those definitions along with Calhoun's own definition provide insights into the multi-faceted aspects of DLs that need to be addressed within DLE programmes.

Another useful definition of a DL is provided by Choi and Rasmussen (2006b) based on the results of a survey of a practitioners. This definition, which in many ways is similar to the second part of Calhoun's definition, is presented as a model (see Figure 1) illustrating that a DL has three levels which include various components. At the top level, a DL has to serve its specific community so users can access and use its digital information for their own requirements. The second level focuses on the applications that a DL implements to serve its users. These applications include digital repositories, electronic journals, content management and access systems. These applications are divided into three components: digital collections, delivery systems, and information services. The foundation level is composed of the infrastructure/organisation. This level focuses on internal issues in the DL such as information management, technology, business environment, people, and policies.

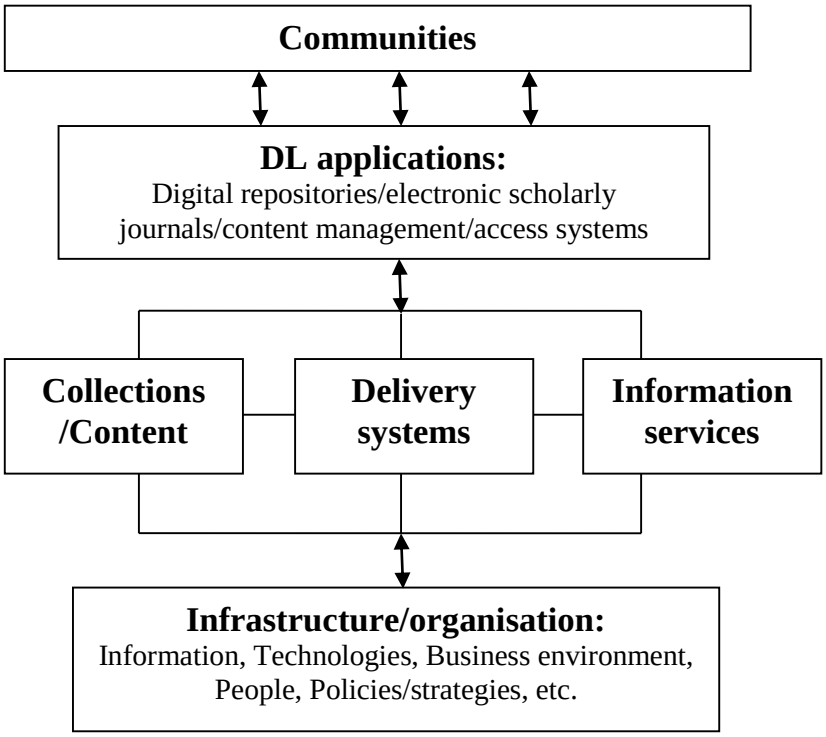

Figure 1: Definition of a digital library based on a practice community

(Choi & Rasmussen, 2006b, no page)

This definition covers the three major components of DLs: IT infrastructure, digital resources and the human factor. These components are also identified in the work of Witten et al. (2010). Because the definitions of the DLF and of Choi and Rasmussen are

thorough yet easily understandable, I have used them to explore DLs as well as the development of DLE in Vietnam.

IT infrastructure

The underlying IT infrastructure plays an important role in the development of DLs. For a country such as Vietnam the infrastructure issues are more likely to include fundamental elements such as Internet connectivity, the availability of hardware and software, the policies and strategies set by the government and leading organisations, the available staff and so on. Tran (1999) commented that most libraries in Vietnam had poor infrastructures, and more recently H.S. Nguyen & Nhung (2012) reported that the low use of online resources in one of Vietnam's major academic libraries was largely due to its poor infrastructure. In developed country environments, however, infrastructure issues for DLs are quite complex and the literature devoted to them is usually highly focused. For example, Henry (2012) examined the following core infrastructure requirements for managing content in large digital libraries: storage and content delivery which included servers, databases and repository platforms; metadata approaches and harvesting, which included content ingestion; search and discovery; services and applications; and system sustainability. My research has focussed only on the IT infrastructure in Vietnam to identify its effects on DLE development.

The application of IT in the LIM field has created a demand for librarians who have the skills needed to manage electronic resources and work in the digital environment. The research of Sutton et al. (2011), Jain (2013) and Hartnett (2014) has identified a significant need for LIM practitioners and digital librarians who have IT literacy skills and can manage electronic resources. Their research also confirm that technology is critical in developing competencies for digital librarians. As DelRosso and Lampert (2012) stated, technology is "a fundamental part of defining what a digital librarian is" (p. 10). In Vietnam, after two decades of automation and IT applications, the LIM field needs the digital librarians for managing digital resources and online services (T. Q. Tran & Do, 2014). The effects of IT on DLE development is examined and discussed in Section 6.1 and 8.1.3.

Digital collections

Digital collections are one of the most important components or the basic building blocks of DLs (W. Y. Arms, 1995). DLs make digital collections come alive, and make them easily available for information users (Witten et al., 2010). Digital libraries must have digital collections (Cleveland, 1998), or in other words, they must have digital information (Smith, 1999). Digital repositories (DRs) are a rapidly developing part of digital collections. In a survey of DRs published in 2008, the Primary Research Group (2008) noted that the annual growth rate of digital repositories was 75.67%. The OpenDoar *Directory of Open Access Repositories* (2015) maintained by the University of Nottingham provides a chart that shows the number of institutional repositories (IRs) worldwide increased from 826 on 1 October 2006 to 2750 on 1 October 2014. This increasing demand for DRs and IRs has encouraged libraries to explore the most advanced technologies available for digital resource management. Digital librarians who work in a digital environment should be trained in the knowledge of digital collections in terms of digitisation, preservation, naming, copyright and delivery (Cleveland, 1998). These are topics that need consideration for inclusion in the curriculum of DLE in Vietnam.

Human factor

The human factor has been considered an important point in successful DL development. This factor consists of two groups: information users, and, DL professionals or digital librarians. In terms of the roles of information users, Borgman (2003) and W. Y. Arms (2005) have pointed out that users are at the centre of all libraries. Bearman (2007) stated that DLs need to focus on information services for user needs. Functional capabilities of DLs have to support the information needs and uses of the communities they serve (Marchionini, Plaisant, & Komlodi, 2003).

The second group is composed of DL professionals. To become DL professionals, LIM practitioners need to upgrade their technical knowledge and skills, which is one of the main issues in DLE development (Ma et al., 2009; Maroso, 2005). The competency requirements for digital librarians and their roles are discussed in Section 2.2. My research has focused on the human factor that affects DLE development through an examination of the roles and attitudes of stakeholders who have been involved the development of DLE. I have also used the triage approach from Nowlen's (1988) education Performance

Model (see Section 3.1.3) to identify and prioritise the significant educational needs of librarians as a part of the human factor affecting the development of DLE in Vietnam.

Much of the research on DLs focuses on technical rather than social issues. In her examination of research on DLs, Liew (2009) found that the dominant areas of focus are usability, organisation and economics, while research on ethical and social/cultural aspects is rare. In my research, the human factor has been considered a major component which should help fill the gap that Liew found. My research focuses on the stakeholders who are involved in the development of DLE in Vietnam, including LIM practitioners, LIM students, LIM managers, deans of LIM educational institutions, and policy makers.

Complexity of DL development

Developing DLs is challenging work which faces many issues. Lesk (2012) indicated that DL development faces among others, technical, economic, legal and social challenges. Myburgh and Tammaro (2013) shared a similar viewpoint on developing DLs:

> DLs themselves involve a multiplicity of converging and developing technologies, all of which affect the creation, content, representation, organisation, access, and use of documents or information objects, as well as affecting social, legal and cultural aspects of the wider environment (p. 49).

In my research, I considered the complex nature of the components of DLs when addressing factors affecting the development of DLE (see Chapter 3).

2.2 Digital library profession

In this section I focus on literature that has explored the roles of LIM practitioners in the digital age and I provide a definition of digital librarians and define their roles and competencies.

2.2.1 Library and information management practitioners in the information age

The LIM workplace has been transformed by advances in information and communication technology (ICT). Working in the networked environment with digital information and computers is becoming more common for the LIM professional, and that is the typical working environment for LIM professionals in the 21st century. This trend

is a key driver of the changing roles of LIM practitioners, and requires them to acquire new skills and knowledge (Bury & Jamieson, 2014; Dakshinamurti & Braaksma, 2005; Fourie, 2004; Muhammad & Khalid, 2010).

While identifying the new roles of librarians, Braun (2002) listed various job titles that LIM practitioners have acquired, including technology consultant, technology training coordinator, head of the digital information literacy office, information systems librarian, head of computer services, webmaster, cybrarian, and internet services librarian. These titles show the significant change in the roles of LIM practitioners in the digital environment compared to their roles in the print world.

LIM practitioners have also taken on roles as technologists, teachers and trainers. For specialist roles, the title *digital librarian* has arisen with competencies related to aspects such as interface design, markup languages, data mining, programming, multimedia searching, and digital resource management (for examples, see: Braun, 2002; DelRosso and Lampert, 2013; Hashim & Mokhtar, 2004; Hastings & Tennant, 1996; Rao & Babu, 2001; Sreenivasulu, 2000). Recently, digital information fluency has been identified as one of the skills that LIM practitioners who work in the digital environment must acquire. According to the 21st Century Information Fluency Project (2013), digital information fluency requires practitioners to have the ability to find, evaluate and use digital information effectively, efficiently and ethically.

LIM practitioners are also expected to educate and train their users to develop skills in searching and using information in libraries. As librarian-teachers, they implement training courses such as library orientation, bibliographic instruction, information literacy, and information research skills (Fourie, 2004, 2013). The teaching role is usually included in the profile of academic librarians, who have many opportunities to perform dynamic roles in designing and developing the contexts for learning strategies (Bell & Shank, 2004; Braun, 2002; Corrall, 2005; Dakshinamurti & Braaksma, 2005; Julien & Genuis, 2011; Sinclair, 2009).

Some frameworks have been developed to capture the professional competence of LIM practitioners. In her work in developing a model for professional competence, Corrall (2005) examined several frameworks in the U.S.A. and the U.K., and suggested a new model which presents an integrated high-level of professional competence for the LIM

field. In her model, Corrall presented the complexity of specialist, generic and contextual competencies that LIM practitioners need for developing and promoting understanding in their contextual business, and achieving success in their continuing professional development. Corrall (2010) suggested that developing curriculum for librarianship should be focus on educated blended professionals in the world of continuing technological advances and educational change.

The new competencies required by LIM practitioners have raised the interest of many LIM professional organisations such as the Special Libraries Association (2003), Australian Library and Information Association (2005), American Library Association (2009), Institute of Museum and Library Services (2009), Chartered Institute of Library and Information Professionals (2010), and the Library and Information Association of New Zealand – Aotearoa (2008, 2012). These associations have identified their own core knowledge and skills which are required for LIM practitioners, and as might be expected, there is an overlap across their knowledge bases. The core knowledge and skills for LIM practitioners can be summarised as follows:

- The library and information profession – roles, legal framework, ethics, values, and foundational principles of the library and information profession;

- Information and knowledge management – information literacy, information seeking and access, information structure and organisation, information services, sources and products, classification schemes, taxonomies and thesauri, data structures, and subject indexes;

- Developing and managing collections - selection, acquisition, disposal, storage, display, provision, cataloguing, classification, preservation and records management;

- Technological knowledge and skills - website/portal design and maintenance, interface design, metadata and makeup language, media literacy, information and communication technology literacy, programming, and basic computer skills;

- Soft skills and attributes – flexibility and adaptability, social and cross cultural skills, leadership and responsibility, effective communication and collaboration skills, self-management skills, critical thinking and problem solving, self-

management skills, project management skills and business acumen, and social literacy such as environmental, economic, health and civic literacy.

The LIM field is changing and LIM practitioners have to keep pace with change by updating their knowledge and enhancing professional performance. The appearance of DLs is considered to be an opportunity for LIM practitioners to emphasise their new roles in the information society. As Myburgh and Tammaro (2013) said, "DLs present an extraordinary opportunity for librarians to reformulate their knowledge base, consolidate their affiliations with other information professionals and cultural custodians, and enhance their professional presence by becoming more engaged with the communities they serve" (p.20). DLE has the potential to help the LIM profession to reshape the competencies for LIM practitioners in the digital age.

2.2.2 Digital librarians

The new roles of digital librarians or LIM practitioners in DLs have been debated for the two last decades. The term *digital librarian* was discussed from the 1990s, including identifying changed roles and competencies of LIM practitioners in DLs (Hastings & Tennant, 1996; McDonald, 1998). DelRosso and Lampert (2012) said that defining the term digital librarian is not easy. It cannot be simply defined that "it's a librarian who works with digital products or provides digital services, because digital products and services are a nearly ubiquitous part of the job these days" (p.4). Identifying their roles, skills and knowledge is important for the development of LIM education. Many studies have been done examining the roles of, as well as requirements for, LIM practitioners in DLs or the digital environment (for example: Long & Applegate, 2008; Lukasiewicz, 2007; Walter, 2005). As discussed in the previous sections, LIM practitioners include digital librarians who are usually concerned with advanced technologies, especially IT and the digital working environment. These features create the new professional competencies of digital librarians and affect DLE development. DelRosso and Lampert (2012) defined "Digital librarians do work with digital libraries, but their work does not stop at a nicely defined boundary. Instead the lines are becoming increasingly blurred between libraries, information technology, physical spaces, and virtual communities" (p.4). The efforts of researchers, scholars and professionals over the last two decades have focused on a variety of aspects related to digital librarians:

- the demand for digital librarians in the information age;
- the roles of digital librarians;
- the skills and knowledge required by digital librarians;
- the creation of programmes/courses/curricula for training digital librarians; and
- methods of teaching digital librarians.

An important question is 'Does the library and information field need digital librarians?' Since the 1990s, job titles using the term "digital librarian" have appeared frequently in advertisements. During the past two decades there has been a series of studies analysing LIM job advertisements. These have been conducted by Yuan (1996), White (1999), Beile and Adams (2000), Lynch and Smith (2001), Marion (2001), Croneis and Henderson (2002), Choi and Rasmussen (2009), and Gerolimos, Malliari & Iakovidis (2015) and they have shown an increasing demand for librarians skilled in IT, with titles such as "technical librarians", "electronic librarians" or "digital librarians". Using the content analysis method, these studies have found that the predominant changes in job requirements for librarians are related largely to the impact of technology on library positions.

Other studies have focussed on determining the positions for the "digital" librarians in the library and information field. For example, Marion (2001) examined 250 online academic librarian employment advertisements during 2000 to explore requirements for technologically oriented jobs. Her research pointed out the rapidly changing automated library environment. The research also discovered the most central categories of job skills in job advertisements, which included: web development, interpersonal skills, independence, and teamwork. In another study, Croneis and Henderson (2002) analysed 223 library job advertisements in the period from 1990 to 2000 that had the word "electronic" or "digital" in them. They found that the number of these positions increased dramatically over the period and that there were three types of job responsibilities unique to digital positions, which were "digital projects management and initiatives, leadership in the field, and production" (p. 234). This trend is demonstrated in the recent survey of Hartnett (2014) which indicate that terms such as electronic and digital appear frequently in job advertisements seeking for librarians.

Another question to determine the role of digital librarians is 'What specific skills does a digital librarian need to function effectively?' (Marion, 2001). There are many existing works which have tried to identify typical roles of digital librarians. McDonald (1998) affirmed that digital librarians play crucial roles in the successful development of DLs, and are important for supporting learning and assisting people to access information. In the digital environment, digital librarians are required to select, acquire, organise, make accessible, and preserve digital collections. They have to plan, implement and support digital services (Hastings & Tennant, 1996). They are required to manage DLs and undertake all tasks in DLs such as information and knowledge management, digital services, information access and retrieval, knowledge mining from the emerging knowledge warehouses and so on (Sreenivasulu, 2000). In the workshops on DLE that were held in Italy in 2005 and in Croatia in 2006, the types of library, the qualification level, and the responsibility of librarians were used to define the roles of the digital librarians.

> A digital librarian should have a combination of technological and librarianship competences…They are a bridge between digital resources and users; an agent of innovation, of citizenship, of information literacy etc.; communication skills are important for the social role of the librarian which is still prominent, and even more so in a digital environment; and pedagogical skills are enforced in a digital environment. (Tammaro, 2007, p. 234)

Being focused on different viewpoints of DLs, academics and professionals have different suggestions for skills for digital professionals. In the 1990s, Hastings & Tennant (1996) and MacDonald (1998) claimed that there were high requirements for digital librarians' positions, in that digital librarians were expected to be independent, active and IT skilled librarians. "It is more important that digital librarians possess particular personal qualities (which are innate) rather than specific technical expertise (which can be learned)" (Hastings & Tennant, 1996, para. 3). Digital librarians were described as professionals who have the skills and experience to implement a DL, take risks, and be independent and flexible; have an understanding of both the potential and the pitfalls of communications and information technology (IT) to achieve the DL; and especially, must have an understanding of the human factor involved in DL development. Other key competencies identified as important for digital librarians were knowledge and skills in IT (mark-up languages, Web technology, user interface design and so on), and searching,

evaluating, selecting, cataloguing, classifying, and preserving the digital resources accessed (Choi & Rasmussen, 2006a, 2006b; Goncalves, Fox, Watson, & Kipp, 2004; Goncalves, Moreira, Fox, & Watson, 2007).

Choi and Rasmussen (2006b) concluded, "digital libraries are the future of academic and research institutions, and digital professionals will be required to have more breadth and depth of knowledge and skills across the dimensions of traditional library knowledge, technology, and human relations" (p.7) . They explained in more detail the competencies of digital positions/digital librarians in their work in 2009.

> Current awareness and appropriate technological skills and experience in the digital library environment, knowledge and experience in creation and management of digital information, and metadata are the most required qualifications for digital librarian positions with high emphasis on management skills. (p. 465)

In short, from the literature, especially from Choi and Rasmussen (2006b), Myburgh and Tammaro (2013), Sutton et al. (2013), Hartnett (2014) and Raju (2014), the competencies of DL professionals can be summarised in the categories below. The identification of these competencies informed my study in terms of examining the current LIM education in Vietnam and the DLE needs of LIM practitioners (see Section 5.1.2 and 5.2.4).

- Technological knowledge and skills
    - Personal IT skills
    - Knowledge/awareness of IT systems and applications
    - Web knowledge: web development, mark-up languages, Web 2.0 technologies
    - Data mining and data management
    - Programming
- Library-related knowledge and skills
    - Users' needs, user/customer care and user education
    - Digital archiving and preservation
    - Cataloguing, metadata, indexing

    - Collection development
    - Visual reference services
- Other knowledge and skills
    - Information literacy
    - Research skills
    - Communication skills
    - Understanding of relevant legal matters, e.g. copyright management skills (project management, marketing/promotion, funding/grant applications)

The following roles of digital librarians, drawn from the literature, also informed my study:

- DL managers: developing, managing and maintaining the DL to ensure its fluent operation;
- Information/knowledge managers: collecting, processing, organising, making accessible, and preserving digital collections;
- Teachers: training users to search and use digital information effectively and legally; and
- Facilitators: making a bridge between digital information resources and users, and supporting and advising users in resolving their information needs.

There is much discussion still to be had within the literature about the roles and skills of digital librarians. There is a consensus, however, that educators, professionals and researchers must work together to identify the specific competencies required by digital librarians and to establish DLE programmes that will ensure the successful development of DLs.

2.3 LIM educational change and digital library education

This section explores change in LIM education and provides an overview of research on DLE. Importantly, it identifies some of the challenges/factors affecting DLE development.

2.3.1 LIM educational change

In 1887, Melvil Dewey founded the first modern library education programme at Columbia University (Bronstein, 2007). The number of LIM schools has increased dramatically since then. In 2007, there were more than 900 universities and institutions with more than 1,500 LIM programmes (Schniederjurgen, 2007). LIM education is now facing many challenges such as the changing world of work, the dynamics of globalisation, and rapid development of ICTs (Virkus, 2012). Weech (2007) pointed out the multidisciplinarity of LIM education:

> Library and Information Science education has always had a multidiscipline orientation, with traditional faculty consisting of those with degrees in the fields of sociology, communications, history, public administration, education, engineering, and computer science, as well as advanced degrees in library and information science. (p. 1)

LIM education has changed over time. The *Kaliper Report* focused on the education of library and information science professionals for the new century. It identified six major curriculum trends in LIM education (Kaliper Advisory Committee, 2000). One of these trends was the increase by LIS schools and programs of "the investment and infusion of information technology into their curricula" (Pettigrew & Durrance, 2001, p. 176). This trend showed that information and communication technology was underpinning an increasing amount of the LIM curriculum. The report also found six key factors that were either instigating or inhibiting change in LIM education (in no particular order):

1. The demands of students, employers, graduates, and professional associations for graduate competencies;
2. growth and expense of supporting emerging technology;
3. internal campus relationships and positioning;
4. availability and presence of faculty with new subject expertise;
5. competition from other LIS programs;
6. the availability of financial support for innovation. (Pettigrew & Durrance, 2001, p. 179)

Though the Kaliper study focussed on LIS education rather than DLE, these factors nonetheless were considered important in my study as potential enablers or barriers for DLE in Vietnam.

The literature also included items that focus on the question of what constitutes discipline knowledge for the LIM professional of the 21st century. Fisher, Hallam, and Partridge (2005), for example, identified discipline knowledge that includes knowledge and skills related to digital competence, and Hallam and Partridge (2004) suggested that IT and LIS can form a perfect partnership in the development of 21st century LIM education. And, according to Stephens and Hamblin (2006), each specific LIM sector, such as health, academic, public, law, business and so on, has a different emphasis in terms of the knowledge required.

With regard to the roles of LIM schools in developing DLE, in 2006, Weech and Pors, on behalf of the Education and Training Section of the International Federation of Library Associations and Institutions (IFLA), reviewed LIS programmes worldwide to determine the availability and extent of DL courses. Acknowledging the limitations of their study, they found that South Korea had "the highest percentage of LIS schools offering Digital Library courses" but only the U.S. and U.K. had specific programmes in Digital Librarianship (Weech & Pors, p. 7). Other researchers found that while some LIM educational institutions offered a full digital library degree (such as Virginia Tech, University of North Carolina, and Indiana University), many schools were incorporating DL courses into their curricula (Ma et al., 2009; Perry, 2005; Saracevic & Dalbello, 2001; Tammaro, 2007). Although there were large numbers of LIM schools that were not offering a specific DL programme, they did offer some DL courses which illustrated the change in LIM education and the emerging need for DLE. Virkus (2012) and Weech (2007) contended that initially DLE should be developed in combination of the necessary disciplines within LIM education. Myburgh and Tammaro (2013) similarly emphasised that “education for digital librarians must draw on selected facets of a number of different disciplines” (p.20).

Many researchers have examined the condition of LIM education in developing countries. Singh (2003), Singh and Wijetunge (2006), Murray and Welch (2009), Johnson (2009), Phuritsabam and Devi (2009) and Nieuwenhuysen (2011) have provided overviews of LIM education in various countries. The findings of these researchers demonstrate that

LIM educational programmes in many developing countries have introduced updated technical subjects which help LIM practitioners to work in a digital environment; however, DLE subjects only make up a small part of their current LIM educational programmes.

2.3.2 Digital library education

This section aims to explore: why the LIM field needs DLE, what is the current stage of DLE development, and what are the challenges being faced in DLE development.

Why the LIM field needs DLE

Ma et al. (2009) defined DLE as “the programmes or courses specific to the training and educating of students who will be able to build and manage DLs after graduation” (p. 534) and raised the question "Why teach about digital libraries?" (p. 536).

Ma et al. (2009) identified two main reasons. The first reason was that there is clear need worldwide for digital professionals in digital information management (p. 536). This reason has also been identified in the work of Smith and Lynch (2001), Marion (2001), Croneis and Henderson (2002), Bawden, Vilar and Zabukovec (2005), and Choi and Rasmussen (2006b; 2009). Chowdhury and Chowdhury (2003) and Tanner (2001) found that besides the traditional library skills and knowledge, LIM practitioners are expected to acquire the knowledge and skills required for their work within the dynamic and complex digital environment. According to Long and Applegate (2008) the rapid development of technology applied to libraries has forced library managers to find a way to help their staff keep up to date with DL issues. This need of the library managers reflects the growing importance of DLs to their organisations. As a result, educating digital librarians has become a high priority.

“Digital librarian positions” appeared in significant numbers in the research of Choi and Rasmussen (2009). Table 1 illustrates the increasing demand for positions with work related to digital librarian positions.

Table 1: Job advertisements for work areas related to digital librarian positions (Choi & Rasmussen, 2009, p. 459)

Category	1999	2000	2001	2002	2003	2004	2005	2006	2007	Total	%
Digital librarian positions	11	15	14	11	7	6	14	16	17	111	30.58
Special collection positions	5	9	7	11	4	3	9	9	7	64	17.63
Others	17	17	9	12	7	17	37	39	33	188	51.19
Totals	33	41	30	34	18	26	60	64	57	363	100.00

The second reason that Ma et al. (2009) found for teaching about digital libraries is that "there is increasing demand for development of educational digital libraries and other types of managed DL collections such as Institutional Repositories" (p. 536). This reason is supported by the findings of the surveys of Spink and Cool (1999), Saracevic and Dalbello (2001), Liu (2004) and Perry (2005) which showed that the number of LIM schools offering DLE (including integrated and independent DL programmes) was increasing due to the need for digital librarians to contribute to the development and management of DLs.

Another reason for the rapid development of DLE has been the growth in funding for research and development of DLs. In the U.S., for example, 77 million dollars was invested in DL projects from 1999 to 2003 (Saracevic & Dalbello, 2001). Research on DLs in other countries such Canada, the U.K., Germany, Japan, Korea, India and so on was also receiving considerable funding for developing DLs (Grace, 2009). In Vietnam, funding for modernisation and digitisation was also growing (see Section 2.4.1). This trend shows that the interest in DLs was becoming a worldwide phenomenon.

In summary, the literature has shown that DLs have become increasingly important in recent years, and educating human resources for DL positions has grown significantly with DLE becoming an important component of university LIM programmes.

Current stage of DLE development

DLE began approximately two decades ago and a variety of approaches have been taken. Studies on DLE programmes by Spink and Cool (1999), Saracevic and Dalbello (2001), Coleman (2002), Liu (2004), Choi and Rasmussen (2006b), Weech (2007) Bakar (2009), and S.H. Nguyen and Chowdhury (2011, 2013) identified curriculum development trends

and provide an overview of education for digital librarianship. The following points come out of their work:

- most educational institutions offering LIM programmes have subjects which relate to DL, and most universities include DL content in their LIM programs;
- DL curriculum and programmes lack a theoretical framework;
- DLE is offered primarily at the graduate level and higher;
- the difference between DL courses is whether the schools take a "hands-on" or "hands-off" approach to DLE;
- one third of schools have independent DL courses, others have combined and integrated DL content; and
- there is a fragmentation of knowledge in DLE which leads to the demand for an interdisciplinary/multidisciplinary curriculum.

A critical issue for DLE development is identifying the content. The above authors suggest a group of elements coming from library and information science, computer science, communication, sociology, etc. Saracevic and Dalbello (2001) identified the content of DL courses as including knowledge management, standards, digital resource management, and community building and social context. They found that the DL agenda has been set largely by computer science, and in LIM programmes the educational approach for DLE places it within an information technology context. Tammaro (2007) suggested that DLE should focus on technological infrastructure and processes, social and cultural contexts, management of the life-cycle of documents and artefacts in the digital environment. On the other hand, Bawden (2007) maintained that information seeking and retrieval is the most important subject of any LIM programme. Gonçalves and his colleagues (2007), in developing a framework for evaluating DLs, suggested that DL curricula should include content about cataloguing, collections, digital objects, metadata specifications, repositories, and information services. Twidale and Nichols (2009) argued that because of the critical role that technology plays in digital libraries, librarians now require additional technical skills. These last two authors contended that education for digital librarians in the future will need to be a blend of elements of

computer science and library science to achieve the necessary *computational sense* to acquire fluency with information technology.

Many scholars and professional organisations have published curriculum guidelines as well as models and structures for DLE programmes. For example, Coleman (2002), Brancolini and Mostafa (2006), Pomerantz et al. (2006), He, Mao and Peng (2006), (2006), Yang, Fox, Wildemuth and Oh (2006), Tammaro (2007), and C. Thomas and Patel (2008) have attempted to identify the core knowledge and required digital competencies. Digital competencies for LIM practitioners also have been identified by professional associations including the Digital Library Federation, IFLA and the American Library Association.

The inclusion of content in DLE from disciplines other than LIS has been the focus of several authors. Spink and Cool (1999) suggested that establishing a “hybrid curriculum” which combines complementary strengths from computer science, psychology, policy studies and library and information science is an effective model for DLE. Similarly, Coleman (2002), Weech (2007) and Yang et al. (2006) contended that a DL curriculum should be interdisciplinary or multidisciplinary. Allard (2002) argued that DLE will be effective if it focuses on how the digital environment has changed the role of the information professional in providing client services (user assistance/mediation) and technical services (document creators/maintainers).

Myburgh and Tammaro (2013) identified three approaches to DLE. The first approach is taken by many LIS schools by "offering courses or certificates in Digital Libraries" (p. 57). In this approach DLE is set within current LIM programmes. The second approach is the multidisciplinary approach in which LIS and computer science departments have worked together to develop education programmes for digital librarianship (p. 58).

The final approach identified by Myburgh and Tammaro (2013) is the complete Master's level programme in digital librarianship. They provide the example of the Master in Digital Library Learning (DILL), a European Commission initiative, in which students are required to study in at least one trimester at each of three different universities over a two year period (p. 57). Students in this programme must already have an LIS or related degree. According to information on the European Commission website (European Commission, n.d.), the DILL programme is designed for four trimesters with 120 credits,

and the knowledge is divided into seven categories: Research Methods and Theory of Science; Digital Documents; Information and Knowledge Management; Human Resource Management; Access to Digital Libraries; Users and Usage of Digital Libraries: Quantitative and Qualitative Evaluation; and a Master's Thesis. The learning objectives of the programme are for students:

- To develop knowledge and skills of digital librarianship through studying the cutting edge of DL research as well as real world applications and best practices.
- To develop research skills through independent, yet supervised, research projects within the digital environment, applying relevant methods and analytical approaches.
- To understand the impact of digital environments on the role of information practitioners in the knowledge society (European Commission, n.d.).

In the U.S., Yang et al. (2006) discussed a project to develop a DLE programme which was funded by the National Science Foundation and implemented by Virginia Tech and the University of North Carolina. This project followed the second approach identified by Myburgh and Tammaro (2013) by aiming to develop an interdisciplinary DL programme involving and Computer Science departments. The foundation for the programme was the 5S theoretical framework consisting of five elements: the digital formats of information (Stream model); structuring or organising of that information (Structural model); logical and representational properties and operations of DLs' components (Spatial model); the behaviours of DLs (Scenarios model); and human factors such as users, managers, actors, who act together to implement the DLs' behaviour (Societies model) (Yang et al., 2006, p. 62). Based on the model, a DL curriculum was developed with 10 modules, including: Overview of digital libraries; Digital objects; Collection development; Information/Knowledge organisation; Architecture (agents, mediators); User behaviour/Interactions; Services; Preservation; Management and evaluation; and Digital library education and research (Yang, Wildemuth, Pomerantz, Oh, & Fox, 2009). That curriculum is currently being used to educate computer science students and LIM students who aim to work in the digital environment.

Some universities such as Indiana University and Rutgers University also offer DLE at the Master's level. Others such as Syracuse University and the University of Illinois have short courses on DLE. Graduates are granted certificates after completing these courses.

Interestingly, there was no agreement among LIM educators in the literature on which approach is the most suitable for developing DLE, which illustrates the complexity of DLE development (Saracevic & Dalbello, 2001).

In general, after reviewing research on education for DLs, Myburgh and Tammaro (2013) found that DLE is at perplexing state in which there is still disagreement among scholars on the definition of a digital librarian as well as on their roles and competencies. Whether to combine DLE into current LIM education programmes or develop it as an entirely separate educational programme is still being contested. Another issue is whether DLE needs to be developed by LIM schools or CS schools or a combination of both. Myburgh and Tammaro emphasised, "Nonetheless, appropriate education for those who will work in the digitised information area must be provided" (p.49).

Challenges of DLE development

As discussed in section 2.1, DLs themselves involve a complex set of technological, social, legal, and cultural issues. Education for DLs is therefore also complex. Based on their survey of DLE programmes in North America, Saracevic and Dalbello (2001) suggested "that a comprehensive approach to digital library education should attempt to integrate the complex issues and problems scattered among the many reviewed programs" (p. 12). They classified the many issues and problems into the following topic categories for DLE programmes: concepts; content; creation; organization; technology; access; preservation; management; and, context (p. 12).

Nguyen and Chowdury's (2011) review of the literature on DL research and education from 1990 to 2010 highlights the complexities. They noted that in a previous study of research topics Chowdhury and Chowdhury (1999) "grouped DL research into 16 areas" (p. 367) and that in studies of DL publications, Pomerantz et al. (2006) identified 19 core topic modules while Liew (2008) identified five core topic themes with 62 related topics or subtopics. Nguyen and Chowdhury (2011) in their own review of the DL literature identified 21 core topics and 1015 subtopics.

DLE is still an evolving phenomenon and of high interest to the LIM profession and CS. As noted above, the wide range of definitions, theories and frameworks related to DLs makes the selection of topics for DLE programmes a highly complex task. Many subjects in the DL curricula focus on IT knowledge and skills, but because DLE involves a wide range of other issues, Myburgh and Tammaro (2013) raised the following point, drawn from Weech (2005):

> An important conclusion that is prompted by most surveys is that digital library education suffers from the lack of a holistic approach to the digital library as a phenomenon that integrates social, cultural, economical, political and technological perspectives. (Weech, 2005, cited in Myburgh & Tammaro, 2013, p. 64)

Given the above quote, it is important to consider the following issues relevant to DLs and DLE which have been identified in the literature and demonstrate the types of concerns that arise in the development of DLE programmes:

- There are many different DL theories, models and frameworks (Nguyen & Chowdhury, 2013). Therefore, it is difficult to identify the most relevant content and to bridge the gaps to link the various concepts.

- The learners come from different backgrounds and have different levels of technology preparation, so choosing the course content for DLE is difficult.

- The limitation of infrastructure for training is a major issue (He et al., 2006).

- Any given technology is only relevant for a period and what is learned today will soon be out dated (McDonald, 1998). This impacts heavily on the academic staff who must keep up to date in order to teach DLE subjects.

- The dynamics of the information society and the changing information needs lead to challenges for LIS education (Allard, 2002).

- There are different approaches between computer science (CS) and LIM. While computer scientists focus on the system aspect of DLs, librarians who manage DLs usually pay attention to the service side (Yang et al., 2006). Saracevic and Dalbello (2001) shared the same viewpoint, that DLE is divided into two areas,

LIM and CS, “one on Venus and the other on Mars.” Reducing the gap between the communities is a challenging task for educators.

The above list of issues relating to the complexity of DLE programme development highlight factors that I identified as potentially affecting the development of DLE in Vietnam.

2.4 Digital libraries and LIM educational change in Vietnam

This section gives an overview of the development of DLs in terms of funds, software applications, IT infrastructure, digital collections and library services. It also examines changes in LIM education in Vietnam that have led to the need for DLE.

2.4.1 The development of digital libraries

Library automation in Vietnam started in the early 1990s with the CDS/ISIS software project for automating libraries supported by UNESCO (Tran & Gorman, 1999). The outcome of the project was very significant in that most public libraries and university libraries used the software to build their electronic catalogues.

In the early 2000s, library systems in Vietnam received significant investments from universities, the government and international organisations (National Library of Vietnam, 2008). In 2001, the National Library of Vietnam started the national project “Building the National Electronic/Digital Library in the National Library of Vietnam”, which focused on building the infrastructure of information technology and electronic resources. In the past decade integrated library systems have been implemented in major public and academic libraries and information centres. Most public libraries now provide online searching, and share catalogue records (National Library of Vietnam, 2008).

Significantly, academic libraries have been active in building electronic libraries. A considerable grant from the World Bank, the East Meets West Foundation and Atlantic Philanthropies has been used to improve the capacity of university libraries. Various projects have focused on improving the IT infrastructure, library system software, and information resources and on educating librarians. Consequently, more than many electronic libraries and four Learning Resource Centres (LRCs) have been built (T.Q. Tran and Do, 2014).

Vietnam has a large number of libraries and information centres which need to be modernised. These libraries need to be upgraded in terms of automation and digitization. The demands are stated in some national project plans. In the National Report 2008, the National Library of Vietnam claimed that in future Vietnam must prioritise the development of modern libraries, encourage the implementation of information technology, and promote digitization in libraries. In addition, high-level technology must be applied to modernise the library sector with particular focus on digital and e-library development, and 100 percent of highly valued materials must be digitalised (MCST, 2007a). For academic libraries, building digital library systems in order to share information resources among universities as well as link to digital resources of international universities is the highest priority (MOET, 2009).

Researchers such as Cao (2000), D. T. Nguyen (2005), Ta (2000) and T. N. Vu (2007) have examined the development of the LIM field in Vietnam and agree that there has been significant development in applying technologies in the LIM field. Libraries and information centres have taken action in developing DLs and digital resources. The researchers, however, warned of the challenges for stakeholders in developing DLs. They pointed out that the movement to the digital environment will continue to face many issues such as finances, staff development, stakeholder attitudes, and government policies. These issues contributed to the development of the initial model in my research (see Chapter 3).

The above researchers also pointed out challenges for the LIM profession in Vietnam. First, libraries have to establish plans for developing digital resources and DLs though they lack experience and knowledge of advanced technology in these areas. Second, LIM schools have to upgrade their curricula as well as create new curricula for educating a modern labour force to meet the requirements for the development of the LIM field.

2.4.2 LIM educational change and digital library education

In Vietnam, educational reform is a critical issue for the national education system, from the primary level to the tertiary level. LIM education, which is at the tertiary educational level, is being reformed in terms of curricula and teaching methods (MOET, 2009). For instance, from 2007 to 2009, the Faculty of Library and Information Science in the University of Social Sciences and Humanities in Hanoi reformed its curriculum in terms

of content and teaching methods. Some subjects which were out of date were eliminated and other subjects which focused on developing new knowledge and skills for LIM practitioners were added to the curriculum (FLIS, 2010).The contents of some subjects were also updated. As a result, LIM curricula has now started to change, with some IT and DL topics beginning to be offered (Lam, 2014).

Some universities (e.g. Can Tho University, and Hanoi University of Culture) worked collaboratively with international institutions to develop LIM educational programmes (Murray & Welch, 2007). They aimed to enhance the quality of educational programmes and to reach the international standards in LIM education. Some DLE subjects were added to their curricula. However, there are issues which challenge the efforts of stakeholders to develop educational programmes being adopted from overseas. Murray and Welch (2007, 2009) who have been involved in designing and delivering LIM training and education in Vietnam, reported that cross-cultural teaching and shortage of qualified staff are challenges for introducing new international education in Vietnam.

Research on DLE in Vietnam has mostly been focused on specific aspects of DLs (such as the contents of a DL) rather than DLE. The research on DLs in Vietnam was started by V. S. Vu (1999). He analysed the conditions in Vietnam and the opportunities for developing DLs, recommending that they should be implemented in Vietnam. M. H. Nguyen (2006) gave an overview of DLs in Vietnam as well as DL training on the Greenstone software. T. Q. Tran and Do (2007) provided an overview of library automation in Vietnam, focussing on the technology, hardware, software, standards, equipment and education for developing automated library systems as well as DLs.

With respect to DLE, L. A. Tran (2000) took the first step in creating a new curriculum for library institutions in Vietnam. She examined library curricula, teaching staff, teaching methods and other factors in library institutions, and designed a curriculum in electronic resources and services for LIM which consisted of 10 courses: Basic Electronic Resources, Basic IT Applications, Communication Networks, Library Automation, Database Structure and Design, Information Handling, Information Sources and Reference Services, Searching CD-ROMs and Online Resources, and Internet Services.

In her PhD thesis H.S. Nguyen (2008) employed the Performance Model developed by Nowlen (1988) to identify and prioritise the learning needs for continuing professional

development of Vietnamese academic library managers and operational staff. She identified competencies related to DLs as one of the main areas of their learning needs. Specific content included DL creation, digital collection development, and copyright issues in the digital environment.

T. Q. Tran (2009) identified a gap between theory and practice in the LIM field in Vietnam, in other words between what is taught in universities and what is required in practice. Many electronic libraries and learning resource centres with digital resources have been established, and these require LIM practitioners who have new skills and knowledge to work in the digital environment. However, there has been little change to the curricula of LIM programmes in Vietnam. Though DLE has been discussed and some content related to DLs has been added to LIM curricula, education for DLs is very limited and content is found only in isolated subjects.

Despite the development of electronic and digital libraries as well as the increase in investment for libraries, education for LIM, especially for DLE, is still under-funded. This is likely one of the causes of the gap between what the departments of LIM teach their students and the knowledge and competencies required in practice. In particular, most graduates lack sufficient knowledge of technology (H. S. Nguyen, 2008) and according to one educator, only 51.8% of librarians are competent in using computers (T. Q. Tran, 2009). Others have noted that only 30% of librarians in Vietnam are equipped with the competencies required to meet the needs of its libraries (T. M. Do & Pham, 2009; T. D. Nguyen, 2009). Indeed, many researchers have found that education and training for librarians in Vietnam need to be reformed and updated with new knowledge in order to meet the requirements of the LIM labour force in the information age (Cao, 2003; D. C. Nguyen & Ton, 2009; T. H. Nguyen, 2009; T. M. N. Tran, 2009; T. Q. Tran, 2009).

The conference on Human Resources for the Library and Information Field, which was held at the Vietnam National University, Hanoi in 2009, concluded with two key points. First, the human resources in libraries do not meet the demands of library practice, especially the demands of library automation and developing DLs. Second, library education institutions need to be up to date in their curricula in terms of providing the knowledge and skills for librarians in the digital world (VNU, 2009). Murray and Welch (2009) described the condition of the Vietnamese LIM field, stating that “there is a

shortage of qualified library staff and the library schools are not producing enough graduates with the necessary levels of expertise" (p.86).

Murray and Welch (2009) found several issues that are common to developing countries and which have hindered the development of the LIM field in Vietnam. They are: (1) low professional status of LIM practitioners, resulting in low pay; (2) shortage of qualified LIM practitioners; (3) limited government funding for LIM programmes; (4) the need for enhancing standard of current LIM education to attract young people to the LIM profession; and (5) lack of digital information resources.

Recently LIM schools in Vietnam have started to update their curricula in order to move into the era of DLs. S.H. Nguyen and Chowdhury (2011, 2013) raised the level of awareness of DLE needs for Vietnamese LIM practitioners by introducing a knowledge map of core topics for DLs and outlining the trend of DL development in Vietnam. They stated that now is the time for developing DLE, and LIM practitioners need to acquire the knowledge and skills to work in the digital environment. And more recently, Lam (2014) conducted a survey of IT subjects related to DLs in current LIM educational programmes in Vietnam. She found that LIM schools have introduced roughly 33% new ICT-related subjects into their educational programmes. Although this is a new and exciting trend, LIM education in Vietnam, however, has still not achieved significant progress in the development of DLE

Although Vietnamese scholars and professionals have acknowledged the importance of DLE and made some suggestions for DLE programmes, their work has focused primarily on describing DL concepts and has emphasised the role of LIM departments in educating human resources for DLs. Their work has not examined the underlying causes of the situation in Vietnam, i.e., it has not identified the factors that are affecting DLE development, nor has it determined or prioritised the DLE needs of practitioners, students and LIM organisations.

2.5 Conclusion

As discussed in this chapter, there are many definitions, theories and frameworks related to DLs. There is no agreement among scholars, however, on the knowledge and skills

required by LIM practitioners including the digital librarians who work in the digital environment.

The remarkable development of DLE in the world in the last two decades signifies that DLE has become an indispensable part of LIM education in the new century. Full DLE programmes are offered in several developed countries, and there has been a considerable amount of research examining DLE from different perspectives. Research on DLE in developing countries, on the other hand, is very limited and in Vietnam DLE can still be considered as an innovation in LIM education.

An analysis of recent literature affirms that DLE is complex involving many factors such as culture, economics, humans, technology, organisational structure, government policy, and infrastructure. Therefore, research on the development of DLE as well as on DLs, needs to explore the full range of potentially relevant factors.

There is a lack of research that focuses on the development of DLE in Vietnam. This gap in the research has motivated me to carry out this research, which is intended to explore the factors affecting the development of DLE in Vietnam, as well as to identify and prioritise the DLE needs of LIM practitioners and LIM students.

Chapter 3 Theoretical framework and conceptual model

"Theory helps a researcher see the forest instead of just a single tree"
(Neuman, 2005)

In this chapter I discuss the theories employed in my study to guide me in establishing an initial conceptual model of factors affecting the development of DLE in Vietnam, and in selecting the methodology to achieve the research objectives.

3.1 Theoretical framework

In this section I identify and explain the reasons for employing the following three theories: Fullan's Educational Change theory; Nowlen's Performance Model; and Rogers's Diffusion of Innovations theory.

3.1.1 Introduction

To meet the objectives of this research, I raised two closely related questions: "What are the contextual factors affecting the development of digital library education (DLE) in Vietnam?" and, "How do these contextual factors affect the development of digital library education in Vietnam?"

Initially, I was concerned with finding the most appropriate lens through which to investigate the research questions. To understand the current status of DLE, I explored the aspects of LIM educational change in Vietnam that are relevant to the study. As defined in the literature review, DLE is a complex issue which involves many issues such as technology, culture, content development and organisation, and so on (Saracevic & Dalbello, 2001). Therefore, the focus of my research was on examining the environment in order to find factors affecting the development of DLE.

Early in my project I found that a single theory was insufficient for dealing with the complexity of the problem being investigated in this research. Thus, I developed a model that drew upon components of three separate theories. In the following sections, I explain why I chose each theory, and the relevance of the particular components for my research.

Each of the theories has helped me to meet the research objectives and solve a part of the research problem, and together they helped guide the collection and analysis of data.

It is important at this point to ensure clarity of the meaning of "innovation," a key term used in my thesis. Two of the three theories chosen for this research make reference to this term. I have chosen to use the definition provided by Rogers because Fullan (2007) focuses primarily on the change process related to the introduction of an innovation into an educational setting. Rogers (2003), however, is concerned with the characteristics of an innovation that affect its adoption and the individuals or organisations who are its adopters. As a result, Rogers' definition was more suitable. Rogers defined an innovation as "an idea, practice, or object that is perceived as new by an individual or other unit of adoption" (p. 12). Though this definition is most often used for research related to new technologies or devices as innovations, it can also be used for research related to intangibles such as a new management practice or a new curriculum for an educational programme (see for example, Spalter-Roth, Fortenberry, & Lovitts, 2007).

In the following sections, I introduce these theories and explain why they were used for my research, what parts of each theory were applied in my research, and why and how I combined the theories.

3.1.2 Educational change

According to Fullan (2007) educational change is a complex proposition involving many issues such as economics, culture, politics and legislation. Changing and reforming education at all levels are always challenging tasks, and understanding and coping with rapid change in the world is a major challenge for educational change. Fullan (2007) argued that educational change is not a single entity, and innovation is multidimensional. In his educational change theory, which has been developed and revised for three decades, Fullan comprehensively discusses factors affecting educational change at all levels, from national governments to learners. His theory emphasises social factors in the change process. As he stated, "educational change is technically simple and socially complex" (Fullan, 2007, p.84).

Educational change environment

My research aims to investigate factors affecting the development of DLE in the Vietnamese environment. The development of DLE was considered as an educational change process, and it occurred within the Vietnamese environment. Before discussing factors affecting the educational change process, and in order to understand the change environment, an explanation is provided (a) of a general model illustrating the educational change environment in which a new innovation is introduced and adopted, and (b) factors affecting the change process being examined in this study. Figure 2, which presents a model of the LIM educational change environment, was adapted from Ellsworth's model (2000).

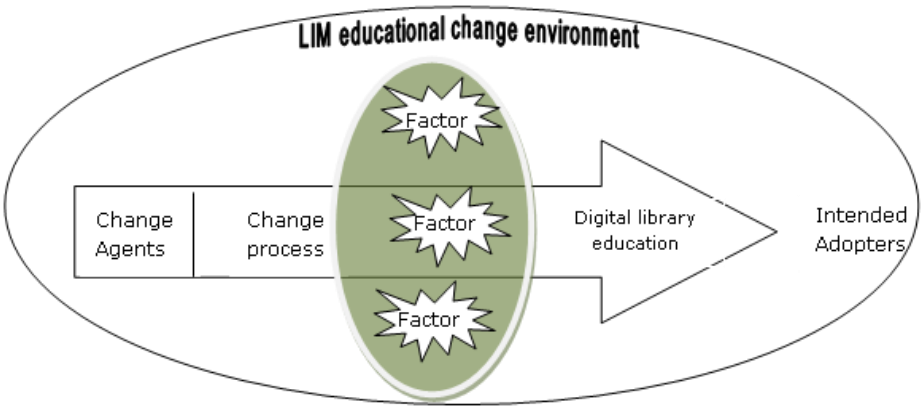

Figure 2: The LIM educational change environment adapted from Ellsworth (2000, p. 27)

In this model, *change agents* are expected to introduce or deliver a new educational programme to *intended adopters* such as individuals or organisations. The change process is used to set up a channel through the LIM educational change environment for the change agents to introduce DLE to the intended adopters. Nevertheless, various factors exist in the environment which might facilitate the change process, or might restrict it. To investigate the factors affecting this particular change process it is necessary to understand the situation in the LIM environment in the Vietnamese context. Ellsworth (2000) drew a general view of the educational change environment. However, he did not indicate what factors in the environment may be affecting the educational change. Rather he suggested using Fullan's educational change theory as a "change toolbox" for investigating the environment of educational change.

Fullan (2007) contended that all stakeholders, from governments to students, are affected by educational change. Stakeholders could be individuals from inside or outside an organisation or a system that want to change or are being pressured to change.

Change process in education change

To investigate the development of DLE in Vietnam as a change process in LIM education I have focused on the broad phases of the change process suggested by Fullan (2007). According to Fullan, there are three phases in the educational change process: initiation, implementation and institutionalisation. Figure 3 presents these phases in the change process model.

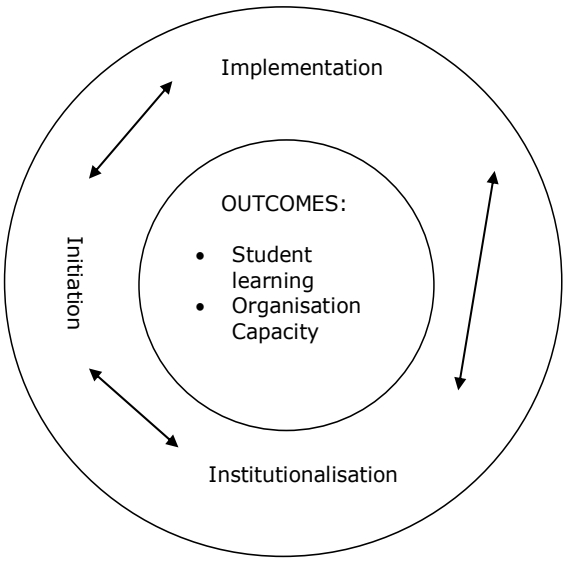

Figure 3: The change process

(Fullan, 2007, p. 66)

Phase 1: Initiation. In this phase of the process a decision to adopt or proceed with change is made. Figure 4 below presents Fullan's model of factors affecting the initiation phase.

Phase 2: Implementation. This phase involves the first experiences of attempting to put an idea or reform into practice. Figure 5 below presents Fullan's model of factors affecting the implementation phase.

Phase 3: Institutionalisation. This is the last phase of the change process where the idea or reform is used widely in practice (Fullan, 2007, p. 65). Fullan viewed

this phase as occurring after the implementation phase. In my research, this phase was not examined because it is a future phase of DLE development in Vietnam. The results of my research hopefully will be used for the institutionalisation phase – for developing and offering DLE programmes in Vietnam (see Section 9.2).

Fullan (2007) noted that numerous factors operate at each phase. These factors need to be explored in the whole change process. He said that the process itself is not linear, but is "one in which events at one phase can feed back to alter decisions made at previous stages which then work their way through in a continuous interactive way" (p. 67). Thus what occurs in one phase can affect decisions made in earlier phases and alter the direction of change. This can have major implications when considering the various phases in the change process.

Factors affecting initiation

Fullan (2007) stated that "initiation is the process leading up to and including the decision to proceed with implementation" (p. 69). Initiation plays an important role in the decision making of educational change. Fullan emphasised that exploring the factors affecting this phase is necessary to assist decision making for change. Figure 4 present the factors affecting the initiation phase in educational change.

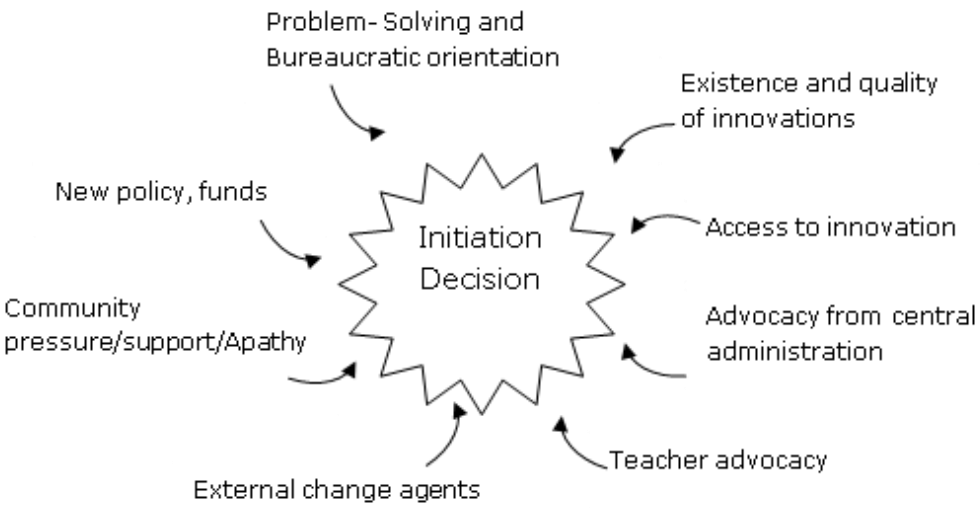

Figure 4: Factors affecting initiation

(Fullan, 2007, p. 70)

Existence and quality of innovations: While Rogers (2003) provided a generic definition for innovation, Fullan (2007) was interested in innovations in education, which he says are new ideas, technologies or educational programmes introduced to practice. In my research, the introduction and development of DLE was considered an innovation in Vietnamese LIM education because in different ways DLE fits all aspects of Fullan's definition – it consists of new ideas, requires the use of new technologies, and is a new educational programme. The literature review shows that the introduction of DLE began more than two decades ago both in developing and developed countries; it also shows that there has been a significant increase in the number of DLE programmes and universities offering DLE programmes. However, the introduction of DLE in Vietnam has lagged behind most other countries.

Access to innovation: This factor focuses on access to information about an innovation (Fullan, 2007). What can stakeholders and others find out about DLE? Leaders, LIM practitioners, LIM educators and other stakeholders expect to have opportunities to access information about DLE, both inside and outside the education system, through conferences, online databases, journals, research papers, and so on. Access to information about DLE was considered to be a factor that could reduce the complexity of DLE and enhance the clarity of it.

Advocacy from central administration: This factor relates to the support of leadership for change in an educational system. In this study, the advocacy and leadership of LIM educational institutions from rectors or deans were considered as a factor that might affect the introduction and development of DLE in Vietnam.

Teacher advocacy: Teachers can be stakeholders and can play an important role in educational change. In this research, the advocacy of LIM lecturers was considered as a potential factor affecting the introduction and development of DLE.

Community pressure, support or apathy: This factor relates to the role and effects of society, the governing organisations and the LIM profession on educational change. In my research, LIM associations and the Vietnamese society, which consist of social and cultural values, were considered to be potential factors affecting DLE's introduction and development.

Problem-solving and bureaucratic orientation: This factor focuses on the action of decision-makers or leaders in terms of their comprehending the value of an innovation that will be introduced to an educational system. There is a question that needs to be answered: what do the decision-makers perceive as the value of the change?

Change agents: This factor focuses on stakeholders who play roles as change agents in educational change. They might be individuals or organisations. Fullan (2007) emphasised that change agents or facilitators play an important part in initiating change projects. Change agents can appear at the local level or national level, and be people in an educational system (internal environment) or outside of the system (external environment). In order to identify change agents involved in DLE development in Vietnam, I used the criteria for change agents suggested by Rogers (2003). He considered change agents to be individuals or organisations that link a change agency with potential adopters of an innovation. I discuss change agents in detail in Section 3.1.4.

Factors affecting implementation

The second phase of the educational change process is implementation. According to Fullan (2007) implementing a new idea into practice is a complex process which involves many factors. Fullan identified nine critical factors affecting the implementation phase. The factors are grouped into three main categories: characteristics of change; local characteristics; and, external factors. Figure 5 presents the broad contextual factors that contributed to the model that I constructed to explore the development of DLE in Vietnam.

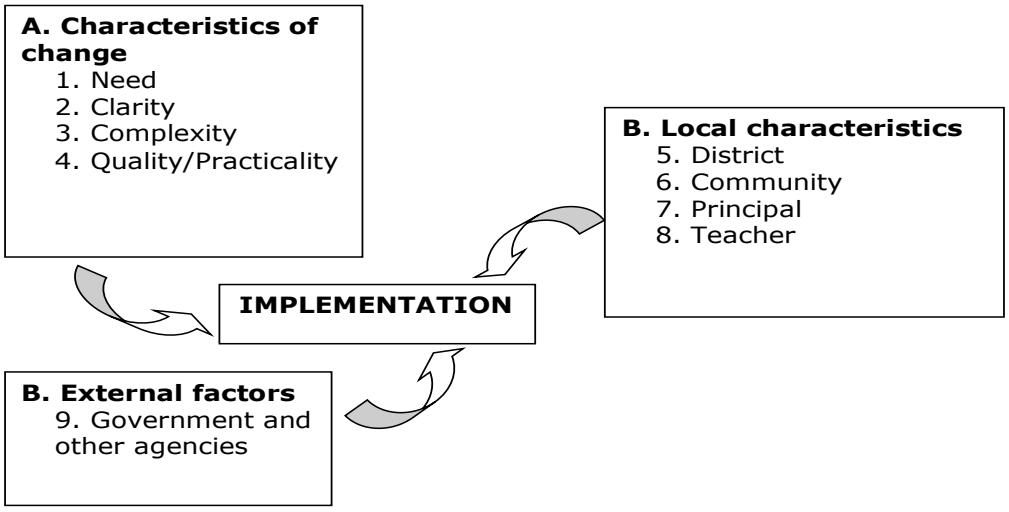

Figure 5: Interactive factors affecting implementation
(Fullan, 2007, p. 72)

Characteristics of change (need, clarity, complexity and quality/practicality).

This category focuses on evaluating the characteristics of an innovation (which in this study is DLE) which affect whether its implementation is successful and adopted into practice.

The first characteristic is perceived *need*. Fullan (2007) said that one of the reasons that educational change efforts fail is because stakeholders do not address "what are perceived to be priority needs" (p. 88). The success of introducing educational innovations relies heavily on identifying and prioritising the needs of the stakeholders who will be involved in the change process. According to Fullan, educational needs not only need to be identified, they also need to be formally recognised (p. 88). This characteristic suggested that the identification and recognition of the needs for DLE of LIM stakeholders was a potential factor affecting DLE development.

The second characteristic is the perceived *clarity*. Fullan (2007, p. 89) contended that the goals of the innovation and the means of its implementation must be clear for the successful implementation of an educational innovation. Thus, the perceived clarity of the goals of DLE and the means of its implementation was considered to be a potential factor related to the development of DLE in Vietnam.

Complexity is about the difficulty and extent of change, and therefore the knowledge and skill required to put the change into practice. Rogers (2003) maintained that when an innovation is perceived as being complex its implementation will be perceived as difficult, and therefore it will be less likely that it will be adopted. With regard to the DLE implementation, this factor was considered to be related to the skills required, the beliefs of individuals, teaching strategies, and the use of required materials by LIM educators and LIM practitioners.

The last characteristic is the perceived *quality and practicality* of the innovation, which according to Fullan (2007), relates not only to the perceived value of the innovation but also to the availability of resources for and feasibility of implementing the innovation.

Local characteristics (district, community, principal, and teacher) and external factors (government and other agencies)

Fullan (2007) discussed the roles of local and external stakeholders of educational change. They are the *school district, community, principals, teachers, students, government and other agencies*. In a more recent work Fullan (2010) emphasised that the cooperation of these stakeholders makes reform and change in education become possible. Sharing the same perspective, and focusing on stakeholders who drive changes in LIM education, Fisher et al. (2005) found that change in LIM professional education needs a full and balanced contribution from stakeholders, including individuals, educators, organisations and professional bodies. Using Fullan's stakeholders as a base, the possible stakeholders in my study are identified in Table 2: Possible stakeholders of DLE development.

Teachers play an important role in educational change efforts. After spending a long time observing changes in education, Fullan (2007) stated that "educational change depends on what teachers do and think" (p. 115). Teachers are catalysts affecting the speed of the change process in education, so if teachers do not support educational change it will not be successful. In my study, lecturers who teach in LIM schools were identified as the teachers.

Table 2: Possible stakeholders of DLE development

Fullan's stakeholders	The possible stakeholders in the study
Teachers	Lecturers involved in DLE programmes
Students	Learners: LIM students and LIM practitioners
Principals	Leaders: deans of LIM schools, and rectors of universities
Government and other agencies	The Vietnamese government and its policies, NGOs and international LIM organisations.
Community	LIM community and the professional associations
School district	University administration

Because Fullan (2007) focussed on educational change in schools, he identified *principals* as important stakeholders. He considered principals to be the leaders within the schools,

and stated that the role of *leaders* is crucial in the educational change process. Fullan (2007) highlighted the institutional head's role in educational change in terms of encouraging staff to change and in providing time and resources for change. When examining leadership and the roles of leaders in universities, Green and Eckel (2010) found that making changes in educational institutions to meet the demands of governments, social agencies, industry and citizens is an important part of the role of university leaders. My research focusses on LIM education which is at the tertiary level, therefore I identified the key educational leaders in Vietnam as deans of LIM programmes and rectors of the universities in which the programmes are situated.

The third set of stakeholders are the *learners.* Fullan (2007, p. 151) stated that students not only are the potential beneficiaries of change, they are also "participants" in the change process. Because my study relates to DLE for the LIM profession as a whole in Vietnam, the potential for DLE to involve professional development also needed to be taken into consideration. Therefore practitioners as well as students were considered to be learners for the purpose of this study.

Government and its management affect educational change. According to Fullan (2007) the role of governments in educational change is to create an environment in which educational change occurs and its goals are achieved. In this study, the Vietnamese government departments with responsibility for educational policies and programmes, for the technological infrastructure, and for any other areas that could potentially influence the development and implementation of DLE were considered to be stakeholders.

External agencies are also among Fullan's stakeholders in educational change. They may be organisations such as other universities and IT companies involved in educational change. In my research, I examined roles of these agencies in developing DLE in Vietnam. The selection of the stakeholders for my research is discussed in Section 4.4.

The other stakeholder is the *professional community*. Fisher et al. (2005) said that stakeholders such as librarians, educators, organisations and professional bodies cooperate to identify the new knowledge, skills and competencies of LIM practitioners. That cooperation enables LIM practitioners to prepare for their work more effectively in the changing digital environment, and to undertake new tasks. Individuals should be self-motivated to acquire new knowledge and skills and identify what knowledge and skills

they need for their work. In addition, educators who provide education services need to understand the educational needs of LIM practitioners and offer educational programmes which meet the demands of practitioners. Organisations such as libraries, information centres and universities offer opportunities for developing education and training, and connecting the suppliers (educators) to consumers (LIM practitioners), managers of LIM organisations and policy makers of government departments.

I chose Fullan's educational change theory for my research because it provides a framework for conceptualising educational change and examining the environment in which it occurs. As discussed earlier, Fullan (2007) viewed educational change to be a three-phase process which is affected by a range of factors including the various stakeholders. I concluded that this theory was applicable because my research was being carried out within the changing and evolving education environment in Vietnam where change was occurring in all aspects of education: objectives, curricula, teaching methods, subject content and policies. Even though the Ministry of Information and Communication had a master plan for the development of the LIM field, and scholars, scientists and managers were discussing reforms in LIM education, I observed that DLE, as a new innovation, appeared to be stalled in a transition between the initiation and the implementation phases. Thus, the research was aimed at examining the environment to understand the current status of DLE development, and investigating the factors that were acting as barriers to and enablers for its development in the context of Vietnam. To achieve this aim, Fullan's educational change theory appeared to be highly suited to the task.

3.1.3 Performance model

To identify additional factors that were potentially affecting the development of DLE in Vietnam I employed Nowlen's Performance Model (1988) of continuing education for professionals.

The knowledge and skills of LIM practitioners are important for educational change. They influence what educational needs ought to be included in a new educational programme. A new educational programme has to bridge the gap between current competencies of practitioners and competencies that will be required by future work or professional bodies. Prioritising the new competencies required for DLE needs is important for the

development of DLE programmes in Vietnam. Thus, I sought a model to help clarify the competencies of LIM practitioners in relationship to LIM organisations and their current workplace situations, as well as the current social environment.

Nowlen developed the Performance Model for implementing continuing education for business and the professions. The model consists of eight elements: update needs, new role preparation, applied human relations, critical skills of mind, individual/organisational learning skills, personal/organisational development balance, life skills and influences of environments and cultures of practice.

In Nowlen's (1988) Performance Model (see Figure 6) the triage process is used to prioritise the needs for continuing education programmes and thus make best use of limited resources. Nowlen claimed "the focus for the triage brings more than job functions into view" (p. 86). The focus also includes other possible factors affecting the performance of individuals in their organisations: basic knowledge and skills of individuals; the challenge of new roles that they will face; the requirement to balance the needs of individuals for development with the needs of their organisation and so on (pp. 86-87).

The Performance Model was deemed appropriate for my study because it is well suited for investigating the DLE needs in Vietnam. Vietnam is a developing country with limited resources, and from my personal experience as a LIM educator, I was aware that many LIM practitioners need to update their professional knowledge and skills. In addition, the libraries and information organisations in which many of them work have their own needs for staff development to bring their resources and services up to date through the introduction of new technologies. The results of the triage process would help to identify and prioritise the significant educational needs for DLE in Vietnam as well as to help understand some of the factors that would potentially affect the educational programmes for meeting those needs. Figure 6 below presents the eight elements of the Performance Model.

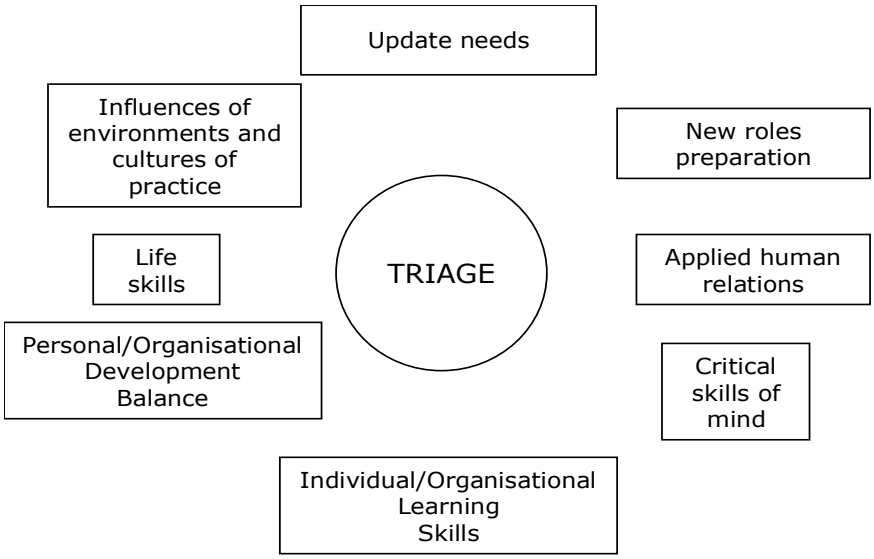

Figure 6: Performance Model
(Nowlen, 1988, p. 87)

My original intention was to include, as a minor part of this study, a triage of the DLE needs of stakeholder groups, including: LIM students and practitioners; LIM educators; LIM managers; and, deans of LIM schools. However, as the study progressed, it became obvious that this would be impossible due to the lack of clarity among key stakeholders about what DLE actually entailed and I decided not to use the Triage concept. Nonetheless, I still found components of the Performance Model to be of value and therefore incorporated them into my study.

I now briefly explain the elements of the Performance Model.

Update needs: Nowlen (1988) explained that practitioners continuously need to acquire fresh knowledge and skills to keep up-to-date with new technology and new legislation required by their current as well as future work. He claimed "being up to date is…one aspect of the relationship of knowledge and skill to competence" (p. 31). In my research, the need for LIM practitioners' to update their competencies was considered as a potential factor affecting the development of DLE in Vietnam.

According to Nowlen (1988), *new roles preparation, applied human relations, critical skills of mind,* and *life skills* are factors which help individuals to undertake their tasks in the workplace. These factors strongly affect the performance and educational needs of working individuals. The development of the LIM system of Vietnam in terms of applying new technologies and digitising information resources depends on having staff

with sufficient knowledge and skills to work in the digital environment. Therefore, the components of the Performance Model that would help me understand the need for DL knowledge and skills from the perspectives of the LIM practitioners and organisations were considered important for my research.

The influences of environments and cultures of practice factor relates to the characteristics of a social system or a community to which an individual belongs. Nowlen (1988) suggested that cultural values, government policies and financial resources need to be considered as factors affecting the learning agendas of individuals and organisations. I observed that the environment in which the LIM programmes exist in Vietnam includes the strong traditional social/cultural values, an education system that is centrally controlled, and LIM programmes that are highly conventional in their content, and that these are potential factors affecting the development of DLE.

The Performance Model recognises that the individuals working within organisations, and the organisations themselves, have development needs. According to Nowlen (1988), the educational needs of both groups form a kind of nexus that requires them to be considered together to achieve the best results for both parties. I therefore realised that it would be necessary for me to examine the nexus of needs for DLE, that is to identify DLE needs from the perspective of practitioners as well as their organisations.

Nowlen's model was successfully applied by H.S. Nguyen (2008) to develop a conceptual model of factors affecting the implementation of continuing professional education (CPE) programmes for university library practitioners in Vietnam. She identified five groups of factors: *social factors; individual practitioner factors*; *organisational factors (including personal relationships); practitioner and organisational nexus;* and, *professional factors*. In addition, she explored and prioritised the CPE needs of library practitioners by using the triage process. I used the *personal relationships* component of organisational factors in my research because H.S. Nguyen found that it affected the educational needs of LIM practitioners.

Because the focus of my research is on factors affecting the development of DLE for LIM practitioners in Vietnam, I observed that components of Nowlen's Performance Model was relevant for my study. In particular, with the development of DLs in Vietnam, there was a need for LIM practitioners with the required competencies to work in the digital

environment. However, the current LIM practitioners were not educated to have these competencies since there were no DLE programmes available to them. From Nowlen's Performance Model I identified the following components for the initial model for my study: update needs; new roles preparation; influences of environment and cultures of practice; and, the nexus between the CPE needs of individuals and organisations.

3.1.4 Change agents in the Diffusion of innovations theory

Rogers (2003) defined a change agent as "an individual who influences clients' innovation-decisions in a direction deemed desirable by a change agency" (p. 366). He pointed out that change agents can have a positive or negative impact on the diffusion of an innovation. According to Rogers, change agents are often professionals from outside an organisation, but they can also be members of the organisation which is undergoing an organisational innovation. They play roles as linkers between a change agency and an audience of clients (adopters) and they can be active during any stage of an innovation's life cycle.

Change agents can affect the rate of the adoption process. Rogers (2003) pointed out that an important responsibility of change agents is that they "facilitate the flow of innovations from a change agency to an audience of clients" (p. 368). He said that change agents use opinion leaders in a social system to effect change, and that in general, they are a positive factor. Rogers identified seven sequential roles (also activities) of change agents. These suggested roles helped me to examine the actual roles of change agents in the development of DLE.

- To develop a need for change: change agents initially help other stakeholders to be aware of the need to change their behaviour. Change agents initiate the change process by pointing out current problems and suggesting alternatives to these problems. Change agents identify the needs of clients, and in some cases create needs.
- To establish an information exchange relationship: the rapport between change agents and clients must be established after the need for change has been identified. Change agents need to sympathise with clients' needs and problems, and try to convince clients to accept them before accepting the innovation.
- To diagnose problems: change agents explore the problems of the clients and examine the environment to explain why these problems are not being solved by

current solutions, in other words, why the existing alternatives do not meet the needs of clients.

- To create an intention to change in clients: change agents need to motivate clients' interest in the innovation to make them want to change.
- To translate the intention into action: the next stage of the change process is that change agents persuade clients to make a decision to adopt the innovation; i.e. they can use opinion leaders to influence the process of making decisions for change.
- To stabilize adoption and prevent discontinuance: after the innovation is adopted, change agents need to reinforce the adoption among clients.
- To achieve a terminal relationship: the final goal for change agents is to enhance the self-renewing behaviour so that it becomes part of the clients' behaviour; in other words, change agents should aim to develop their clients' abilities to themselves become change agents.

Rogers (2003) also identified factors affecting change agent success. They are: (1) change agents' efforts in communicating with clients; (2) willingness of clients to adopt new ideas; and (2) empathy of change agents with clients' situation.

Recent research in Malaysia and in New Zealand provides two examples of studies that focus on academic librarians as change agents in innovation adoption processes. In Malaysia, Kamraninia and Abdullah (2010) examined the role of academic librarians as change agents in the adoption of open access repositories in their institutions. These researchers found the academic librarians' primary ways of promoting their institutional repositories were by providing training sessions, holding meetings in departments and faculties, and linking the institutional repository website with the university and faculties' website. In New Zealand, Dorner and Revell (2010) investigated the perceptions and promotion of institutional repositories (IRs) by subject librarians. They found that subject librarians perceived IRs to be a good resource for accessing theses and were of greatest value to humanities scholars, but overall IRs were still underdeveloped, offering little value to undergraduates and least value for science clients. We can conclude that in the New Zealand example, the librarians were not effective as change agents. These two

studies demonstrate the usefulness of the change agent concept for LIM research, and the Malaysian study illustrates the concept's value in a developing country context.

I decided not to use Fullan's concept of change agents because it is too broad in that it considers all stakeholders in the education system to be change agents. Rogers' concept of change agents is narrower in that in encompasses only individuals who influence innovation decisions. My choice of Rogers' definition would allow me to focus only on key stakeholders who were attempting to influence the introduction of DLE into the Vietnamese LIM community. By using Rogers' conceptualisation of change agents, I could examine the characteristics and roles of change agents, as well as factors affecting their success in the development of DLE in Vietnam (see Chapter 7).

3.2 The initial model

The first two objectives of my study are to identify the contextual factors affecting the development of DLE in Vietnam, and to explain how those factors are affecting the development. Based on parts of the theories of Fullan (2007), Nowlen (1988) and Rogers (2003) and elements from the literature review, I identified a range of factors that I adapted for inclusion in the study. These factors are presented in Table 3 - The factors adapted for inclusion in the initial model.

Table 3: The factors adapted for inclusion in the initial model

Factors from the literature review	Factors affecting educational change (Fullan, 2007)	Factors affecting continuing education (Nowlen, 1988)	Factors affecting Diffusion of Innovations (Rogers, 2003)	Adapted factors for inclusion in the initial model
The involvement in developing DLE of LIM schools, LIM associations and scholars	Stakeholders and their characteristics: Teachers, principals, students, district administration, community			Stakeholders and their characteristics LIM lecturers, LIM practitioners/students, LIM managers, LIM deans, LIM professional bodies, and agencies.
Educational change in Vietnam, the development of digital libraries	Need for educational change	Update needs; new roles preparation		DLE needs
Funding and policies of the Vietnamese government	Government and other agencies • Policies, funding, laws	Influence of environments and cultures of practice: social and cultural values, economic system, features of work place		The environment • Social/cultural values • Economic conditions • The government - its policies/funding
The complexity of DLE	Characteristics of change • needs, clarity, complexity, quality/practicality		Characteristics of innovation: relative advantage, compatibility, complexity, trialability and observability	Characteristics of DLE • clarity, complexity, quality/practicality
		Personal/Organisational development balance		Personal and organisational development balance
Researchers and educators of LIM study the development of DLE	External change agents of education change		Change agents' roles	Change agents of DLE development
Digital library profession		New roles preparation, Critical skill of mind, applied human relations, life skills		Digital library profession

The factors adapted from the theories were grouped into seven categories:

- *Stakeholders and their characteristics*: LIM practitioners/students, LIM lecturers, LIM deans, LIM managers, LIM professional bodies, and external change agencies.

- *DLE needs*: DLE needs of LIM practitioners, LIM organisations and LIM educators.

- *The environment:* social and culture values, economic conditions, and the government policies and funding.

- *Characteristics of DLE*: clarity, complexity, quality/practicality

- *Personal and organisational development balance*: the balance between the benefits of professional development for individuals and for their organisations. The nexus between LIM practitioners and LIM organisations; the nexus between LIM lecturers and LIM educational institutions.

- *Change agents:* roles and characteristics of change agents and factors affecting their success.

- *Digital library profession:* knowledge and skills required for LIM practitioners and LIM educators

The study's third objective is to develop, test and, if necessary, revise a model of the contextual factors. Using the factors adapted from the three theories and the literature review I developed a simple initial model which acted primarily as a framework to guide me in decisions related to answering the first two research questions. The initial model included the potential contextual factors affecting DLE development in Vietnam, which I separated into internal factors (existing inside the educational system) and external factors (which come from the external environment of the educational system). I assumed that many of these factors would interact with and affect each other, and some would have a stronger influence than others.

Figure 7 provides the initial model of potential factors affecting the development of DLE in Vietnam.

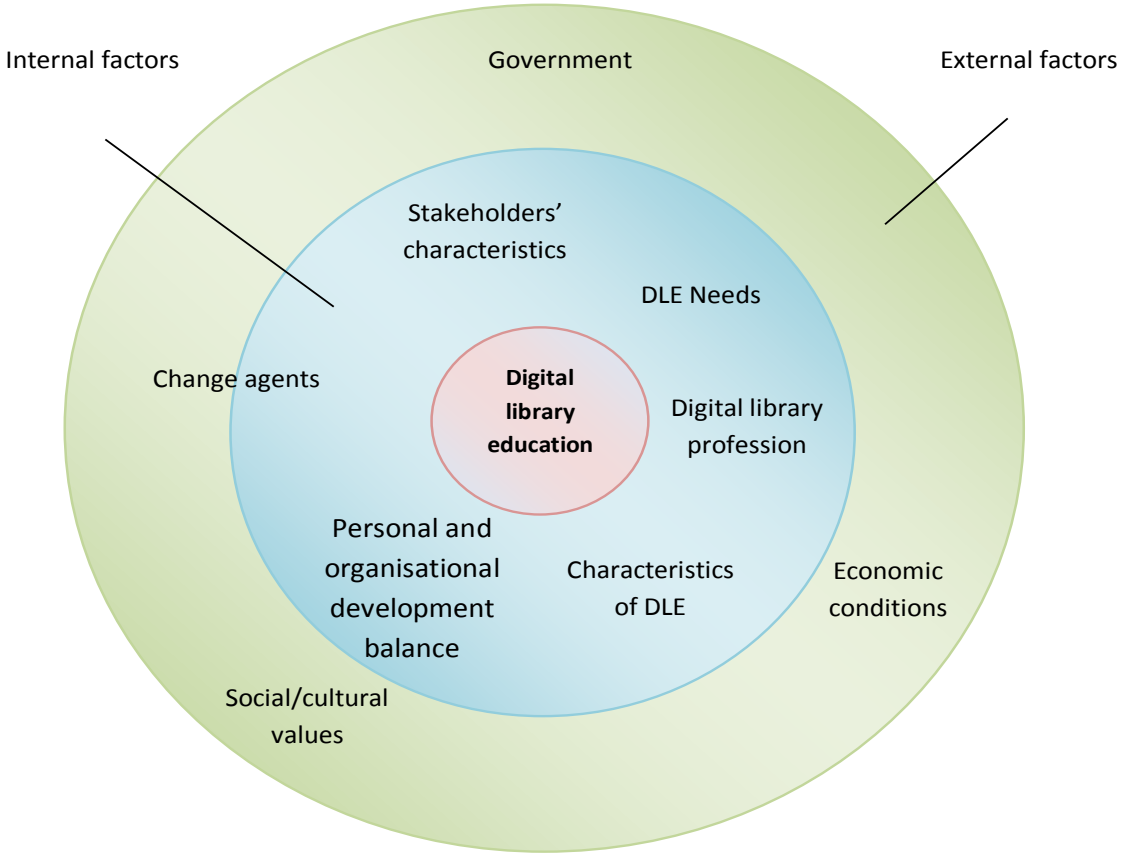

Figure 7: The initial model of potential factors affecting the development of DLE in Vietnam

In the following sections I explain the factors identified as potentially affecting the development of DLE in Vietnam.

Internal factors

I considered the internal factors to be those closest to the core of DLE development - for example, the stakeholders with the closest ties to the services and resources needed for digital libraries, and the DLE needs identified by those stakeholders. The internal factors were:

Stakeholders and their characteristics

Fullan (2007) contended that internal as well external stakeholders contribute to educational change. I identified the internal stakeholders in this study to be the LIM practitioners/students, LIM educators, LIM leaders such as the deans of LIM educational institutions and the managers of libraries, LIM professional bodies (associations) and others with an interest in or concern related to DLE development. (I regarded the government to be an external stakeholder due to its overarching power across the LIM

environment, which I discuss below). For the purposes of this study, I needed to investigate the characteristics and roles of the various stakeholders in DLE development. I identified the internal stakeholders to be as follows:

LIM practitioners/students are the learners who should be at the centre of educational activities. Their characteristics in this model were seen as learning needs, attitudes, basic knowledge and skills, and aspirations and motivations, all of which potentially affect the objectives, content, format and methods of DLE.

LIM educators (lecturers) are the educational providers. Because LIM lecturers need to understand the importance of DLE and to act as advocates for its development, their attitudes were considered to be crucial for the development of DLE in Vietnam.

LIM leaders (LIM managers and deans) are the directors of libraries and heads of LIM educational programmes. They are the key decision makers who represent their organisations in internal as well as external discussions relating to issues pertinent to the need for DLE, and therefore affect its development. As a result, LIM leaders were considered stakeholders whose perspectives were important for this study.

LIM professional bodies are the LIM associations in Vietnam. They work with the professional community to identify the knowledge and skills required for LIM practitioners and LIM education providers. I perceived them to be a bridge connecting LIM professional practices and LIM education, and therefore to be an important stakeholder.

Other stakeholders include other individuals or organisations with an interest or concern related to DLE development. I considered these to be the university administrations which fund academic departments and programmes, and private companies involved in providing or developing DL products and services for libraries. I also remained open to including any additional stakeholders that might be discovered during the research process.

Needs for digital library education

Understanding the needs for DLE was considered vital for this research. As noted in Section 3.1.2, Fullan (2007) recognised that successful educational change not only requires identification of the needs, it also requires formal recognition of those needs. By

identifying the knowledge and skills that organisations require to provide DL resources and services, and that LIM practitioners must acquire, it then becomes possible to determine the content for DLE as well as the attitudes of important stakeholders about the importance of those needs.

Characteristics of DLE: clarity, complexity, quality/practicality

In this research, DLE was viewed as an innovation in LIM education being introduced into Vietnam, and the development of DLE was seen as a change process. Therefore, identifying the characteristics of DLE was considered important for decision making in the initiation phase when the development of DLE was being contemplated, and for the implementation phase when it would be put into practice. This factor, as might be expected, is closely related to the previous factor, DLE *needs*. It is through the understanding of DLE needs that the characteristics of DLE become clear. And with clarity, it is easier for potential providers and adopters to conceptualise what DLE involves, to determine how complex it will be to develop and provide, and to decided how practical it will be in terms of the resources needed to achieve a high quality outcome. Fullan (2007) pointed out that "lack of clarity - diffuse goals and unspecified means of implementation – represents a major problem at the implementation stage…" (p. 89). Thus, understanding the characteristics of DLE was considered important for this research.

Personal and organisational development balance

According to H.S. Nguyen (2008), *the nexus of personal and organisational needs* plays an important role in CPE development. Similarly for this study, I considered that if the needs for DLE of the practitioners and their organisations were balanced, the performance of both would be improved and therefore DLE would be considered to be of greater value. Thus understanding the nexus between the two would be an important component of my study.

Digital library profession

This factor refers to members of the profession who are referred to as digital librarians, and in particular the competencies they must have to perform their roles. The body of professional knowledge and competencies of digital librarians identified in the literature is discussed in Section 2.2. In the context of the DL profession in New Zealand, the

competencies have to be determined in relation to the LIM practitioners, LIM organisations and professional bodies such as the Vietnam Library Association.

External factors

I considered the external factors to be those that were contextual with the potential to affect the development of DLE. These factors included the social/cultural values in Vietnam, the current economic situation, and the government policies and funding.

Social and cultural values

The social and cultural values in Vietnam were considered relevant because they affect what a society perceives to be important in terms of the educational needs of individuals and organisations (Nowlen, 1988). H.S. Nguyen (2008), for example, found that social and cultural values affected Vietnamese society's views of library work, which ultimately affected library practitioners' choices for professional development.

Economic conditions

The economic conditions affect the pace of development including technological development and educational development within a country. Thus the economic conditions in Vietnam would very likely affect the development of DLE and were therefore considered a part of the external environment.

Government

In Section 1.6 I identified the Library Department of the Ministry of Culture, Sports and Tourism (MCST) as having responsibility for governing libraries and information centres in terms of professional and technical standards, and the Ministry of Education and Training (MOET) for governing the curricula and quality of education of LIM schools. Other government agencies also have responsibilities that affect LIM education. The government is therefore a key external stakeholder with the potential to affect a range of areas relevant to the development of DLE education.

Change agents

I identified the potential change agents in this research as the stakeholders who were influencing the development and introduction of DLE into LIM education in Vietnam. I

considered managers, deans, practitioners, and educators as well as their organisations as possible change agents who were among the internal factors, and government officials and their organisations as potential change agents among the external factors. It was necessary to identify who the change agents were, what their actual roles were in DLE development, and factors that were affecting their success.

3.3 Conclusion

In this chapter, I have outlined the theoretical component of my study. I explained that I viewed DLE as an innovation whose development would lead to a change in LIM education in Vietnam. Based on the literature review and theoretical frameworks of Fullan, Nowlen and Rogers, I developed an initial model of potential factors affecting DLE development to help me develop the research methodology needed to answer the research questions.

Chapter 4 Methodology and research design

"If we knew what it was we were doing, it would not be called research, would it?"
(Albert Einstein Site Online, http://www.alberteinsteinsite.com/quotes)

In this chapter I present the research paradigm, methodological approach, research procedures, research sample, and method of data analysis. I also discuss other issues relating to the research such as ethics, reliability, validity and language.

4.1 Research paradigm

The research paradigm plays an important role in the way researchers conceive the research objectives, and approach the research process. In my research I have followed an interpretivist paradigm, which is based on the belief that there is no universal truth, so reality is an essentially subjective social product that is constructed and interpreted by humans according to their beliefs and value systems (Darke, Shanks & Broadbent, 1998). According to Darke, et al. (1998), the interpretivist approach focuses on the cultural and historical context of phenomena and seeks to understand them through the meanings assigned to them by the research participants (Orlikowski & Baroudi, 1991, p. 5; as cited in Darke et al., p. 276).

To investigate the contextual factors affecting the development of DLE in the Vietnamese context I have drawn upon the spoken words of people closely involved with DLE development in Vietnam. The interpretivist viewpoint has allowed me to come to a deeper understanding of the phenomena through the explanations, thoughts, perceptions and words of research participants and, thus, I have been able to identify the factors affecting educational needs and the development of DLE. The interpretivist approach has helped me explore and understand the context of the research problem and the complex nature of the Vietnamese environment.

4.2 Methodological approach

The purpose of qualitative research is to facilitate an in-depth understanding of the phenomena being investigated (Gorman & Clayton, 2005). Qualitative research can

involve many factors such as empirical materials, personal experiences, interviews, artifacts, cultural text, observational, historical, interactional and visual text that illustrate routine and problematical moments and meaning in individuals' lives (Denzin & Lincoln, 2003). In addition, qualitative research seeks to understand social reality and provides a rich description of people and interaction in natural settings. It aims to "understand how social order is created through talk and interaction" (Bryman, 2008, p.367).

Thus, a qualitative approach based on the observer in the real world has been appropriate for my study because it has helped me to investigate and understand the relevant social and cultural factors affecting DLE development in the Vietnamese context.

4.3 Research process

This section provides an overview of the research process, phases of the research, and the data gathering processes.

4.3.1 Overview of research process

Based on the recursive research process of Gorman and Clayton (2005), the research was implemented in three stages including developing an initial conceptual model, testing the model with qualitative data, and revising the conceptual model. Figure 8 illustrates the process of the study with the objectives stated in each step.

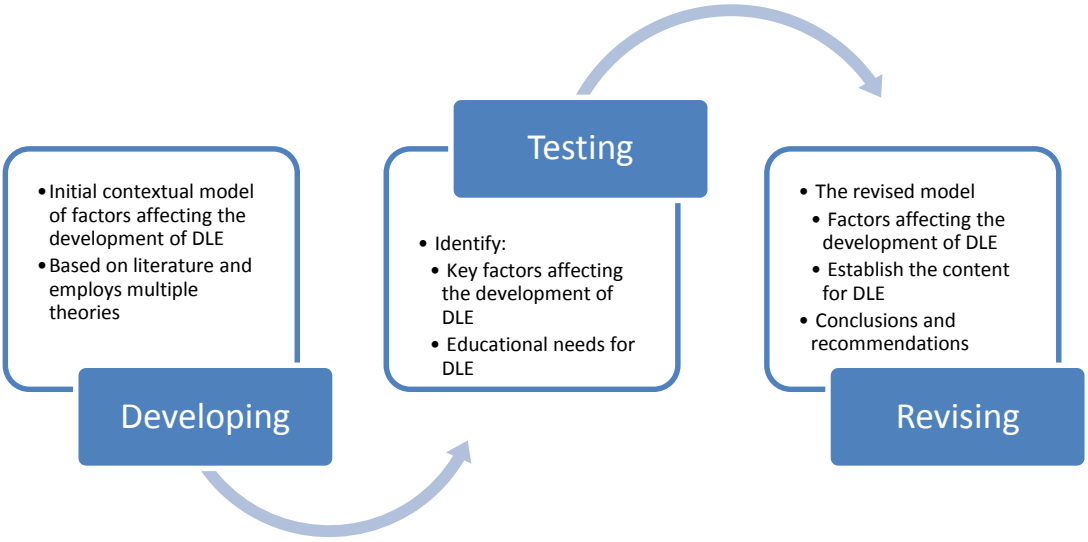

Figure 8: Research process and objectives of the study

In the first stage the objective was to establish a conceptual model of factors affecting the development of DLE in Vietnam. The objective was achieved by reviewing the existing research relating to digital libraries and DLE as well as relevant literature from Vietnam and other areas of the world. In the second stage, in order to test the model, qualitative data were collected through interviews and by gathering documentary evidence. This stage was intended to identify and prioritise the DLE needs of LIM practitioners and LIM organisations, and to explore the factors affecting the educational needs as well as the factors affecting the development of DLE in Vietnam. Finally, in the third stage of the research, I revised the model based on the analysed data. The conclusion and recommendations were stated after the model was revised. Thus, the recursive nature of of my study was beneficial to the final outcome.

Based on the research process, the data collecting and analysis procedures were divided into three main phases: desk research, data gathering and data analysis.

Phase one: Desk research

The goals of this phase were to conduct a literature review and establish an initial model. This phase was mostly completed when the research proposal was approved. However, the literature review continued to be updated during the period of the fieldwork, data analysis and writing up. From the literature review, I achieved two things: firstly, I became aware of the available existing work undertaken in the DL area, and I also identified the gaps in the current state of DLE and the key issues which needed to be taken into account in the study.

Based on the literature review, I developed an initial model of factors affecting the development of DLE in Vietnam drawing upon components of the Educational Change theory of Fullan, the Performance Model of Nowlen, and the Diffusion of Innovations theory of Rogers.

Phase Two: Data gathering

In this phase, I undertook fieldwork in Vietnam from April through July 2011. To investigate the DLE needs of LIM practitioners and factors affecting the development of DLE, I collected two types of data: interview data and documentary evidence.

For documentary evidence, I identified research papers, government publications and unpublished documents related to DLE and LIM education in the Vietnamese context. I collected these items during the period of conducting interviews. The details of the methods I used to gather documentary evidence are discussed in Section 4.3.2.

For the interview data, I conducted 18 interviews and 11 focus groups involving 70 participants including: LIM practitioners; LIM managers; LIM lecturers and deans of LIM schools; chairpersons of professional associations; and, representatives from business and government (details in Section 4.4). All interviews were approved by official agreement from the organisations before being conducted. The interview techniques are discussed in more detail in Section 4.3.3.

Phase Three: Data analysis

All data gathered in Phase Two were analysed in this phase in order to answer the research questions. The techniques and tools for analysing the qualitative data are discussed in Section 4.5.

4.3.2 Gathering data - documentary evidence

Two questions were used to guide the gathering of documentary evidence: 'What documents need to be sought for the research?' and 'Where are the documents to be found?' Because one of the most important issues was the quality of documents, I followed the assessment criteria suggested by Scott (1990) for: authenticity; credibility; representativeness; and, meaning (cited in Bryman, 2008, p. 516).

To ensure that all documents and information resources used in the study were reliable, I limited them to:

- Institutional documents: books, journals, research reports, reviews, evaluations, theses and conference papers, curricula and course content.
- Library community documents: annual reports, policies, master plans, regulations, human resource data, training reports, and website pages.

- Government publications and official statistics: government policies and strategies, national reports, academic reports, published and unpublished materials.

4.3.3 Gathering data - Interviews

The characteristics of the interview method such as flexibility, depth of information, quick response, and validity, help researchers explore social and cultural phenomena, and gain a deep understanding of the people's perspective on the research issue. The method assists researchers to explore and explain the beliefs, feelings and behaviours of people on the research issues (J. Mason, 2002). I employed interviews in my study because of the following reasons:

- Interviewing participants helped me discover and understand the contextual factors affecting the development of DLE in Vietnam from the perspective of the stakeholders.

- I received immediate responses to questions. Therefore, the method assisted me to probe more deeply by adding more questions as needed. These questions were ones I could not anticipate before the interviews.

- The interview method required simple equipment and was mostly based on communication skills which I already had.

- It produced a high response rate.

Before conducting the interviews, I explored the working environment of interviewees. I visited their site to introduce myself and speak informally with people I already knew. This step helped me to understand the structure and "culture" of the organisation and ensure that I behaved appropriately. In addition, recording and transcribing were the two methods which I used in the interviews; thus, equipment such as the digital recorder, notebook, laptop and pen had to be available and working well.

Semi-structured interviews with open-ended questions were used for collecting data. In-depth one-to-one interviews and focus group interviews were employed in this study. The interview methods and participants and the organisation types are listed in Table 4.

Table 4: Participants and interview methods

Interview methods	Participants	Organisations
Focus group interviews	LIM practitioners	Libraries and information centres
Individual interviews	LIM managers	
Focus group interviews	LIM lecturers	LIM educational institutions
Individual interviews	LIM deans	
Focus group interviews	LIM students	
Individual interviews	Officials	Relevant government departments Professional association

The focus group sessions ranged from 70 minutes to two hours long, with an average time of 90 minutes. The individual interviews averaged 60 minutes, and ranged in length from 40 to 75 minutes (Section 4.4 gives more details of the research sample).

Semi-structured interviews

In the semi-structured interviews, I used an open framework that allowed for focused, conversational, two-way communication. In this sense, I could give information to, and receive information from the interviewees. Before conducting the interviews I created an interview protocol. The protocol included a list of main questions on relevant topics to incorporate into the interview. Other questions could be asked but by following this process I did not lose sight of the main questions. This type of interview was chosen because it helped me control the issues being addressed. The flexibility of the method allowed me to establish new main and sub questions when I found a new idea or issue during the interview.

Kvale (1996) suggested nine types of question asked in qualitative interviews: introducing questions, follow-up questions, probing questions, specifying questions, direct questions, indirect questions, structuring questions, silence and interpreting questions. These types of questions were employed in each actual interview. For formulating the questions, I used the process described by Bryman (2008). The process consists of nine steps: general research area, specific research, interview topics, formulate

interview questions, review/revise interview questions, pilot guide, identify novel issues, revise interview questions and finalise guide.

When determining the interview protocol (i.e., the interview guide), I focussed on a specific research topic (the development of DLE), then broke it down into specific interview topics (initial factors/issues). I then developed the interview questions based on these initial factors. After several days, I reviewed the interview questions, and revised them to make them clearer, then I conducted a pilot interview. Based on the issues arising from the pilot interview, I revised the interview questions again.

Open-ended questions

These questions were designed to encourage full and meaningful answers in semi-structured interviews. The questions allowed interviewees to freely express their own answers without any leading, prompting or interrupting from me. These questions gave interviewees an opportunity to answer as much as they could, and I could develop new questions based on their answers.

Individual interviews

The individual interview method (one-to-one interviews) was employed to examine the perceptions and attitudes of LIM managers, deans of LIM schools, officials from relevant government departments, and chairpersons from LIM associations on the development of DLE. These individuals were highly important to the development of DLE in Vietnam and there it was important to interview them one by one so that they could speak in confidence. This method also enabled me to expand on questions and probe deeper when an interviewee said something of potential significance. As noted above, I developed an interview protocol (see Appendix 1) to guide me in conducting the interview.

Focus group interviews

The focus group method is a type of group interview in which interviewees and a moderator/researcher discuss a particular tightly defined topic. According to Powell and Single (1996), "a focus group is a group of individuals selected and assembled by researchers to discuss and comment on, from personal experience, the topic that is the subject of the research" (p.499). Wildemuth and Jackson (2009) indicate three strengths

of focus groups: (1) interviewees have opportunities to compare their ideas with other interviewees; (2) interviewees' social nature imitates the frame in which people usually build their opinions and attitudes; and (3), new ideas will be generated in focus groups.

In my research, separate focus group interviews were conducted with LIM practitioners, LIM lecturers and LIM students. From the focus groups with LIM practitioners, I aimed to understand their need to acquire knowledge and skills for their current positions, and to identify their needs relating to DLE. The focus groups with LIM lecturers had several aims: to discover the lecturers' perceptions and attitudes about DLE; to determine the recent changes in education within the LIM profession; to determine whether the lecturers are open to learning and teaching about DLE; and to identify their needs for career development. The focus groups with LIM students were aimed at exploring their perceptions of current LIM educational programmes and their expectations for changes to those programmes. In the focus group sessions, it was hoped that the various sets of interviewees would be able to share their ideas and also make additional comments when they reflected on what others in the group said – leading to new perspectives and richer data.

4.4 The research sample

To understand how the contextual factors are affecting the development of DLE for library practitioners in Vietnam I employed purposive sampling. According to Patton (2002) the logic of purposive sampling "lies in selecting *information-rich cases* for study in depth. Information-rich cases are those from which one can learn a great deal about issues of central importance to the purpose of the research" (p.169). Pickard (2013, p. 64) points out that for purposive sampling *a priori criteria* provide a structure "based on cognitive signposts developed from the literature review" and "form the basis of a sampling framework".

For this research I established two sampling frameworks, one for research sites and another for participants from those sites. In addition to drawing from the literature review for determining the sampling criteria for the two frameworks, I drew upon my experience and understanding of the LIM field from ten years working as a practitioner and educator.

For the research sites I established criteria to select from well-known institutions which offer LIM education in Vietnam, from leading libraries and information centres which play important roles and influence other organisations, from government departments which govern the LIM field, and from ICT companies involved in developing DLs. I also established criteria to select appropriate participants from the selected sites, that is, representatives of LIM practitioners, educators and government officials.

4.4.1 Research sites

Marshall and Rossman (cited in Gorman and Clayton, 2005) stated that the criteria for searching and choosing locations should be based on where:

- access (in terms of being allowed entry) is possible
- there is a high probability that an appropriate mix of features (processes, people, programmes, interactions, structures, etc.) is present;
- an interactive relationship could be built with study participants;
- data quality and credibility of the study are likely to be ensured.

Selecting libraries and information centres

As noted in Section 1.6.2 the Vietnam library system consists of different groups of libraries such as public libraries, academic libraries, army libraries, school libraries and information centres. In early 2001, a national project was implemented to introduce information technology in the management of libraries (NLV, 2008). Most of the large libraries have integrated library systems and use computers, library software and networks to manage all their systems in terms of information processing, information retrieval, loaning and user management. The libraries have created their own databases, and some of them have been creating digital resources. Libraries in the system can share catalogue records. Information users can access the websites of these libraries for searching and in some cases, making requests. However, the thousands of small libraries are still working in a traditional environment with limited IT application.

To ensure that each library and information centre chosen would provide rich data, the following a priori criteria were identified. It had to: (1) be large in size; (2) represent one of the main library types in Vietnam; (3) represent one of the three main geographic areas

(i.e., North, Central and South); (4) play an important role such as supporting education in general, LIM education, or the governance or development of the LIM sector in Vietnam; and (5) have implemented digital resources (e.g., online library catalogues, full-text databases, digital image collections) and automated services (and thus, was on the way toward becoming DLs). Table 5 provides the criteria used to identify representative libraries and information centres.

Table 5: A priori criteria for selecting libraries and information centres as research sites

	Criteria	Sub criteria	Note
1.	Size of library	Large (number of staff and Information users)	Has more than 30 staff and 5000 users
2.	Type of library	Public libraries Academic libraries Information centres	The libraries represent significant types of libraries in Vietnam
3.	Location	North, Central or South	Represents a geographic area
4.	Role	In education in general In LIM education In governance or development of LIM sector	Have played a strong supporting role
5.	Have implemented digital resources	IT applications Digital resources	The libraries have applied IT and have digital resources

Table 6 presents the selected LIM organisations (pseudonyms have been used) and the criteria used to choose them. I have not included the location of the sites to reduce the chances of the organisations being identified. Based on the five criteria I chose eight libraries and information centres as participating organisations for my research. Four

were from the North, three from the South, and one from Central Vietnam, thus ensuring representation from across the whole country.

Table 6: LIM organisations involved in the research

Name of LIM Organisation	Criteria			
	Size	Type	Role	Have applied IT & Have digital resources
Ba Dinh	Large	Academic library	Supporting education	Yes
Dong Da	Large	Public library	Supporting society	Yes
Gia Lam	Large	Public library	Supporting society	Yes
Hoa Binh	Large	Academic library	Supporting education	Yes
Kim Ma	Large	Academic library	Supporting education	Yes
Tay Ho	Large	Information centre	Supporting government, business & society	Yes
Thanh Xuan	Large	Academic library	Supporting education	Yes
Van Dien	Large	Academic library	Supporting education	Yes

Selecting LIM schools

The main role of the Vietnamese LIM schools is to educate people for working in libraries, information centres, government departments and other organisations. Each of these schools is governed by MOET and their university. MOET defines the core curriculum for LIM education, and based on the definition, these schools develop their own specific curricula. The universities control the schools in terms of staff, course content and teaching plans. Schools also work with libraries, the Department of Libraries and LIM associations to identify the competencies required by LIM professionals. They provide

diversified programmes such as short courses, part time and full time study and all levels of qualifications from certificate to PhD degrees.

To select the representative LIM schools, I identified the following criteria. The school: (1) has a large number of LIM students; (2) offers a broad range of subjects in and different levels of LIM educational programmes; (3) has offered LIM education for at least 10 years; (4) has the capacity for educational development (academic staff, learning resources, financial and governmental support); (5) represents a geographical part of the country. Table 7 presents a priori criteria used to select LIM schools for the study.

Table 7: A priori criteria for selecting LIM schools

Criteria	Sub criteria	Note
Student number	Number of current students	Has over 200 students
LIM educational programmes	Broad range of LIM subjects Different level of educational programmes Leaders willing to update the curriculum	
Time in LIM education	Number of years	At least 10 years in LIM education
Capacity for educational development	Academic staff, learning resources, financial and governmental support	Over 10 staff
Location	North, Central or South	Represents a geographic area in Vietnam

Based on the criteria, five LIM schools were chosen. Table 8 presents the selected schools and criteria for choosing them. The locations of the schools have not been included in the table and pseudonyms have been used to reduce the likelihood of them being identified.

Table 8: LIM schools involved in the research

Name of LIM Organisation	Criteria			
	Student number	LIM educational programmes	Time in LIM education	Capacity for educational development
Cau Giay	~450	Broad range of LIM subjects, Certificates, Bachelors Leaders willing to update the curriculum	>10 years	Over 10 staff, Good learning resources, Government support
Hoan Kiem	~400	Broad range of LIM subjects, Certificates, Bachelors, Masters Leaders willing to update the curriculum	>10 years	Over 10 staff, Good learning resources, Government support
Hoang Mai	~400	Broad range of LIM subjects, Certificates, Bachelors Leaders willing to update the curriculum	>10 years	Over 10 staff, Good learning resources, Government support
Long Bien	~500	Broad range of LIM subjects, Certificates, Bachelors, Masters, PHD Leaders willing to update the curriculum	>10 years	Over 10 staff, Good learning resources, Government support
Thanh Xuan	~250	Broad range of LIM subjects, Certificates, Bachelors, Leaders willing to update the curriculum	>10 years	Over 10 staff, Good learning resources, Government support

Selecting Ministries

The Vietnamese government is in charge of tasks assigned by the State. These tasks are in the fields of politics, economics and social welfare, national defence, security and external relations. The government

> maintains effective operation of the State apparatus from the central to grassroots levels; ensures the respect for, and implementation of the Constitution and laws; promotes the people's sense of mastery in national defence and construction; ensures stability and improves the people's material and spiritual life (Ministry of Home Affairs. Institute for State Organizational Sciences, 2015).

The LIM field is involved in supporting this last role of the government, especially improving the people's spiritual life by providing reading materials for various purposes.

To understand DLE development from the perspective of the Vietnamese government, I chose two ministries from which to select interview participants and obtain documentary evidence. I chose the Ministry of Education and Training (MOET) because of its role in managing the Vietnamese educational system in terms of funding, policies and curricula, including the curricula in LIM schools. I selected the Ministry of Culture, Sports and Tourism because it is responsible for managing all of the library systems in Vietnam. The Ministry of Science and Technology (MOST) was chosen because it is an agency of the government performing the function of state management of science and technology, including scientific activities and technological development (MOST, 2012a). The National Agency for Science and Technology Information (NASATI), which is directly under MOST, functions to advise and assist the Minister in performing state management and implementation of information, library and statistical science and technology (MOST, 2012b). NASATI strongly influences not only information centres and libraries subject to MOST, but also those under the jurisdiction of other government ministries.

I have named these ministries in my research because anyone with any knowledge of the LIM profession in Vietnam will know who they are. However, in the analysis, discussion and conclusions I have used pseudonyms for them and for the individuals on their staff whom I interviewed to do my utmost to prevent readers of my thesis from linking specific quotes or other data directly to the participants from these organisations.

Associations

LIM associations are LIM professional bodies which are responsible for establishing the competency requirements for LIM professionals, promoting new educational programmes, and creating the professional environmental support for the development of DLE. In Vietnam, LIM professional bodies are the Vietnam Library Association and the Information and Documentation Association. The professional bodies not only affect the LIM practitioners' profession, but also suggest LIM educators to update knowledge and skills for their teaching proficiency. These organisations work as professional organisations to support and make connections between libraries and information centres in Vietnam. They organise conferences, professional development workshops and short courses for LIM practitioners. These non-profit associations consist of libraries with similar objectives and information users. Any individual and organisation can apply to become a member of these associations. The members of the associations include individuals such as librarians, information professionals, lecturers, researchers, managers; and organisations such as libraries, information centres, LIM schools and government departments.

I selected the two Vietnamese LIM associations in which almost all libraries and information centres, and LIM schools, are members: the Vietnam Library Association and the Information and Documentation Association. As with the government departments, anyone with any knowledge of the LIM profession in Vietnam will know who these associations are. However, in the analysis, discussion and conclusions I have used pseudonyms for them and for the individuals on their staff whom I interviewed to do my utmost to prevent readers of my thesis from linking specific quotes or other data directly to the participants from these organisations.

Selecting an IT Company

IT companies are involved in the automation and modernisation of libraries and information centres. The companies are offering IT solutions for libraries and information centres such as integrated library software, digitising solutions, network technology, personal computers and servers, and other IT solution projects. In some cases, they offer special courses which focus on IT knowledge and skills for LIM practitioners.

For selecting an IT company, I identified the following a priori criteria: it (1) it has at least 10 years of experience working with libraries; (2) it has solutions for automation such as integrated library software and advanced technologies, for example, for digitisation projects; (3) its solutions have been used by a large number of libraries; and (4) it is a large company with more than 200 staff. These criteria ensured that the IT company was influential with regard to automation in the LIM field in Vietnam. One IT company was selected based on these criteria. To ensure anonymity, I have not used the name of this company in my research.

The relationship of research organisations

Figure 9 introduces the organisations participating in the study and illustrates their relationships in terms of support and governance.

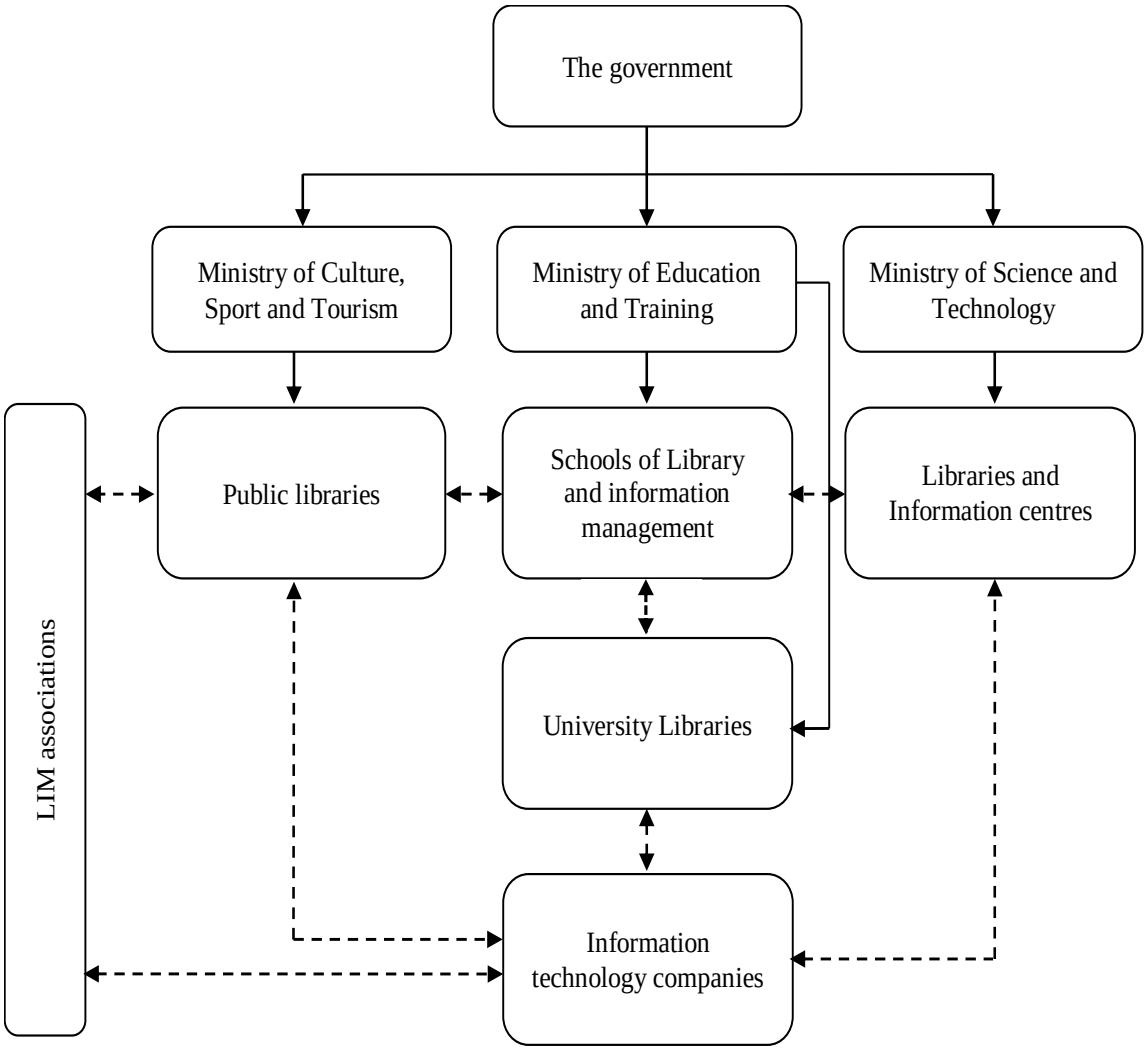

Figure 9: The researched organisations and their relationships

In Figure 9 there are two types of arrows, each of which represents a type of relationship.

⟶ Governing relationships (represent the governance of government authorities to LIM organisations. The authorities use laws, regulations and funds to manage and lead LIM organisations)

⟷ Supporting relationships (Libraries, schools, information centres, associations and IT companies support each other in terms of technologies, education, staff development, library techniques and library standards)

The figure shows that libraries, information centres, ministries and LIM schools are involved in two sets of important working relationships. The first is with the various ministries that are responsible for governing institutions. The second is with various organisations that support the libraries, information centres, schools and their staff. These relationships are characterised here as governing relationships and supporting relationships. For example MOET governs academic libraries and LIM schools in terms of standards and requirements for university libraries, and the curricula of LIM schools. LIM associations and IT companies have supporting relationships with other organisations. LIM associations are professional organisations which support libraries, information centres and LIM schools for professional development. IT companies play a role as technology advisors and agents of libraries, information centres, LIM associations and LIM schools.

4.4.2 The sample population

In this section I provide a priori criteria I developed for selecting the individuals from LIM organisations and LIM schools.

Selecting participants in Libraries and information centres

I used the following criteria for selecting individuals (LIM practitioners) from the LIM organisations. To ensure representation from the different areas of library services, I selected at least one staff member from each of the departments in the organisation. And, to ensure that I obtained rich data, the second criterion was that the staff member had to have at least five years of working experience in the organisation. In addition, the managers of the LIM organisations assisted me by recommending staff who met my criteria. The number of participants is presented in Table 10.

Thirty practitioners (9 men and 21 women) from six libraries and one information centre participated in focus group sessions. They worked in different departments in the libraries: information technology departments, information services departments, cataloguing departments, acquisition departments, and reader service departments. Some of them had managerial roles in addition to their library duties, while others had purely non-managerial roles. All participants had from four to ten years' experience in the library and information field. They had different educational backgrounds, mainly from library science, computer science, and linguistics. All of them had bachelor's degrees, some others had a master's degree in library and information science or they were currently in master's programmes.

In each organisation I also conducted an interview with the manager. Eight LIM managers were chosen from the participating organisations. Six of them were directors and one was a vice-director. Two managers held PhD degrees, five others held master's degrees. Three of the managers did not have any LIM background, and five managers were LIM professionals who held both library and other qualifications. All of them were over 40 years old and had more than 10 years in the library and information field. The managers have played important roles in this study as authorities and participants. As authorities, they gave me access to the participating organisations. As research participants, they gave me an overview of their organisations, introduced potential staff to interview and organised meetings with their staff. I got useful support from them during the data collecting process. They were the key interviewees of this study.

Selecting participants in LIM Schools

I used three main criteria for selecting the interviewees (lecturers) from LIM schools: (1) they represented one of the school's teaching departments; (2) they had at least five years teaching experience; (3) they were teaching subjects related to DLs and IT. The deans of the LIM schools assisted me by recommending staff who met my criteria. In each school I also conducted an interview with the dean. The number of selected lecturers is presented in Table 10.

Fourteen lecturers from five LIM schools agreed to participate in the focus group sessions. Four of them played two roles: they were both lecturers and practitioners. Seven of the lecturers were over 50 years old, the rest were young lecturers, mostly under 35 years old.

Twelve lecturers held master's degrees, and four of them were doing PhD programmes in Vietnam. Five lecturers had completed master's degrees overseas, and the rest held degrees from the Vietnamese LIM schools. Two lecturers held doctorates.

In each school I conducted an interview with the dean. There were five deans participating in this study. Two deans were doctors and professors, three others held master's degrees and were doing PhD programmes. Three had backgrounds in library science while two others had backgrounds in linguistics and science. Three deans were over 50 years old and were educated in Russia, and two others were under 50 years old and were doing PhD programmes in Vietnam. The participation of the deans was significant for the study. The deans provided access to their organisations, organised interviews with staff, and supplied relevant documents if required.

I also involved eight students from one LIM school in a focus group to obtain their perspectives. They were in their first to fourth years of study. All of them were full time students. In addition, I also analysed the background and academic record data of 150 current undergraduate LIM students. Note that the information provided to me had been anonymised.

Selecting participants in ministries, associations and the IT company

In each of these organisations I decided to conduct only one interview with a key manager and to collect relevant documentary evidence. The reason for this decision was because my intention was only to examine the roles and effects of these organisations on the development of DLE. For this purpose, the managers and documentary evidence were sufficient for providing the rich information needed.

There were four officials, who were also managers participating the study. Two were directors, one who works in a ministry related to educational development in Vietnam and the other working in a ministry concerned with the development of the library and information sector. The two others were a vice-chairperson and chairperson of LIM associations. The four officials had from 15 to 30 years' experience in education and library fields.

The IT manager participating in the study was a director working for an IT company that was well-known for its industry leading technologies for libraries. He was director of the

department of library solutions, and had more than ten years of experience in IT and library science.

In summary, I conducted 18 individual interviews and 11 focus groups with 70 participants. These participants were selected from 18 organisations. To preserve the anonymity of the organisations participating in the study I have given them pseudonyms (presented in Table 9).

Table 9: Pseudonyms of participating organisations

Organisations	Pseudonyms
Libraries and information centres	The seven participating libraries were given the name of a place in Vietnam. Their names are Hoa Binh, Ba Dinh, Thanh Xuan, Kim Ma, Tay Ho, Dong Da and Gia Lam.
LIM Schools	Six LIM schools were given names of places in Vietnam. Their names are Hoan Kiem, Long Bien, Cau Giay, Ha Dong, Hoang Mai and Thanh Xuan.
Government Department or Ministry	There were two ministries participating in this study. They were coded as Alpha Ministry and Beta Ministry.
Associations	There were two associations. They were given names: Delta Association and Gamma Association.
IT company	There was only one, it was named only as an information technology company.

I conducted interviews with LIM practitioners, managers of libraries and information centres, lecturers of LIM schools, deans of LIM schools, and officials who work for the government and LIM associations.

The sample of all interviewees of my research is presented in Table 10.

Table 10: Distribution of participants in the study

Organisations and their abbreviations	Participants											Total
	CA	AC	CI	RE	IT	MA	LE	DE	OFI	ST	DI	
Hoa Binh – HB	1	1	1	1		1	-	-	-	-	-	5
Ba Dinh – BD	1	-	1	1	1	1	-	-	-	-	-	5
Thanh Xuan – TX	1	-	1	1	1	1	-	-	-	-	-	5
Kim Ma – KM	-	1	1	1	1	1	-	-	-	-	-	5
Tay Ho – TH	1	1	1	1	1	1	-	-	-	-	-	6
Dong Da – DD	1	-	1	1	1	1	-	-	-	-	-	5
Gia Lam – GL	1	1	1	1	1	1	-	-	-	-	-	6
Van Dien – VD	-	-	-	-	-	1	-	-	-	-	-	1
Hoan Kiem – HK	-	-	-	-	-	-	5	1	-	8	-	14
Long Bien – LB	-	-	-	-	-	-	2	1	-	-	-	3
Cau Giay – CG	-	-	-	-	-	-	4	1	-	-	-	5
Hoang Mai – HM	-	-	-	-	-	-	2	1	-	-	-	3
Ha Dong - HD	-	-	-	-	-	-	1	1	-	-	-	2
Beta Ministry - BM	-	-	-	-	-	-	-	-	1	-	-	1
Alpha Ministry - AM	-	-	-	-	-	-	-	-	1	-	-	1
Gamma Association – GA	-	-	-	-	-	-	-	-	1	-	-	1
Delta Association - DA	-	-	-	-	-	-	-	-	1	-	-	1
IT company - IT	-	-	-	-	-	-	-	-	-	-	1	1
Total per category	6	4	7	7	6	8	14	5	4	8	1	70

Note:

CA = Cataloguing staff
AC = Acquisition staff
CI = Circulation staff
RE = Reference staff
IT = Information Technology staff
MA = Library managers
LE = LIM lecturers
DE = Deans
ST = Students
OFI = Officials at Ministries and Associations
DI = Director at IT company

Table 11 identifies the participant categories and explains their representative codes.

Table 11: Codes of participants

Participants	Notes
LIM practitioners	In this study they were called “staff”. They were coded with their library's name. For example, a librarian at Ba Dinh was coded “BD-Staff”.
LIM managers	Managers were coded with their organisation's name. For instance, the manager of Dong Da was coded “DD-Manager”.
LIM Deans	Deans were coded with their school's name. For example the dean of Hoan Kiem was coded “HK-Dean”.
LIM Lecturers	Lecturers were coded with their school's name. For example a lecturer of Long Bien was coded “LB-Lecturer”.
Officials	Officials were coded with their organisation's name. For example an official of Alpha Ministry was coded “AM-Official”.
LIM Students	They were coded as Student1, Student2 and so on

4.5 Data analysis tools and methods

4.5.1 Overview of analysis procedures

One of main difficulties with qualitative research is that the approach generates a large unstructured data set because it relies on field notes, interview transcripts and documents. In qualitative research the gathering and analysis of data often occurs concurrently. There is a constant interplay of data and analysis, data informing analysis and analysis informing new data gathering. This section discusses the analysis procedures for all the different kinds of data gathered in Phase Two.

The interview transcripts provided a large amount of qualitative data. Thus, choosing strategies and tools for analysis was a crucial task. I adapted the interactive model suggested by Miles and Huberman (1994) to analyse the data. The process of analysing data is presented in Figure 10.

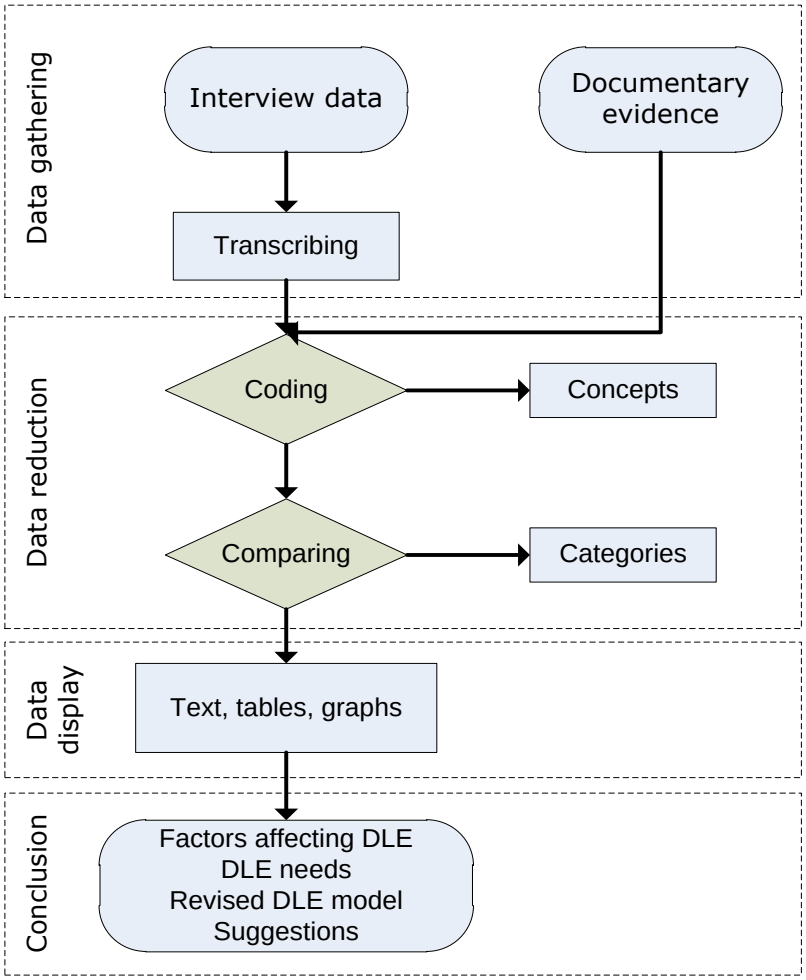

Figure 10: Data analysis procedures of the research adapted from the interactive model (Miles & Huberman, 1994)

Figure 10 presents four sequential steps of the data analysis procedure: data gathering; data reduction; data display; and, conclusion. The data gathering (interview data and documentary evidence) was discussed in Sections 4.3.2 and 4.3.3. In the following sections I discuss four main aspects of the data analysis: transcribing the interview data; reducing data (coding and comparing); displaying data; and, drawing conclusions.

4.5.2 Transcribing the interview data

After conducting interviews, all interviews were transcribed for analysing. The outcome of the process was to provide the data in a form that was easier for analysing. There were some challenges that I faced in transcribing: (1) the interviewees did not always speak in nice finite sentences. I needed to reconstruct the sentences for the reader's easy understanding; (2) the conversation sometimes was not easy to hear, especially when several people were talking at the same time. I had taken notes which I could then

compare with the audio versions; (3) the results are presented in English, while the interviews were conducted in Vietnamese (the language translation issue is discussed in Section 4.9). In some instances, I had to compare the transcripts with the notes taken while conducting the interviews in order to verify the meaning of the words spoken by the interviewees. After this step, the transcripts and documents were used for the next step: data reduction.

4.5.3 Data reduction

Data reduction is one of the most important tasks in the data analysis. The outcomes of this step were concepts and categories that were used to identify contextual factors affecting DLE development in Vietnam. The inputs for this step were the interview transcripts and documents from research organisations.

In this study, I used the technique of data reduction based on the tools and strategies suggested by Miles and Huberman (1994): contact summary sheets, pattern coding and writing memos. Gibbs (2002) defined coding as "the process of identifying and recording one or more discrete passages of text or other data items (e.g., parts of a picture) that, in some sense, exemplify the same theoretical or descriptive idea" (p. 57). It is a process to break the rough data into units for analysis, and to categorise the units (Denscombe, 2010). I used pattern coding for analysing data because (1) it helped to reduce the large amount of data, and (2) the analysis of data as it was gathered helped me to sharpen my focus in the later fieldwork.

I employed the same method to code the interview data and the documentary evidence. I used descriptive keywords and pattern coding based on the factors suggested by the initial model as a starting point to identify concepts and categories. Concepts and categories were changed and revised as data analysis progressed. During data analysis I worked intensively with my supervisors who helped me to revise my codes and gave suggestions for exploring more codes or combing concepts. This process is illustrated in Figure 11.

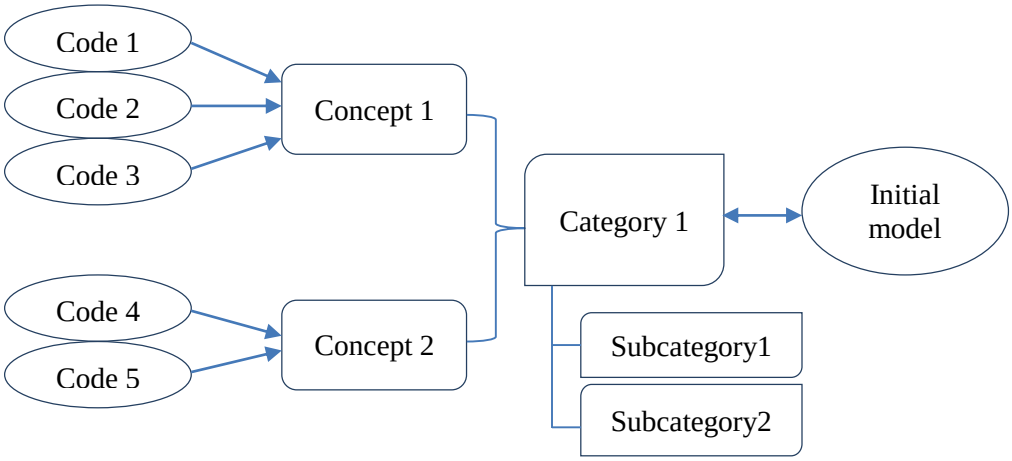

Figure 11: Coding process

The process can be explained in three steps:

Step 1: Identifying initial codes: In this step I carefully read the full-text transcripts at least two times. I then picked key ideas from the text and labelled them with key words. I created a simple table using Excel (explained below) in which each key word was recorded along with the relevant text from the transcript.

Step 2: Developing concepts: After coding five transcripts, I reviewed the key words and revised and grouped them into suitable concepts, using the suggested factors in the initial model to develop the concepts. I also re-read the full-text to ensure the meaning of ideas/statements before grouping them together under the concepts. I then compared the concepts with those in the initial model, and where necessary I merged new concepts with existing ones. I also verified that no initial factors were inadvertently missed and I identified new concepts that were not present in the initial model.

Step 3: Establishing categories: In this step I compared the concepts, grouping some together in one category while moving others to another more suitable category. I also developed some subcategories for each category. As in the previous step, I compared the categories with those in the initial model to consolidate similar ones, check for missing categories, and identify new ones.

Table 12 gives a sample of coded interview data at the end of the three steps. Column one contains the categories into which the various codes/concepts were grouped. Column two provides three examples of the codes I applied to the raw data: *understanding about DLs*, *DL competence*, and *defining DL frameworks*. Column three provides the relevant raw

data extracted from the transcripts, and column 4 records the identification (ID) of the interviewees. Column five shows the relevant notes. As can be seen in this table, after comparing the concepts I decided that the code for the raw data from the HM-S2 transcript needed to be moved from the *DL conceptualisation* category to the *DLE content* category.

Table 12: Samples of coded interview data

Category	Codes/ Concepts	Raw data from interviewees	ID	Note
DL conceptualisation	Understanding about DLs	*In my opinion, digital libraries do not separate to traditional libraries. DL are a group of digital collections, it archives digitised materials. The digital materials are published online and accessed from out of the libraries.*	TX -L1	
	DL competence	*When teaching DL, we need to indicate the issues to help practitioners understand the importance of cooperation in developing DLs in terms of technologies, equipment, and information sharing and so on.*	HM -S2	Move to Category: ***DLE content***
	Defining DL frameworks	*The most important thing here is that we have to define the concept of DL. The concept has to be mentioned in the law of libraries. If we do not have an idea or a concept of DLs, and you do not understand what DLs are, we cannot do anything.*	DD -S4	

I used MS Excel with the initial codes I developed from the raw data. This programme helped me be flexible in creating, filtering and grouping ideas, concepts, categories and themes. The ideas, views, comments and statements from all participants and documents were recorded verbatim. The quotations were extracted by keywords. The keywords were filtered and grouped in concepts. The concepts then were filtered and grouped in categories. Finally, the categories were used to establish themes which highlight key factors affecting DLE development. The revised themes and categories were used to revise the initial model.

4.5.4 Data display

At this stage, data were organised, compressed, assembled and presented by text, charts, diagrams and graphics. Data display techniques employed in this research included text,

tables and diagrams. The techniques were used to discuss and interpret the factors which affect the development of DLE in Vietnam.

4.5.5 Drawing conclusions and verifications

This is the interpretive stage in which I attempted to draw meaning from the displayed data. I compared the findings of the study with the information in the literature review and the theoretical framework.

Toward the end of this stage, the contextual model of the study was assessed and revised. The final result of this stage was the development of the final model of factors affecting the development of DLE in Vietnam.

4.6 Validity

Validity is a crucial criterion in assessing and establishing the quality of qualitative research. Miles and Huberman (1994) note "the basic issue here can be framed as one of relative neutrality and reasonable freedom from unacknowledged researcher biases – at the minimum explicitness about the inevitable biases that exist" (p. 278). To ensure the validity of my study, I employed the following steps.

I checked the gathered data against other sources. For example, I checked the responses of key stakeholders with the existing publications from their organisations. I checked the documentary evidence against different sources. I checked reports on LIM education from the Vietnamese government with reports of LIM schools. Interview data, in some cases, were compared with documentary evidence. The comments of a dean or lecturer were checked with the annual reports of their organisation. All key points from interviews were sent back to interviewees for checking to ensure that I did not misunderstand them. After conducting an early interview, I sent the transcript to my supervisors for checking. They gave feedback and suggestions for the next interviews.

I selected the interviewees from different LIM organisations and different departments of each organisation. This selection helped me to collect rich data from different stakeholders. In addition, I also received advice from key stakeholders for choosing suitable participants. They suggested people who they believed would provide valuable

information. Deans and managers also helped me select appropriate staff members for my research.

In addition, I adopted an open and friendly demeanour with participants. As a result, I felt confident that they trusted me and were candid in what they said; for example, with regard to some sensitive issues such as government management and evaluating LIM education. If they had felt uncomfortable and did not trust me, I would not have received frank responses.

4.7 Reliability

Reliability focuses on whether the research instruments are neutral in their effect and would obtain the same results if used on other occasions. According to Denscombe (2010), reliability means that the outcomes of the research are the same if anyone did the research. To improve the reliability, I ensured consistency in the use of the criteria to select the participants in the research. In addition, I also received advice from interviewees who helped me to identify other highly informative interviewees, which was a critical feature of the data gathering process. After the pilot interview, I ensured that all of the critical questions were posed to all interviewees.

4.8 Ethics

I was aware that ethical considerations are very important in research. Thus, I strictly followed the requirements of the VUW Human Ethics Committee (HEC). I applied for and received ethical approval from the School of Information Management HEC before starting data gathering. In addition I received permission from all managers and deans before accessing the research organisations.

At the beginning of the each interview and focus group I stated clearly the purpose of the study and gave an information sheet to the participants and allowed time for them to read it. They were informed that their interview or focus group session would be recorded, that they and their organisations would not be identified in any written reports from the research, and all raw data would kept in a locked filing cabinet and computer files password protected. Focus group participants were also informed of the requirement for confidentiality of the discussion content. I confirmed that the gathered data would be

kept confidential, and only my supervisors and I would access the data. They were advised that any information obtained from them would only be used for my thesis, articles published in academic journals or conference presentations. I also gave a date for participants to withdraw from my research if they changed their mind. All participants agreed to participate by signing the consent form before I started their interview or focus group session (see Appendix 2 for Information Sheets, Consent Forms, etc.).

For collecting academic record data of current undergraduate LIM students, I received permission from the authorities to access their academic records in an anonymised form.

4.9 Language translation

The data were collected in Vietnamese but the final results reported in English, even though English is my second language. Thus, I faced two challenges. First, it took time to translate data from Vietnamese to English, and second, there were possible shortcomings in translating the results of interviews and other data from Vietnamese into English. For the first issue, I coded all data (interview transcripts, documents) in Vietnamese. The results in the reduction phase were translated into English. The strategy helped me save much time. For the second issue, I employed an expert translator for checking all translation work from Vietnamese to English.

4.10 Conclusion

I chose the interpretivist perspective in order to understand the realities of the LIM field in Vietnam, and to lead to theoretical framework development in this area. I employed purposive sampling to choose individual participants, and developed a priori selection criteria to identify the best organisations and individuals for the study. Individual face-to-face interviews, focus group interviews and documentary evidence were the data gathering methods. I followed carefully planned procedures to ensure the validity and reliability of the research. To analyse the qualitative data, I employed Miles and Huberman's (1994) interactive model and, lastly I ensured that all ethical aspects of the research were duly considered.

Chapter 5 Internal factors

"Without changing our pattern of thought, we will not be able to solve the problems we created with our current pattern of thought."

Albert Einstein (1879 – 1955)

Library and information management (LIM) education is changing in Vietnam. Digital library education (DLE) is a new area in LIM education. This research does not aim to develop a DL curriculum for Vietnam, rather it examines the environment in which such a new educational programme is being developed and implemented. In particular, it investigates the contextual factors, both barriers and enablers, affecting the development of DLE in Vietnam, and identifies the relationships among these factors and how they affect DLE development. For these purposes, the research project set out to answer two questions: (1) *What are the contextual factors affecting the development of digital library education in Vietnam*? and (2) *How do these contextual factors affect the development of digital library education in Vietnam?* Question 1 is addressed in Chapter 5, Chapter 6 and Chapter 7. In particular, Chapter 5 identifies internal factors, Chapter 6 clarifies external factors, and Chapter 7 examines characteristics and roles of change agents and factors that were affecting their success in influencing the development and implementation of DLE into LIM education in Vietnam. Question 2 is answered in Chapter 8, which discusses the relationships among these factors and their effects on the development of DLE.

This chapter provides an analysis of the internal factors which exist within the Vietnamese LIM field affecting DLE development. For this purpose, this chapter examines the stakeholders' attitudes to and perceptions of DLs and DLE for LIM practitioners. The characteristics of DLE which will be implemented in Vietnam are then identified, and finally, in terms of the relationship between staff and their organisations, the personal and organisational development nexus is clarified.

5.1 Stakeholder attitudes

This section examines stakeholders' attitudes and perceptions of DLs and, more specifically, education for digital library (DL) professionals. It includes discussion of stakeholders understanding of DL concepts, and their viewpoints on whether or not the LIM profession needs DLE. This section also explores how stakeholders deal with change; the perspective of younger lecturers on DLE; and cooperation in the LIM field in curriculum development.

5.1.1 Understanding of digital libraries

The data show that stakeholders in general: (1) believe that DLs are the next stage of library development in Vietnam; (2) consider appropriately educated staff to be vital for DL development; (3) agree that DLs require new management strategies; and (4) have different understandings of the concept of a DL in Vietnam.

Digital libraries are the future of the LIM profession

The term 'digital library' has been used widely within the LIM community. One of the significant points to emerge from the data analysis is that stakeholders were prepared to talk freely about DLs because they believed, rightly or wrongly, they understood the term. I did not try to explain the concept of a DL because nearly all the various stakeholders in this research perceived that the next phase or trend in library development in Vietnam will be DLs. In the data, it can be seen that the likely reason for their assumption is because during the last decade many libraries in Vietnam have changed dramatically from traditional libraries to modern libraries in which advanced technologies are being applied. As the Chairperson of the Delta Association said, "we have had a decade for applying IT in libraries setting up network systems, computers and library software. I think digital materials are the next stage of library development." Almost all of the stakeholders in this research identified a "digital library" as a type of modern library.

Some stakeholders contended that it was time for developing DLs, in whatever form they understood that would be, but there was wide agreement that this could only occur if the ground was prepared by the education of staff. The Manager of Tay Ho Information Centre made this viewpoint clear:

> I think this is the right time to develop and implement digital libraries in Vietnam. In fact, in some cases, we have already started. After doing automation for libraries, now we are focussing on digital resources and online services. Digital resources and online services are trends in libraries and information centres in Vietnam. (TH-Manager)

Most stakeholders emphasised the movement of Vietnamese society to the digital age in which the sharing of information is important for the development of the technological, educational and economic sectors. As the Dean of Hoan Kiem School stated:

> We are living in a flat world [she used the term from the book "*The world is flat*" by Thomas L. Friedman] in which the Internet can deliver digital information anywhere and anytime. It is a good opportunity for developing countries including our country. (HK-Dean)

Data from documentary evidence and the interviews give an example of this shift to the digital age. The Vietnamese government is implementing its E-government project which aims to make a connection between citizens and the government based on ICT and the Internet. ICT is being applied to many fields such as education and government management (MOET, 2010a; MIC, 2007a). According to the Dean of Hoan Kiem School, in this environment the LIM field has good opportunities for development. The rise of distance education along with growing expectations to be able to access information via the Internet appear to have created a strong demand for digital information. In response to this, managers perceive that libraries and information centres must move to the digital environment to meet the demand (TH-Manager, KM-Manager, HK-Manager). The Chairperson of the Delta Library Association pointed out that the development of digital resources and online services are becoming increasingly common in libraries and information centres in Vietnam. He said that now is the time for the LIM field to research and develop educational programmes for LIM practitioners. The Manager of Hoa Binh Library emphasised the momentum of DLs:

> The digital library is an inevitable trend in library development in Vietnam because society is going forward to the digital environment, and the development of technology. The society recognises values and roles of libraries for the development of our education and economy. (BH-Manager)

Some stakeholders, including managers, deans and professionals, had quite a clear understanding of the DL concept. They remarked that we should clarify the difference between 'digital libraries' and 'digitised libraries'. The Manager of Tay Ho Library emphasised that a digital library is not simply a library in which the resources are digitised. The Manager of Kim Ma Library stated the Vietnamese LIM field is taking the first step towards DLs. He said "we are standing at the beginning stage of the digital library development, it means we are at the stage of digitising information resources" (KM-Manager). Most interviewees called a library at this stage of the development an 'electronic library'.

In general, it can be seen that most stakeholders thought that DLs were the future of the Vietnamese LIM field. They stated that in the near future LIM practitioners would work in the digital environment. However, there was confusion about the meaning of DLs. The phrase "digital library" is now a common term in Vietnam, but it appears to be spreading widely without a clear meaning and therefore there is a need for developing a deeper understanding of the DL concept. As a lecturer at Long Bien School pointed out, "we need to understand deeply the concept of DLs; this helps the development of DLs. Otherwise we cannot connect with other DLs in the world" (LB-Lecturer1).

Educated staff are vital for DL development

Almost all managers, deans and senior LIM practitioners seemed concerned about the competencies of current LIM practitioners because most do not have a background in IT. These research participants mentioned that for DL development, staff needed to have skills and knowledge in ICT.

A senior librarian with responsibility for the IT system in Kim Ma library mentioned that developing DLs would be a complex task affected by many issues such as human resources, technology solutions, the IT infrastructure, networks, standards, and digitising. He added that it would be a long term project (KM-Staff2).

The human factor was identified as another significant aspect when stakeholders talked about DL development. The Dean of Hoan Kiem School pointed out that when developing DLs the focus should not only be on technology and digital resources, but there is also a need to emphasise the information users, who are the reason for the movement from the traditional libraries to DLs, and the people who manage these libraries (HK-Dean).

Significantly, both Dean and Manager stated that the roles of LIM professionals in DL development were crucial. They warned that without skilled staff, libraries could not implement digital library projects (KM-Dean, TH-Manager).

The data analysis shows that the LIM field in Vietnam lacks skilled staff. Confirming the lack of trained staff, the official of the Alpha Ministry who has organised many training programmes for LIM practitioners, said:

> The fact is that we lack human resources for digital library development. At this time digital libraries and digital collections are only being implemented in some big libraries. I think developing digital libraries is for the whole of society, thus we should not focus only on some libraries. However looking broader, we do not have enough staff for developing DLs in terms of the national level. (AM-Official)

This viewpoint from key stakeholders indicates that the leadership of the LIM field recognises the importance of appropriately skilled staff for the development of the LIM field. The Managers of Tay Ho, Ba Dinh libraries, the officials of Beta Ministry, Delta Associations and all the deans stated that they need new staff who are competent to work in the digital environment.

In general, leaders recognised that LIM practitioners play an important role in the development of the LIM field, as well as the development of DLs in Vietnam. However, key stakeholders believed that there are insufficient staff qualified for the development of DLs.

No consistent understanding of the concept of a digital library

In the data, as noted earlier, there was a general agreement among participants that DLs will be the next stage of LIM development in Vietnam. However, the data also showed that individual stakeholders (LIM managers, LIM practitioners, deans, lecturers and officials) had various definitions of DLs.

While some were confident they understood the concept (see the comment of Tay Ho Manager above), there was however another viewpoint from the Manager of Hoa Binh Library, which was that some people used digital library as a "fashion term." This comment suggests that people may not be clear about what a DL is, but they are still using

this term frequently and widely because they hear others using it. The Manager of Hoa Binh Library said he has been in many committees which evaluated DL projects, and talked with other LIM managers, and he recognised that some managers do not have any basic knowledge about DLs, even though their libraries have been conducting DL projects. He continued:

> Leaders in the army library system are not active. They understand DLs in simple ways. Sometimes they do DL projects as they want to improve their image. They implemented DL projects because other libraries have done so, not because of and based upon their actual needs. (HB-Manager)

Although stakeholders agreed that the future lies with DLs, they clearly have different levels of understanding of the DL concept. The most common understanding is that a DL is similar to a digital collection, and it is the future of traditional libraries. As a manager stated, libraries have started doing digitisation (DD-Manager). Another manager said "The library has established a digital collection and developed some online services. Now we are running a digital collection project" (GL-Manager). Stakeholders mentioned digital resources when they talked about the concept of a DL because, as a manager said, these resources are one of the most important aspects of a library (KM-Manager). Four LIM managers who participated in interviews said that traditional libraries which apply ICTs are 'electronic libraries', but a library is called a 'digital library' when its information resources are stored on computer servers so readers can access and use the information resources online via the Internet. Sharing a similar viewpoint, a senior lecturer at Long Bien School gave her definition of a DL:

> A digital library is a group of digital collections; it archives digitised materials. The digital material is published online and can be accessed from outside the library. Readers can read full texts of materials via the Internet. A digital library is sometimes known as an online library service. (LB-Lecturer3)

All libraries participating in this research have done projects in digitising materials. Developing digital collections was recognised by respondents as the second stage in the development of DLs in Vietnam as indicated by a manager "after a decade of automating management operations such as cataloguing and circulation processes, libraries are now starting to develop digital collections" (TH-Manager).

While many libraries have started doing digital collection development, there is a problem which has been mentioned previously, that LIM practitioners do not have a clear understanding of developing digital collections in terms of the purpose and usage of these resources. The Manager of the Information Service Department of Kim Ma Library shared her experience that when her colleagues started the first digital collection project, they did not know much about digital resources. They just scanned materials and stored them in the computer, and did not have any idea about preservation and usage of digital information. The reason was that the current LIM practitioners were not educated about this in their formal education at LIM schools. “We did not learn about creating digital collections when we studied at the university" (KM-Staff1). In addition to illustrating the lack of agreement on a definition of DLs, it also shows an unwillingness to take responsibility for professional development, a point that arises later in this chapter. The problem was also indicated in a comment by a senior LIM professional who is well-known in the LIM community in terms of his knowledge of DLs and information technology. His comment reinforces the point that some stakeholders understand the term ‘digital library’ poorly. He stated:

> Many libraries have started their digital collection projects. However, their methods are not correct. They create digital collections because the others are doing that, then they follow. They learn from others although they are not sure whether the methods are right or wrong. They do not have a detailed plan and a strategy for digital resource development such as what resources should be digitised, the technologies being used, the usage of digital collections and so on. The reason is they do not have staff who have clearly understood digital libraries, digital collections and the digital environment. (GL-Staff2)

There was an idea that a DL is an intelligent system which does not simply answer the questions of enquiring information, but also gives advice for information users. In other words, it gives knowledge rather than just information. The Chairperson of Gamma Association described a DL:

> DLs are knowledge. A digital library is an information professional. It is not a book or a movie, and it is not a traditional library which is digitised. A digital library must have information and knowledge. For example, if I were a farmer who wants to know about pests which are destroying my farm plants, I want the

> digital library to take the role of an expert and give to me methods to prevent the pests. It does not only give a book or information about the pests, rather it has to give me the answer how to prevent the effect of pests. That is an intelligent system. (GA-official)

In this case, he mentioned a digital library that provides technological information for farmers in order to help them to enhance the productivity of producers. This digital library works as an information adviser who can give the right answers for farmers' problems rather than just giving a book.

Another viewpoint was that DLs are organisations which apply information technology in their management. In this view, expressed by four library managers, DLs are closely tied to information technology. They implied that a DL, in some ways, is a server, computers, network, and the IT management system. Almost all of the stakeholders emphasised the role of technology, especially IT and computer science, in the development of DLs. Deans and LIM managers thought that emerging ICTs are leading change in the LIM field. Four LIM managers believed that libraries and information centres have been significantly developing their services and management because of IT. This point was also reinforced by a dean when she said "the development of technology and science opens opportunities for the development of the LIM field" (HK-Dean).

The data clearly show that there are different levels of understanding of the DL concept among managers. Managers who work in big libraries which have implemented automation projects have a good understanding about digital libraries in terms of technologies, functions, requirements and human resources. On the other hand, managers in small libraries do not have an overview of DLs. They think of DLs as a group of digital collections or libraries applying new technologies.

Call for a clear concept and framework for digital libraries for Vietnam

Another key point that came out of the data was that there is a call to develop a general definition of DLs and a DL framework for Vietnam. The reason for this call was that there was an unclear understanding of the DL concept, and stakeholders thought that a national definition and framework would help the development of DLs and DLE.

Some key stakeholders (e.g., BM-Official, HB-Manager) emphasised that one of the most important tasks for LIM professionals in the development of the LIM field is to clarify

the concept of DLs as well as the roles within them so that they are understood by leaders (policy makers and leaders of functional ministries) and people in society. A national framework of DLs will help people, outside and inside the LIM community, to understand what DLs are as well as their functions, structures and requirements. The Manager of Hoa Binh Library said:

> The leaders and the society do not fully understand about digital libraries. That is because the LIM field has not made good efforts in ... delivering the DL concept as well as outlining the importance of DLs for educational development and other fields to society. (HB-Manager)

The diffuse understanding of LIM professionals of the DL concept and the fact that society is unaware of the value of DLs has made LIM managers and other stakeholders recognise that they need to develop a conceptual framework for DLs in Vietnam. However, the Manager of Gia Lam Library warned that developing a definition of DLs is not an easy task. "It will require cooperation among researchers, educators, LIM practitioners and government officials", he said. The Dean of Cau Giay School suggested that Alpha Ministry which governs the LIM field should take the role in developing the framework of DLs for Vietnam. She said "the ministry can gather key people in the LIM field and create opportunities for them to work together to develop a framework". She agreed that it is difficult but possible. She confirmed "the Alpha Ministry has developed and implemented library standards by this means".

An official at the Beta Ministry argued that the term 'digital libraries' has to be defined in the library legislation currently being developed. He said that the legislation will control every aspect of society which relates to the LIM field, and therefore law makers need to define what a DL is (AM-Official). As a result, the Ministry must be involved with any attempt to create a nationally agreed definition of DLs. Continuing with this point, the official added:

> First of all, we have to develop a DL definition for Vietnam. Then we have to reach an agreement on the definition among the LIM community. Based on that, we have to define the framework of digital libraries, identify the functions, aspects, and requirements of DLs. Above all, we have to educate people who can manage the system. Based on the definition and framework we will identify who is needed

> for DLs, what the knowledge and skills are for DLs that should be offered for LIM professionals. (BM-Official)

This viewpoint is very important for DL development as well as DLE development because, as I have found, practitioners and educators are not clear about what a DL is and what the requirements are for this type of library as well as requirements for people who work in it. The official of Beta Ministry emphasised that a framework for DLs is vital for Vietnam at this time (BM-Official).

5.1.2 LIM profession need for digital LIM practitioners

The interview data show that most participants accepted that there were unmet needs for DLE in the LIM profession. However, some stakeholders thought that the needs come just from big libraries; in contrast they said that small libraries did not have DLE needs. Additionally, although DL courses were being introduced, a full professional DLE programme was needed.

Perception of educational needs

There was agreement among participants that human resources play a fundamental role in the development of the LIM field, especially for DL development. Libraries need qualified staff for their new roles in the digital age. One interviewee said the following:

> In my opinion, human resources, that is, educators, and LIM practitioners, are the most important factors for DL development. The success of digital libraries, especially education for digital libraries will depend on the quality of the human resource. If you improve the infrastructure of libraries, but you do not have good staff, your [DL] projects will not be successful. (LB-Lecturer3)

Most interviewees (in LIM education and the LIM profession) believed that either LIM practitioners need new educational programmes or we have to update the current LIM educational programmes. The Manager of Tay Ho Library said “now is also the time for us to seriously research and develop educational programmes for LIM practitioners. We need staff to manage digital libraries.” Although most participants did not directly mention the term ‘digital library education’ or ‘education for digital libraries’, they mentioned DLs and education for staff in terms of preparation for their new roles in

libraries. The term 'digital librarian' which indicates a new kind of librarian was used by some respondents.

Managers and deans believed that developing DLs and DLE is a good strategy at this time. The Dean of Hoan Kiem School and the Chairperson of the Delta Association shared the same viewpoint that more and more libraries are moving to the digital environment, and applying new technologies to their work. More computers are being used in libraries. The development of libraries requires LIM practitioners to acquire more knowledge and skills in IT. The Dean of Hoang Mai School and the Chairperson of Delta Association stated this is a good opportunity for DLE. Again, they mentioned developing a concept for DLs in Vietnam. The official of Beta Ministry added:

> For developing DLs and DLE, we need to ask the question - what is the difference between electronic libraries and digital libraries? This is because the understanding of the concepts will affect the work [of LIM professionals], and their teaching [LIM lecturers]. (BM-Official)

Some stakeholders believed that the need for DLE is greatest for large libraries, especially academic libraries. They argued that university libraries invested more heavily in DL development because of their roles in education. A librarian of Gia Lam Library stated "the needs come mainly from the big libraries [public and academic libraries] in the big cities" (GL- Staff3). The Vice-Dean of Cau Giay School said that thousands of small libraries were working in the traditional environment.

Agreeing with this viewpoint and adding more information, a dean and an official both pointed out that thousands of school and public and small academic libraries are still running their operations using manual methods. According to these two participants, staff in these libraries do not need continuing education in digital library management (HM-Manager, AM-Official). The Dean of Hoang Mai School concluded "we still have to teach traditional library skills such as how to present a catalogue card. If we teach technology or digital libraries, students will not be able to work in libraries that do not have the technological and digital environment" (HM-Dean). On the other hand, there is an optimistic outlook on the future of DLE. The Dean of Long Bien School said that the requirements for library standards at school libraries which were introduced by MOET in 2004 have forced libraries to enhance the quality of their services. He argued that "sooner

or later the libraries will be developed because of the [government] strategy to apply IT in all aspects of the society. School librarians and other librarians will need DLE" (LB-Dean).

Demands for a full DLE programme

Although there are existing DLE courses, some stakeholders still stated that they needed a full DLE programme for their personal professional development. A manager noted "we do not have a full DLE programme, thus there is no chance for practitioners to study", and she continued:

> I know that there are some subjects which relate to DLs being taught in the universities. For example, the introduction of digital libraries, database management, developing digital collections and so on. However, these subjects do not describe the whole the picture of digital libraries. In each subject, lecturers discuss digital libraries, but they only give general ideas or concepts. (GL-Manager)

There were two opposing views about who should offer DLE. The Manager of Ha Dong Library, who is also an educator and quite an influential man in Vietnam, stated that the Vietnamese community needs a revolution in the whole concept of libraries in terms of the ways these libraries carry out their roles. He argued that ICT is affecting all aspects of the LIM profession and that libraries are going forward and becoming DLs. In addition, the official of the Alpha Ministry emphasised that LIM professionals had to acquire knowledge and skills of new technologies, that they need to be capable of advanced technological thinking. He suggested LIM education should be undertaken by schools of computer sciences or others which relate to technology (AM-Official). In contrast, some stakeholders did not agree with these viewpoints. The Manager of Ba Dinh Library and the Dean of Hoang Mai School argued that library and information science is a separate field from IT and computer science, and IT is a tool for the development of libraries. They thought the current LIM schools should update their curricula to meet the demands from the LIM profession rather than giving DLE to computer science schools.

The comment of a lecturer in Thanh Xuan School summarised many interviewees' viewpoints on the development of DLs.

> The concept of DLs in Vietnam is being debated. At this time we have not talked about a specific model of DLs, and what the components of DLs are. Ideas about DLs are vague. People just think DLs are something for the future. Building a real DL seems like an impracticable plan at this time. However, the future is DLs, and the development of DLs needs to be divided into many stages. A possible thing that libraries can do at this time is to build digital collections. Remember that creating digital resources is part of developing a DL. Therefore, with the current situation, libraries should focus on developing digital collections rather than building DLs. (TX-Lecturer5)

In summary, it can be seen from the data that there were different understandings among stakeholders about the concepts of DLs. Key stakeholders suggested that before there can be much progress made on DLs and DLE, it will be useful to reach greater agreement on a conceptual framework of DLs in Vietnam, and the government should play an important role in developing the framework. In addition, almost all participating managers said that it appears to them that there is a big need for skilled staff for the development of the LIM field. The need will lead to the demand for individuals and organisations to have access to professional DLE programmes.

5.1.3 Changing attitudes

In this section I examine the attitudes of stakeholders about change in the LIM field as well as LIM education. I provide an overview of how stakeholders decide to adopt/accept a new technology/educational programme. It appears that those who wish to bring about change in LIM education face many challenges.

Making decisions for change

The Chairperson of the Delta Association shared his experience in introducing new ideas and standards to the LIM field. He concluded that people hesitated to make changes in the LIM field, especially people in top government management. He said:

> It is very hard and it takes time to implement something (an idea or technology) in this field. For example when the National Library completed translating and editing the DDC classification, then moved to the next step for implementation. At this step, leaders of the functional government department did not approve.

> They just said "implementing or not depends on the libraries." It means nobody is willing to apply the DDC. As you can see, the lack of decision-making in the government will strongly affect the application of new technology. (DA-Official)

He continued with the following points. He said that in general "we lack democracy." Sometimes politics affected decision making for change. Leaders were not decisive. They were afraid of making mistakes. They were not flexible and did not have an overview of long-term development. They chose the "safe way" to make decisions, he commented. Thus, the Chairperson concluded it was really hard to make a decision for applying something new.

The Manager of Van Dien Library, who is also a LIM lecturer, used a simile when talking about making a change in the LIM field.

> Our LIM field is like a housewife who does not know or care that non-stick pans are already invented. Instead of choosing a non-stick pan with advanced technology to make her work easier, she insists on using the old aluminium pan, and wastes time in scrubbing. It is so hard to change the mind of people in the LIM field. (VD-Manager)

He said that the LIM field in the world had changed dramatically with widely applied ICTs. However in Vietnam, "we still teach LIM people the 'expired value' of LIM science", he said.

There were some LIM professionals who agreed with his point. A young lecturer of Hoan Kiem School said "Almost all housewives are expert with non-stick pans. However, they still just have a look and do not want to use them. This is the same situation in our LIM field." The Chairperson of Delta Association gave his comment on change in the LIM field as well as the role of LIM managers. He said:

> What a pity that in some LIM organisations, people who have decisive roles are not clear about the application of new technology in the LIM field. Even some managers know nothing about ICT application in libraries, or just know the 'name' but not the 'meaning'…. They do not want to use non-stick pans because they think the traditional pans are still very good…. As we can see, changing a habit, although the change brings benefit, is not easy. (DA-Official)

It appears that some LIM leaders are not open to sharing digital resources. For example, some libraries have digitalised data, but they do not want to make it public for users. The Chairperson of the Gamma Association argued, "so what are their objectives when implementing the digital projects?" They still keep their view that with digital resources, like other books or journals, readers have to come to the library to access the resources. In addition, they are afraid that if they are offered online, other people will copy all their data without any payment or permission.

The different LIM schools, in general, had all decided to update their curricula. However, they were just proposals. Implementing the curricula was a different story. Some LIM schools decided to introduce new subjects by asking their staff members to do research and implement the subjects. In addition, they also worked within the university to determine if there could be any cooperation with other departments, and invited LIM professionals to teach the new subjects.

Meanwhile, other schools introduced only a few new subjects in the curricula. They explained that their schools did not have lecturers for the subjects. As a result, these schools have only partially changed the curricula.

5.1.4 The younger generation's perspective

The data show that young lecturers certainly advocated for change in LIM education. Technology subjects as well as the DL concept excited younger lecturers (60 percent of lecturers who participated were considered 'younger' lecturers). Almost all participating younger lecturers from the five schools were of the view that LIM education needed to change the curriculum in order to prepare LIM practitioners to work in the digital environment, and they also thought that LIM education needed to lead changes in the LIM field through education. A young lecturer of the Hoan Kiem School said, "I am happy to stop teaching my current subject if it is not valuable for LIM students". Another lecturer in the school confirmed, "I am willing to prepare new subjects if requested".

The younger lecturers also preferred to give more hands-on instruction in each subject in the LIM curricula. Their point was that to understand and adapt to technology subjects, learners had to practice. Theory was also important, but lecturers had to give opportunities for students to practice. This view was similar to the LIM profession's viewpoint that

LIM education needed to focus on practice. Most of the participating LIM practitioners and managers claimed that the LIM schools taught too much theory; the education programmes were not realistic. According to Gia Lam Library's manager "We need students who can work in the library without retraining".

In contrast, there was a consistent attitude of older lecturers to the change in LIM education. Some of them hesitated to change their teaching subjects. There were two deans who claimed they met with resistance from older lecturers. The Dean of Hoan Kiem School said the school compromised with the older lecturers for two reasons. First, their attitude was natural human behaviour. They had taught in the schools for a long time, so it was really hard to phase out their teaching subjects. Second, LIM schools lack lecturers, so the schools still needed the older lecturers to run educational programmes.

Some LIM lecturers thought theory was important for LIM students. The Dean of Hoan Kiem School stated that younger lecturers just focused on practice; they did not have a background of LIM theory. She said "some younger lecturers are very expert in technology, software libraries, and new library standards. However, they do not have a theoretical framework of the LIM field. "She declared that they, therefore, needed to find a balance between theory and practice".

Of course, not all older lecturers have the attitudes discussed above; some of them are very active and willing to update their knowledge. Some senior lecturers have brought many new ideas to LIM education. They were the first people to teach DLs and technical subjects. Some of them also preferred to focus on practice rather theory.

A Senior Lecturer at Long Bien School talked about LIM schools' lack of laboratories for LIM students in subjects relating to IT and other technologies in the LIM field. She shared, "I have to ask LIM schools to set up computer laboratories for students. We cannot teach students library software just by reading books. They need opportunities to practice what they have learnt."

5.1.5 Cooperation among stakeholders

Cooperation is an emerging issue that stakeholders identified in the LIM field. This section examines the cooperation of stakeholders in terms of making changes in the LIM field, especially in LIM education. The data for this section are derived from an analysis

of the answers of interviewees to three questions: What are the challenges for LIM educational change? What are the cultural aspects that you think might affect the development of the LIM field and DLE? And, how does your school cooperate with other schools and agencies to develop the curriculum? The data show that there is little collaboration in the LIM field in terms of agreeing with new ideas or developing new educational programmes. The data also show that it is a cultural issue rather than a management issue. As the Dean of Hoang Mai School said "In our culture, people think they are the best, so it is hard to get an agreement on an issue in the LIM field" (HM-Dean).

Cooperation in the LIM profession

Many respondents identified failure to cooperate as a weakness in the LIM field. The Manager of Dong Da Library shared his experience when LIM managers discussed software for libraries. Many conferences had been organised. Some government leaders supported the idea that libraries should use the same software in order to share information resources among libraries and more importantly, it would save money. Some leaders and managers suggested that libraries should work together to develop standards for library software. However, in fact, each library had its own choices in terms of technologies, software and standards. "It seems that working together for a general purpose is a problem in the LIM field", the Manager concluded.

There is limited sharing of information resources among libraries. LIM managers gave two reasons for this. First, libraries do not use the same standards so this affects the efforts of libraries in sharing information. Second, and most importantly, libraries do not want to share resources. The attitude of LIM managers towards cooperation plays an important role in the sharing of information resources and LIM development, the Chairperson of the Gamma Association commented.

Another example of lack of cooperation in the LIM field is digital collection development. As I discussed in Chapter 5, all LIM managers confirmed that their libraries have been digitising books and journals. However, there is an issue that "there is no collaboration among libraries" in developing digital resources, according to the Director of the IT department of Gia Lam Library. He commented that libraries did not look for advice or technical support from libraries leading in IT application, from IT professionals, or from

senior LIM practitioners. The libraries developed digital collections on their own. Consequently, the libraries do not have a long-term development plan for digital information resources, and the digital collections are not used effectively.

From the three issues discussed above, it can be seen that there is a lack of cooperation among libraries, especially the attitude of LIM managers in terms of working together to achieve common goals in the LIM system.

Cooperation in LIM education

I examined the cooperation on curriculum development at two levels: cooperation among LIM schools, and cooperation between LIM schools and government departments.

In this study, LIM schools, especially, those with a good reputation, did not want to share their curricula with others. The Associate Dean of Cau Giay School refused my request to look at the school's curriculum. He said "I am sorry but because we have spent a lot of resources developing the curriculum, the Rector has asked us not to make it public. I am not allowed to give you the curriculum" (CG-AssociateDean). The Dean of Hoan Kiem School complained that some other LIM schools had copied her school's entire curriculum without permission, so in the future she did not want to share information about the curriculum. The high ranking LIM schools that participated in this research developed their own curricula without sharing information, and did not work together to develop a single curriculum for the LIM field. The Dean of Long Bien School confirmed, "until now, there has been no conference or meeting on developing curriculum among schools. I could say that LIM schools have not collaborated closely in developing educational programmes." It is acknowledged that in many countries, LIM schools develop curricula independently of each other. In Vietnam the stakeholders, many of them working in LIM schools, expressed a wish to cooperate more on curriculum development, an important point that emerged from the research.

The conflict over LIM curriculum development among educators was evident in a story from a manager who is also a senior lecturer and is well-known in the south of Vietnam. He told me that when helping a LIM school to develop a curriculum, he refused to work with some professors because of a difference between his and their points of view of LIM education. He said:

> When the Rector asked me to help his university to develop a LIM curriculum, I asked him, "Have you invited anyone else?" He listed some names. I said I could not work with them because we had different viewpoints; you have either choose me or them. Finally he accepted me and I have helped to develop the curriculum. (HD-Lecturer1)

Another senior lecturer of Hoang Mai School shared that there is disagreement among LIM educators in terms of the competencies required for LIM practitioners. He said that he had been working with many educators and in his experience there were many who still preferred to educate people for traditional libraries. He said:

> I do not know why they still teach students competencies which are no longer used in the LIM field. Working with computers, the Internet and digital resources is the environment of future LIM practitioners. The LIM schools have to teach these competencies. (HM-Lecturer2)

On the other hand, some educators preferred to develop a curriculum which educates students for traditional libraries, and this was their reason for not cooperating on the curriculum. The Deans of Hoang Mai and Cau Giay schools stated that there were many libraries in Vietnam still working in traditional environments with limited involvement of technology, so LIM schools had to educate people for these libraries and did not need to provide high technological knowledge for students. A lecturer of Cau Giay School commented:

> I asked some students about how they have applied the knowledge that they learned in universities. They said that their knowledge of library software and technology has not been used because their libraries do not have computer systems. (CG-Lecturer5)

At the national level, there was an issue of power between LIM schools and government departments and it was affecting how they cooperated in the area of curriculum development. All participating deans confirmed that they had to follow the guidance of the government departments for developing the curriculum. The Dean of Hoan Kiem School claimed that government departments have not been working closely with schools to develop LIM education. The Dean of Thanh Xuan School pointed out that she struggled

when developing a curriculum that was different from the basic curriculum of the government department so she had to change to follow this prescribed curriculum.

It also appears that there was no cooperation between LIM schools and government departments to update current curriculum. The Dean of Hoang Mai School claimed that government departments had not collected comments from all LIM schools to develop the basic curriculum. He said "our comments have been ignored." All deans confirmed that they had not been told about the update of the basic curriculum. Deans and lecturers were particularly concerned about the officials of government departments who did not have sufficient knowledge about LIM science, but took responsibility for governing the contents of LIM education. A senior lecturer shared his experience about an official who was involved in developing a LIM curriculum, saying I "was so disappointed about an official, this person knowing nothing about the LIM field" (HD-lecturer1).

It can be seen that deans and lecturers prefer to have the right to develop their own curricula. The Deans of Hoan Kiem, Hoang Mai and Thanh Xuan schools all said they would like to develop new programmes, but because of the government bureaucracy with its many regulations, they hesitated to do it. The Dean of Hoan Kiem said, "I want to open a new programme, but we have to follow so many administrative procedures from the government department that I am still waiting. If I am granted permission, I will develop it as soon as possible." It appears that all LIM schools accept the strictness of the government and try to go along with it rather than negotiate or give suggestions for change.

In general, there is an issue of cooperation in the LIM profession and LIM education. It is a cultural factor rather than an administrative factor. Stakeholders who are involved in a change normally do not reach an agreement. The effects of these factors on DLE development are discussed along with all other factors in Chapter 8.

5.2 Digital library education characteristics

This section provides (1) an overview of the interviewees' perceptions of the specific DLE needs of LIM managers and LIM practitioners; (2) an analysis of current LIM educational programmes; and (3) an overview of LIM schools in developing DLE.

5.2.1 Educational needs of organisations and managers

In this section, I identify the DLE needs of stakeholders who are involved in LIM educational change. Then, I define the gap between the current needs of the LIM profession and the current formal LIM education.

Some stakeholders stated that LIM managers and leaders lacked knowledge about DLs, and their limited understanding of DLs would affect the development of DLs and DLE. Therefore, there was a strong indication from these stakeholders that Vietnam needs digital library programmes for the leaders.

There was concern about a perceived lack of knowledge on DLs among some LIM managers and leaders. A manager who had been involved in many DL projects as a consultant said that many managers did not have a good understanding about DLs (HB-Manager). An official in the Beta Ministry also shared the same view about the understanding of DLs of LIM managers. He said he was very disappointed with the managers and leaders in the LIM field because they were not thinking about DLs, and they did not even have a concept of DLs (BM-Official). Another manager agreed with this view that some managers were not thinking about effectively staffing DLs:

> In Vietnam, leaders understand DLs in a simple way. They do not have high requirements for DLs. Thus, their libraries will not be digital libraries. People just focus on infrastructure, not on the management or staff. If you have a big building with hundreds of computers, you are very proud. For DLs/DLE development, we should change the viewpoints of leaders in DLs. (HB-Manager)

While gathering data, I had opportunities to visit some libraries in which much money had been invested by the Vietnamese government and foreign organisations for library automation systems. I found that these libraries have had no significant changes in terms of developing online services and digital collections. This fact was partially explained by a manager who suggested that most libraries do not have good strategies for using the infrastructure (TX-Manager). As one Chair of a LIM association concluded, LIM leaders do not have a clear vision about leading their libraries into the digital age. He said the lack of leadership is an issue for DLs/DLE development in Vietnam at this time (GA-Official).

Respondents emphasised that the understanding of leaders about DLs will affect the development of DLs and DLE. The official of the Delta Association emphasised that the role of leaders is very important for this development. Therefore, some stakeholders suggested that LIM schools needed to develop DLE for library managers, to help them to understand DLs and make better decisions and develop appropriate strategies for DL development.

In general, it appears there is a DLE need for LIM managers. The interviewees believed that LIM managers needed to have a clear understanding of the DL concept. With this in mind, an official of a government agency remarked, "I think we should design a general course for managers in order to help them have basic knowledge on DLs and also management skills for leaders in the digital environment. This is very important" (AM-Official).

5.2.2 Educational needs of LIM practitioners

Four areas of educational needs were indicated for LIM practitioners. As one librarian stated, "I think staff who work in digital libraries need three areas of knowledge: *library science*, *computer science* and a *foreign language*, especially English" (GL-Staff4). The Dean of Hoan Kiem School said librarians need to be educated with the "*soft skills*" that help them to be flexible and successful in the changing world. She explained that soft skills are similar to emotional intelligence (HK-Dean).

Basic knowledge needs

Significantly, the term "digital librarian" was mentioned by stakeholders. It suggests people have recognised the new roles of librarians in the digital age. They recognised that the LIM field needs better skilled human resources for its development. It appears that there is a need for LIM practitioners who have skills, abilities or knowledge that enable them to perform particular functions or to carry out selected responsibilities in DLs or in the digital environment. The director of Alpha Ministry stated "our practitioners have very good skills for traditional libraries, but they lack skills in advanced technologies, and managing modern libraries. Both staff and managers are lacking these skills" (AM-Official). So, there is a question that was often asked by stakeholders: what knowledge and skills are required for DL librarians (GL-Manager, LB-Lecturer2, BM-official)?

One of the basic needs is to understand the whole concept of DLs. As the data show in the previous sections, there is an unclear understanding and no agreement about the DL concept. People understand and explain DLs in their own ways. The Chair of Gamma Association assumed that this might be the result of a lack of official information from authorities and educators. He continued by saying that the situation has led people to attend formal education programmes that helped them form an overview about DLs. In addition, a senior public librarian gave his opinion: LIM practitioners in public libraries needed to understand how to build a DL, to understand clearly the structure, standards and requirements of the library. They also had to understand the needs of information users in the digital environment (GL-Staff4). Therefore, two stakeholders, one senior lecturer and one manager, concluded that when teaching DLE, educators needed to indicate issues relating to DLs in order to help LIM practitioners understand the importance of cooperation in developing DLs in terms of technologies, equipment, information sharing, and so on (GL-Manager, LB-lecturer1).

Digital resources or digital content are a crucial topic for the LIM field in Vietnam at this time. Developing digital collections is an issue that stakeholders were very excited about. LIM practitioners would like to have knowledge of digital collection development such as resources, standards, technologies, formats, policies and usage of digital collections. Stakeholders confirmed that they have been doing some digital projects. However, what they said about projects suggests that they do not have a long term view, a clear development plan for using the digital information. Some libraries do digitise materials, while others just allow users to access the summaries of the fulltext. Only one of the participating libraries had open access to their digital resources for their users, while others just digitised and archived them as offline databases. This situation shows that LIM practitioners are not quite clear the purpose of about digital collections.

A librarian of Kim Ma Library said it was not only about how to digitise materials, but also how to archive, manage and use them effectively. As a director of the department of information resources said, she and her staff members did not have a good understanding about digital preservation when doing digitisation (KM-Manager). This is also typical in the other participating libraries. Some projects which have aimed to develop digital resources have been completed, but there were limited plans for using digital resources. So it appears that there is a need for education in digitisation, which confirms that Vietnam

is still in the transition phase with respect to DLE. In detail, LIM practitioners need to know how to create projects and develop strategies for digitisation. Some staff from three participating libraries discussed issues relating to digital collections, such as digital preservation, database management, standards and technologies, workflow for digitisation, copyright and usage (GL-staff3, KM-Staff1, TX-Staff6). A LIM practitioner shared her opinion on learning new knowledge and skills for digital collections. She said "we have to understand the requirements for digital collections such as, digitising, collecting, cataloguing, archiving, maintaining and delivering. We are experts with print materials, but for digital resources, we need to learn more" (GL-Staff3).

Information technology competencies

Participants commented that DLs were related to technology, especially to computer science. They suggested that besides the LIM background, LIM practitioners needed to acquire knowledge and skills of IT if they wanted to work in DLs and in the digital environment (GL-Manager). As a senior practitioner of Gia Lam Library stated "Librarians need to have digital competencies to work in modern libraries. Using computers at work is essential for all librarians" (GL-Staff3). A manager emphasised the important roles of IT staff members and he stated:

> I think in modern libraries, the IT staff are very important. They take responsibility for maintaining the IT system. They are the like people who control the traffic. Everything in the library is online, thus the system should never be shut down and has to run smoothly. All departments have to cooperate together. Providing online resources is very challenging. (KM-Manager)

Following on from this point, respondents pointed out that librarians need advanced knowledge of issues related to the Internet environment. The participants commented that librarians need to understand the potential usages for Web 2.0 technology in libraries, and what online services and libraries can develop based on Web 2.0 technology. Interestingly, cloud computing was also mentioned as a new technology solution that libraries can apply in the future. In addition, security for digital resources and in the network environment was a subject that caused IT administrators concern in their libraries. Two interviewees said that this knowledge is not only necessary for IT managers but for all librarians when they work in the digital environment (BM-Official, KM-Manager).

Some stakeholders thought that the current LIM courses in DLE subjects only focused on how to use DL software, rather than giving LIM practitioners an overall perspective of the electronic or computerised system. They also suggested that staff should be educated on how to control technology, how to use computers and software effectively, and to understand the workflow process.

The data show that digital content and the habits of online information users are new interests of LIM practitioners in Vietnam. Managers of Ba Dinh and Dong Da libraries said that the use of online materials in their libraries is increasing. In addition, Deans of Hoang Mai and Long Bien Schools emphasised that in the virtual or Internet environment, understanding needs and habits as well as the trends of online resource use is very important for LIM practitioners.

Online services were also a topic that stakeholders thought was important. Some managers talked about the new and important role of online services for their libraries. A director of the IT department at the Gia Lam Library stated that his staff had to attend short courses that focused on online services, digital collections, copyright, users' behaviour and so on. That knowledge and other related skills have helped the staff do their new tasks within the Internet environment (GL-Manager). The need for competencies for online services was stated by some of the LIM practitioners who said they need skills to search and evaluate online resources. A staff member who works in the information service department talked about her need for education:

> I am not sure about the competencies of digital librarians or the knowledge and skills that are required for people who work in a digital library. However, for my current work, I need to learn about online services, digital collection development, and the behaviour of online information users. The knowledge will help me to develop our department. (GL-Staff2)

Managing a DL is a big topic that LIM managers and staff members emphasised during their interview. The Chair of Delta Association thought that the knowledge of managing libraries in the digital age is still a new topic that had not been introduced in formal LIM education. He added that LIM practitioners were expected to know how to use a digital library, how information flow worked in a computerised system, how to search and use a

digital book, how to manage the requests of readers and how to establish the habit of using DLs among readers.

Other competencies

One of the key areas for LIM practitioners in Vietnam is their knowledge of foreign languages, especially English. Almost all the stakeholders agreed that in the 21st century, LIM practitioners need to be able to use English in their workplace. They argue that much knowledge around the world is written in English, and Vietnam really needs this knowledge for development. Librarians are a bridge to connect Vietnamese people with this knowledge (HL-Dean, GL-Staff1, KM-Manager, TH-Manager). English is, in fact, compulsory at all levels of education in Vietnam, especially in higher education (GoV, 2008). Stakeholders predicted that digital resources would be more readily available in English in the digital age. This trend provides an opportunity but also a challenge for LIM managers in Vietnam because even if they can provide multiple resources for their users, they still face the barrier of their staff's language ability. Stakeholders conceded that LIM practitioners' foreign language ability, especially in English was very weak. They concluded that LIM practitioners needed to be able to use English fluently because it is a crucial tool for their work and for their lifelong learning. Stakeholders commented that LIM schools should focus on enhancing English ability amongst LIM learners. A manager confirmed that he preferred to employ people with a background in both IT and languages because they were very good in doing specific tasks. They can learn library knowledge by doing their specific tasks in the library (KM-Manager).

The Dean of Hoan Kiem School emphasised that soft skills were also among the skills that needed to be acquired by new LIM practitioners. Some stakeholders, significantly, argued that for working in the library, LIM practitioners needed to have strong soft skills such as communication, writing skills, reliability, flexibility, cooperation and so on. This was because they had to work with very able "customers" and deal with a variety of informational needs.

There was a significant comment from a director of Beta Ministry that LIM practitioners should not only play the role of librarian, but should also be researchers and educators, especially the LIM practitioners in academic libraries. He said the image of people who worked in libraries was one of book keepers; this was a passive and negative image. The image affected the income of librarians because leaders would think working in libraries

was simple work that everyone could do even without a professional education. He said that the research and education roles would help change the image of LIM practitioners. They should also be senior advisers for the students, lecturers and researchers of the university when these people needed information for their work-related tasks. This is not a new role for librarians in developed countries but very new for Vietnamese librarians (BM-Official).

Participants also spoke about the need for LIM staff to come from certain professional backgrounds. Some stakeholders argued whether or not libraries needed IT professionals and librarians who were expert in both backgrounds: computer science and library science. A senior lecturer who is also a LIM manager, critiqued, "I can see the different views of both IT people and librarians. IT professionals normally focus on technology and do not care about library science, while librarians focus on readers and library services" (LB-Lecturer). This viewpoint is supported by a LIM manager. She said she found that sometimes IT and LIM staff members had difficulty cooperating in digital collection development projects because they talked in "different languages." Therefore, some stakeholders believed that it would be better if some librarians could be educated in both IT and library science (GL-Manager, GL-Staff5, KM-Manager, KM-Staff2). A manager suggested that LIM practitioners should have other backgrounds such as foreign language and IT before studying LIM science. He said:

> I think having a background from other areas such as language and IT, then studying LIM is easy for LIM practitioners working in the library. These backgrounds will assist practitioners. For example, when we develop DLs, if the IT professional has a LIM background, he can implement DLs more smoothly than if he has no background in LIM. (KM-Manager)

The former Dean of Hoang Mai concurred with the viewpoint above. She shared an example about an IT professional who was asked to establish a library. After a time to develop a library system, finally the IT professional had to ask her for assistance. She said he did not know what a library was, how to manage it, or what the requirements for a library were. Therefore he needed her advice. She concluded that we needed LIM practitioners who were expert in both computer science and library science. The lecturer of Long Bien School stated "librarians need to understand the software that they are using

and can manage their library by computers. They do not need to become a programmer or an IT administrator."

In general, the educational needs of LIM practitioners identified in the interview data were very diverse. They included an introduction to DLs that covered its concepts, framework, roles/functions and management; traditional library knowledge; information technology; soft skills and language. A manager shared his view of employing staff members:

> My point is we need three kinds of staff in our library: IT professionals, LIM professionals and language experts. So education for the LIM profession I think should be focused on three areas: IT science, library and information science and language. A digital librarian should be educated to be an expert in these areas but there is no need to teach much on cataloguing and traditional library skills. (KM-Manager)

This view is also similar to that of the Manager from Hoa Binh Library. He thought it would better to employ IT graduates who had good English. He added, of course the library would employ LIM students though he expected that it would very good if LIM students had all these backgrounds.

The Associate Dean of Cau Giay School said he had introduced many students to employers. He had found that students who are good in three areas (IT professionals, LIM professionals and linguistics) normally got very good jobs with high salaries. He said:

> I have helped many students to find jobs. Some students are very good in LIM science, linguistics [English] and IT. They find it easy to get good jobs. They can work for libraries and information centres of government departments, companies, NGOs and so on. My point is that with the three areas of competency, LIM practitioners have good opportunities for finding jobs. (CG-Dean)

In summary, the knowledge and skills that stakeholders stated were grouped into four areas. They are IT, LIM, foreign languages and soft skills. In these areas, of course, IT and LIM are basic knowledge for LIM practitioners. The knowledge and competencies for LIM practitioners will be summarised prioritised in Chapter 8.

5.2.3 Methods and levels of education

Designing an educational programme was a difficult task for educators and authorities. For instance, the director of the department of library of Alpha Ministry who has implemented many continuing education programmes for LIM practitioners, especially for public librarians, made the following point:

> The most difficult educational issue for LIM practitioners is how to establish a suitable curriculum for them. For practitioners, it is good to train them based on their need, and what they are doing in their library. You might teach them some interesting, modern technology, but actually they do not need the knowledge. At the level of public libraries, they do not need the subjects [digital subjects]. (AM-Official)

The idea here is LIM schools should design educational programmes which help practitioners acquire knowledge and skills so they can complete their current tasks at their library rather than providing new knowledge and skills that they cannot apply to their work right after completing the courses.

However, some other stakeholders disputed this idea and argued that DLE should provide competencies for the future careers of LIM practitioners. For example, a senior lecturer said the LIM profession is changing and LIM practitioners should prepare for this. She continued that LIM educators needed to help these LIM practitioners.

To meet the demands from both viewpoints, an integrated educational programme was suggested by key stakeholders such as deans, senior lecturers and managers. They stated that a program mixing the subjects of traditional libraries and DLs is suitable for LIM practitioners. This program can provide competencies that help LIM practitioners manage the traditional libraries and also prepare for them for work in the digital environment.

Many participants suggested we needed different kinds of DLE programmes for different stakeholders such as LIM practitioners, LIM managers and future LIM practitioners (current LIM students). LIM practitioners, managers and deans noted that DLE programmes needed to be developed at all levels. They suggested LIM education should offer short courses and masters level programmes in DLE for LIM practitioners, and full programmes for current LIM students.

There are different views on the methods of education. Some people say that LIM schools are offering educational programmes focussing on theory rather than practice. A LIM practitioner of Kim Ma Library suggested that “for DLE, we [educators and other stakeholders who can offer LIM education] should focus on practice with methods such as hands-on teaching or learning by doing (KM-Staff). Another LIM practitioner who implemented a DLE programme at Kim Ma library shared that people [learners] were very excited when they had the chance to develop digital collections and create a small DL on their own.

The official of Alpha Ministry who worked with many libraries to develop continuing education for LIM practitioners preferred to organise short courses for librarians. She said "we have organised many short courses for LIM practitioners in cooperation with NLV to help them to work in the modern libraries. We just focus on current practitioners, because current LIM students, I think, are educated in the knowledge and skill of DLs. Professionals need to update their knowledge" (AM-Official). Stakeholders noticed that the background of learners was an important issue for developing DLE. For current LIM practitioners, their ability to study DLE is followed by a question mark. The reason that stakeholders were concerned is because the current LIM practitioners were not born in the digital age. Some of them are older and they resist change. In addition, DLE includes many technological subjects. Therefore, stakeholders wondered about LIM practitioners’ ability to study DLE.

Stakeholders suggested DLE should be flexible. The Manager of Gia Lam Library stated there were many different types of libraries in Vietnam, with very different conditions. The libraries of big universities and in big cities normally receive good budgets while public libraries and small libraries struggle to find funds for running their system (BD-Manager). As a result, there are different levels of needs for DLE, so respondents suggested that DLE programmes should be designed for different LIM practitioners at different levels (LB-Lecturer1).

Teaching methods were an issue in LIM education. Some lecturers in the five LIM schools thought that we should train students by hands-on methods. This means focusing on practicing a particular technology, issue, standard or specific library software. On the other hand, other lecturers thought that at university level students should be educated in

critical thinking. Learners also needed to be educated for self-study for the rest of their lives, as one lecturer said "it is lifelong learning."

5.2.4 Digital library subjects in the current LIM educational programmes

In order to understand the trend to incorporate DLE in LIM education, I analysed the curricula and annual reports of LIM schools as well as interview data from the deans and lecturers from the five participating schools. One LIM school did not allow me to access its curriculum, so data from the latest curricula of four LIM schools have been analysed. Figure 12 shows that the DLE credits make up from 17% to 43% of the total number of credits in the LIM curricula. The data are not 'significant' in any respect and are only used here to illustrate a trend that was mentioned by many participants in the interviews and focus groups.

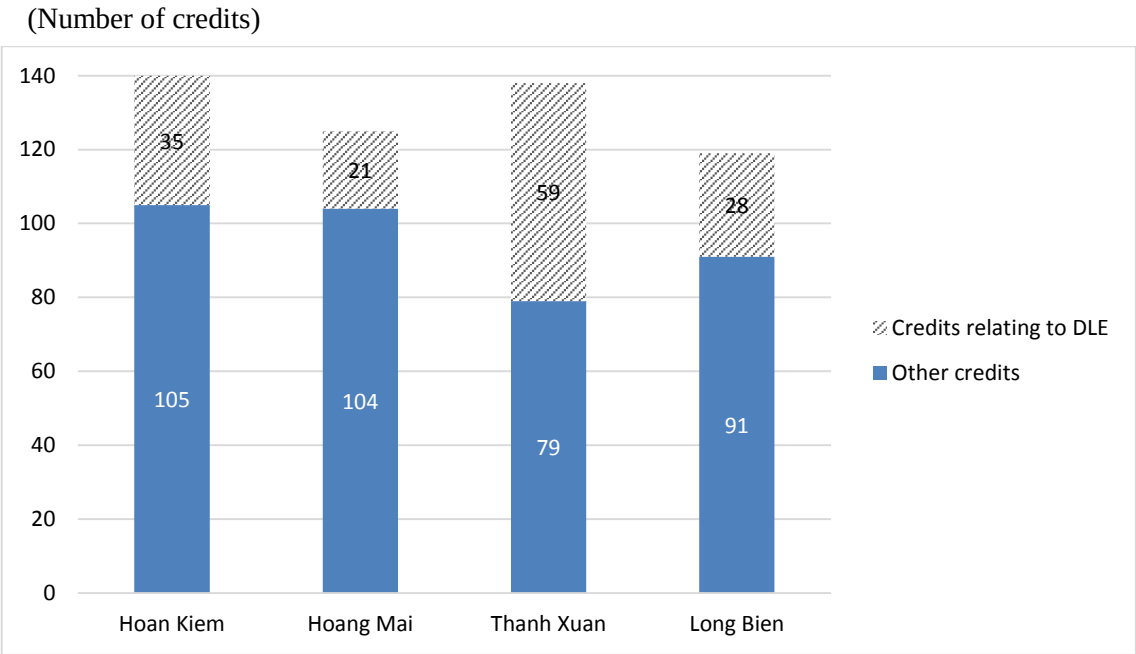

Figure 12: The number of credits relating to DLE in curricula

The figure shows that there has been a trend to incorporate DL subjects into the LIM programmes in the four schools. As identified by Choi and Rasmussen (2006b) and Yang et al. (2009) (see Sections 2.2 and 2.3), DLE consists of various subjects relevant to DLs such as technologies, usage of DLs, digital content and human resources. Although the subjects found in the four schools did not cover all areas of DLE, they showed a trend in going forward to DLE in LIM schools in Vietnam. As shown in Figure 12, the subjects

relating to DLs made up 21 to 59 credits in the curricula of the four LIM schools. The subjects relating to DLs taught in these schools are shown in Table 13.

Table 13: Subject credits related to DLE in four LIM curricula

Schools / DLE subjects (credits)	Hoan Kiem	Hoang Mai	Thanh Xuan	Long Bien
Automation in LIM field				2
Digital libraries	3			
Digital content				2
Standards for LIM				2
Introduction of IT	3	4	1	3
Multimedia				2
Knowledge management				2
Programming			4	
Technology and information systems		2	3	
Information resource development	3	2	3	
Computer structure			2	
Digital resource management			3	
MARC 21	3			3
Database management	4		6	2
Information retrieval systems	4	2		4
Integrated library systems	2	3	3	4
Web content management			2	
Security for information resources			2	
Network management including security and other issues			8	
Metadata			3	
Open source software			2	
Online services			2	
Information networks	2	2	3	
E-publishing		2		
Information society		2	3	
Introduction of DLs	2	2	2	2
Applying ICT in LIM	4			
Access database	2		4	
Web design	3		3	
Total	35	21	59	28

When examining the changes in the LIM curricula, I found an increase in the number of credits relating to DL subjects. For instance in Hoan Kiem School, in 2000, courses with content relating to DLs made up 10 percent of the total credits of the programme, and in 2011 it increased to 26 percent. I could not get the old curricula from Hoang Mai and Long Bien schools because I was not allowed access. However, the deans of these schools confirmed that they had been adding more DL subjects in to their curriculum. In 2011, the credits for courses with DL content made up 17 percent of Hoang Mai School's curriculum, and Long Bien School's was 24 percent. Thanh Xuan School was a new school so we could not compare the curricula, but the subjects with content relating to DLs made up 43 percent of the total credits of its curricula. It offered more DL subject credits than the three other schools. Consequently, the trend shows that some LIM schools are expanding the range of DL knowledge and skills being taught.

There were two different viewpoints on the current LIM education programmes. From the LIM profession's side, LIM practitioners claimed that although LIM education programmes had been updated with new subjects, these programmes still did not meet the demands of the profession. The Manager of Gia Lam Library said there is a wide gap between LIM practice and LIM education in universities. According to her, students normally needed to be retrained before working in the library. At the same time, some educators including deans and lecturers argued that their education programmes do in fact meet the demands of the LIM practitioners, and that they feel confident about their qualified students. One dean said "more than 90% of graduate students found jobs in the areas they were educated in. This is evidence that we meet the expectations of the LIM profession" (HK-Dean).

5.2.5 Library and information management schools

In this section, eight aspects of LIM schools are examined: lecturers for DL subjects, school capacity, deans' attitudes to DLE, conflict between young lecturers and older lecturers, the viewpoint of lecturers on DLE, leadership in the university, the attraction of DLE for LIM students, and LIM students and their viewpoints on DLE.

Lack of lecturers for teaching DL subjects

There were existing obstacles for DLE developments, such as a lack of staff who could teach DL subjects. All participating deans confirmed that their school did not have enough lecturers for teaching DL subjects.

At the Cau Giay School, there was not a single lecturer from the permanent staff who was teaching a DL subject. The school had to recruit professionals from libraries and lecturers from other schools to teach the subjects. In Hoan Kiem and Long Bien schools, there were three lecturers able to teach DL subjects. There was only one lecturer in Long Bien School who had done a master's degree in DLs. The Dean of Hoang Mai School confirmed that he had invited lecturers from other faculties to teach DL subjects. The lack of DL lecturers was one of the greatest difficulties for DLE development by preventing the LIM schools introducing new subjects, especially subjects related to DLs. The Dean of Hoan Kiem School stated her challenge in finding staff for digital subjects, a challenge repeated by other deans of participating schools.

> I understand that there are many interesting subjects which can be added to our curriculum. Myself, I would like to introduce the new subjects, or even open a new programme. However, looking at our staff, who can teach these subjects? How many lecturers do we have to teach these subjects? No, we do not have staff for this subject. (HK-Dean)

The Dean also said that was is not easy to employ a lecturer because of the very high requirements for lecturers at a university, and it took time to educate a lecturer. All deans confirmed that they selected bachelor students who have excellent academic results to become lecturers. This means that before they can teach, the lecturers have to get master's degrees, or PhD degrees which normally take 5-7 years. Usually, the Dean must show that the school has a programme that needs more staff. It is really hard to convince a rector by saying that they are intending to open a new programme so they need staff. Consequently, the school may be unable to hire new staff for new educational programmes.

At the time I conducted the interviews, there were two LIM schools that were active in developing and changing curricula. One was reviewing its curriculum in terms of grouping some subjects into one, and adding more new subjects related to the digital and

Internet environments. However, as its Dean conceded, the new subjects were all elective subjects at that time, and there were no lecturers at his school who were able to teach the subjects. Another school was developing a new curriculum which included new subjects related to technology and the Internet environment. However, it did not have a plan for developing staff. The school intended to use the current lecturers for the new curriculum despite the lecturers having claimed that they were already overloaded with current subjects.

Although educating current staff is sometimes a part of the solution for developing DLE, the LIM schools would still have to run the current programmes, which means that staff would still have to teach their existing subjects. As a result, they would have limited time to prepare for teaching the new subjects. When I spoke with young lecturers they were very excited about DL subjects; however, they had to teach other courses and in some cases were not allowed to choose courses. They were assigned to courses that they did not really like, reducing their motivation to research new areas. As a result, they ended up just following the current educational programmes of the schools.

LIM School capacity

There was concern that LIM schools are not capable of implementing DLE adequately. A senior lecturer at Long Bien School said that when teaching introductory DL subjects, she struggled to find a laboratory for students to practice because her school did not have computer labs for LIM education. This situation also occurred at other LIM schools where she was a visiting lecturer. She emphasised that practice was important for teaching DL subjects. Another lecturer who teaches Software for Libraries asserted that "schools and lecturers try to introduce new knowledge of DLs and technology for LIM students. However, we do not have our own lab or 'practice library', thus this restricts us implementing the knowledge" (CG-Lecturer).

Three deans also agreed that students who study LIM education, especially DLE, need to practice what they have learned. The Dean of Hoang Mai School asserted that "the LIM programme now has too much theory, and students have limited opportunities to practice." They think that schools teaching DL subjects need to have a "practice library". There are two viewpoints on the practice library. The Dean of Long Bien said that a LIM school does not need its own practice library or lab, rather the school needs to work in

cooperation with the university library to set up a fieldwork environment in the library. She conceded that "I have failed to create a practice library for our school; I think the best way is to work with the university library to build a practicing environment" (LB-Dean). However, two other deans said that a LIM school should set up its own practice library or lab. The Dean of Hoan Kiem School emphasised "we should set up a system practice library in which students can practice workflow in an electronic library with computers and software."

Attitudes of deans to DLE

Understanding about DLE

In terms of DLE, some deans did not have a full comprehension of the concept of DLE. They thought that DLE involved single courses such as the "introduction of digital libraries" or "digital resources" in the curriculum. The Dean of Hoa Mai School confirmed that the School offers DLE: "Yes, we have digital library subjects in our curriculum. We have taught digital libraries for a long time. We are trying to educate students to have knowledge and skills to work in modern libraries" (HM-Dean). This point shows that the Dean thought knowledge and skills in DL subjects would help future LIM practitioner's work. However, it also shows that the LIM manager thought these subjects were DLE. Long Bien School had a similar concept of DLE, because they stated that DLE consists of some single subjects which related to the term "digital library".

The unclear understanding about DLE was also observed by LIM practitioners. A manager shared his experience of cooperating with some LIM schools to develop educational programmes.

> I had the chance to work with scholars to develop LIM curricula. I found that many new and interesting subjects had been added to the curricula. However, when I read carefully the contents of these subjects, I found that people who suggested the subjects did not have a good understanding of these topics. (HB-Manager)

On the other hand, there were other deans who had sufficient understanding of DLE programmes. The Dean of Thanh Xuan Library said that a DLE programme consisted of a set of knowledge and skills which helped LIM practitioners work in the digital

environment. Therefore, she suggested, this programme needed to be based on a DLE curriculum which had objectives and multiple subjects focusing on DLs. The Dean of Hoan Kiem School agreed, "DLE is not some single subjects, it is a full educational programme which provides digital competencies for LIM practitioners."

Developing DLE in current LIM programmes

There was a concern that if LIM schools focus on DL subjects and skills relating to IT, students may face challenges when they work for traditional public libraries and school libraries which have not applied IT or have only started using computers for their work. One dean confirmed that focusing on knowledge and skills of traditional libraries was his priority at this time and in the near future. He stated:

> We educate students to help them to do tasks in the library such as cataloguing, classifying and information service. If we only teach students the subjects relating to digital libraries, when they practice in the workplace they cannot do simple tasks in the libraries. Because we do not have digital libraries, they cannot apply what they have learned. (HM-Dean)

Two deans gave a variety of reasons to explain why they had not implemented a DL programme: lack of lecturers (already discussed at the beginning of this section); the actual needs, as they see them, of the LIM profession; and, the fact that developing a new curriculum consumes resources of LIM schools. The Dean of Cau Giau School emphasised that LIM education needed to focus on current needs of the LIM field. He said, "I think at this time, the LIM profession still works mostly in traditional ways, thus we have to educate human resources for the current needs. Of course we have to think about DLs, but they are for the future." The Dean of Hoang Mai School warned of challenges that a school might face when developing and implementing a new educational programme. He stated, "A school has to pass through many stages from school level to ministry level. The project (DLE programme) needs the involvement of staff members and professors. And we have to wait for a long time for approval." In addition, all deans confirmed that they lacked staff for doing new educational programmes. A dean confirmed that lecturers were overloaded with teaching, that they did not have time for developing new programmes as well as doing research in new areas (HM-Dean). The Dean of Hoan Kiem School also agreed with the reasons above.

Significantly, four deans thought that adding DLs to current educational programmes was necessary for LIM schools to meet the needs of the LIM profession. Some deans confirmed that they would introduce DLE if they had the opportunity.

Conflict and gap between young lecturers and older lecturers

The interview data show a gap between young lecturers and older lecturers. There are two generations of lecturers in LIM schools in Vietnam: older lecturers who are over 50 years old and younger lecturers who are around 30 years old. The reason for this is connected to the recent political history of Vietnam. During the 1970s and early 1980s many LIM practitioners were sent to the Soviet Union and Eastern European countries to study. These practitioners now hold key positions in the LIM profession. The Soviet Union collapsed and for one decade after this no LIM staff studied overseas. Sending staff overseas started again in the early 2000s after Vietnam had achieved significant economic development, society had become quite open, and the Vietnamese government focused on developing human resources. The Dean from Hoan Kiem pointed out that there are two generations of staff members not only in the LIM schools but also in the libraries.

The issue here was that the older generation of lecturers were almost all educated in the Soviet Union, while the second generation was educated in developed countries such as the US, the UK, Australia, and New Zealand. In this research, eight participating lecturers were educated overseas. This has caused a conflict between older lecturers and younger lecturers about the philosophy of education for library and information science. A lecturer of Long Bien School said that the older lecturers preferred to develop educational programmes which focused on theory, while the young ones wanted to add more practical subjects to the curricula. The Dean of Hoan Kiem School contended that young lecturers were good in technologies and practice, but they lacked theory and an overview of library and information science. Her views can be contrasted with the point of view of the young lecturer from Cau Giay School who said, “the teaching methods and the contents of the LIM educational programmes are more focussed on the theory of LIM, and there are not enough credits for practice” (CG-Lecturer1).

The data also suggests that changes to the curriculum were more likely to be resisted by senior lecturers who feel threatened by change. Some older lecturers teach subjects which are already quite out of date. These subjects need to be updated or taken out of the

curriculum. Two deans, however, said that schools normally faced a strong reaction from these lecturers if schools wanted to change their subjects (HK-Dean, HM-Dean). I also had personal experience of this when I helped the Dean of Hoan Kiem School to update the undergraduate educational programme. An older lecturer got angry when we asked her to change the content of her teaching subject. As a result, we had to agree that she would keep the content unchanged.

The data from staff member profiles from participating LIM schools shows that younger lecturers make up more than 70% of school staff members. For example, Hoan Kiem School has 16 staff of whom four are more than 50 years old and the others are around 30 years old; in Long Bien School, the numbers are 10 and three respectively. Significantly, younger lecturers are expected to lead the change in LIM education. As a senior lecturer of Long Bien School said, “we [older lecturers] have no chance for change now, we hope young people like you [the researcher] can make the changes in LIM education. We [the LIM profession] really need to change.” The Deans of Hoan Kiem and Cau Giay schools highlighted the expectations placed on the younger generation in the LIM field when they said, "We are going to retire soon; young lecturers will have to undertake the task of the development of the field” (HK-Dean).

Although some interviewees considered younger lecturers to be vital for the development of the LIM field, other participants identified challenges the younger lecturers would face. A senior lecturer in Long Bien School said, “They think they can change the situation quickly. They were educated in developed countries with a lot of advanced technologies, and then they come back and want to apply all these things to the LIM field. It is impossible.” The Manager of Gia Lam Library's viewpoint was clear with the following warning to people educated overseas who were trying to introduce new things to the LIM field: “you might face the challenge that people will think you are in the sky, you are not based on the actual conditions of Vietnam, you are a mad person.” She continued, “as a result you will lose motivation for the change” (GL-Manager).

Young lecturers who participated in this research tended to have a good background in information technology and English. Five of ten participating lecturers could use English very well because they studied at postgraduate level in native English speaking countries. A senior lecturer who is a former dean asserted “English is very important for lecturers. It is a tool for lecturers doing self-study” (LB-lecturer). Almost all participating lecturers

confirmed that they were now teaching subjects related to technologies such as the introduction of IT, database management, library software, introduction of DLs, automation in libraries, and online searching. They said that in order to teach these subjects they would have to do study by themselves. Importantly, young lecturers appeared to feel confident about teaching subjects relating to DLs. For example, a lecturer at Cau Giay School who was teaching two subjects, DLs and library software, said "I have no problem with these subjects" (CG-Lecturer4). These points suggest that although lecturers might be not educated in DLs in their formal LIM education, they can learn by themselves and can teach DL subjects.

One of the most significant perceptions when I talked about the change in LIM education with young lecturers in the Hoan Kiem and Cau Giay schools was that they were willing to change and update their teaching subjects if the schools asked them to. A lecturer from the Hoan Kiem School said he was happy to cut his current courses if they were not necessary. Another lecturer from this school added, "we [young lecturers] are prepared to give up our subject if the school wants to change and update the curriculum" (KM-Lecturer4). This viewpoint I also found in the Cau Giay School, when the Associate Dean and young lecturers confirmed that they were very active in updating their curriculum and introducing new subjects. As a young lecturer said, "we have to update the curriculum and our knowledge to meet the requirements of the LIM profession" (CG-Lecturer 2).

Viewpoint of lecturers on DLE

Most lecturers were of the view that LIM schools taught the knowledge and skills of DLs to students. As a lecturer of Cau Giay School stated, "the fact is that many libraries are moving from traditional libraries to electronic and digital libraries. They apply many advanced technologies. Therefore, we teach DLs for students" (CG-Lecturer1). Another lecturer of this school added, "students are very excited when studying subjects which introduce modern libraries and technologies" (CG-Lecturer3). A lecturer at Cau Giay School stated, "lecturers and the school try their best to bring new knowledge, especially new technologies, from the library field to students."

Five lecturers in the group interviewed at the Hoan Kiem School agreed that if LIM stakeholders used the term "digital library", it would not attract attention. They suggested that since now is the digital age, all organisations need to manage their digital resources,

therefore educators should think about education for managing digital information resources rather than education for managing a DL. One of the lecturers emphasised, "we [educators] have to get out of the narrow DL concept; we need to educate people who can work in the digital environment" (HK-Lecturer1).

Leadership in the university: Rectors

The interview data show that the rector (vice-chancellor) of a university plays an important role in the development of a LIM school, especially in developing and implementing new educational programmes. The Dean of Hoan Kiem School noted, "in my opinion, the development of this school as you see it today is because of the support from the rector. The rector plays an important role. If he supports us, we can easily introduce a new educational programme." The Dean advised me that if I intended to identify factors affecting LIM education in a university, I needed to pay attention to the role of the rector.

The vital role of the top leader of the university was also confirmed by a manager of a university library. He said that when his library implemented digital learning resources, he had support from the director (same role as the rector) of the university who released a document which stated that lecturers and students had to use these digital resources for teaching and learning. As a result, resources had been used frequently, and his library had received more projects for digitisation.

The role of leaders was also mentioned by a lecturer of Hoan Kiem School. She said that when she conducted interviews with managers of academic libraries, most managers confirmed that rectors played an important role in the development of libraries. She said, "if a rector thinks that the library is the heart of the university, and thinks that it plays an important role in education, then he will give priority to the library." She continued, "in my opinion, the attitude [on the role of the library] of the rector is very important for the development of an academic library."

DLE attracts LIM students

In Vietnam, the number of students who apply to study in the LIM field has been declining gradually every year and the LIM field is not an attractive profession. Figure 13 illustrates the decline in the number of students whose first choice was to study LIM.

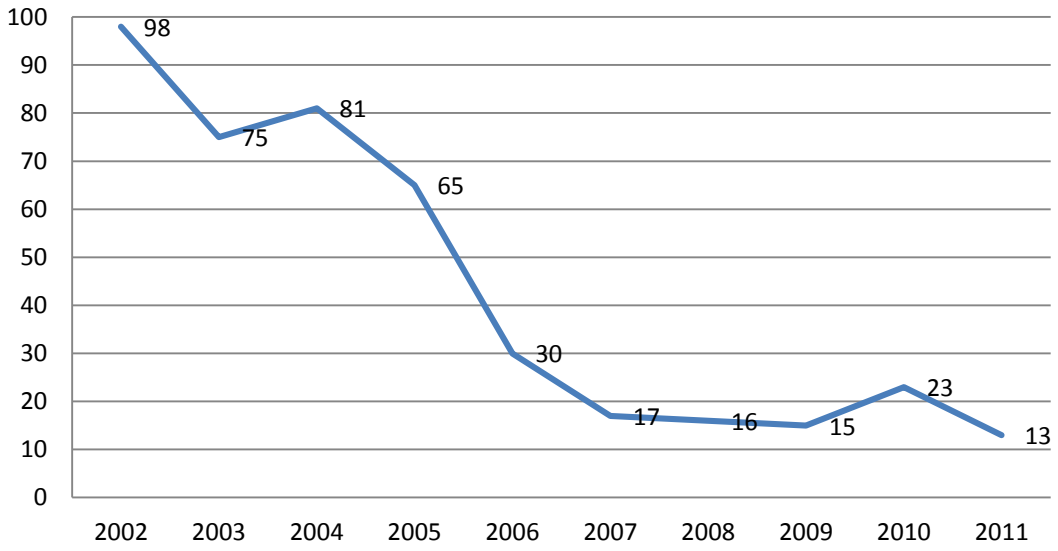

Figure 13: The number of students who chose to study LIM science as their first choice at Hoan Kiem School from 2003 to 2011

The data in Figure 13 are from Hoan Kiem School's annual reports.[2] As can be seen, student numbers have decreased tenfold in ten years. Two deans confirmed the drop in student applications to their schools; thus it is a challenging issue for LIM schools. A lecturer at Hoan Kiem School also raised this issue, saying "we have to accept that the number of students now is declining sharply", and "we [educators] should do something to change this situation." Therefore, changing the curriculum and opening new education programmes were strategies that LIM schools were using to attract students. All of the deans confirmed that they were trying to update and introduce new programmes.

Some lecturers had the opinion that the addition of technology-focused subjects to the curriculum attracts students to apply to study in LIM schools. One lecturer of Cau Giay School said that students were very excited when studying his subject [library software] and they hoped that they would have more subjects which related to modern libraries in the educational programme. She continued:

> If I was a person who had no idea about the LIM field, the first thing I would be interested in is the content of the curriculum. If the curriculum mentions the digital age, and helps students to work outside the LIM field, in particular in libraries, it will attract learners. (CG-Lecturer)

[2] The annual reports from Hoan Kiem School are not included in the References list because doing so would identify the School.

Her colleagues agreed with the viewpoint. They argued that LIM schools had to provide skills and knowledge that students themselves could use to work in the digital age, for importantly, such competencies help them to adapt to a new working environment.

LIM students and their viewpoints on DLE

Student abilities

Almost all lecturers interviewed confirmed that the new subjects attracted LIM students. A lecturer of Cau Giay School said that LIM students would like to learn new technologies in the LIM field. The Associate Dean of this school also confirmed "with 14 years of teaching the LIM field, I find that almost all LIM students like to learn new things such as new technologies, working with computers, and even I like to learn new technologies for libraries" (CG-Associate-Dean).

Some interviewees, however, were concerned that LIM students were not good in digital subjects. To address this, I did a simple analysis of academic records of LIM students at the Hoan Kiem School to see if there was any evidence for this. The results show that LIM students did well in digital subjects. Figure 14 presents the academic results of students based on their first degrees, with 97 in Group C and 53 in Group D.

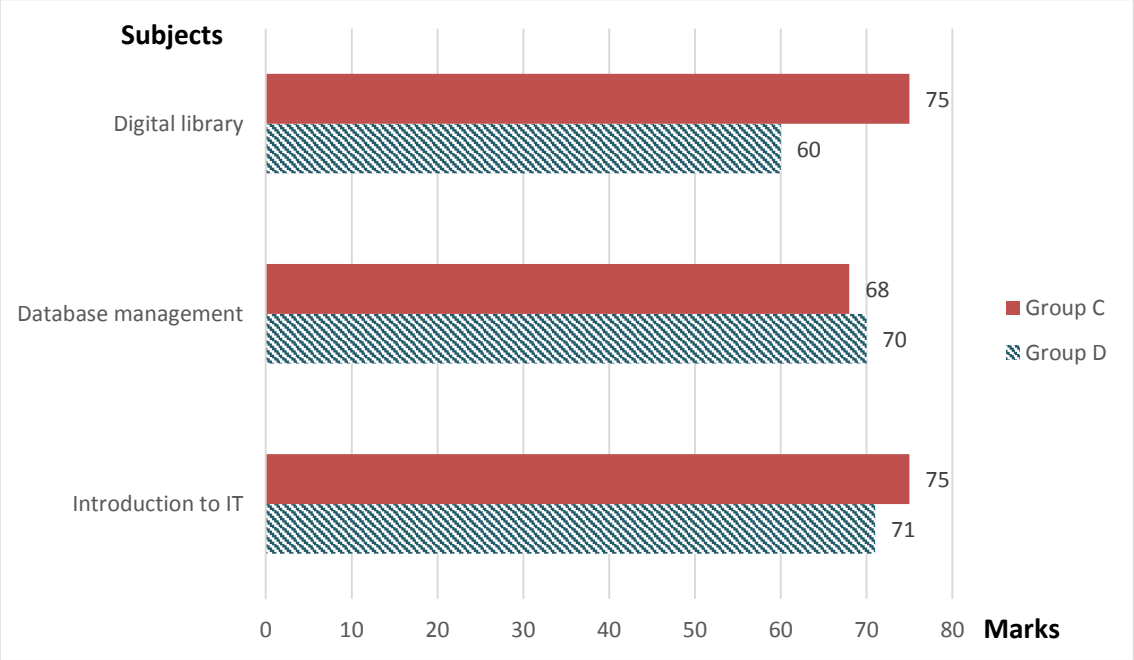

Figure 14: Academic records of LIM students in technology subjects in the Hoan Kiem School

I compared the academic records of two groups in three subjects relating to DLs: Digital library, Database management and Introduction of IT. The academic records show that LIM students achieved a good result with an average 68 out of 100 final marks. There is no significant difference in the results between group C (who took the entrance exam with three subjects: literature, history and geography. This group is close to social science) and group D (this group is close to natural science which requires students to take the entrance exam with mathematics).These the data above show that LIM students regardless of their background have no problem with technical subjects, and they are "very excited about and prefer to study modern subjects which relate to computers and the Internet", as a senior lecturer of Cau Giay School confirmed.

LIM students' educational needs

Current LIM students are the potential consumers of DLE programmes. In my study, the LIM lecturers all felt that LIM students like studying IT and related subjects. To determine whether this was true I asked the students which subjects there were interesting in. Almost all students confirmed that they were interested in IT and technology subjects. One student said, "I applied to study this programme because I thought I would learn knowledge and skill relating to information management and information technology." Another student said, "in my opinion, I think all students who are studying the LIM programme would also prefer to study more new technologies which are applied in libraries." The subjects that students were interested in the LIM programme were:

- Introduction to digital libraries
- Introduction to IT
- Multimedia
- Internet
- Marketing in libraries
- Software for libraries
- Searching information
- Web design
- Reference services
- MARC

Students confirmed that they feel happy and motivated when studying the subjects above. They expected to have more modern subjects relating to information management in the LIM educational programme. One student sharing his viewpoint on technical subjects and current LIM education said, "I am excited about subjects relating to computers and technology. Why are there still many subjects for traditional libraries? We feel bored and I think that they will not help us in our career" (KM-Student4). Some students also stated they wanted to learn "soft skills" that would help them to adapt easily to a new working environment.

Finding jobs was the most important interest of LIM students, so most expected to learn more skills and knowledge about IT, DLs and the Internet and soft skills because these would help them find jobs after graduation. One of them said:

> Of course I would like to study DLE subjects and modernisation, automation in libraries. Modernisation is the inevitable trend of all areas including the LIM field. Therefore, knowledge and skills in technology are not only crucial tools for my future career, but also a master key for me to find a job. (KH-Student2)

Students were excited about the DL topic. All students believed that the DL was the new library of the future. One stated, "The digital library is the type of library which will be developed sharply in the future. It connects them to the Internet and will enable them to share information online" (HK-Student3). Another stated, "a digital library is a place where we deliver digital information to users via the Internet" (KH-Student6). Two other students stated that DLs included computers, the Internet, software, digital resources, and human-computer interaction.

Students also gave their opinion on the requirements and the competencies for future librarians. One student said "a person who works in the digital environment or the Internet age needs to be an expert in IT, and be able and willing to learn technology".

The competencies those students wanted to have were:

- Active and critical thinking
- Ability to learn new technology (self-study) and to follow new trends in technology development
- Knowledge and skills in IT

- Ability to work in the Internet/digital environment
- Ability to use English well
- Ability to assess end-user information needs
- Good skills in using the Internet and searching for information
- Expertise in library science

There was another perception on LIM competencies. A student thought that a librarian would not be able to be expert in all disciplines, rather the librarian should have general knowledge in the areas in which he takes responsibility in the library. He should have IT literacy but would not need to be a programmer. The student said:

> In my opinion [the library] cannot require a librarian to have all knowledge. For example, the librarian does not need to be able to program, rather he needs to understand IT and apply it to his job. I mean that he learns application software, and uses it to manage the programme. Of course, the library still needs IT experts in order to solve technical issues in the library. Skills and knowledge in IT is very important for librarians. These help them to work properly. (HK-Student8)

Significantly, half of the participating students were not satisfied with the content of the curriculum and the way of running the educational programme. One student said, "the educational programme focuses too much on traditional libraries and has too much theory, with too little practice" (KH-Student4). He expected the school to change the current educational programme in terms of content and teaching methods. "We hope the school will offer more modern subjects than stated in the curriculum, so we have more opportunities to practice during study."

5.3 Personal and organisational nexus

According to Antonacopoulou (2006), individual learning translates into organisational learning. In other words, organisational learning is a result of individual's learning. In the Performance Model, Nowlen (1988) found that there is a relationship between personal and organisational development. This section identifies the nexus between individuals and organisations. In particular, it explores the relationship between LIM staff's needs and LIM organisations' needs as well as LIM lecturers' needs and LIM schools. The term "learning need" in my research has been used to describe educational needs, and the need

for development of individuals and LIM organisations. The section examines the need for individual's professional development in comparison to the development strategies of organisations. As a result, the personal and organisational development balances in both the LIM profession and LIM education are examined. Based on that, barriers and facilitation for DLE development are identified.

5.3.1 Organisational development policies and strategies

This section examines the staff development strategy of LIM organisations in terms of their needs for LIM staff, and strategies to keep qualified staff. It also examines aspects of the organisational environment with regard to the individual and organisational nexus, i.e. the permanence of staff, and the impact of IT application success.

Staff development

All participating LIM managers conceded that they have challenges with keeping qualified staff. Qualified staff are defined as "people who are professional staff qualified in library science, language and IT" (KM-Manager). As the data indicated, the salaries in libraries are not good enough to attract and retain qualified people. The Manager of Gia Lam Library said that "staff members will leave the library when they find other good jobs." She said her library sent four people to study overseas, but none of them now worked for the library. She conceded, "there are staff now studying overseas, but I am not sure whether or not they will come back to work for our library. That is our problem." Another manager experienced a similar situation, "we send staff for higher education, but after completing, they quit to find other jobs with higher income." From this situation, she stated that "in my opinion, normally if people are educated well in DLs, they no longer want to work for libraries" (GL-Manager).

The working environment in a library was described as uninteresting. The Dean of Hoang Mai School thought that the LIM field was an unattractive working environment. He said that people who worked in the field were not active and even LIM lecturers were very passive: "they just try to complete their task without suggestions and comments, and hesitate to change". Another manager said that LIM practitioners, normally are resigned people (HB-Manager). Stakeholders shared that some LIM practitioners felt embarrassed when talking about their jobs in libraries. A librarian of Gia Lam library conceded that

LIM practitioners did not feel confident when talking about their jobs because they thought society did not respect the librarian's work (GL-Staff5). Another practitioner, however, commented that a working environment with computers, the Internet and email is an interesting workplace for librarians in comparison to a non-computerised library.

Because of the salary and working environment factors, keeping good staff is problematic for libraries and information centres. All seven LIM managers from the participating organisations agreed that they struggled finding good staff for their organisations and sought solutions to keep these staff. The managers had used many strategies to keep staff, such as promotion (GL-Manager), letting staff have part-time jobs, finding projects for staff (TX-Manager, HB-Manager, KM-Manager), or making a friendly and warm working environment (HB-Manager). The Manager of Kim Ma library said, "as manager, I have to try to help my staff to have a good income, not high, but at least it will be the same amount as if they worked for private companies, otherwise, they will leave this library" (KM-Manager). A manager shared his experience of keeping good staff in libraries:

> Keeping good staff is very challenging. We know that the salary is not as good as the private sector. I have to encourage staff and try to find projects to help them earn more money. We set up a CISCO lab which supports the library and does IT training. Therefore we have money for IT staff members. In other departments we find digitising material projects that helps them have extra income. Of course, money is not everything. Creating a "fresh" working environment is also very important. (KM-Manager)

The Manager of Gia Lam Library shared the same viewpoint with the Manager above on the income solution. In addition, she also stated other solutions for keeping good staff by giving staff opportunities to study. She said:

> We have a problem in keeping good staff. There are two solutions that we have used: (1) give them chances to study, then promotion, and (2) help them earn more money by allowing them work in part time jobs outside the library. Myself, after working all day, I have to work as a translator. If managers are not active, we cannot keep expert staff. (GL-Manager)

The Manager in Hoa Binh Library agreed with the income solution. In addition, he thought that taking care of the physical and mental well-being of staff members was a good strategy. He stated:

> I think the most important issue here is how to keep good staff working for the library. Income in the LIM field is very low, so you have to give them chances for study, and to work overtime to get more pay. We rely on the labour union to take care of staff members in cases of getting married, sickness, bereavement, public holidays and so on. (HB-Manager)

Giving opportunities for staff to study was a common strategy which all seven LIM managers used to keep their staff. Managers of Hoa Binh and Gia Lam libraries said they normally sent staff to study some special courses, even at master and doctoral levels. They thought that having opportunities for continuing education was a good reason for staff to stay with the library. "We always allow staff to attend LIM educational programmes which are introduced by LIM schools and other LIM organisations. Sometimes we insist staff attend these programmes" (GL-Manager). LIM practitioners at Ba Dinh, Tay Ho and Gia Lam libraries agreed that educational opportunity was a motivation for them to work in libraries. As evidence this can work, a staff member of Ba Dinh Library said, "I work in this library because I have chances to study more" (BD-Staff3).

However, having opportunities to study is not always considered as an attractive reward. One manager confirmed that some staff members did not want to study, even though they were younger staff. She said some people were not active; they thought they could complete their daily tasks in the library without any continuing education. According to the Manager of Ba Dinh Library, another reason for reluctance to study was that librarians did not want to spend time, effort and sometimes money to study, because after completing the study their income and position would be the same as before they studied. That was why the Manager of Gia Lam Library suggested that education should lead to promotion.

Keeping needs in balance between LIM organisations and LIM practitioners was a requirement and part of the "art of management" of leadership (TH-Manager). As the Manager of Gia Lam Library said, "If managers are not active, we cannot keep the expert staff" (GL-Manager). The Manager of Tay Ho Library stated his need and the methods

with which his organisation used to organise and encourage staff members to attend continuing education. He said:

> We encourage staff to attend any course that relates to their undertaking in this library. We also arrange for people to take over tasks of staff who take leave for study. However, the staff also need to arrange their time to do some tasks; they have to give up their hobbies or entertainment during the time they study. We have to keep a balance between what staff expect and what the library requires. We try to make a good environment for staff. As a result they should work for us for a long time. (TH-Manager)

It can be seen that educational opportunity was a crucial strategy for LIM organisations to develop their staff.

"Information technology" was the favourite term of LIM managers. They thought IT played an important role in the development of the LIM field. Consequently, there was a trend that LIM leaders would give priority to the IT department and preferred to employ people who had sufficient knowledge and skills in computer science. Three LIM managers said that the IT department was the most important in their libraries, and "we try to keep them working for our library" (GL-Manager). The Manager of Hoa Binh Library even said that libraries needed to employ people who have degrees in computer science or in English. He thought the professional competencies in LIM would be easy to learn by doing. He continued, "we encourage current staff to update their IT knowledge and skills, and enhance their English ability." It can be seen that the attitudes of managers on staff competencies leads to strategies for staff development, and also continuing education for staff.

Organisational environment

In this section I examine two aspects of the organisational environment: *permanence of staff,* and *IT application success.*

Permanence of staff

LIM managers aspired to employ high quality staff. However, the permanence of staff affected their aspiration. The issue was particularly significant given the limitation on staff numbers, and its impact on organisational development. The Manager of Hoa Binh

Library said that libraries were limited in the number of staff they could employ. Because the number of staff had already reached the limit, the library could not employ new staff although it really needed them. As a result, the library did not have a chance to employ qualified staff, the Manager in Gia Lam Library complained.

LIM managers could not ask someone to resign because his/her competencies did not meet the requirements of the library. The Manager of Dong Da Library shared that she would not be able to ask someone to resign because that person might be related to a "big boss." Another Manager at Hoa Binh Library said he could not require staff to stop working due to human compassion. He said this fact might lead to a problem when a practitioner did not want to improve his competencies because nobody could ask him to leave his job. The Manager of Hoa Binh Library said that "the LIM practitioner attitude, that having a permanent contract is job security, reduces the efforts of staff members in terms of working productivity and enhancing competencies" (BD-Manager).

However, other LIM managers have tried to improve the quality of their current staff. For instance, the Manager of Gia Lam said that because it was hard to terminate the contract of an employee and to employ new people for the library, she has to push her staff to study, and give more opportunities for staff to attend continuing educational programmes. She also made a rule stating that staff have to update their knowledge and skills. Most of her staff were expected to study, and had to compete for opportunities with their colleagues because of the limited budget.

IT application success

It also could be seen in the data that if a library has a developing IT infrastructure and success in applying technologies, it affects the learning needs of staff as well as the organisation. There were two examples of IT success which affected educational needs.

The first example was Van Dien Library which had a good IT infrastructure but lacked qualified staff. This library belonged to a big university, and it had developed a modern IT system, integrated library software, and had a big building. However, after some years of operation, the library had to share half the building with other departments in the university. The IT system with strong servers was just used for cataloguing. There was a small digital collection but it was not accessible online. The only service which was

offered to users was the online catalogue. The Manager gave as reasons that the library lacked qualified staff members for developing modern library services based on IT, and that she did not have experience in managing an IT system. She said:

> To be honest, sometimes I feel that managing a modern library is a hard job for me. I do not have experience in managing and developing an organisation based on IT. It should be managed by an IT professional like the former manager. The IT system has not been used effectively. (VD-Manager)

She also shared that her staff were not active in updating their knowledge in order to manage the system. She asked and encouraged staff to study but they did not take action for two reasons. The first was the library still offered simple services and operated as a traditional library, so staff thought that their competencies were good enough. In fact, they were right, she confirmed. The second reason was most of her staff were women busy with their families. They thought that working in the library would be a simple task, thus they would not need to study more. As a result, there were very few requests for continuing education. The Manager confirmed that almost all the requests were to attend higher education programmes such as a Master's programme in order to a get a degree for promotion, rather than simply up-skilling for their current tasks.

The second example was Kim Ma Library which was successful in applying IT and had qualified staff. The library was recognised as an example for using IT for developing modern services which were offered online. Many libraries sent staff to visit the King Ma Library. The Manager was very confident when talking about DLs and education for staff. He stated, "definitely, digital library is the future of the LIM development, but at this time we do not have a digital library. We are at the first stage of DL development. However, it does not mean that we will not prepare for it. We have to do it from now." He said he encouraged staff to study: "we always accept the requirements for continuing education for staff, and have funds for their study. We also invite LIM professionals from overseas and well-known LIM practitioners in Vietnam to teach our staff."

Staff of the library also confirmed their manager's words. All five staff of the focus group explained their library tasks very well, which were mostly based on the library's IT infrastructure. They came from different departments such as IT, reference service, and information development departments. One staff member said, "we have to work very

closely and have to cooperate with each other. We have to understand all standards, requirements and functions of the system. I have had to learn to manage the system in my department" (KM-Staff3). Another staff member added,

> We have attended many courses such as instruction in IT, library standards, digital collection development, and introduction to digital libraries. We have also learned from each other. Because of the equipment in the library, we have to have good IT literacy. (KM-staff1)

All of them expected to attend a full DLE programme. As a librarian said,

> We attend some short courses for training in digital libraries. However, they were only beginner courses which gave us a general idea about digital libraries. We need more understanding about digital libraries and, of course, more practice in developing and managing a library. (KM-Staff5)

It can be seen that managers and staff have some opposing viewpoints in terms of educational needs.

In summary, both the inability of an organisation to remove ineffective staff because of the permanence of their positions, and the introduction of IT applications which require staff to obtain new knowledge and skills, have affected the DLE needs of the organisations and their staff but in contrasting ways. The introduction of IT applications has created a need for both organisational and staff development. The permanence of staff, on the other hand, often acted as a barrier to both personal and organisational development. This on-going conflict between the needs of libraries and of their staff is discussed in the following section.

5.3.2 Individual needs

The staff members' individual needs were examined in relation to the organisational needs. In addition, gender was also an important aspect affecting the individual needs.

Conflict in the needs between organisations and individuals

The analysis of the interview data identified a conflict between the needs of organisations and individuals. On the organisation's side, they need qualified staff for managing their

system. The Manager of Hoa Binh Library stated the need of her library for human resources, "We need people who are expert in information technology, have good English and basic knowledge of electronic libraries/digital libraries". In another strong statement, the Manager of Kim Ma Library said he intended to employ "good staff" who had good knowledge and skills in IT and English, and who had overseas degrees. He added, "we need good staff. As a manager, if you want to do something, you need support from your staff. However, if you do not have good staff, you cannot do anything for DL development" (KM-Manager). The Manager of Cau Giay library hoped to find employees who have knowledge in DLs. He stated "I agree that in the near future librarians need the competence to work in the digital environment" (CG-Manager). Although having high expectations of qualified staff members, all managers conceded that it was really hard to meet the demand because the working environment in the LIM field is not attractive and, more importantly, the income of LIM practitioners is lower than in other fields. Therefore, it is hard to attract quality people to work in libraries.

The demand for qualified staff has increased the educational needs of LIM organisations. LIM managers said that they would send their staff to study DLE courses if LIM schools introduced them. In some cases they asked their staff to study more. The Manager of Hoa Binh Library for example, said:

> We always give opportunities for our staff to study LIM educational programmes at all levels, especially programmes related to technologies for libraries. We try to send them to the courses that are offered by LIM schools and other LIM organisations.

The position of many staff was that they were facing the challenge of performing two roles at the same time: completing their tasks in libraries while serving their families. A senior practitioner of Kim Ma Library said her reason for choosing to work in the library was because she would have time to take care of her family. She said "I have to take care of my family and also earn money. Working in the library gives me time to care for my family and take a part-time job" (KM-Staff2). Another practitioner added, "If you have enough finances, you will focus on your job. Otherwise, you are always looking for a chance to find another job" (GL-Staff4). A practitioner of Hoa Binh Library said she would like to attend continuing education, but sometimes she missed these courses because of her family. She said:

> I have a chance to attend some continuing educational courses that would help me manage my work in this library. However, I have to support my family. As a woman, I have to do housework and take care of my children; this work takes a lot of my time. Sometimes I have missed chances to attend an educational programme (KM-Staff3).

On the staff side, practitioners expected their organisations, in particular their managers, to understand their situation. For example, a practitioner of Dong Da Library said that he wanted his manager to have empathy for staff members, to understand the difficulty in librarians' lives as well as to provide opportunities to study. He stated:

> The manager has to understand the needs of staff. While working in this library, librarians have few opportunities to earn money, and sometimes it is boring. Beside that they have to take care of their family, they want to find part time jobs, they want to be promoted, and so on. Therefore, the management committee should have flexible policies to encourage staff to complete their tasks and also give them opportunities to study in order to enhance their skills (DD-Staff5).

A staff member from Gia Lam Library shared a similar viewpoint. She stated if people who worked in the library did not have support from their family or they did not have part-time jobs, their lives were very difficult. She said, "almost all library staff have to do other jobs outside the library" (GL-Staff1) which would affect their motivation to study.

It can be seen that the condition of staff members, especially their economic condition, affects their aspirations to enhance their competencies as well as their motivation for work. There is conflict between attitudes to staff development among staff and their managers. On the side of the organisation, for developing objectives, it has to require staff to work professionally, and always update their knowledge and skills. On the other hand, staff are facing the challenges of low incomes and their life situation. Sometimes they feel no benefits will come from continuing education in terms of salary or promotion.

Gender aspect

The data show that women make up the majority of staff members in libraries. Two thirds of participants in my research were women. The official of Alpha Ministry confirmed that women make up a huge percentage of the staff in the LIM field. This fact affects the

organisational and individual development because women, through no fault of their own, find it harder than men to commit time to their work and to professional development. This is related in part to the national culture. Spending a lot of time on housework and giving birth are two barriers that constrain female staff from contributing to their organisation. Their organisations require them to spend more time and effort on professional development, but they feel unable to meet the demands. As a result, there is conflict between individuals and their organisations. The managers of Gia Lam, Hoa Binh and Thanh Xuan libraries confirmed their struggle in managing their organisations because most staff are women.

The Manager of Gia Lam Library said that as a Vietnamese woman, she had to take responsibility for housework. She said "of course my husband helps me, but I take it as a natural role." She also shared that she had to work after hours as a translator, so it was really hard for her to fulfil all roles at the same time. She contended that women have fewer chances to study if they get married. Especially, if a woman takes responsibility for earning money, she will have limited time to improve her professional competence. "Some of my female staff members do not want to study more; they have many other things in their personal lives that should be given priority to" the Manager shared. The Manager of Hoa Binh Library confirmed that "now I prefer to employ men, there are too many women in this library."

Female staff also talked about the challenges in women's lives. A staff member from Gia Lam Library said, "we have many things to do after work, sometimes I wish I had more time to study new knowledge and skills in the changing LIM field." A staff member from Tay Ho Library said she had tried very hard to organise her schedule for housework and professional work, but conceded that she missed some educational programmes because she could not arrange for time to attend them. Some other staff also agreed that they did not have such flexibility in their time as their male colleagues.

In the LIM school area, the situation was similar to the libraries; female lecturers make up the majority of staff members. The Dean of Hoan Kiem School struggled when some of her staff got pregnant. She said "normally each family has around two children, so women have to be busy for at least ten years giving birth and looking after children. As a result, they do not have enough time for research and study. This is how it is. It has happened to me." She now preferred to employ male staff to create the gender balance in

the school and reduce the risk of being short of staff when female staff give birth. She also shared that some female staff did not want to study; they did not have the motivation to update their knowledge. She said:

> I have asked them many times to do the PhD programme, but they have declined. So I have had to use the university's policies to ask them to study. It seems that they think teaching is a good occupation for "family women" because they have more time for family and do not have to work so hard which keeps everything simple. I have to change this attitude. (HK-Dean)

Of course, not all women were busy with "family work" and the roles of "family women." Many women had high aspirations to develop their professional career. The managers and deans above confirmed that many female staff expected to have more opportunities to study, attending continuing education programmes and workshops. They wanted to learn new technologies, standards, and other professional competencies. "Opportunities for study are rewards for staff who have done excellent work", the Managers of Gia Lam said. Other Managers in Hoa Binh, Thanh Xuan and Dong Da libraries had the same idea. They used education as recompense for hardworking staff.

It can be seen that there is a close relationship between the organisations' requirements and staff needs and performance. In both areas, the LIM profession and LIM education, the needs of individuals and organisations need to be balanced; otherwise, the conflict between them might hinder the learning needs. For individuals, their learning needs are affected by staff development strategies, their economic condition, empathy (or otherwise) from their manager, and their current tasks in the library.

5.4 Conclusion

There was general agreement among stakeholders that this is the time for Vietnam to develop DLs. The data show that all participant organisations have implemented some digitisation projects and there is a need for new staff who can work in the digital environment, specifically in DLs. Stakeholders felt free to use the "digital library" term, however the concept of DLs was not agreed upon among stakeholders. This situation leads to the idea that we need to develop a definition and a framework of DLs for Vietnam. This framework needs to be widely accepted by the Vietnamese LIM community.

The data also indicated that there is little cooperation in developing new ideas/programmes among stakeholders. With regard to the attitudes of stakeholders to DLE development, there appeared to be a conflict between the attitudes of younger and older librarians and lecturers. The younger ones tended to be eager to learn about new technologies, whereas the older ones tended not to be. In addition, LIM leaders did not like to take risks, and a result they would normally choose safe decisions rather than decisions that would require changes.

With regard to DLE subjects, even though LIM schools have updated their curricula, there is still some distance between LIM educational programmes and the LIM profession. Some DL subjects have been introduced in LIM schools but from the viewpoint of the LIM profession, LIM education does not meet demands from practice. In addition, LIM schools are facing a lack of lecturers who can teach DL subjects.

The data in this chapter concerning the level of stakeholder understanding, the application of IT in libraries, the development of DLs in the LIM field, and the condition of LIM education, supports the argument that the development of DLE in Vietnam is at the transition phase between the initiation and implementation phases. At this point, some libraries have developed DL projects, while others have not yet taken this step. Some schools have decided to be pioneers in developing DLE, while other schools are still waiting for a suitable moment.

Finally, the nexus between individual and organisational development has been identified as a factor affecting the learning needs of LIM practitioners and organisations. There sometimes was a conflict between the needs of individuals and the organisations in which they work, which could act as a barrier to educational change, whereas the alignment of these needs can act as an enabler.

This chapter has identified three internal factors affecting the development of DLE: *stakeholder attitudes to and perceptions of DLs and DLE*, *characteristics of DLE, and the nexus of individual and organisational development.* Their effects and the relationship between these factors are discussed in Chapter 8.

Chapter 6 External factors

> *Society plays an important role in education and influences it, both positively and negatively*.
>
> (Manali Oak, 2009, “Society's Influence on Education”, para 4)

Following Chapter 5, which identified internal factors, this chapter explores the external factors affecting the development of DLE in Vietnam. For this purpose, the chapter examines the environment (including social/cultural values, government and economic conditions) of LIM educational change in Vietnam. The data for this chapter were drawn from documents of the Vietnamese government and its agencies, and from the individual and focus group interviews of stakeholders who were involved in DLE development.

The data reveal three external factors affecting DLE development in Vietnam: (1) the information and communication technology (ICT) infrastructure; (2) the government (including its policies, funding, laws and management); and, (3) social and cultural values. Economic factors such as the focus of IT investment and the level of staff salaries are included in the discussion of government funding.

6.1 Information and communication technology infrastructure

Experts in DLs such as Bearman (2007) and Witten et al. (2010) maintain that the development of the LIM field is based on the development of technology, especially information technology. My findings support this point. In the following sections, I examine enablers and barriers within the IT infrastructure for the development of the LIM field as well as DLE. Data from documentary evidence and interviews indicate that the development of ICTs in Vietnam and IT applications in the LIM field have built the necessary fundamental infrastructure for the development of DLs as well as DLE. As more Vietnamese use the Internet to access information, so the demand for DLs will surely increase, thus making DLE essential. The ICT infrastructure is thus an important external factor affecting the development of DLE.

6.1.1 Internet and digital content development

Internet development

Statistics from Internet providers show that Vietnam has experienced a significant increase of Internet use since it was established in the country in 1997 (Communist Party of Vietnam, 2011b). Figure 15 presents statistics from the Vietnam Network Information Centre (VNIC) of Internet users in Vietnam from 2003 to 2012 which show that the number has increased dramatically, nearly ten times in one decade, from almost 3.1 million (3.8 percent of Vietnam's population) in 2003 to more than 30 million (35.26 percent) in February 2012. It is expected that there will be about 2 to 3 million more new Internet users every year (VNNIC, 2012). The number of Internet users is higher than the global average of 30%. The development of the Internet is a result of the Vietnamese government's strategy to give priority to research and development in science and technology. In particular, information technology is recognised as a key focus for the development of the economy, education and the society (GoV, 2012c; MIC, 2007a).

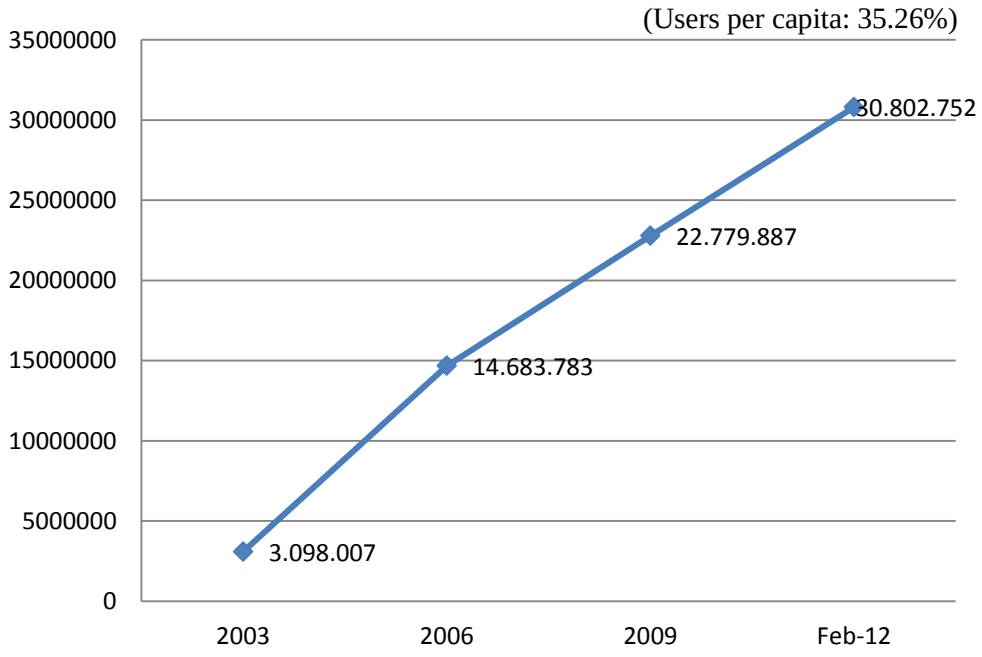

Figure 15: The number of Internet users in Vietnam

(Source: The Vietnam Network Information Centre – VNNIC, 2012)

The participating managers and deans agreed that the LIM field has benefited from the development of ICT, and especially the spread of the Internet in Vietnam. The Manager

of Tay Ho Library, for example, said "now the library can satisfy the demands of readers via the Internet. This is a significant change for us [in the LIM field]." Documentary evidence showed that all participating libraries were offering some online services such as library catalogues and online borrowing and renewals, and their managers confirmed that they planned to expand the number and range of these services in order to move further into the online environment.

Digital content

The development of a digital content industry was planned in the early 2000s by the Vietnamese government (GoV, 2009). The government established the National Institute of Software and Digital Content Industry (NISCI) to speed up the development of the digital content industry in Vietnam. According to the *White Book of Vietnam ICT* in 2012 the digital content industry in Vietnam grew by 25% in each of the last four years (MIC, 2012b). It employs more than 60,000 people with 600 companies involved in the industry.

The official from the Alpha Ministry declared that the Internet has changed the ways Vietnamese people access information. There has been a sharp increase in the use of digital means to access information compared to traditional means. Based on the NetCitizens survey by Cimigo, people in Vietnam use the Internet for three main reasons: reading news, using search engines, and conducting research for studying and for work (Cimigo, 2011). In particular, 74% of the respondents used the Internet for their study, research and work in 2010. That is a significant figure for the development of the LIM field. The official of the Beta Ministry said the increase in students in universities and schools using the Internet for study purposes is a good opportunity for the LIM field. The official said:

> It requires the library to develop its digital resources and online services to meet the requirements and the changes from the universities in terms of curricular development, teaching methods and management. A library is not a physical store house with printed materials, rather it has to provide materials online so all that users can work from their office or home. (BM-Official)

Vietnam has established an Internet infrastructure for the development of the economy and society. In addition, the Vietnamese people have started to use the Internet and digital

content for their work. It is a good environment for the development of the LIM field, according to the director of the IT department at Gia Lam Library. The effect of this factor is discussed in Chapter 8.

Opportunities for the LIM field development

In a national report on ICT development in 2011 (MIC, 2011a), the Vietnamese government identified ICT and the Internet as crucial tools for bridging the gap in education between rural and urban areas in Vietnam. The report pointed out that ICT is not only used widely in big cities, but also by educational agencies in rural areas, and even in areas which still have many challenges in economic development (MIC, 2011a). ICT development is one of the key national strategies being implemented to lead the country into the "knowledge economy", a term now being used in official government publications. The government has stated that intends to use ICT and education as important tools for the development of the Vietnamese knowledge economy (Communist Party of Vietnam, 2011a).

The data show that the Internet has developed considerably in Vietnam during the last two decades. In addition, as identified in Chapter 5, there has been a trend toward using digital content in Vietnam, and more students as well as professionals prefer to use digital resources for their study and their work. As the Manager of Tay Ho Library said, “the environment creates an excellent opportunity for us to develop and assert the LIM field’s roles in the digital age.”

6.1.2 Application of IT to the LIM field

The application of IT in the LIM field has been discussed in the literature review chapter. In this section I point out the significant aspects that affect the development of DLs and DLE. The data are based on the annual reports of participating libraries and LIM professional associations. I do not use specific data from any organisation, rather the information below is aggregated from these sources.

Success in IT application

A significant achievement in IT development at the national level has been the establishment of a basic IT infrastructure for the LIM field. In its annual report of 2009, the National Library of Vietnam (2009) identified four types of libraries that invested in

IT systems: academic libraries (including university and college libraries); public libraries (central public libraries in provinces); information centres of functional ministries; and, army libraries. Most of the libraries have networks, servers, staff computers, Internet connections and library management software, and some have developed digital collections (National Library of Vietnam, 2009). The Chairperson of the Delta Association summarised, "libraries and information centres have made a significant change by moving from using a manual system to a computer based system, and such fundamental investment is important for the LIM field as it moves to the digital age." Some managers and deans mentioned that the transformation of the LIM field has raised awareness of the important role of libraries in educational, social and cultural development.

The second important related development in IT for the LIM field is the growth in the application of IT which has created more opportunities for practitioners to work in a computerised library environment. The Chairperson of the Gamma Association indicated that the development of the LIM field, in terms of applying IT in libraries and information centres, gives LIM practitioners a very good opportunity to experience technologies, library software, and an automated working environment in which computers are used for LIM practitioners' tasks. The change in using computers and networks to manage LIM organisations has, in the minds of some people, also led to a change in the image of librarians. As the official of the Beta Ministry commented:

> The image of people who work in libraries has changed. Librarians are not the people who keep books and take them off the bookshelf when requested. They are the people who are capable of using computers to retrieve information from online databases, and who can satisfy information needs by using IT and their digital literacy. (BM-Official)

The changing image of LIM practitioners has also led to a change in the viewpoints of LIM leaders on the competence of LIM practitioners. As discussed in Chapter 5, LIM associations, libraries and LIM schools have introduced new knowledge and skills which benefit LIM practitioners in the digital working environment.

Shortcomings of the introduction of IT

Stakeholders identified three limitations to the introduction of IT in Vietnam: the investment was focused on big libraries; libraries usually invested more on IT infrastructure rather than on staff development; and services for users are limited.

Two senior LIM practitioners claimed that only public libraries in big cities and academic libraries in larger universities have received investment in their IT infrastructure from the government. The official from the Alpha Ministry point out that there are thousands of public libraries, school libraries and other small libraries still working in the traditional environment without Internet connections, or even computers.

Another limitation of IT projects, according to the Manager of Gia Lam Library, is that even though libraries have invested heavily in IT infrastructure, they have not focused on educating staff members to work in the new computer environment. The manager added that only a few introductory courses for using computers and library software were offered to the library staff in IT development projects but there were no courses that trained staff to understand the requirements of an IT-based working environment such as workflow, digital culture, cooperation, online services and so on. Some stakeholders concluded that the achievements of IT are limited. For example, the former Manager of Dong Da Library shared that when requiring staff to change their working style and habits he often struggled because some staff members did not agree with the requisite changes in the library. The Manager of Ha Dong Library also confirmed that her library's IT system was used very little because the library did not have qualified staff. She said, "we do not have librarians who can develop library services based on the IT system. As a result, the usage of the IT system is very low." Rather than being proactive with regard to upskilling staff this manager simply appeared to accept the situation. This type of resignation seemed to be common in many libraries.

This second issue leads on to the third issue which is that although there has been considerable investment in libraries, information users have not received much benefit from IT projects. The only significant service provided by most libraries so far is that readers can search for information online instead of having to use a manual bibliographic retrieval system. All participating practitioners who were working in reference

departments confirmed that they still offer most services in the same way as they did before IT was introduced. As a result, readers still must come to libraries to make requests for materials and use mostly printed materials.

In summary, the significant development of the Internet and the trend towards using digital content has created the need for libraries to provide digital content and has established the foundation for the development of the LIM field moving to the digital environment. There are, however, barriers to this development caused by government funding being limited only to the development of large libraries, the focus by libraries on infrastructure development rather than staff development which has resulted in minimal online access for users to digital resources.

6.2 The government

In this section I examine the impact of the Vietnamese government on DLE development through its policies, laws, funding and management. There are levels of government management in Vietnam relevant to LIM: the level that affects the whole society including the LIM field, and the level that directly governs the LIM field. Section 1.6.2 provides an overview of the legal and administrative framework for the LIM field in as part of the background contextual information about Vietnam.

6.2.1 Policies for education and technology development

In this section I examine the main strategies of the Vietnamese government for information technology and education and how they relate to the LIM field, and I also identify policies for the development of the LIM field.

E-government project

In 2001, the Vietnamese government planned to establish an ICT infrastructure as a foundation for developing E-government (GoV, 2001). By 2006, it had begun to implement a national project in ICT with the intention of advancing the country's ICT infrastructure (GoV, 2006). This project was also aimed at extending the use of IT in the educational sector, and has led to positive results. By 2011, nearly all universities, colleges and technical schools were connected to the Internet, and 96% of high schools had an Internet connection (MIC, 2011a). Students and lecturers are now offered free

Internet access at these educational institutions. The priority for ICT development and IT use as a foundation for national development was stated in the IT Law of 2006:

- Government gives priority to research and development and the application of IT in developing the economy and society, and developing the national ICT infrastructure.
- The aim of IT applications is to enhance the government's performance in managing society, to increase the ability of governmental agencies, and to give opportunities for all citizens to implement their rights and obligations.
- Digital information will be created, developed and archived in order to support all governmental agencies and the public sector.
- IT will be applied in all areas in society such as: education, health, culture, army and other sectors. (National Assembly of Vietnam, 2006b)

The government's plans to develop the ICT infrastructure were aimed at supporting many of its other aims, i.e., to develop E-government services, to introduce IT to the educational sector, to strengthen the government's performance and to help citizens exercise their rights and meet their obligations. In addition the government aimed to modernise the public sector by reforming human resource management with an efficient public administration system that could provide motivated, skilled, and capable staff who can manage the economic, social and environmental challenges that Vietnam was facing.

Educational development policies

There are thousands of libraries in Vietnam's educational system. The government has policies to manage these libraries. Policies for the development of education also will affect these libraries.

Education has received significant interest from the government and Vietnamese society. The Constitution of the Socialist Republic of Vietnam emphasises the importance of education in the development of the country as well as the priority which should be given to educational development. The Constitution states:

> Developing education is one of the primary national policies … The State and the society foster education in order to enhance intellectual abilities, develop human

> resources and nurture talents. The State gives priority to educational investment and encourages other investors. (National Assembly of Vietnam, 1992)

The Vietnamese government has identified the development of higher education as a priority. In the national plan (GoV, 2007) for the development of universities and colleges, the government aimed to expand the tertiary education system with a target to educate 1.8 million students in 2010, 3 million students in 2015 and 4.5 million students in 2020. The plan included an increase in the annual state budget for tertiary education, encouragement of official development assistance and foreign direct investment to invest in education, and promotion of educational socialisation. This plan also promoted investment in libraries and information resources which work in the digital environment. It stated that investment in libraries aims to enhance the capacity and quality of libraries, establish national DLs that aim to connect and share information resources among universities in the whole country, and develop an international information network which aims to open opportunities for all universities and colleges in Vietnam to exchange with other universities in the world.

In addition, in order to encourage competition among universities in Vietnam, the government released a ranking list of universities. Significantly, one of the important criteria for ranking was the quality of libraries. This criterion requires that:

> University libraries have to have enough books, textbooks, reference materials in Vietnamese and foreign languages in order to meet the demands of lecturers and students. Universities have to establish electronic libraries with Internet connections to support effective teaching, learning and research. (MOET, 2010f, p. 322)

At the secondary education level, development of school libraries was identified as a priority. MOET, which releases national standards for all high schools, stated that the Ministry should focus on developing libraries to enhance teaching and learning (MOET, 2010d). One criterion in the national standard for secondary schools is that a school must have a library:

> which meets the standards of the LIM profession for a school library in terms of management and organisation; the library needs to focus on developing digital

> resources such as reference materials, schoolbooks, lesson plans, question lists, and exam questions; the library has to update information from around the country and the world. These information resources need to meet the demands of teachers and students. (MOET, 2010d)

The government is clearly giving priority for the development of library systems from school to university level. Though the policies and standards appear to be clear, the next step is a difficult one, namely implementing them in order to achieve their goals. This step is evaluated by stakeholders in Section 6.2.3.

Education in the digital age

Because education is a national priority, the Vietnamese government has intended to manage the educational system and move it into the digital environment. There are 26,000 universities, colleges and schools with 20 million students in Vietnam (MIC, 2011a). As discussed above, the government identified the development of ICT within the education sector as a priority to enhance teaching and learning. The government also viewed the library to be one of the important elements in an educational institution. Therefore, in the national development plan for education, the government has focused on enhancing the capacities of libraries and information centres through the development of learning resources, especially digital materials. In 2012, MOET introduced plans to develop digital learning resource centres at universities and schools to ensure that students, lecturers and researchers can access material online (MOET, 2012).

E-learning was introduced in Western countries more than 15 years ago, but it is a new orientation in education in Vietnam, especially in higher education. In 2011, the Ministry of Information and Communication identified e-learning as a crucial tool in combination with the Internet for equal access to education for all citizens in the country (MIC, 2011a). The authorities have invested in some projects which have encouraged stakeholders in the education system to develop online educational programmes. Even some contests in designing digital coursework for e-learning have been organised (MOET, 2010e, 2011). In the national plan for the development of distance education from 2005 to 2010, the government aimed to give various opportunities for students to access education (GoV, 2005). This plan sought to change the teaching and learning methods by using ICT. The government, and in particular MOET, began to use “digital coursework” or “electronic

coursework" as terms in some of its documents (e.g., MOET, 2008, 2010b). In addition, MOET began to recommend that teachers use digital resources for teaching and learning online.

In the national plan for education development, MOET stated that IT, digital information resources and the Internet would change teaching methods (MOET, 2008, 2010b). The initial aims of the national plan were "fostering the application of IT in teaching and learning at all educational levels, and all educational areas; enhancing computer labs, and Internet connections at educational institutions; and using software to manage educational activities at all educational and training agencies" (GoV, 2008).

In the objectives for education for the period 2008-2010, the government stated that it would give priority at a national level to establishing and developing libraries to enhance the quality of supporting services for education (GoV, 2008). To achieve its objectives, the government aimed to develop an online national educational network.

> Developing educational network: establishing an online network which aims to connect the education system. This network connects all educational agencies around the country through the Internet with high speed broadband; developing digital content for educational purposes; to develop digital libraries in which developing digital learning resources for e-Learning; developing an online information portal for all educational agencies which would provide support for educational and training activities; implementing the multimedia for teaching and learning such as video, web and audio conferences. (GoV, 2008)

In summary, the documentary evidence showed that the government's strategy for developing the education system was to move teaching and learning into the digital age. The government, and in particular, MOET, was focusing on enhancing the quality of education by applying new technologies to teaching and learning methods.

6.2.2 Government's management of the LIM field

According to Fullan (2007) governments play crucial roles in the direction and support of educational change. Though Fullan's interest was in primary and secondary education, in Vietnam the government is highly involved in all levels of education, including the tertiary level. As is demonstrated in this section, stakeholders perceived the government's

management of education to have a significant impact on the development of the LIM field and DLE.

Investment in the LIM field

The government's role in the development of the LIM field was mentioned by practitioners, managers, deans and officials. They agreed that the policies of the government for LIM were the most important factor in comparison with other factors affecting the development of the LIM field.

A senior lecturer who was also a former Dean of Long Bien School emphasised:

> The big issue here is the management of the government. The government should have more strategies and guidelines; in fact, the government has some, but not enough, in order to orientate the development of the LIM field. Vietnam is different from other countries in terms of the way the government controls society. (LB-lecturer)

In addition, according to the Chairperson of Delta Association, government management has affected all aspects of the education system including funding, development strategies and staff development.

All LIM managers in this study confirmed that the main funding for libraries and information centres came from the government. These managers asserted that they faced challenges because of limited budgets. Nearly all activities such as maintaining the computer system, salaries for staff, and acquiring new materials were paid using government funding. Some limited revenue also came from individuals, internal organisations and NGOs.

In terms of general governance, the Vietnamese government has focused on three main areas: science, technology and education. The government has encouraged the public and private sectors to be involved in developing education, and has given priorities for research and development in science and technologies (GoV, 2003, 2008). As discussed in the previous section, projects which apply technology in education and training such as online resources for teaching and learning, e-learning or distance learning have been supported.

In the last decade libraries have received significant funding from the government in terms of infrastructure, IT systems, information resources and staff, as confirmed by many LIM managers. This demonstrates that the government and some parts of society have realised the importance of libraries. For example, the Manager of Hoa Binh Library said the roles of libraries were increasingly recognised by society, especially the roles of academic libraries especially with regard to the development of DLs.

> Digital libraries are an inevitable trend of library development in Vietnam, because of the requirements of society, which are about going forward to the digital environment and the development of technology. Society determines the value and roles of libraries for educational and economic development. (HB-Manager)

This recognition has been shown by the investment from governments and other organisations such as NGOs and the World Bank. The Manager of Hoa Binh Library stated that his library had invested a million dollars in the last decade for IT infrastructure and digital resources. As discussed in the literature review, academic, public, school and army libraries in Vietnam have had two busy decades implementing IT applications. The Manager of Ba Dinh Library stated that IT and the view of society had changed the face of the LIM field.

Human resource development and salary policies

In Vietnam, the salary of government employees is based on their seniority, that is, on the numbers of years as government employees. There are eight levels in the salary system. The minimum wage for government employees in 2012 was 1,050,000 VND (around $US50) per month. A graduate with a bachelor's degree starts his/her career at 2.34 points on the salary scale which is multiplied by 1,050,000 VND amounting to 2,457,000 VND (around $US122) per month. The level of salary is increased after two or three years until it reaches eight points. Employees have a seniority allowance based on their number of years working, but salary is still the major proportion of their income (GoV, 2012d). The official of Alpha Ministry said the negative effect of the salary policy on the LIM field was that almost all the income of LIM practitioners comes from salary. They do not have extra income so they struggle to live on their basic salary.

Four interviewed managers thought low income was one of the reasons the LIM field did not attract qualified people. Interviewees claimed that the salary did not encourage staff to work because it was based on the years of employment rather than their work quality or positions. The Manager of Kim Ma Library stated that the salary of new staff was always lower than a staff member who started work earlier, although new ones may have graduated from a well-known university with an excellent academic record and may be more competent than older staff. He continued, "in the LIM field the bonus allowance is very low when compared to other fields, so it is really hard to attract qualified people to work for this field." In a report on salaries in the public sector in 2012, the Ministry of Labour, Invalids and Social Affairs concluded that the salary for the public sector is inadequate. The report suggested the government needed to take action by reforming the policy in order to enhance the productivity and performance of public sector employees (Ministry of Labour Invalids and Social Affairs, 2012).

As discussed in Section 5.3, stakeholders frequently mentioned the issue of salaries. All LIM managers complained that librarians have low pay. Some new staff said they could not even pay their basic living expenses because their salary was so low. One staff member from Ba Dinh Library said:

> Unlike developed countries where LIM professionals can live on their salaries, and are proud of their profession, in Vietnam, a developing country, LIM practitioners struggle to earn a living and their salary is barely sufficient for their basic lives. Some people are ashamed to say they are working in a library. (BD-staff5)

The Manager of Ba Dinh Library explained the effects of the current salary policy:

> As you know, libraries are non-profit organisations. We do not have any extra income except the basic salary from government, which is very low. Librarians struggle with the financial issue. As a result, they have to find opportunities outside the library to compensate for the deficit which they have to pay for everyday life. Therefore, some staff do not work in libraries with their whole hearts. (BD-Manager)

A senior staff member said the lack of quality LIM staff in Vietnam is a direct result of the low pay for librarians. The effect of this policy was analysed in Chapter 5 and will be discussed in Chapter 8.

6.2.3 Viewpoints of stakeholders on government management

From the data, there appears to be a wide gap between government policies and actual practice in the LIM field. Most interviewees believed that although the government had policies for LIM development, government management was not strong enough for this development to succeed. As the Manager of Gia Lam Library said, "The management of the government is weak. We need to improve the relationship between the government and LIM associations" (the LIM associations are discussed in Section 6.2.4).

Though the interviewees discussed many facets of government management, in this section I focus only on issues that relate directly to the LIM field. They are the management of LIM curriculum development, the application of library software in the library system, the development of DL concepts and the lack of overall management in the development of digital collections.

With regard to the first issue, there was a common viewpoint from interviewees that the government was quite strict in governing the LIM curriculum. As indicated in Chapter 5, Beta Ministry controls the content of all educational programmes, and any effort to change the curriculum would be limited to around 20% of the total credits of the basic curriculum. If a university makes a change that exceeds the limit it has to create a new educational programme, which is a long and complex process. The Deans of Hoan Kiem, Long Bien, and Hoang Mai schools thought that the management restricted curriculum change. The Dean of Hoang Mai said that he had helped a LIM school develop a curriculum with many updated subjects in comparison to the basic curriculum, which was managed by Beta Ministry. However, the new curriculum was not accepted by Beta Ministry because it was different from the basic curriculum. As a result, the school had to modify its plans and follow the basic curriculum.

The regulations regarding curriculum management as outlined above have led to underhand strategies by LIM schools. The Thanh Xuan School wanted to change its curriculum and needed it to be approved. It decided to introduce new content using the

older subjects' names. In this way some schools reduce the time it takes for administrative formalities.

Three deans complained that the government ignored comments and suggestions about content for the basic curriculum. The two current LIM educational programmes which are managed by Beta Ministry were proposed by only one school, however these needed to be discussed by all LIM schools. When some schools provided critical analysis, the Ministry ignored it. The Dean of Hoang Mai School said "we [his school] sent our comments about the curriculum, but did not receive any feedback. Now we have to follow their curriculum. It is not fair." The Dean of Hoan Kiem School had the same view when she talked about the basic curriculum. She said it was not good that all LIM schools had to follow suggestions from one school without any negotiation. She continued "we really want to change the content of the curriculum."

The second issue is the application of library software in the libraries including public, academic, school libraries and information centres. As mentioned in the literature review, the library system in Vietnam has had two active decades of IT application. However, all participating managers pointed out that there had been a lack of coordination from the government. That was the fundamental role of the government, one manager said. The Manager of Gia Lam Library said each library could choose its own way of computerising its library management. "Every library thinks 'I am the best'" he said. The Chairman of Delta Association said the lack of cooperation in applying library software and technologies has led to a waste of resources, and there was no connectivity between libraries. He said that "if the government had provided good guidance on this issue, we could have done more and the picture of the LIM field would be better." The Manager of Gia Lam Library claimed the sharing of resources among libraries in the system was limited because they would not cooperate in terms of using library software, and they were not willing to share their resources. This issue is discussed in Section 5.1.5.

The third issue is developing the digital library concept. As I discussed in Chapter 5, stakeholders did not have a clear understanding about DLs and were not in agreement on DL concepts. Because of that, some managers and officials thought the government should take responsibility to develop a general DL concept for Vietnam. They argued that the DLs are being developed, but with the particular conditions in Vietnam the LIM field should have had some guiding concept of DLs for development.

The last issue is the lack of overall management in the development of digital collections which involves several sub-issues: lack of standards, poor budget control, and intellectual property concerns. All participating managers talked about the digitisation of information resources. However, some stakeholders wondered about the waste of human resources and money when all libraries are doing their own digitisation. A lecturer of Cau Giay School said about a public library: "I do not know why they digitise monograph documents even though many of them are of no value." He continued that the government should control this work. The Manager of Thanh Xuan Library, a university library, pointed out:

> All libraries are developing digital collections without any basic knowledge or direction. They do digitisation by following other libraries. They are digitising materials without a long term goal, and there are no standards for digital resources, no cooperation among libraries. I think we [the LIM profession] need guidelines and oversight from the government. (TX-Manager)

Some interviewees thought the government's investment in digitisation was ineffective. All participating managers confirmed that most budgets for digitisation came from the governments (local and central). The Chair of the Delta Association explained that in terms of the development of the LIM field, if all libraries could work together on digitisation, money and human resources would be saved. He held similar views to a lecturer of Cau Giay School, and managers of Tay Ho and Gia Lam libraries. He said:

> I think the government has to do more work on digital copyright. It helps if all publishers and libraries and information centres can work together to develop digital information resources. In my opinion, libraries do not need to digitise everything. Currently, all books and other publications are already in digital formats. If libraries and publishers cooperate, we can save a lot of money. The issue here is management by the government. If the government has firm laws about copyright, intellectual property and so on, I think everything will go very well. (DA-official)

He explained that law enforcement in Vietnam is poor. Some organisations have digital collections but won't publish online because they are afraid that other organisations or individuals will download their database without permission or payment. Some

organisations have invested money and human resources for digital collection development, while others just want to use them without contributing anything. He added that the publishers were not interested in the idea of cooperation in digital publications because if the breach of copyright were serious they would lose their benefits. “That situation prevents publishers publishing digital books”, he concluded.

It was clear that interviewees wished for effective policies from the government. They all thought that government should play an important role in the development of the LIM profession. Yet it appeared that the government’s management was not really effective as interviewees used words such as “hope”, “expect”, ”wish” and “should” when they talked about the government’s management.

Apart from indicating the weakness of the government in managing the LIM field, interviewees agreed that some government policies have had positive effects on the development of the LIM field. This could be seen from government policy which was discussed in Section 6.2.1. One of the policies was that the government encouraged all individuals and organisations to invest in the LIM field. The Dean of Hoan Kiem School and the Chair of Delta Association said the result of the policy was that many libraries had moved from traditional libraries to electronic libraries. The Chair said:

> We could not imagine that now readers can search and read books online. We can stay at home and search for necessary materials before coming to the library. In some cases we can read books online. This is a significant change for Vietnamese libraries. (DA-Official)

Another effective policy was giving priority for applying IT to all sectors of society. As discussed in Section 6.2.1, the government invested heavily in IT. Interviewees agreed that IT had changed the image of libraries. All managers confirmed that their libraries received money for IT applications from the government.

The third policy was the introduction of specific standards that libraries had to meet. One of the important requirements was that staff who work in libraries had to attend formal LIM education (MCST, 2008; MOET, 2003). The government now required all LIM staff to have attended formal LIM education; otherwise they could not keep their jobs. Nonetheless, the Dean of Cay Giay School said many LIM practitioners were working in libraries without LIM degrees. The policy, however, has led to increase numbers of part-

time students in LIM programmes. All deans confirmed that the numbers of LIM practitioners enrolled part-time in LIM educational programmes had grown sharply. The Dean of Hoan Kiem School emphasised that even if LIM practitioners already had LIM degrees, they needed to attend continuing education to keep up with modern LIM competencies.

Evaluating the roles of LIM government departments

There are two functional ministries managing the LIM field: Alpha Ministry and Beta Ministry. Although other ministries are also involved in managing library and information systems, these two ministries manage a large number of libraries in Vietnam and have a strong influence on the LIM field. The official from the Alpha Ministry explained the role of the ministry's LIM Department:

> This Department plays an important role in managing the LIM field. The Department acts as counsellor for the government. It helps the government to construct policies and develop strategies for the LIM field. One of the most important policies is for staff development. Developing human resources is a natural and important role of the Department because the human resource determines the success of all activities in the LIM field. The government emphasises that investment in the labour force has to meet the demands of development of the LIM field. (AM-Official)

Theoretically, the LIM Department plays an important role in the development of the LIM field, especially in staff development. However, interviewees claimed that the Department had not performed its role effectively. The Chairperson of the Delta Association claimed that the LIM Department did not have a strong influence on the development of the LIM field. It had done little in terms of advising the government to release effective strategies for the development of the LIM field, even though it was officially responsible for doing so. The Chairperson explained that because each library or information centre system belonged to a functional ministry or a province and the budget for running the organisation came from the ministry or province, it was really hard for the LIM Department to influence those libraries and information centres for which it does not provide funding.

The Manager of Hoa Binh Library said another reason for the weak management of the LIM Department is the quality of officials. According to him, staff in the LIM department lack leadership abilities and do not clearly understand the LIM field. As a result, they do not have good ideas for long-term development. The Director of the LIM department in the Alpha Ministry, confirming this issue, said "if we had qualified staff we could work more effectively in developing strategies for the LIM field."

6.2.4 Evaluating roles of LIM associations

LIM associations play an important role in developing the quality of LIM practitioners. In foundational research on LIM professional association's roles, Yungmeyer (1983) pointed out that professional associations demonstrate their interests in education in the LIM field in many ways such as organising conferences and meetings, sponsorship, providing continuing education opportunities, and developing and adopting standards for professional education. Thomas, Satpathi and Satpathi (2010) observed that library associations play an important role in preparing professionals to face the challenge offered by emerging technologies.

There are two professional associations in the LIM field in Vietnam. The Chairpersons of Gamma and Delta Associations said that most libraries and information centres are members of these associations. The Chairperson of the Delta Association stated that the key role of the Association was to develop the professional careers of LIM practitioners by identifying the educational needs of members, and by introducing standards of competence for LIM practitioners. A similar statement on the roles of LIM associations was made by the Chairperson of the Gamma Association.

There was an overlap between the roles of the two associations and also between these associations and the LIM Department. All of them stated they had similar missions such as developing the professional careers of LIM practitioners and helping libraries and information centres in terms of organisational and staff development. The two LIM associations have achieved some positive results for the LIM field. According to their Chairpersons the results are:

- Organising some conferences and workshops,
- Working with libraries and information centres to develop library standards for the LIM field,

- Organising some continuing education short courses for LIM practitioners, and
- Publishing two LIM journals (one per association).

The Chairperson of Gamma Association stated that the Association needed to work intensively with libraries and information centres to develop the competence of LIM practitioners. However, the Association has a limited role in developing professional careers for LIM practitioners. The Chairperson of Delta Association also confirmed that his Association had very little success in developing LIM practitioners' competence due to the lack of cooperation among LIM associations, libraries and LIM schools (as was discussed in Section 5.1.5). He said "in the future we have to work with libraries and LIM schools to address the competence of LIM practitioners."

The Chairperson of Gamma Association pointed out that his Association had a role as a consultant in LIM development. He said when someone introduced a new technology into the LIM field, the Association's role was to examine the practicability of the technology, and then circulate this to all Association members. The next steps were for the Association to organise conferences and workshops, and collect comments from professionals on the technology. Based on this assessment the Association would advise whether or not the technology should be applied in the LIM field. The Association would then apply to the government for approval to introduce the technology. He added, for educating LIM practitioners, the Association followed the same steps in order to find out the core competencies. He concluded:

> The roles of the professional association are to foster new ideas. We survey and observe the LIM profession then make suggestions. It is not like a person putting forward new ideas that just appeared in his mind last night. The idea needs to be assessed and reviewed to be sure it meets the demands of practice. The role of this Association is to broker agreement in the LIM field about the new idea. (GA-Official)

Managers, deans and senior LIM practitioners had the view that the role of LIM associations should be visible in the LIM field in terms of professional development. However, the effect of these associations on the LIM field is not obvious. Some LIM managers thought that the associations have contributed little to the LIM field. In some

cases, big libraries have had a stronger influence on the LIM field than the associations in terms of introducing technologies, organising continuing education courses and leading professional competencies.

6.3 Social and cultural values

Early in Chapter 2, Saracevic and Dalbello (2001) and Myburgh and Tammaro (2013) identified social and cultural issues as important aspects of the development of DLE. Social and cultural values were covered in more detail in Chapter 3 during the discussion that led to the development of the original model. This section explores three aspects of the effect of social and cultural values: (1) stakeholder beliefs with regard to education; (2) the view of the LIM field held by society and by LIM stakeholders; and (3) power distance in the LIM field and Vietnamese society.

6.3.1 Stakeholder beliefs with regard to education

The data analysis shows that LIM practitioners thought that education is a crucial tool for professional and personal development. However, stakeholders believed that having a degree is more important than acquiring knowledge.

In Sections 5.1 and 5.2 I identified the DLE need from practitioners. Almost all LIM practitioners stated that they wanted new knowledge and skills related to IT and DLE because competencies in these areas were important for their professional development in the digital era. Some key stakeholders were sceptical of the reasons behind some practitioners' desire to obtain new skills. These stakeholders claimed that LIM practitioners attended educational programmes because they wanted to get certificates or degrees rather than through a desire to obtain new knowledge. This scepticism seemed to be born out by practitioner preferences for official education programmes which offered certificates. As a senior librarian said, "we normally want to attend educational programmes which offer authorised certificates" (GL-staff3). The Dean of Hoan Kiem School shared her experience in introducing education programmes to LIM practitioners:

> In my experience, most of the demand for continuing education programmes from LIM practitioners is because they want a certificate. We have tried to introduce some single subjects focused on specific DL competencies [they cannot issue a

> certificate for a single subject], but the LIM practitioners are not really interested. (HK-Dean)

She concluded that LIM practitioners really wanted to update their knowledge. In order to meet the need, however, LIM schools had to design educational programmes that can issue certificates or degrees.

The Manager of Dong Da Library stated that many staff wanted to get higher degrees because of promotion opportunities rather than their professional development. She recognised that some staff were unwilling to take short courses which would train them in necessary skills and knowledge, preferring instead to attend formal educational programmes simply to get degrees (e.g. Masters, PhD) which took a long time to complete, were mostly focused on theory, and of course, were costly. The Manager of Hoa Binh Library commented "there was the potential for the outcome of learning to be of little value to the library because what staff learn from higher degrees might not be practically applied in their current work".

The Ba Dinh Library manager explained one of the reasons for staff to focus on degrees is that because in Vietnam, authorities, especially in the public area, use certificates and degrees to employ and promote rather than using the knowledge and skills of employees. He said that in job interviews that some candidates had very good competencies for working in the library, however, because criteria stated clearly that candidates must have certificates or degrees related to LIM, he could not employ them.

The perspectives of some LIM students were also a cause for concern. Answering the question "*why did you choose the LIM school for your study?"* a student replied:

> Actually I had not enough marks [in the entrance exam] to study in my favourite school, so I had to choose this LIM school. My parents cannot accept the fact that their son failed the entrance exam and would not become a student [in the preferred school]. (KM-Student2)

Sharing his plan, the student said "To be honest, I do not have much motivation to study, but I will try to complete the major. I am not sure whether or not I will work in this field". The Alpha Ministry official said that going to universities without a direction or an objective is a problem of higher education in Vietnam. He stated "focusing on a degree

rather than knowledge might be affected by Confucianism in which people are educated heavily on behaviour and lightly on knowledge. Having a university degree is more important than becoming a skilled worker". The Beta Ministry official confirmed "recent government reports show that we lack skilled professionals but have too many university graduates having theory only". He continued: "You can see the statement 'politeness should be learnt first, before knowledge' in everything. I think we have to change our educational philosophy."

In summary, though LIM practitioners believed that education is important for their profession, they believe that having an authorised LIM certificate or degree has a higher priority. LIM students too are studying primarily to get a degree, with some of them choosing LIM because they did not achieve the standard needed to get into their preferred programmes. Some of the stakeholder attitudes toward education might be explained by the influence of Confucianism, a major ideology in Vietnam.

6.3.2 Vietnamese society's view of the LIM field

This section examines how the LIM field is regarded within Vietnamese society. I have drawn on documentary evidence, and have used data from the interviewees about the views of people who work inside and outside the LIM field, regarding the LIM field's roles in educational, economic and cultural development.

In an article in the *Vietnam Library Journal* an official of the Beta Ministry who works for a department that supervises universities made a positive comment, claiming that the library is an important element of a university (B. N. Vu, 2009). She stated that the teaching and learning activities should be developed around the library:

> It is time for the library to become the pride of the university. It is the centre of all activities in the university. We cannot change and develop the national education system to international levels without significant change and deep reform in the academic libraries. They have to become an important criterion in verifying and evaluating universities in Vietnam. (B. N.Vu, 2009)

The Manager of Hoa Binh Library supported the above view, providing evidence of society's interest in the LIM field. He said the library system had, in recent years, been given a significant budget for developing infrastructure and enhancing libraries'

capacities. “I can see the government and society have changed their views on the LIM field. Budgets for libraries have been increased. Libraries are now the heart of universities.”

However, although there is a high expectation from society in terms of the role and the contribution of libraries to national development, the capacity of libraries, especially the academic library system, still does not meet the demands of university development nor the demands of national education development. The report of MOET in 2010 showed a negative image of academic libraries:

> The libraries have poor resources. The information resources in libraries do not meet the demands of information users in terms of quality and quantity. The teaching methods mostly focus on theory rather than on practice and are based on teacher-centred methods. As a result the ability of self-study among students is not good. Libraries have to play an important role in changing education. (MOET, 2010c)

The Chairperson of the Gamma Association shared his experience about the viewpoint of society on the LIM field, and explained why libraries and information centres still do not meet the demands of society. He said:

> The LIM field plays an important role in community and social development. In theory, people said information resources were very important for the development of the nation. However, the fact is different. In our society, I can see that although people do not use LIM organisations, they still complete their tasks at organisations or universities. The say they can be successful without using information from the LIM organisations. (GA-Official)

He continued that one of the roles of LIM associations was to heighten public awareness of the value of LIM organisations. The Manager of Kim Ma Library commented on the attitude of one professor about using the library. The professor had said he and his students did not need to use materials in the library and could still complete their teaching and learning tasks. The Manager concluded, “we have to change this attitude. However, it is a difficult mission because it involves many stakeholders including the government, universities, libraries and lecturers.” A LIM practitioner stated:

> We have to carry out reform in education. In particular, we have to change our current teaching methods and learning styles so that they require the active and creative participation of teachers and students. To do that, we have to have effective libraries, otherwise it is very hard to change the current teaching and learning methods. (KM-Staff2)

Pointing out reasons why people do not use much information from LIM organisations, the Chairperson of the Gamma Association addressed the following issues. First, this was because of the ways people study, teach and do research in universities and other institutions. People could work with limited information resources. He said:

> For example, when someone is doing research, he first has to explore whether the topic has been done or not, or who has done similar work, or at least he has to have an adequate list of references. In fact, however, he implements his research without doing this step. People said they are still successful without using information resources from the LIM organisation. (GA-Official)

Some academic library managers said that a similar situation exists because of teacher-centred methods which are still popular in universities in Vietnam. As a result, students just used course books that lecturers gave them, and repeated what they learned from the book in the final exams in order to pass the exams.

The second reason is that the information resources held in LIM organisations are poor in terms of quality and quantity. They do not meet the demands of information users. As a result, people cannot rely on information resources in LIM organisations. A lecturer from Hoan Kiem School said she normally had to buy books for her work, and sometimes asked for help from overseas friends. A manager said that academic libraries had introduced some international data resources, but they bought limited access databases rather than a full database. Therefore, this resource could not fully meet customer needs.

There was an attitude that libraries were organisations which did not need skilled staff. This could be seen at all levels of government management. The Vice-Director of Gia Lam Library claimed that leaders still thought that people who worked in libraries were not qualified staff and that people did not need to have a LIM education to work in libraries because they could learn after being employed.

This viewpoint also appeared in the top level of leadership in government. A statement made by a Vice-Director of a MOET department raised a formidable reaction from the LIM community. He said in an interview about enhancing the quality of teachers that if teachers did not meet the required standards, MOET would ask them to be school drummers (to beat drums at schools to remind teachers and students of the time to start and finish a learning session) or librarians. A LIM practitioner commented that this perception would destroy the LIM field. Another LIM practitioner was disappointed with the viewpoint of the Vice-Director, and he said people who work in libraries have to be educated in LIM competencies. If the top leadership holds this view, the LIM field would not have a bright future, the librarian commented. The Director of a public library reported on comments made by its governing department Director about human resource management. The LIM Manager said:

> It is so disappointing; the Director looks at our library as a rubbish bin. People who cannot work will be sent to our organisation. Those people all the time like to chat and gossip. They hold Bachelor's degrees but do not have any knowledge about LIM science. They are not willing to undertake tasks that they have to do in the library. (CC-Manager)

Another perception was that LIM career was mostly suitable for women. A senior practitioner observed that "people still think this job is suitable only for women, and the fact is that the number of women is much greater than of men" (GL-Staff4). The official of Alpha Ministry explained that the reason for this view was that the general image of a librarian's job was that it consisted of keeping books and allowing readers to borrow them; it was not a busy and hard job. For many library employees, having a job in a library means they have more time to do other work outside the library. She pointed out that "in Vietnamese culture women still take the main responsibility for housework. So people think a librarian's job is good for women" (AM-Official). The issue of the majority of staff in LIM being women was examined in Section 5.3.

The views discussed above show the need to change society's perceptions about the LIM field. The Director of the LIM Department at the Alpha Ministry said that the image of people who work in the LIM field has been changing in society and the role of LIM organisations was being acknowledged. She believed, however, that it was necessary for

the LIM field to get people in society to understand more about the role of LIM organisations as well as LIM practitioners. The Director shared her experience:

> For developing the image of the LIM field in society, I recently mobilised all the resources from LIM organisations, government departments, and people to develop a "reading culture" for Vietnamese people. The society emphasises education, but people do not like reading. It is very surprising. I organised some communication campaigns and marketing for the national reading days. Many national and international media broadcasted the campaigns. The effect was very good and it spread through the whole community. (AM-Official)

From the data analysis, it can be seen that society still does not have a real respect for people who work in the LIM field, although LIM organisations play an important role in educational and cultural developments. LIM practitioners recognise that they have to take action to change the attitude of society. LIM practitioners who are knowledgeable in technology and have digital competence would improve the image of librarians. In addition, LIM practitioners needed to make an effort to change their image. The effects of these views on the development of the LIM field and DLE as well as the investment and policies for the field are discussed further in Chapter 8.

6.3.3 Power distance

According to Hofstede (2001, pp. 83, 97, 102), power distance (PD) is the degree of inequality which exists and is accepted by the less powerful members of a group, organisation, institution or society. He found that in a high PD workplace, employees perceive managers as less approachable, communication flows downward and respect upward, while in a low PD workplace, employees perceive managers as peers and are more willing to share ideas.

At the organisational level, I found that the PD was high because LIM practitioners normally kept a distance from their managers in terms of proposing their personal needs. During the interviews LIM practitioners expressed their educational needs as well as personal development goals by using words such as "wish" and "hope". They said everything depended on their organisation's plans. I also experienced the power of managers in the way they managed their organisations. They used phrases such as "I

require", and "they have to", indicating a high level of PD which might discourage LIM practitioners from stating their educational needs.

At the national level, in terms of government management, the PD between levels of management in the governmental system was also a barrier to DLE development, especially between the Beta Ministry and LIM schools. LIM schools had to follow the guidance of the Ministry with very little feedback going upward. This limited the confidence and creativity of LIM schools in making changes in their educational programmes. Deans complained about the strict governance in curriculum development. For example, two schools had to change their new curricula to follow the core curricula of Beta Ministry. I found that the LIM schools hesitated to propose any changes to the Ministry, ending up choosing a compromise where they introduced only slight changes into their curriculum.

6.4. Conclusion

As discussed in this chapter, a variety of external factors have affected the development of the LIM field and thus the development of DLs and DLE. Though some factors have been enablers, others have hindered development.

The establishment of an ICT infrastructure in Vietnam has led to substantially positive results. Internet uptake has been relatively high and has opened opportunities for Vietnamese society to access online services and use digital information resources. These developments have prompted libraries to develop new services and resources for the online environment. The level of development, however, has varied across types of libraries, and funding has focussed on technology at the expense of staff development leading to minimal benefits for library users. Thus, the infrastructure development has created opportunities and benefits, but it also has brought challenges for the development of the LIM field as well as DLE.

In terms of its policies and management, the government of Vietnam has introduced national projects and policies which prioritise the development of education (particularly, higher education) and technology. Because the LIM field has a close relationship with education and technology, it is affected by their development. However, stakeholders

identified issues related to government management of the LIM field which highlight gaps between policies and practice.

The two LIM associations in Vietnam should be playing important roles in professional education, however, the data show that their responsibilities were overlapping not only with each other but also with the LIM Department. And, while the Chairs of these associations identified some of their accomplishments, other stakeholders felt that the associations' efforts were often unsuccessful and their impact was not obvious. Thus the associations appeared to have made few contributions to the LIM field that were supportive of DLE development.

Social and cultural values were shown to have impacted negatively on LIM education and DLE development. LIM practitioners were perceived to place less importance on the knowledge gained than the certificate or degree obtained in academic programmes or professional development courses. In addition, LIM was not the first choice of many students in LIM schools leading to low motivation. Thus the learning opportunities for practitioners and students resulted in little benefit to libraries. As for the broader society, there is little recognition of the importance of LIM field and there is a generally held view that libraries do not need qualified staff and are places with jobs that are suitable for women. And finally, there is a high degree of power distance in Vietnam within organisations such as libraries, and between the relevant government ministry and LIM schools. This dimension of Vietnamese cultural characteristics has led to top down approaches in educational decision-making, ranging from individual staff members' professional development opportunities to the LIM schools' prospects for curriculum development.

This chapter has identified three external factors affecting DLE development in Vietnam: C*IT infrastructure; the government's policies, laws, funding and management; and social and cultural values*. The effects of these factors on DLE development are discussed in Chapter 8.

Chapter 7 Change agents

"Good ideas are not adopted automatically. They must be driven into practice with courageous patience"

Hyman Rickover (1900 - 1986)

According to Rogers (2003) change agents start a process of change and push it through the change process. Using the change agent concept of Rogers and based on data from the interviews and documentary evidence, in this chapter I identify key change agents and their roles in the development and adoption of DLE in Vietnam and I explore the factors that affected their efforts.

While conducting the interviews and analysing the data, I found that some stakeholders had achieved significant results, while others were still struggling to convince the LIM community to adopt DLs let alone DLE. Despite the concerted efforts of these stakeholders, in general, the concepts of DLs and DLE were still not thoroughly understood in the LIM field. This disparity in outcomes led me to examine the specific situation of change agents in the development of DLE as well as DLs. Through this focus on change agents I am able to provide a clearer insight into the factors affecting DLE development.

7.1 Defining change agents in the LIM field

In the change process of LIM education development in Vietnam, DLE in this study is considered to be an innovation in the transition phase, that is, between the initiation and implementation phases. Therefore, change agents in DLE development might not have undertaken all seven roles identified by Rogers (2003) (see Section 3.1.4). In addition, because the Vietnamese environment has its own culture and politics (examined in Sections 6.2 and 6.3), I had to take these into consideration to determine what, if any, impact they had on the roles, characteristics and efforts of the change agents in the DLE adoption process.

In Vietnam, from the early of 2000s, there has been significant development of DLs in terms of computerising the management of libraries (T.K.D. Phan, 2014; H.M. Nguyen, 2014). LIM managers of Gia Lam and Tay Ho libraries commented that this development was led by some prominent libraries, information centres, IT companies and individual experts. These organisations initiated the most eventful period of automation and application of IT in the LIM field in Vietnam. Many new technical standards and software in LIM for libraries were introduced. Data in Chapters 5 and 6 indicate that the development of DLs has led to the need for digital librarians.

This need then has required LIM schools, as educational providers, to develop DLE programmes. This chapter looks at change agents in both the *LIM profession* and *LIM education*. The term *LIM field* is used when I refer to both of these areas. I also consider a change agency (or change organisation) to be an important element of DLE development. According to Rogers (2003), a change agency is usually an organisation made up of individuals who have higher level university degrees or are experts in the field in which an innovation is being diffused. In my research, I use the term change agency to refer to an organisation in which DLs or DLE programmes have been introduced and developed and which also have made efforts to influence other organisations to follow suit.

In the following sections I explore change organisations and examine the characteristics and roles of change agents.

7.2 Change organisations

Based on the data, I identified a change organisation (for example a library or information centre) as one that had: (1) a good reputation as a leader in technology applications and DL development, or in educational changes in LIM schools; (2) a strong influence in the LIM community; and (3) highly qualified staff. A change organisation was also an organisation that cooperated with individual change agents to develop DLs and DLE in the LIM community.

7.2.1 Libraries as change organisations

One of the most influential LIM organisations in my research was Tay Ho Library which had a very good reputation for being a leader in introducing new IT. It had introduced a

sample digital library, and the first online database in Vietnam. It also organised some national and international conferences on DLs. The digital library topic has been more widely discussed in Vietnam since these conferences. This organisation introduced some short DLE programmes for practitioners and lecturers in Vietnam. It also cooperated with some LIM schools and IT organisations in providing short DL courses for practitioners. Some LIM schools sent their lecturers to these courses. In their interviews, three deans identified Tay Ho as a leading library in terms of applying new technologies, digital library applications, standards for libraries and professional training.

Another example of a change organisation was the Kim Ma Library which was recognised as a successful library in developing IT systems and building digital resources. This library also introduced some short courses which focused on DLs for LIM practitioners. These courses were organised as practical workshops which, although they were limited to introducing the general concept and understanding of DLs to LIM practitioners, succeeded in raising an awareness of DLs and improving digital competencies among LIM practitioners. A LIM practitioner in the Gia Lam Library said, "I attended one workshop for building a digital library. This was the first time I joined an official programme, and it helped me to have a good understanding of DLs as well as the requirements for a digital librarian." The contribution of Kim Ma Library to LIM education was recognised both by LIM schools and libraries. The Dean of Hoang Mai School, for example, said the Kim Ma Library made a significant contribution to the introduction of DLs in Vietnam.

The data show these change organisations had a strong influence on other organisations. The influence of a change agency was measured by its position in the LIM field and its success in applying IT. The LIM practitioners and LIM organisations tended to pay attention to the ideas of the big libraries or information centres. In particular, the Chairperson of Delta Association stated if an organisation has been successful in applying new technologies, and it is a leading organisation, its "voice" in the LIM community would be powerful, and its influence would likely spread through the community. In the study, Tay Ho and Dong Da libraries were typical LIM change agencies of in Vietnam. Both of these organisations are highly prominent among Vietnam's libraries. One is an information centre and the other is a public library. What they did in regard to automation

for their own libraries was carefully watched by other libraries. The Dean of Hoang Mai School said:

> The library [Tay Ho] plays a role as a leader in applying new technology. Other organisations such as libraries and information centres are watching the library in applying and running new technology, software or standards. If it succeeds, they will follow. (Dean-HM)

Some libraries in my research were successful in implementing IT applications, but they were not recognised as change agencies because their voice was not strong in the library community. These libraries appeared to focus only on developing their internal system rather than trying to deliver the ideas behind it to other libraries. As a result, they were known as successful libraries in implementing IT but not as influencers of other libraries. Hoa Binh Library, for example, was recognised as a library with a modern IT system; however, none of the interviewees mentioned it as a leading organisation when I asked them which libraries had the greatest influence in the Vietnamese LIM community.

The third and possibly most important factor helping organisations adopt innovations and become change agencies is having highly qualified staff. The two managers of the leading libraries reflected that they could not develop any idea or project w appropriately qualified staff. The manager of Kim Ma Library said he was lucky because he had very active staff who were experts in the LIM field. The manager could implement IT projects because of his staff. He said:

> We need qualified staff. As a manager, if you want to do something, you need the support from your staff. If you do not have qualified staff, you cannot do anything for the organisation's development. Around 50 percent of our staff were educated overseas. Others also attended some courses which were taught by foreign professionals … . I feel confident when implementing a project because of my qualified staff. (KM-Manager)

The Tay Ho Library provided further evidence for the importance of qualified staff for change agencies. Its manager stated that he made a conscious effort to enhance the quality of staff in order to foster digital developments in his library. He said "going forward to the digital age needs to start from human resources."

7.2.2 LIM schools as change organisations

Based on the criteria for change agencies, two LIM schools were identified as leading educational change organisations. Hoan Kiem and Thanh Xuan schools had updated their education programmes by adding more IT and DL subjects, and were influential in terms of other LIM schools' curricula development.

The Hoan Kiem School has more than 35 years' experience in LIM education. The school had been working on a project for changing its curriculum in terms of structure, subjects and teaching methods since early 2000s. One of the most significant changes in its curriculum was adding technological and DL subjects, and removing out-dated subjects. The Dean explained that to prepare for the change, the school organised some conferences and workshops to which it then invited well-known lecturers, senior LIM practitioners, researchers and managers from other schools and libraries to discuss the perceived need for competent LIM practitioners at the current time as well as in the near future.

For making changes to its curriculum, the school had to prepare its staff. This school has the biggest number of academic staff in comparison with other schools. The Dean confirmed the school sent six lecturers to study overseas. She stated, "sending staff overseas is a good way to help the school move to the future and reach the level of education in other countries." She concluded that for changing or developing the curriculum, having qualified staff was the most important element.

The outcome of the project made a significant impact in LIM education. The Chairperson of Gamma Association, who had cooperated with the school in developing the curriculum, made the following observation:

> From the viewpoint of a professional association we see that Hoan Kiem School is one of the schools that has contributed highly to LIM education. They are leading the way in adding new knowledge and technological skills for digital libraries for LIM practitioners. (GA-Official)

Further evidence of the influence of Hoan Kiem School in promoting change was the fact that its new curriculum was being used by other institutions. The Dean said her school "helped two colleges and one university to establish education programmes."

The second case is Thanh Xuan School which is one of newest schools in LIM education; however, it has made significant contributions to LIM education in terms of developing a modern LIM curriculum. It is highly focused on IT and digital competencies and the foreign language ability of LIM practitioners. The school's Dean shared her viewpoint on developing curricula. She stated:

> The LIM field is now moving to a digital age; therefore, LIM practitioners need to be educated to be able to work in the digital environment. The development of technology, the Internet and digital resources requires LIM practitioners to have knowledge and skills of IT and digital competencies. (TX-Dean)

As outlined in Section 5.2.4, the number of subjects with content related to DLs in the curriculum of this school was 42% of total credits. It was the highest number in comparison with other schools.

To educate LIM practitioners with a modern and updated curriculum, the school invited academics from overseas to develop the programme. Perhaps as a result of this, the objectives and educational content of the curriculum was quite different from other LIM schools. It aimed to educate LIM students to work in modern libraries strongly involved in IT. For running this curriculum, besides developing its staff's qualifications, the school recruited lecturers from the School of Computer Science and senior LIM practitioners from libraries.

The contribution of this school was raising the awareness of emphasising digital competencies in the education of LIM practitioners. The Dean of Hoang Mai School made this comment on the effect on LIM education of Thanh Xuan School:

> Although the outcome of the educational programme of the School is still being debated and some educators do not agree with the curriculum, the approach of this school in terms of the method of developing its curriculum [i.e., inviting overseas academics] and the viewpoint on competencies for LIM practitioners has impacted on the development of curricula in other schools. We have already added some DL subjects into our curricula. It is the trend of LIM education. (HM-Dean)

I found that the perspective of the Thanh Xuan School that LIM practitioners' competencies should focus on IT, DLs and foreign languages coincided with the

viewpoint of the Manager of Kim Ma Library which was also considered a change organisation in the LIM field. These organisations together had a big impact on LIM education as well as on the wider LIM community.

7.2.3 Information technology companies as change organisations

Some managers and senior staff said that for DLE development in Vietnam it is necessary for libraries and information centres to cooperate with technology companies outside the LIM field to deliver ideas or concepts around DLE. The IT companies were also mentioned by interviewees as being influential in the development of automation in libraries and DLs in Vietnam.

In Vietnam IT companies such as CMC, Tinh Van and Lac Viet have been involved in DL development. They have worked in conjunction with leading libraries to develop library software and IT standards for libraries. The IT companies have also cooperated with libraries to train staff to work in modern libraries. For example, CMC worked with the public library system to conduct workshops for LIM practitioners which focused on library software, technologies in libraries and developing digital resources (GA- Official).

The chairpersons of the library associations and some LIM managers pointed out that, through the development of automated systems and then other digital technologies for libraries, the IT companies have fostered the development of DLs. A former director of Dong Da Library, for example, emphasised that if a library needed a comprehensive technology solution, it needed a professional IT company. The Manager of the Tay Ho Library went further, stating that

> IT companies such as ICT play a role as a technology leader. If the company invests money and resources in research and developing new standards and new advanced technologies for digital library software and produces good software, the libraries will use their solution. (TH-Manager)

Similarly, the Chair of the Delta Association said “obviously, IT companies have been involved in the development of the LIM field. They introduce new technologies and automated solutions to libraries. Library systems have changed significantly in the last decade.”

The development by the ICT companies of these new technologies and automated solutions for libraries has led to the need for qualified staff, as was indicated by the official of Beta Ministry. He stated that as a result of using more computers, libraries are changing and "as a result, there is a pressing need for digital librarians who can work in the modern digital environment." As can be seen from the official's comments, the technologies that were being introduced into libraries have required new competencies for LIM practitioners.

7.3 Change agents

This section examines characteristics and roles of change agents, and explores factors affecting their success in promoting the adoption of DLE.

7.3.1 Change agent characteristics

Through my examination of the data, I found that change agents have played an important role in the development of DLs and DLE in the LIM field. I found in the context of DLE development in Vietnam, a change agent was: (1) an active person who was always looking for new and better ways of doing things; (2) well-known as an expert in the LIM field; and, importantly (3) was an active leader.

The Manager of Tay Ho Library fit the above criteria very well. During his interview, he discussed his background as a researcher and mentioned he liked to discover new technology to apply in his work. He explained that when he was promoted to a managerial position, he was always looking for and subsequently introducing new technologies and standards that would help his organisation to enhance its services. He then tried to demonstrate the success of his organisation to other organisations. With his efforts and those of his organisation, library software and some standards for digital formats and online databases were accepted widely by the LIM community. The Dean of Hoan Kiem School commented on the Tay Ho Library Manager's contribution, saying, "He is a leader. He and his organisation have introduced many new technologies to the LIM field."

Another change agent was the Manager of Ha Dong Library. He also was a visiting lecturer at LIM schools. He was recognised as an active professional who advocated for the development of DLs. He organised some workshops on DLs for LIM practitioners including one in which he trained LIM practitioners to use DSpace and Greenstone

software to build DLs and digital collections. His library was one of the first in Vietnam to apply IT in management. He commented that he faced many challenges when moving his library from a traditional to a modern computerised library. He said that when introducing the concept of DLs:

> I faced challenges from outside and inside our organisation. From outside, many LIM professionals said I was a crazy man who is doing an unreal thing. From inside our organisation, I had to convince the Rector to support my work, and encourage my staff to follow me in the "revolution". It took time for us to develop a modern library, but now we can be proud of what we have done. Many libraries visit and ask for advice. I have done many workshops which focus on digital libraries and digital resources. (HD-Manager)

Three managers and two senior LIM practitioners agreed that the Ha Dong Library Manager was an active leader in delivering DLs. The Manager advocated for the introduction of DLs to the LIM field. I found that although his library was not yet a digital library, it played a significant role in bringing DL concepts to the LIM field.

In my research I discovered that stakeholders who played a role as change agents needed to be well-known in the LIM community. I found the Managers of Tay Ho and Kim Ma libraries achieved some positive results in delivering their ideas related to DLs to the LIM community. Their libraries were also change organisations. They were known as active leaders in developing DLs. Their organisations developed a basic IT infrastructure for DLs, and they also led others in using ICTs. The Associate Dean of Cau Giay School provided detailed knowledge about the Kim Ma Library Manager, commenting that he is a successful manager who was educated overseas. He noted that this person is self-motivated and creative, but he is not a librarian. He said the Manager worked as a lecturer before managing the library and he has very good general knowledge. More importantly, the Associate Dean said the Kim Ma Library Manager knows what the library needs and doesn't need, and he has a long term development plan to lead his library into the digital age. He pointed out that the Manager is comfortable with technology, has worked with technical experts to identify suitable technology to fit the needs of his library, and is active in finding the necessary budgets for DL projects.

A senior lecturer from Hoan Mai School gave his view of the Tay Ho Library Manager:

> What I can see from the LIM field, he is a manager who is active in delivering new technology, he expects to change the condition of the LIM field. The manager found opportunities to convince top leaders to approve his DL projects by providing them with sufficient evidence. Many lecturers in our school attended digital library workshops which were organised by his organisation. (HM-lecturer5)

The Dean of Hoan Kiem School was recognised as one of the change agents in LIM education. The school was an active educational institution in updating and changing its curriculum. As shown in Chapter 5 in the analysis of Hoan Kiem School's curriculum, the number of credits for DL subjects stood as the second highest of all subject areas. This school was the only one which had its own computer lab for LIM students to practice in. The Dean stated "LIM education has to change to meet the need from the LIM profession. We have achieved some results, but we need to work more to change our curriculum to meet the needs of the digital age." She received the support from the Rector and staff in changing the school's educational programme. The Hoa Binh Library Manager and the Chairperson of the Gamma Association who had cooperated with the school agreed that she was an active leader in updating and changing the educational content for LIM practitioners. The Chairperson said the Dean listened and was willing to talk with LIM professionals about developing the curriculum.

In the interview data, people believed a change agent had to have a leadership role in order to influence the change process. I found that when a change agent wanted to influence or make a change in the LIM field, he or she needed to have the power to make a decision for change – in other words, this person needed to be a manager. When asking the Dong Da Library Manager about who could influence change in the LIM field, without a moment's hesitation she said "she/he should be a leader," by which she meant that this person should be a manager.

The three examples discussed above demonstrate that the three change agents, i.e., the Tay Ho Library Manager, the Dean of Hoan Kiem School, and the Dong Da Library Manager, were active in managing their organisations. In their positions they had the opportunity to make decisions to apply new technology to the LIM field. They also had opportunities to lobby and convince the top leaders, such as the rectors and officials who worked in the government departments, to approve their projects.

Among the participants in this research, there was an example of an active stakeholder who was not a change agent. A senior lecturer of Long Bien School who taught DL subjects tried to exert influence to increase the amount of content related to DLs in the programme in which she taught. She said, "I asked our school to increase the number of credits of DL subjects, but the school did not approve. I hoped decision makers would recognise the importance of DLs in the curriculum." As can be seen, the senior lecturer was unable to influence the decision makers, and because she was not a manager herself, she was unable to bring about change in her school. This example shows that when a stakeholder did not have managerial authority, she or he was unlikely to influence the development of DLE or LIM education.

7.3.2 Change agent roles

Though Rogers (2003) contended that change agents played seven different roles in the adoption process, the roles spanned from the beginning to the end of a project. As noted earlier, the development of DLE in Vietnam is in the transition phase which sits between the initiation and implementation phases. Therefore, in the context of DLE implementation in Vietnam, I found that only three of the seven change agents' roles were applicable. These were: (1) to understand the current issues/situation (or problem) of the LIM field; (2) to explore and prompt educational needs for DLE; and (3) to advocate and try to initiate efforts for change in LIM education.

Understanding the current issues/situation (or problem) of the LIM field

Rogers (2003) pointed out that analysing the client's problem and understanding their situation are roles of change agents. Thus, an important role of the change agents in my research was to examine and understand the environment in which DLE as an innovation would be adopted. The data show that the change agents took action to explore the situation of the LIM field in Vietnam. The Director of Delta Ministry shared his thoughts on a project which aimed to enhance the capacity of academic libraries. He said that by talking with LIM managers he identified the low quality of LIM practitioners as a key issue restricting the capacity of libraries. He said he then convinced library managers to enhance the competence of librarians by giving opportunities for staff to take courses in IT and DLs. He also said that understanding the current environment of the LIM field and adapting DLs were special roles for leading stakeholders. He said:

> We cannot bring an innovation into our environment without examining it. We have a particular condition in terms of culture, economics, policies, and infrastructure. For DL development, we must understand the current conditions of the LIM field, examine the actual needs, and then develop a DL concept for this specific environment. I have experienced many projects that failed because the initiators did not understand the contextual environment. (DM-Official)

Change agents in LIM education also understood current issues in the LIM field when developing an educational programme. The Dean of Hoan Kiem School confirmed the school had made efforts to discover the actual needs and to examine the condition of the LIM field before updating DL subjects into its current educational programme. She said:

> I understand that there are needs for DLE from LIM practitioners. However, as an educational provider, our school examined the level of needs, and the condition of the Vietnamese libraries. These actions have helped our school know why the current educational programmes do not meet the needs of the LIM profession, and what challenges might restrict LIM practitioners' needs in enhancing their competence. (HK-Dean)

The Dean also shared that the school did not try to meet all of the requirements in the curriculum, rather it worked with LIM professionals to clarify the needs in terms of which ones to give the highest priority and which to leave for the future.

The Gamma Association's Chairperson agreed that one of the most important roles of educational providers was to understand the problems and challenges that the LIM field was facing. He explained:

> We understand that the LIM field is just at the transition stage of the DL development. Some libraries have full IT systems, while others only have a few computers. We are aware that the LIM field still struggles with many issues such as lower levels of IT application, limited budgets for development, lower staff quality and so on. We are clear that the educational needs for the LIM field are diverse. Therefore, constructing educational programmes which meet the demand is a challenge for us and for educators. (GA-Official)

This statement affirms that understanding the current situation of the LIM field is crucial for LIM educators to develop DLE. A DL programme needs to be based on the actual demands of the LIM profession.

Exploring and prompting educational needs for DLE

The Dean of Hoan Kiem School asserted that educators needed to know the actual needs of the LIM profession. She said that educators could not offer an educational programme only by reading about international trends in professional journals, or attending some international conferences. She pointed out that what the Vietnamese LIM field needs might be different from other countries. She shared a story about her colleague who is studying overseas:

> He sent me several emails and documents and tried to convince and advise me to change the curriculum and the name of the faculty following what he has learned overseas. That is a utopian person. We have to base our decisions on what the librarians [in Vietnam] need, on what the LIM field needs, on the actual conditions of the LIM field, not what we think is good, or what the rest of the world is doing. We also have to base our decisions on the capacity of the school for developing a curriculum or introducing subjects. (HK-Dean)

The Dean shared her experience in developing the LIM master's programme and updating the bachelor's programmes. She and her colleagues had to identify the actual needs of the LIM profession by conducting surveys and by reading conference papers. She noted the school had to determine the trends in the development of the LIM field. She said, "I found out the key issues from LIM leaders through discussion at conferences. By this method we determined what the LIM profession needed for education, what employers needed from graduated students in terms of their competencies."

The Gamma Association's Vice-Chairman talked about identifying the needs of the LIM profession. He commented that one of the key roles of the Association was addressing the educational needs of the LIM field by developing the professional core competencies of LIM practitioners through offering short courses and cooperating with LIM schools. He said the leading schools and active educators need to identify current needs and, in some cases, predict the skills and knowledge that librarians and information professionals

will need for their careers. Based on this knowledge, they can offer continuing education programmes. The Chairman of Delta Association emphasised educators had to understand the actual needs of the LIM field.

The Dean of Hoan Kiem School, the Managers of Kim Ma and Tay Ho libraries, and the Director of Delta Ministry were the leading stakeholders in exploring the needs for DLE in the LIM field. They worked with LIM practitioners in order to understand the current educational needs. As pointed out earlier, the Dean of Hoan Kiem School organised workshops, conferences and surveys to receive feedback on educational needs from LIM practitioners. The Managers of Tay Ho and Kim Ma libraries used their own libraries as experimental environments in which to develop DL courses for their own staff. This helped them to examine and predict the DLE needs in the LIM field. At the highest level of management, the Delta Ministry Director worked with deans and managers to explore the competencies which would be needed for new librarians in the digital age.

Identifying and developing future educational needs was a significant task of the change agents in the LIM field who initially helped LIM stakeholders to be aware of their educational needs. They saw the potential need for new LIM practitioners, and recognised the importance of digital competencies for LIM practitioners in the digital age. They convinced managers and LIM practitioners that DLE is necessary for the LIM profession and they helped these stakeholders to identify future educational needs. The Dean of Hoang Mai School and the Manager of Gia Lam Library shared the same viewpoint on some initial workshops on DLs which were introduced by Tay Ho and Kim Ma libraries. They stated that these courses reputedly were a catalyst for the demands of the libraries, and raised an awareness of DLE for LIM practitioners in the LIM community, especially LIM schools. And, they believed that helping LIM practitioners to recognise their educational needs was an effective way to identify future educational needs in the LIM field.

Advocating for and trying to initiate changes in LIM education

All participating deans confirmed that introducing a new educational programme was challenging. The challenges were not only in the limited resources, but the attitudes of lecturers and leaders (rectors or academic committee members) for change. Two of the

stakeholders from the LIM educational sector discussed their efforts to advocate for and initiate change.

At Hoang Mai School, the Dean had an opportunity to change the curriculum, and he himself was willing to do it. The Dean said the school faced a shortage of suitable staff, had an inadequate infrastructure, and had to contend with various attitudes from lecturers and leaders on changing the curriculum. Then the Dean decided upon a sort of solution. The school updated the subjects in the curriculum, and the Dean required the lecturers to research the current trends in LIM education and then encouraged them to propose solutions for change. In addition, the Dean presented evidence and requirements from LIM practice as well as opportunities for the school's development. As a result, all lecturers were motivated and then they advocated the change.

An opportunity for change was presented to Hoan Kiem School, and, as in other LIM schools, it faced similar difficulties. The Dean said, "we [the school] can see many difficulties. I have tried to convince the rector, talk with staff, and build a team for change." As a result, she said "we are now introducing new IT and DL subjects for students." She also asserted that the support from the rector helped her to make the change. She asked lecturers to do research on new subjects and she set up a schedule for the lecturers to teach these subjects. The empathy of most of the lecturers for the Dean's view on change was very important, she said. It can be seen that after understanding the demand for changing the educational programme, the Dean worked intensively to make the change happen.

The Dong Da Library Manager discussed the process for change that occurred when applying new library software and setting up a new workflow for the library. He said moving from a traditional library to a modern library with new software and new workflow was a challenge for his decision making. The library had more than 100 staff, and had run for many years without a computer system. Referring to the agreement from the government to invest in IT systems to improve the capacity of the library, he said "we know it is a challenge, but we cannot miss the good opportunity." He went on to say the greatest difficulty, however, lay in changing the working habits of staff who had been working without computers for a long time. To resolve this issue the manager encouraged staff members to acquire IT and DL competencies by attending CPE programmes with the fees being paid by the library. In addition, he convinced staff of the need for change,

and had many meetings with the directors of all the library departments to outline the benefits of the new system and then ask them to talk with and convince staff.

As can be seen from the three cases above, the active manager or dean had to make strong efforts to bring about change in their organisations by convincing staff to change and seeking the support of top managers.

7.3.3 Factors affecting the success of change agents

I initially used Rogers (2003) to identify potential factors that might affect the success of change agents in expanding DLs and DLE. However, as I analysed the data I also found that local cultural factors were relevant. In total, I found four factors: (1) the change agent's position and social status; (2) the reluctance of the stakeholders to change; (3) opinion leaders support for developing DLs and DLE; and, (4) the cooperation of key stakeholders.

Change agent's position and social status

Although Rogers (2003) did not mention this factor, the stakeholders emphasised that in the Vietnamese context an important factor affecting the success of change agents was their position and social status. The data from Section 7.3.1 showed that a crucial characteristic of a change agent in the LIM field in Vietnam is whether he or she is a manager or at least has a good reputation. In Vietnamese society, to have a "significant voice" or to raise awareness, change agents need to have a high level of authority. This finding explains that some active stakeholders failed to have any influence on the development of DLs and DLE because they did not have the power of a manager. This cultural aspect demonstrates that a potential change agent who aims to affect change in LIM education, but who is not a manager, will face resistance. The Chairperson of Delta Association conceded that "in our culture, you need to be a top manager in order to influence other people. If you do not have power, nobody will listen to you."

Reluctance of the stakeholders to change

The reluctance among stakeholders to change was a big challenge for change agents. In Chapter 6, I explored this reluctance, a cultural aspect which has restricted the development of DLE. A senior lecturer of Ha Dong School and the Dean of Hoang Mai School shared the same challenge in developing new educational programmes. When they

proposed a curriculum with some new IT and DL subjects, decision makers in the government department did not want to change much of the basic curriculum, so they asked these schools to revise their curricula several times in order to fit with the existing basic curriculum. This type of resistance has limited LIM schools in initiating change or developing LIM education. The Dean of Hoang Mai School said "people in government departments do not want to take the risks involved in change. This makes LIM schools struggle to develop new educational programmes which aim to meet the demands from the profession."

A former LIM manager who was also a senior lecturer of Ha Dong School shared his story about attending a conference where he defended his viewpoint that LIM education should add more subjects to train LIM practitioners in DL competencies. He said he had made a statement that LIM education still needed to educate students in the knowledge and skills of traditional libraries even while the LIM profession was moving towards the digital environment. Many educators disagreed with his viewpoint. They were convinced the LIM field in Vietnam was still working mostly in the traditional way, so it did not need to make significant innovations in LIM education. This perspective was expressed by the Associate Dean of Cay Giay School who asked, "since we still have thousands of libraries that are still traditional, without computers, why do we have to change the current educational programme?" This statement indicated that not all educators wanted to change their educational programmes toward DLs.

This reluctance to change also existed at the organisational level. Some deans and managers indicated they had difficulty convincing staff to adopt new innovations in their organisations. Hoan Kiem School's Dean pointed out that some older staff in her school were unwilling to change their subjects and the school had to come to a compromise with these staff in some subjects. The data also showed that other schools such as Long Bien and Hoang Mai faced similar issues.

Opinion leaders

Opinion leaders were an important factor which helped change agents to spread the concept of DL and DLE to the LIM community. According to Rogers (2003), opinion leadership "is the degree to which an individual is able to influence other individuals' attitudes or overt behaviour informally in a desired way with relative frequency" (p.27).

He stated that "change agent success in securing the adoption of an innovation by a client is positively related to the extent that he or she works through opinion leaders." In order to identify and measure the influence of opinion leaders, Rogers raised three questions: Who is your leader? Who are the leaders in this system? Are you a leader in this system? In this research, I have examined the effects of opinion leaders at the organisation level (in a school or library) and at the system level (the LIM field). I found that some change agents used opinion leaders effectively to bring about change in their organisation and influence others. Opinion leaders had an impact on change in LIM education. In some cases, change agents were also opinion leaders.

The Deans stated that the change in curricula had good support from rectors (see Section 5.2.5), and they could use their influence to make changes in the LIM educational programmes. For example, the Dean of Hoan Kiem School confirmed that the Rector helped them by approving their proposal for a change in the curricula. The Rector also formally communicated the change in documents used by the Deans to request lecturers to get involved in the transformation of educational programmes.

Another example of a change agent using an opinion leader to gain support for developing a DL was at Kim Ma Library. The Manager said this library had developed digital resources for teaching and learning. However, few lecturers and students used these resources. The Library Manager had to use the authority of the Rector to ask lecturers and students to use the resources. As a result, these resources were used effectively, and the Library received positive user feedback. These results were important for the Library in order to receive more funds to develop DL resources. In this case the Manager used the influence and authority of the leader to change the behaviour of lecturers and students in using digital library resources for their tasks.

Some change agents used the influence of top leaders in the LIM field as well as in the government. Change agents worked with policy makers to initiate changes in LIM education. The official of Beta Ministry shared his experience when he and his colleagues made an effort to introduce the DL term. He said they lobbied law makers to use the term "digital libraries" in the library law. They used conferences and workshops to spread information from leaders about DLs and DLE to the LIM community (see Section 7.4). Some leaders from MOET, the library departments and LIM professions used the terms "digital libraries" and "digital librarians" in their talks. The leaders also expected the LIM

field to move forward to the digital age. The change agents such as the Managers of Tay Ho and Kim Ma Libraries and the Dean of Hoan Kiem School, used these views to convince the LIM profession to develop DLs. They also used them to affect policy makers in terms of releasing policies which would help the development of the LIM field (see Section 6.2 for more details about the policies of the government).

Cooperation among key stakeholders

Poor cooperation among stakeholders was also a barrier for change agents in the LIM field. The data show that the four groups of stakeholders who were involved in developing the LIM field did not work cooperatively. They were schools, libraries, professional associations and government departments. The Associations claimed that the leading government departments did not have a good strategy for development of the LIM field. The Delta Association Chairperson gave his view on the role of these departments: "they do not have a clear vision for the long-term development of the LIM field. They do not play a role as the leading organisation." In a similar vein, the director of a government department said, "as professional associations, they do not have good advice for the development of the LIM field."

Cooperation among libraries was also not strong**.** The way in which IT systems and library software were applied in the library system highlighted this point. The government aimed to use the same software across the country's library system in order to be able to share information among libraries. However, each library was using different software with different standards. The Manager of Ba Dinh Library said "the lack of cooperation in using IT and library software makes for isolation among the libraries; no sharing information, no support together."

There was also a lack of cooperation among major LIM schools in developing LIM curricula. Three of six participating deans confirmed that schools did not want to share their curricula with other schools. In Section 5.1.5 I have already identified the poor cooperation in developing a basic curriculum for the LIM field.

The weak cooperation among stakeholders in the LIM community was a barrier which restricted change agents' efforts in LIM educational change. It was a challenge for change agents to spread the understanding of DLs and DLE in the LIM field because stakeholders

were not working together. As the Chairperson of the Delta Association emphasised, "you cannot make change in education if people do not collaborate. The most important thing here is that you must arrange for them to work together and identify the roles of libraries, schools and associations in developing education for the LIM field" (DA-official). As demonstrated in the data, the negative effect of weak cooperation among stakeholders slowed down the progress of DLE development.

7.4 Communication channels

In my research, change agents used communication channels to share information in order to reach a mutual understanding and influence other stakeholders. According to Rogers (2003) *communication channels* are the means used to send messages from one individual to others. He suggested two basic means: *mass media channel*s which involve radio, television, newspapers; and *interpersonal channels* which are used to exchange information face-to-face among individuals. The data show both these means were used. It was through various communication channels that change agents were able to build networks and raise awareness of DLs and DLE in the LIM community. Thus, DLs and DLE were becoming accepted by the LIM community through channels such as conferences and workshops. Professional journals, however, were not mentioned as an effective channel for delivering messages through the community.

In the decision process, Rogers suggested that two important first stages are *knowledge* (individuals or other decision makers learn and understand the innovation) and *persuasion* (individuals or other decision makers establish a favourable or unfavourable attitude toward the innovation). I found that change agents in the LIM field used conferences and workshops with personal face-to-face interaction as a means to deliver new ideas to the LIM community.

The Chairperson of Delta Association shared this perspective:

> In my experience, professional conferences are important chances for all LIM professionals to share new ideas. For example, the awareness of DLs highly increased after the international DL conference in 2007. All managers and librarians understood that DLs were the future of the LIM Field. Some key LIM

> speakers in this conference raised issues of DL development in Vietnam as well as the preparation of staff for the LIM field in the digital age. (DA-Chairperson)

The Dean of Hoan Kiem School shared her school's experience in delivering new topics, issues or educational programmes to the LIM field:

> Every year, we organise one or two workshops and conferences with various topics which are receiving high interest in the LIM communities. We invite almost all of the well-known lecturers, professionals, managers and deans. This is the chance for LIM stakeholders to sit together and discuss emerging issues in the LIM field. We have done workshops such as Competence for LIM Practitioners in the Digital Age, or Challenge and Opportunities for the LIM field in the New Century. We also have had a conference in order to foster change in LIM education, especially for the change in our educational programmes. (HK-Dean)

The idea of using conferences and workshops as an official forum for the LIM community was strongly approved by managers and LIM practitioners. Three managers confirmed they usually attended LIM conferences and workshops and also sent senior staff to them. They said this was a good and fast way to get new information and update the community's knowledge about technologies, issues, challenges as well as requirements in the LIM field. The Director of Kim Ma Library who was active in delivering new ideas to the LIM field said:

> Besides using face-to-face strategy to convince other people to accept our ideas, I normally attend conferences or ask my colleague to attend, and present our work. After that I invite professionals who are interested in our work to visit our library. Sometimes I organise workshops and invite LIM practitioners from other libraries. Our visual library for the medical education programme is a significant result that has been introduced to the LIM community. Many other medical schools from other universities use our library and they also develop their own digital resources. (KM-Manager)

It can be seen that workshops and conferences have been effective channels for change agents to have an influence in the LIM field. These events also provided opportunities for change agents to explore the viewpoints of stakeholders on current issues in the LIM field.

During his interview, the Ha Dong Library Manager, who was a strong advocate for DLs, told of his experience in exploring the viewpoints of LIM managers in DL development. He said that at a conference he delivered his thoughts on the digital future of libraries in Vietnam, and it initiated heated debate and discussion among managers, which continued after the conference. He concluded that face-to-face discussion at a conference is an effective way to raise an issue, because he had previously raised this issue in several journal articles but without any response.

However, there were limitations with workshops and conferences. These events were only for senior staff, managers and researchers, not for all LIM practitioners. The Chairperson of Gamma Association who organised many professional workshops for LIM practitioners conceded that these workshops only met a small demand of the LIM practitioners, and sometimes libraries sent the wrong staff to the workshops. One of the staff from Da Dinh Library claimed, "I wish I had the opportunity to attend workshops or short courses to enhance my skills and update my knowledge, but these are just for senior staff or department directors." Conferences were likewise just for professionals, managers and researchers. The Manager of Gia Lam Library explained that ordinary LIM practitioners had little chance to attend conferences because of financial limitations.

An interesting finding was that LIM stakeholders were not interested in research papers published in LIM professional journals. The Deans of Hoan Kiem and Hoai Mai schools said that the reason was the low quality of research. One interviewee pointed out that lecturers published papers because of requirements from the university, not because they wanted to publish their research, and they therefore focused on quantity rather than quality (HM-lecturer3). The Chairperson of Gamma Association said that the LIM journals did not attract lecturers, researchers and LIM practitioners. He contended that LIM practitioners did not use the journals to update their knowledge for their jobs, and that researchers used journals merely as a place for publishing research rather than as a way to contribute to the academic community.

It can be seen that conferences and workshops were being used as an interpersonal communication channel for change agents to deliver new ideas and convince stakeholders to accept their ideas. Journals were not a good channel for transferring messages through to the LIM community. Holland (2000) suggested that building networks and communities to promote change or adoption is important for change agents. Thus, change

agents should know the potential as well as the limitations of communication channels to make these connections.

7.5 Conclusion

In this chapter I found that to make changes in LIM education in Vietnam, individuals and change organisations needed to work together in cooperation with other stakeholders involved in the change process. Change organisations had a strong influence in the LIM field as was seen by their successes. And, individuals such as change agents worked closely with change organisations to have an influence and foster changes in the LIM field.

Through my analysis of the data, I found that the success of change agents was affected by their position and social status, the reluctance of the stakeholders to change, opinion leaders; and the cooperation of key stakeholders. The data show that to foster change in LIM education, the change agents needed to be leaders in the LIM field, and that they used opinion leaders to support the development of DLs and DLE. I also discovered that workshops and conferences were considered by stakeholders to be effective channels to convey important messages through the LIM community.

In this chapter I have identified the seventh factor – *change agents* - affecting DLE development. The impact on change agents of environmental issues unique to Vietnam are examined more thoroughly in Chapter 8 during which I present a detailed discussion including a revised model of the contextual factors affecting the development of DLE in Vietnam.

Chapter 8 Discussion and revised model

"Change is a process, not an event"

(Hall, 1978, p. 1)

In this chapter, based on the data analysis in Chapters 5, 6 and 7, I discuss the contextual factors affecting the development of DLE in Vietnam and revise the initial model. The chapter answers the second research question: *How do these contextual factors affect the development of digital library education in Vietnam?* This chapter aims to:

- discuss in detail the effects and relationships of these factors;
- revise the model of contextual factors affecting DLE development; and
- summarise DLE needs of LIM practitioners.

For these purposes, in Section 8.1 I discuss the contextual factors as enablers and barriers by identifying their characteristics and their effects on DLE development. In Section 8.2 I explain how I revised the initial model and examine the relationships of the factors. Finally, in Section 8.3, based on the participants' interviews and documentary evidence from LIM schools, I identify potential learners and their core educational needs. This is not, however, in response to the research questions. The educational needs for DLE were an important component that stakeholders were highly interested in during the interviews and by providing a combination of contextual factors and the identification of educational needs, this research helps to establish the foundations for DLE programme development in Vietnam.

8.1 Contextual factors

In this section, I discuss the seven major factors identified in Chapters 6 and 7 affecting the development of DLE in Vietnam: the government, stakeholder attitudes, DLE characteristics, IT infrastructure, social and cultural values, the nexus of personal and organisational learning needs, and change agents. Importantly for the outcomes of this research, the way each factor is an enabler or a barrier to DLE development is considered, bearing in mind that a factor can be both an enabler and a barrier.

8.1.1 The government

Through an analysis of the interview transcripts and the documentary evidence, I found the Vietnamese government to be the most influential factor affecting not only the development of DLE in Vietnam but most aspects of Vietnamese society including the LIM field. LIM education, including DLE, is a part of the national education system and therefore is directly affected by the government. In terms of policies and law, the government acted as an enabler; however, in terms of management and funding, some government actions have limited DLE development.

Government as an enabling factor

Research on governments' roles in education has shown that governments and their policies have strong effects on educational change, and they can help or hinder the educational change process (see, for example: Harris, 2008; Priestley & Miller, 2012; Stewart, 1985; Xiong, Zhang, & Liu, 2011). Fullan (2007), through an examination of governments' roles in educational change, concluded that governments provide pressure as well as support for continuous improvements in education. Fullan pointed out one of the most important roles of governments in promoting educational change is providing a clear description of the innovation to be implemented. He also noted that governments have to understand the needs and expectations of organisations.

I use the term 'government policy' to refer to the policies of the Vietnamese government in the areas of education, IT and the LIM field. These three areas were mentioned by stakeholders as being inter-related when they emphasised the effects of government on the LIM field as well as on LIM education.

As part of the national educational system and the national information system, the LIM field is affected by policies for education and information systems (see Section 6.2). *The Ordinance of Libraries* (2008) is a landmark policy which guides the LIM field on development. It states that libraries and information centres play important roles in developing knowledge among citizens and supporting the development of education and technology. Figure 16 shows the relationship that government policies, laws and funding have on the inter-related areas of education, IT and the LIM field.

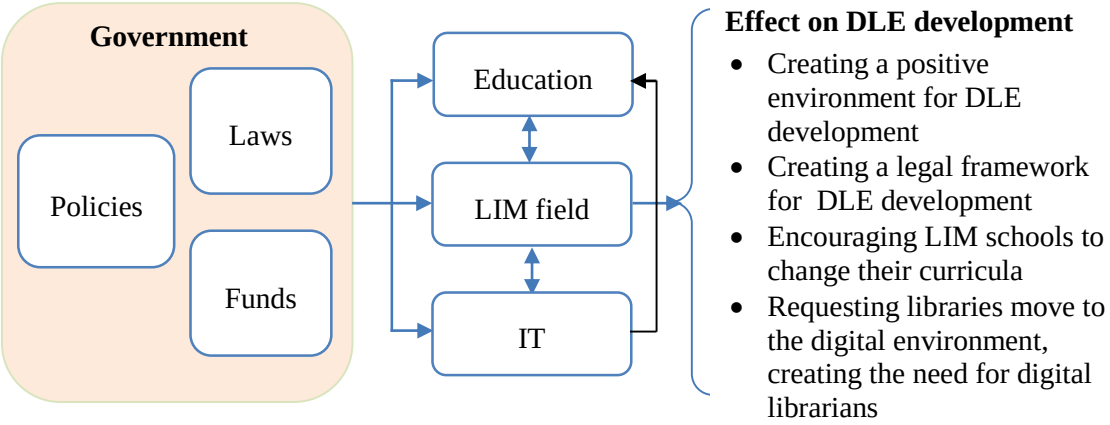

Figure 16: The government's positive effects on DLE development

As an enabling factor, the government has introduced policies that aim to enhance the quality of education and to develop the use of technology. Examining government policies related to the LIM field, I found relationships among education, IT and the LIM field. The *Education Law* (2009) and *Information Technology Law* (2006) and other government documents identify education and IT to be crucial tools for economic and social development. As a result, education and IT are two areas that have received significantly increased investment from the government, NGOs and other organisations (see Section 6.2.1). In addition, the policies released for the LIM field created a legal framework for the development of LIM education as well as DLE. Government policies appeared to be aimed at encouraging a positive environment for the development of the LIM field, especially LIM education.

The LIM field was considered by the government as a support element for the development of education (SCNA, 2008), with libraries playing a key role supporting changes in teaching and learning (MOET, 2007). The Ministry of Education and Training (MOET) wanted to stop the situation in which students and lecturers could complete their teaching and learning tasks in universities without using resources in libraries. Lecturers were asked to introduce more learning resources for students and they were encouraged to change their teaching methods. Data in Chapter 5 show that the didactic method was the major teaching method, in which students followed their teachers without question or concern, and they passed exams simply by using basic course books. MOET, therefore, introduced standards for academic libraries (2007) and high school libraries (2003) that were aimed at improving their resources and services in order to help lecturers and

teachers change their teaching methods to enhance student learning. The engagement of libraries in support of teaching and learning is backed up by research by Montiel-Overall (2008) and Montiel-Overall and Hernández (2012), who showed that cooperation between librarians and lecturers enhances the quality of education. The use of materials in libraries encourages students to be more creative and active in learning than when just using course books supplied by lecturers/teachers.

MOET also introduced a requirement for all staff who work in libraries to have certificates or degrees in LIM (see Section 6.2.2). The introduction of this requirement demonstrated that the government was taking the view that LIM should be viewed as "a graduate profession of highly skilled individuals" (Hallam, 2007, p. 311). This policy led to significant changes in academic libraries and gave an excellent opportunity for LIM schools in terms of increasing the number of students. However, to meet the demand from the LIM profession, LIM schools had to enhance their educational quality by changing their curricula (content and methods) and providing qualified lecturers.

There are 400 university and college libraries and thousands of school libraries in the Vietnamese educational system. In addition, thousands of public libraries are partners of the system. The importance of the government and its policies was recognised by many key stakeholders such as managers, deans and chairpersons. Stakeholders pointed out that education, IT and LIM have a mutual relationship. The data in Chapter 6 show that the development of education and IT directly affected LIM development. As identified in Section 6.2, the LIM field directly benefits from investment in education and technology and has done so for the last two decades. Libraries in the educational system have received significant investment from the government because it has recognised the importance of libraries in teaching and learning (see Chapter 6). Policies that aimed to develop education and technology have affected the LIM field positively.

In this context, DLE development was affected by two influences. First, IT is being used as a crucial tool for the development of society, including the LIM field, resulting in the LIM field changing from a traditional to a digital working environment. The change in the LIM profession has challenged the LIM schools to reform their educational programmes. Second, LIM education is part of the national education system; therefore, national education policies directly affect LIM education and DLE. The government has encouraged educational institutions to change and improve their educational programmes

to produce quality human resources for national development. As a result, some LIM schools have changed their curricula to meet the needs as stated by the LIM profession. However, these changes were insignificant due to the strict control of curriculum development by the government (see Section 6.2).

Government as hindering factor

In terms of management, some government actions have limited DLE development. Hoan Kiem School's Dean, for example, described a gap between policies and practice in Vietnam. The policies normally looked good on paper, but faced challenges when applied in practice (see Section 6.2.3). A case in point is when the government departments with responsibility for policies for LIM development did not support their implementation, resulting in ineffective outcomes. For example, one of the most common issues which deans and lecturers mentioned is MOET's strict governance of curriculum content. This, they said, has constrained the educational change process in LIM education.

The data show that the structure of the political system is why policies sometimes do not work. This is a top-down system and there is very little upward feedback. The government in Vietnam controls most aspects of society and all organisations have to follow government policies. For example, in Chapter 6, the data show that all LIM schools had to follow the governance of MOET with very few opportunities for providing input. Implementation of the policies is in the hands of government departments (see Section 6.2.2). There are very different levels of power between these departments and organisations. The deans interviewed in this research claimed that universities did not have much independence in developing curricula and controlling finances. Sometimes they had to compromise with government departments in order to get support. The cases of curriculum development at Thanh Xuan School and Ha Dong School were two examples of the impact of the structure of the political system. Both schools had to change their initial proposals to fit the basic curriculum required by MOET. This form of direct management control by the government limited the creativity and independence of LIM schools and LIM organisations. This finding is reflective of Ramsden's (1998) observation that in higher education "excessive management produces compliance, passivity, and order for order's sake; it discourages risk-taking and stifles creativity and long term vision" (p. 108).

In addition, limited funding for the LIM field was a hindering issue. Research by Ahmad (2012) and Schiller and Liefner (2007) identified government funding as playing an important role in educational development, especially in developing countries, and Altman (2006) found that at the early stage of DL development, funding from government is crucial. In Vietnam, most libraries and information centres belong to the public service, so most budgets for investment and employment are provided by the government. All managers, deans and officials confirmed that government funding was an important factor for the development of this field. However, data in Chapter 7 show that the budgets were low in comparison to the needs in the LIM field. In addition, funding for LIM education was limited. This issue limited the development of DLs and DLE in the LIM field.

In summary, the government has played an important role in the development of DLE. The government was an enabler by means of positive policies and funding, the foundational elements for DLE development. On the other hand, it was also a barrier because some of its policies were not fully carried out by government departments and others limited the ability of LIM schools to update their curricula.

8.1.2 Stakeholder attitudes

I now revisit five issues which were first addressed in Chapter 5 when I identified the importance of stakeholder attitudes on DLE development: *the profession's views on the need for digital LIM practitioners; the level of understanding of DL concepts; the attitudes of stakeholders to change; the limited cooperation among stakeholders;* and, *the younger generation's perspective.*

Rogers (2003) contended that stakeholders only adopt something new (which in this research is DLE), when they know what it is and why they should adopt it. According to Cacioppo, Petty and Crites (1994) and Petty, Wheeler and Tormala (2003) attitudes strongly impact on the actions of people in a change environment. In my research I found that stakeholders thought that DLs are important for the future development of the LIM field, but many did not clearly understand the DL concept. This situation resulted in stakeholder attitudes having both positive and negative effects on digital library development and ultimately on DLE development.

LIM profession's views on the need for digital LIM practitioners

The data show that some stakeholders believed DLs are critical to the future of the LIM field and the LIM profession needs digital librarians for its future. Significantly, this view came from top managers in the LIM field, demonstrating that some of the key stakeholders were optimistic about the future of the LIM field when they could see it containing DLs. Their vision of the future was important for DLE development since it motivated libraries in developing their systems and enhancing their staff members' competencies.

The impact is already recognisable in the LIM field where some libraries have prepared for the digital future by developing digital resources, employing more technologically capable staff, and establishing IT departments, as well as encouraging other staff to attend DLE courses. The belief in the future of DLs amongst many stakeholders has also led to an expectation of changes to LIM education. These stakeholders felt that LIM education must change to follow the developments in the LIM profession in which IT has a strong impact and digital resources give opportunities for new services for customers.

Level of understanding of DL concepts

In terms of negative impact, however, the cloudy understanding of many stakeholders of the DL concept has slowed down the development of DLs in Vietnam, which has limited the ability of LIM practitioners to express their educational needs for DLE.

The first point here is that stakeholder attitudes have restricted the development of DLs. The data show that there were different levels of understanding of the DL concept among stakeholders. Only a small number of stakeholders thoroughly understood the DL concept, while most others did not have a clear understanding; some of them used "digital library" as a fashion term. This also reflects the challenge in the LIM field when developing DLs. Although library directors wanted to modernise their libraries with an improved IT infrastructure and digital resources, these organisations still worked in the traditional way and made slow progress to the digital age.

A second point is that both the cloudy understanding of the DL concept among stakeholders and limited opportunities in DL practice hindered LIM practitioners because they could not state their DLE needs clearly. In studies about educational change, Ely

(1976, 1990a and 1990b) found that adopters needed time to learn and integrate the innovation that they were going to adopt. The participants in my study who were unclear about DLs were unable to state clearly their needs and expectations. For example, some stakeholders who worked in departments which were not computerised could not state clearly their educational needs for DLs (see section 5.2.2).

Some stakeholders suggested developing a general definition and framework of DLs for general use in the LIM field. The framework would provide the requirements, standards and structures of DLs. If stakeholders fully understood the issues of DLs, they would recognise whether current LIM practitioners actually met the demands of DLs. With this understanding, managers would then be capable of deciding if LIM practitioners (current staff) needed to be educated in digital library competencies.

Attitudes of stakeholders to change

There is a saying that "the only people who like change are wet babies" (Source unknown). Both Fullan (2007) and Rogers (2003) contended that most people do not want to change. In addition, researchers such as Choules (2007), Davis (2001) and Saunders & Charlier (2005) found that change in education is often hard and complex. An interesting finding in my study is that taking the necessary steps to initiate change was a challenge for LIM stakeholders. All LIM organisations seemed to be waiting for a sign from change agents, which they then hoped to follow. This perception restricted the degree of change in the LIM field, especially change in LIM education. This section examines the change attitudes of leaders and practitioners.

In my research, I defined leaders as LIM managers, deans and officials who influenced, guided or directed others. I considered leaders to be only those stakeholders who could influence LIM education. In some cases, the leaders were also change agents. For example, the Managers of Kim Ma and Tay Ho Libraries and the Deans of Hoan Kiem and Thanh Xuan Schools thought that DLs were critical for the LIM field's future, therefore, they took action and risks to introduce DLs and DLE (see Section 7.2). These stakeholders were called positive managers by Fullan (2006) who identified the important role they play in educational change. Recent research in higher education confirmed that leader attitudes to change play an important part in educational development (Eddy & VanDerLinden, 2006; McRoy & Gibbs, 2009; Milton, Watkins, Studdard, & Burch, 2003).

On the other hand, some managers and deans hesitated to change; they preferred a safe way to make changes in their organisation. They did not take risks; rather they followed others who were seen to be successful. It is possible that these managers and deans are among the groups of librarians who, according to Nov and Ye (2009), have the personality trait of resistance to change (RTC). This trait dictates how these librarians "respond to events such as the introduction of a new technology that brings potential changes to their well-practiced routines" (p. 1702), and acts as a barrier to the adoption of digital libraries. Because of managers' and deans' reluctance to change in Vietnam it has taken two decades for minor change to occur in LIM education and even now in some LIM programmes almost all subjects focus on traditional libraries and printed materials.

I also found a conflict in the attitude among deans to changing curriculum content. On the one hand, some deans were active in changing curricula which meant adding more DL subjects and technical content. They argued that the development of IT challenges new LIM practitioners. Therefore, they should have the competence of digital citizens as well as the competence of workers in the digital age. On the other hand, others preferred to keep teaching mostly traditional competencies. They argued that libraries have been computerised for 20 years; some big libraries have changed significantly while many others have not changed. Therefore, according to this point of view, if schools teach modern competencies to LIM practitioners, many graduates will not have opportunities to practice because there are only a few computers in many libraries. This conflict restricted the progress of LIM educational programmes on DLs. No agreement among schools has been made in terms of contents for DLE. However, the MOET took a curriculum from a LIM school and asked other schools to use this as a basic curriculum (see Section 6.2.3).

At the staff level, there was conflict between the younger and older generations (see Section 5.1.4). In general, younger staff accepted change more readily and adapted to new things in their organisations, while older staff struggled to adapt to new things and refused to change the curriculum by dropping some out of date subjects that they were teaching. This acted as a barrier because most of the younger lecturers wanted to change, while many older lecturers preferred to keep things the same.

Limited cooperation among stakeholders

Hallam and Partridge (2004) stated that "collaborative partnerships are the key to the future of LIS education" (p.21). In my research, however, I found that cooperation among stakeholders was weak in terms of organisations working together to foster new developments in the LIM field. There was an issue that stakeholders (libraries and LIM schools) always thought that they are the best organisation in the LIM field. It results in these organisations not wanting to communicate with each other. This directly led to a lack of cooperation among LIM organisations in terms of developing standards for DLs, and especially, among LIM schools in terms of developing educational programmes.

In my study, the library departments, professional associations, LIM schools and influential libraries had limited cooperation related to the development of DLs. For example, these stakeholders did not work together when making critical decisions about library software. As a result, public libraries, academic libraries, army libraries, and information centres all applied different software and different standards; even in each system libraries used different software. This led to the situation that because there is no national standard for DLs, libraries cannot share information. While DLs have been discussed in Vietnam for over a decade, there is no common understanding of the DL concept in the LIM field and the various stakeholders have blamed each other for the slowness of DL development.

In terms of developing curricula, there was no cooperation among LIM schools. This is because of two reasons. First, the government imposed a LIM curriculum; this issue was identified in Section 6.2.3. Second, the deans' restrictive attitude on curriculum sharing limited change. Deans did not want to publish their curricula because they were afraid that other schools might copy them. I had to struggle to convince the schools to allow me to access their curriculum content. One school refused my request even though I stated that it would be only used for research purposes.

I found another example of the lack of collaboration among these schools. There are two core curricula, one for Library Science and one for Information Management, both governed by MOET. However, only one school contributed the content of these curricula, which left other schools dissatisfied. For DLE programmes, these schools acted in isolation, i.e., there was no sharing of information about DLE development among them.

As a result, only a few subjects are especially focused on DLs in the current LIM curricula, and schools still face challenges in developing DLE.

The younger generation's perspective

Hargreaves (2005), in research on generational factors in educational change, found that younger teachers are flexible, adaptable, and they "are probably more receptive towards or tolerant of change" (p. 972). As demonstrated in Chapter 5, there is a gap between younger lecturers (i.e., those under 35 years old) and older lecturers in terms of attitudes to educational content and educational approach. The younger LIM lecturers appear to be active people in LIM educational change, with strong motivation for study because of their own development needs. The documentary evidence indicated that two-thirds of academic staff in LIM schools are younger lecturers.

In Chapter 5 I discussed evidence showing that younger lecturers were excited with DLs and DLE. They wanted to do research in DLs, and others confirmed they were willing to change their current teaching subjects and move to DLE subjects if required. Deans also confirmed that younger lecturers preferred to teach modern subjects related to technology and DLs. They thought self-study and updating new knowledge in LIM is work that young lecturers have to do actively. Some younger lecturers admitted they feel ashamed if their knowledge in technology is not as good as their students.

Making up a large number of the academic staff and being more active in updating their knowledge, younger lecturers are expected to be a crucial factor affecting LIM educational change. They are expected to be a positive element to improve the quality of LIM education and so change the LIM profession's view of DLE. Some deans and LIM managers stated that LIM schools lack lecturers for teaching DLE subjects; they normally have to recruit lecturers from outside the universities. However, the lecturers and their advocacy for change in LIM educational programmes are a crucial foundation for LIM schools developing DLE programmes. Some schools such as Thanh Xuan, Hoan Kiem and Long Bien encourage younger lecturers to undertake research in DLs to prepare for introducing new DL subjects in the near future. Deans confirmed they have to provide guidance for young lecturers preparing for change in educational content.

I found that the younger generation (LIM practitioners and lecturers) in the LIM field is a positive factor for DLE development. Amongst practitioners I found that, in comparison to older staff, younger staff tended to work more with computerised systems. Younger librarians advocated for new technologies and were willing to change their working behaviour but they were not taught DL competencies in their formal LIM education, therefore, they were looking for educational opportunities (see Section 5.1.4). A similar point was also found by H.S. Nguyen (2008) when she examined the educational needs of university librarians in Vietnam. She found that people thought older individuals should not keep learning and younger people should be given opportunities (p.121). In my research, I found younger staff clearly stated their needs in education and most of them confirmed that they will attend DLE if given the opportunity. In addition, deans confirmed continuing education is also a good opportunity for promotion for younger lecturers. Younger lecturers are needed for developing and implementing DLE programmes. In some schools, however, such as Hoang Mai and Ha Dong schools, the younger academic staff struggled to influence their deans with regard to the importance of introducing DLE into the curriculum due to the power distance factor (see Section 6.3.3). This finding, along with the other cultural aspects, is important and demonstrates that cultural dimensions have a major influence on LIM educational change in Vietnam.

In summary, stakeholders' attitudes had strong impacts on the development of DLE as both enablers and barriers. In terms of enabling, the LIM profession's need for digital LIM practitioners encouraged LIM staff to attend DL courses, creating a need for DLE. In addition, younger academic staff were advocates of DLE programmes. In contrast, the unclear understanding of DL concepts, the reluctance to change, and the limited cooperation among stakeholders hindered DLE development.

8.1.3 Digital library education characteristics

This factor is related to the need for DLE, the DLE content in current LIM educational programmes, and the ability of LIM schools to develop and implement DLE.

The need for DLE was expressed by LIM practitioners and LIM managers. LIM practitioners recognised that they needed a formal DLE programme to update their skills and knowledge in order to help them work in the changing environment (see Section 5.2). Some stakeholders suggested that DLE should be offered to LIM managers in order to

help them understand DLs clearly. This would then change their attitudes about the development of DLs. The recognition of the need of both LIM practitioners and LIM managers was an enabling factor for DLE development.

Effect of educational need

According to Fullan (2007) need is one of the most important characteristics of educational change. Many attempts at effecting change in education have failed because the need for change was not carefully examined. DeSilets (2006) stated that at "the beginning of any program plan is the identification of the gap between where the learner's knowledge is and where it needs to be" (p.148), and educators need to examine learners' needs before developing educational programmes.

From my analysis of the data, I have identified two types of DLE needs: (1) the need expressed by LIM managers and officials for change in LIM education to meet the developments in the LIM field; and, (2) the need of LIM students and practitioners to acquire up-to-date competencies (see section 5.3). Figure 17 presents the effects of the LIM profession's need for change in LIM education in which DLE is considered a new element that will enable LIM schools to satisfy educational needs.

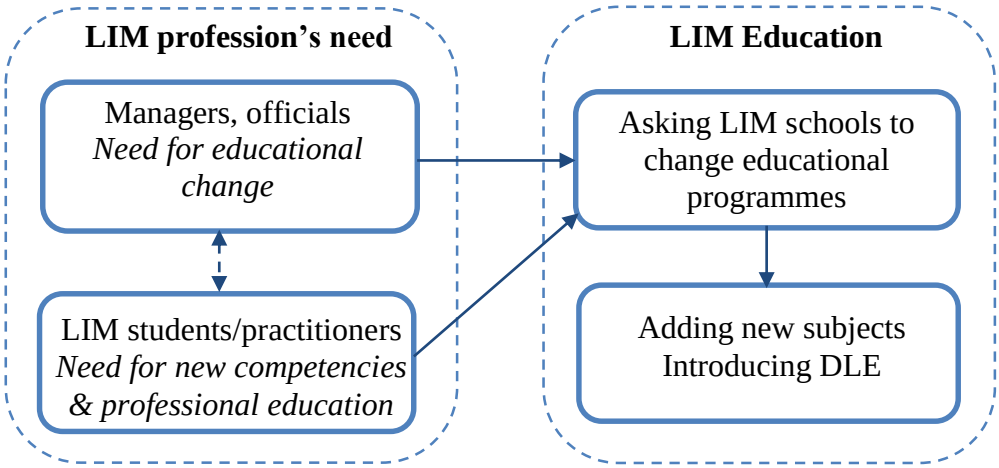

Figure 17: Effects of LIM professional need on LIM education

The data in Chapters 5 and 6 show that the development of the LIM profession in terms of applying new technology, managing libraries using computer systems, and creating digital content, has led to the need among LIM organisations for new staff who have sufficient IT literacy and can work in the digital environment. However, LIM managers and officials claimed that graduate students did not meet the requirements of most LIM

organisations, “they have to be retrained” (GL-Manager). As a result, managers expected LIM educators to update and add more new subjects into their curricula. In addition, some managers and officials stated that DLE was not only for LIM practitioners, it was also for LIM managers. Managers needed to be educated to a full understanding about DLs in terms of requirements, technologies, benefits, management and challenges (DA-Chairman).

In a review of IT application in the LIM field, H.V. Do (2007, 2014) found that electronic and digital library projects between 1995 and 2007 did not meet the expectations of the LIM field. Libraries did not use IT systems effectively. One of the most important issues that impacted the results in Do’s review was that libraries did not have qualified staff to manage the system. The data in Chapter 5 support Do’s findings. LIM managers explained that the slow progress in IT applications in the LIM field was because of the low priority given to the training and education of staff. As a result, libraries have implemented advanced IT systems but have lacked staff who can manage these systems. Therefore, library managers expect LIM schools to develop DLE for current practitioners. One manager commented that “a full DLE programme is what I need for my staff” (KM-Manager). The educational need of LIM practitioners as stated by LIM managers provides evidence of support for DLE development. If LIM managers recognise the importance of DLE for staff development, they will send staff to study, provided the staff are willing to go.

On the LIM education side, there was a significant change in educators’ attitudes in that they recognised that LIM schools are more like a business institute. In this way, they play a role as producers who try to meet the demands from practice (the LIM field) by producing a qualified “product” of education (BM-Official, HK-Dean). The product here is qualified practitioners to meet the demand from the LIM profession. This need places a responsibility on LIM educators to change their educational programmes to output the desired product, that is, they need to focus on teaching the competencies the practitioners need.

Deans also recognised increasing competition among the many LIM schools while the number of LIM students has declined sharply (see Section 5.2). As a result, LIM schools were having to change their curricula in order to attract students. Each school was required to compete with other schools within its university because each university has

a limited number of students that all schools must share, therefore each school needed to convince the rector (or vice chancellor) that it deserved its share of students. The school share of resources would be reduced in the following year if its application numbers were smaller than other schools (see Section 5.2.5). Therefore, changing educational programmes and adding new interesting subjects were used by LIM schools as a way to attract students (HK-Dean, CG-Dean).

Importantly, in addition to the needs from managers, the educational needs of LIM practitioners were strongly influencing the development of DLE. From the perspective that LIM practitioners are potential consumers of DLE, LIM educators (lecturers and deans) confirmed that the educational needs of future as well as current LIM practitioners were being used to determine whether LIM schools should develop DLE. The data analysed in Sections 5.2.1 and 5.2.5 show that current LIM practitioners and future LIM practitioners (LIM students) have a need for DLE.

LIM practitioners expected to update their knowledge and skills related to DLs to help them to work in the digital environment (see details of the knowledge and skills in Chapter 5). Current LIM students thought competence in DLs would help them to find jobs as well as to work in modern LIM organisations that are based on computer systems and digital resources.

The literature identified two approaches to teaching DLE. The first one focuses on “hands-on” practice (Liu, 2004; Saracevic & Dalbello, 2001). With this approach the students learn how to use a specific technology or software. The second teaching method is based mainly on theory which gives general knowledge to learners that they will apply in their work. The data indicate that LIM practitioners prefer the "hands-on" methods of teaching and learning (see Section 5.2.3). This finding should be useful for LIM schools when they design their teaching methods for DLE programmes. The “hand-on” methods were described by Liu (2004) and Saracevic and Dalbello (2001).

In terms of DLE content, some stakeholders such as the official of Beta Ministry, the vice-director of Gia Lam Library and the senior lecturer of Ha Dong School argued that digital librarians have to be experts in ICT who can code or customise software. They suggested that DLE should be taught by a computer science school. However, some lecturers commented that these subjects (knowledge and skills) did not bring benefits to LIM

students. A lecturer of Cau Giay School said some LIM students struggled when studying the advanced computer science content.

On the other hand, some LIM managers and educators argued a digital librarian needs competence in ICT but does not need to become an IT expert (see Section 5.2.2). This viewpoint appears to be sensible given that DLE needs to provide competencies that help LIM practitioners work in a digital environment, but technical issues are the work of IT people. Tennant (2008) argued that librarians do not need to learn advanced knowledge of technology; rather they need to have general knowledge in order to complete their tasks in libraries.

> All librarians do not need to know how to write computer programs, but they do need to know what those programs are capable of doing. They should know the technical skills needed and possessed by their staff and must have enough technological literacy to devise practical solutions to the problems libraries face. (Tennant cited in Long and Applegate, 2008)

Though the LIM practitioners who were interviewed in this study identified the need for DLE, their stated needs were not specific. This situation can be explained by the evidence that the DL concept itself is not clear in Vietnam and the development of DLs is still in the transition phase. Fullan (2007) said "precise need is often not clear at the beginning" (p.89). He confirmed people often become clearer about their needs only when they start doing things, that is, during implementation itself. This situation reinforces the importance of LIM schools clarifying and meeting the needs for DLE. They took the initiative in introducing new subjects for LIM practitioners. At this time they played the role of change agents by bringing new educational programmes to the LIM field. For example, the data in Chapter 5 show that some DLE courses have been introduced to LIM practitioners because LIM managers identified the need for staff who can do certain tasks in the digital environment. In this situation LIM practitioners did not state the educational need, rather LIM educators worked closely with the managers to help staff recognise the need.

In summary, the educational need of stakeholders is a crucial factor for developing DLE. It is the basis of content and teaching methods of DLE programmes. Although the need of the LIM profession is not stated in detail here, the data in Chapter 5 show that there

was a need for DLE which has stimulated the move to introduce some DLE subjects in LIM educational programmes. Therefore, educational need is an enabler of DLE development. The educational need is summarised in Section 8.3.2.

Effect of the lack of infrastructure and lecturers

In Chapter 5, I found that the *deficiency of infrastructure for DLE development* and the *lack of lecturers for DLE* were both hindering DLE development.

The data in Section 5.2.4 show that all deans thought that modern computer labs with Internet access were two crucial elements for DLE. In the five major LIM schools in this study, only one had a dedicated computer lab for its students. The other schools had to rent labs. A senior lecturer at Long Bien School commented that the lack of opportunities for practice limited her teaching and also inhibited her school from introducing new DLE subjects. A lecturer in Cau Giay School had to bring his students to an Internet shop to practice searching for information. The lack of facilities to allow students to access the Internet was therefore a critical factor that prevented the introduction of new DLE subjects into the curricula in four of the five LIM schools, and inhibited the schools from developing and implementing a full DLE programme.

Another serious issue was that LIM schools lacked lecturers who could implement DLE programmes (see Section 5.2.5). Teachers always play an important role in educational change in terms of teaching methods and changing curricula (Donnelly, 2006; Findlow, 2012; Parsons & Fidler, 2005), and their attitudes and abilities influence the educational change process (Fullan, 2007). However, data in Section 5.2.5 show that LIM schools lacked qualified lecturers in DLs, a great difficulty for DLE development. All deans in this study confirmed that the shortage of lecturers was a major issue that restricted the growth of DL subjects in the LIM curricula.

The lack of infrastructure to support student learning in LIM schools, and the shortage of qualified academic staff to teach DL subjects are significant barriers to DLE development and will take time to overcome. However, as the Dean of Ha Dong School emphasised, LIM schools must be active in preparing for change if they did not want to be losers in the fierce competition among LIM schools as well as between the LIM field and other fields.

8.1.4 Information technology infrastructure

The data in Chapter 6 show that stakeholders agreed the advances in the IT infrastructure created an environment conducive to the development of DLs and a demand for digital librarians. This finding concurs with Hallam and Partridge (2004), Jain (2013) and Hartnett (2014) that developments in the LIM field are closely related to the development of technology. Figure 18 illustrates the effect of the IT infrastructure on DLE development in Vietnam.

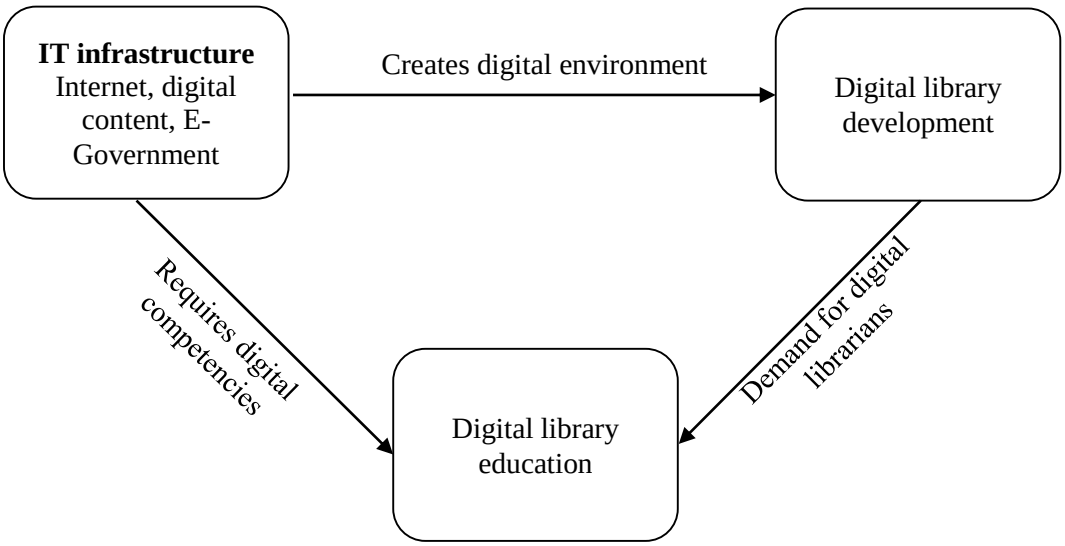

Figure 18: The effect of IT infrastructure on DLs and DLE

Internet access in Vietnam has increased sharply in the last decade (VNNIC, 2014). The data from documentary evidence also indicated there is significant development in terms of IT applications in libraries and information centres. Most academic libraries and big public libraries in Vietnam have completed the first stage of automation and are moving into the digital age, with many of them beginning to develop their own digital resources. The data in Sections 5.2 and 5.3 show that these libraries needed LIM practitioners who had adequate skills and knowledge to work in the digital environment.

The development of E-government in Vietnam was another contributing factor to DLE development. The arrival of E-government services helped to establish a digital environment in Vietnam that has prompted libraries to introduce more digital services in line with other organisations (see Section 6.1). Bertot, Jaeger, Shuler, Simmons and Grimes (2009) and Jaeger, Greene, Bertot, Perkins and Wahl (2012) found that the development of E-government with its digital services has led to changes in the LIM field

which require digital competence among LIM practitioners. They explained that because public officials and citizens have widely accepted digital services, to help them sustain a complicated digital environment librarians must have satisfactory digital competence. Similarly, in my research, all managers stated that they needed new staff who have IT proficiency. Libraries were one of the first organisations that applied ICTs in their operations, therefore, people who work in libraries should have the digital competencies needed to work in the digital age.

In summary, the IT infrastructure in Vietnam has created a positive environment that supports the development of DLs and DLE. It has created a demand for a DL labour force. Stakeholders believed that the competencies offered by DLE will help LIM practitioners find jobs in the LIM field. In addition, DLE has provided LIM programmes with a crucial tool to enhance the quality of their curricula as a means to attract new students.

8.1.5 Social and cultural values

The social and cultural environment is an important factor for bringing about education development and change. Ely (1990a), who examined the environmental conditions which promote change, contended that besides the characteristics of the innovation, the environment in which the innovation is to be introduced plays a crucial role in the change effort's success. According to T.T.M. Nguyen (n.d.) and D.D. Nguyen (2009), Confucianism has a profound impact on Vietnamese culture. It influences the attitudes, beliefs and behaviours of Vietnamese people in many aspects such as the status of education and the relationships among members in a family and an organisation. The development of DLE was affected by the following social and cultural factors: *social beliefs in education; power distance in Vietnamese society; and Vietnamese society's view of the LIM field.* In my research, I found that social and cultural values acted as a barrier restricting DLE development.

Social beliefs about education

The beliefs of Vietnamese people about education was a cultural aspect affecting DLE development. Researchers such as Dai Viet Su Ky Toan Thu (1993) and K. Vu (2009) recognised that Vietnamese people believe that having a degree with high academic records will make their lives better. These researchers found that Confucianism deeply

affects all aspects of Vietnamese society because people think that education gives good opportunities for personal development. Their belief is that people with a good education will become leaders, and education assists learners, especially young people, to succeed so they can support their families.

In my study, the stakeholders thought that the traditional belief in education would affect the educational expectations of LIM practitioners (see Chapter 6). Some managers said that many LIM practitioners attended educational programmes because they wanted to get certificates or degrees rather than through a desire to obtain new knowledge. H.S. Nguyen (2008, p. 272) referred to this as "degree hunger". The Dong Da Library Manager confirmed that many staff wanted to get higher degrees because of promotion opportunities rather than their professional development. As a result, it was hard for library managers at times to approve requests for further education opportunities from staff. This was because these managers recognised that some staff preferred to attend a formal educational programme simply to get degrees (e.g. Masters, PhD) which took a long time to complete and were mostly focused on theory, and of course, were costly. Staff were sometimes unwilling to take short courses which would train them in necessary skills and knowledge. In other words what these staff wanted for themselves was not necessarily what was best for the library. As the Manager of Hoa Binh Library said, there was potential for the outcome of learning to be of little value to the library because what staff learn from higher degrees might not be practically applied in their current work.

In Chapter 5 I found there was a perception among the study's participants that younger staff needed to study more and older people should give educational opportunities to younger ones. LIM managers confirmed they normally received requests for study from younger staff, while older staff rarely proposed additions to their learning. An older LIM practitioner said "we have high expectations of young people." They thought that learning technology issues was suitable for younger people and they should be given opportunities for study. In addition, the data also show that younger staff were excited about DLE and DLs. This situation inspired younger staff to study, but because it discouraged older staff from wanting to learn about DLs, it is a barrier for DLE development.

Power distance

The power distance (PD) aspect was identified inside LIM organisations, between managers and staff, and at different levels of the administrative system (see Section 6.3.3). It appears that PD restricted the development of DLE.

The data in Section 6.3.3 show that PD existed at the organisational level. This prevented LIM practitioners from proposing their needs (especially needs for education) to their manager. Normally the manager decides how and when staff need to improve their skills and knowledge. This led to a situation in some organisations in which staff said to me they needed DL competencies but their manager said that they were unnecessary (see Sections 5.2.2). Thus, the high level of PD in the workplace had a negative impact on LIM practitioners' ability to meet their educational needs.

At the level of government management, PD was also evident. It prevented LIM schools from communicating to the ministry their need for change in LIM educational programmes. All schools have to follow the basic curriculum which is managed by the Beta Ministry (see Sections 6.2.3 and 6.3.3). At this level, the high PD in terms of the relationship between government departments and library schools was also a barrier to the development of DLE programmes at LIM schools.

Vietnamese society's view of the LIM field

The view of society about the role of libraries and information centres was an important barrier to the development of DLE. I found that the Vietnamese society's perspective affected the stakeholders' dispositions about LIM work. According to the participants, the LIM field did not receive much attention in society, and people still thought that working in the library was a "simple job". This led to the fact that LIM practitioners hesitated to talk to others about their work because they felt uncomfortable stating that they were librarians. Another impact was that they did not have much motivation for study and did not want to enhance their own competence because they thought that nothing will change after receiving further training. As a result, some LIM practitioners did not want to attend continuing professional educational programmes, and as noted earlier, they were reluctant to state their educational needs, which had a negative effect on DLE development.

Stakeholders said that in Vietnamese society many people still think that the LIM field or libraries do not play an important role in educational and economic development. Some managers claimed that top leaders still have this viewpoint. A library manager confirmed that people just think of libraries as stores to keep books, so the tasks of librarians are to take books in and out of the stores. In addition, reading behaviour or reading culture is an issue among Vietnamese people that the government is trying to enhance (MCST, 2011). Vietnamese people do not like reading (H. V. Nguyen, 2012). On average, one Vietnamese citizen reads 0.8 books per year, which is very low when compared with Malaysians who read 10 books per year. An official in MOET claimed teaching methods based on a teacher-centred approach in the educational system led to the low value placed on libraries. The official concluded that teaching and learning are still operating primarily without libraries and other academic resources.

The situation and viewpoint of society had negative effects on DLE in terms of funds and opportunities for its development. For instance, the LIM field had limited budgets because from the society's viewpoint, libraries have low value so they have not received good investment in comparison to other fields. As a result, many libraries did not have enough money for developing their IT systems, thus they tended not to need DLE (see Section 6.3.2).

In summary, the social beliefs in education, power distance in Vietnamese society, and Vietnamese society's view of the LIM field all contributed to the negative impact that social and cultural values had on DLE development.

8.1.6 Personal and organisational nexus

The relationship between individual need and organisational need is an issue that is considered a crucial factor affecting organisational development. In her research on continuing professional development (CPD) for university library practitioners in Vietnam, H.S. Nguyen (2008) found that there is a close relationship between practitioners and their libraries in terms of their learning needs and development. Antonacopoulou (2006) and Monette (1977) also found that the needs of one side definitely affect the other side. My findings are similar to theirs.

Interactions of learning needs

In this research, I found there was a relationship between LIM practitioners and LIM organisations (LIM field) in terms of their learning needs (see Section 5.3). The organisations need to be able to retain staff, and offering them opportunities for developing their skills was one way to do so. The organisations also need staff with competencies to run their IT systems so they need staff to learn those competencies, without which the organisation is less effective than it should be. Individuals need competencies to perform new tasks at work and especially to achieve promotion, and very often they need the support of the organisation to get those educational opportunities. This intertwining of needs and expectations goes beyond the 'balance' that was in the original model (see Figure 7 in Section 3.2) and explains why the term 'nexus' is now used.

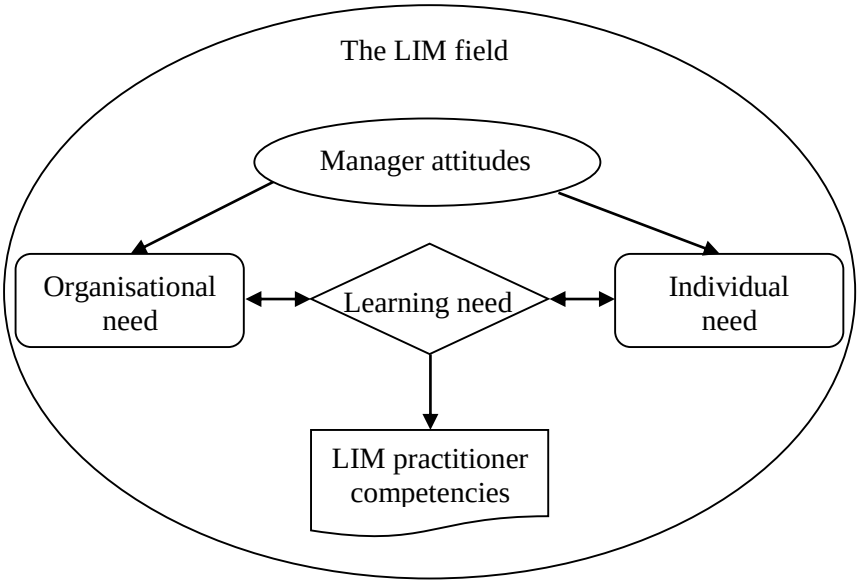

Figure 19: Interactions of learning needs

Figure 19 presents the relationship between LIM individuals and LIM organisations in terms of their learning need, in which the learning need was affected by manager's attitudes. In most cases, LIM managers decided what educational programmes their staff attended. In some libraries, managers required their staff to learn while others encouraged their staff to take more education. Some managers used both strategies: encouraging and requiring staff to learn new knowledge. As discussed in Chapters 5 and 6, younger staff members overall were happy with this and they accepted offers from managers. Though LIM practitioners sometimes proposed their learning needs to their managers, a

manager's final decision usually depended upon whether they thought it necessary for their organisations rather than for the personal development of the staff. This finding is similar with was found in other research. H. S. Nguyen (2008), for example, found that LIM managers in Vietnam strongly influence their staff's CPE. She discovered that some demanding managers, to meet their organisation's need, forced staff to attend CPE programmes, demonstrating that the attitude of managers to staff educational need plays an important role in organisational learning in that context. There is common agreement in the management literature that individual learning is a result of organisational learning rather than the other way around (Antonacopoulou, 2006; Pawlowsky, 2001). Thus, at the level of the LIM field, an assemblage of learning needs of LIM organisations represents the learning need of the whole LIM field.

In the data, I found two types of relationships between individual and organisational learning: conflict relationships and balanced relationships.

I found a conflict relationship occurred when the learning needs of LIM practitioners did not match with the needs of their organisations. This happened in libraries which were not fully computerised, and led to the situation where managers thought their staff did not need DLE or any IT courses. However, on the side staff, I found that many staff wanted to attend DLE courses, but the limited budget of their libraries prevented these staff from these opportunities.

In terms of balanced relationships, in some libraries such as Kim Ma, Tay Ho and Thanh Xuan, the learning needs of the organisation matched those of LIM practitioners. Managers in these libraries wanted to keep and employ qualified staff who can help their organisations change to the digital environment. For this purpose, giving staff opportunities for furthering their education was a strategy managers used to attract and retain high quality LIM practitioners to work for their libraries. LIM practitioners in these libraries felt free to express their needs for education and personal development. The educational needs discussed in Section 8.3 were predominantly from librarians in these libraries.

In my research the need for organisational learning generally led to the need for individual learning. Antonacopoulou (2006), in an examination of the relationship between individual and organisational learning, found that individual learning does not have a

significant impact on organisational learning. I found a similar result in the LIM field. This is important for DLE, because if LIM educators or change agents want to develop an educational programme for LIM practitioners they will need to cross check with LIM managers. In some cases, educators might have to make an effort to change the restricted view of managers on staff development because their negative attitude may restrict LIM practitioners from obtaining CPE.

Fullan (2007) emphasised that individuals should be self-motivated to acquire new knowledge and skills and should identify the knowledge and skills they need for their work. However, the data in Chapter 5 show that some LIM practitioners did not want to take responsibility for their own development. Instead they left all of the decision-making to their managers. This restricted the development of the LIM profession and LIM education.

In my data I found that in some LIM schools, such as Hoan Kiem and Thanh Xuan, lecturers expressed their demands clearly and LIM schools supported them to obtain higher qualifications. In addition, deans also encouraged lecturers to seek educational opportunities to enhance and update their knowledge, and they especially encouraged younger lecturers so that they could introduce DL subjects into the LIM curricula. In the LIM academic setting there was no conflict on professional development of lecturers and the organisational development of LIM schools. This is a positive factor for developing DLE.

Gender aspect

The gender aspect is an interesting issue for the LIM profession. According to H.S. Nguyen (2008), gender is an element which affects the CPE of LIM practitioners. She concluded that "family commitments and social constraints are barriers to the CE [continuing education] of female practitioners" (p.157). Data in Section 5.3.2 show that females make up a major proportion of staff members in Vietnam's libraries. In a survey of human resources in the Vietnamese LIM field, T.Q. Tran and Do (2010) found that 77.3 percent of LIM practitioners are female. My research confirmed that the number of female staff was a challenging issue for LIM organisations. LIM managers in my study claimed that the large number of female staff had negative impacts on organisational

development. The educational needs of the organisations were limited by the fact that female practitioners had family commitments that restricted their participation in CPE.

In summary, there was a relationship between individuals and organisations, in which the individual and organisational nexus affected the career development and learning opportunities of the LIM practitioners. The large number of female staff members in libraries restricted the educational needs/development of LIM organisations.

8.1.7 Change agents

In this section, based on the discussion in Sections 8.2.1 to 8.2.6, and on the data analysis in Chapters 5, 6 and 7, I discuss the effects of change agents on the development of DLE in the Vietnamese context, and I identify factors affecting change agents' efforts to develop DLE in Vietnam.

In the Change Communication Model which describes the environment of educational change, Ellsworth (2000) situated the change agents at the beginning of the educational change process. They adopt a new idea or innovation and try to spread it through their community. Change agents in the LIM field played a similar role in which they tried to expedite changes in LIM education. Given that DLE progress was quite slow, I wondered *what factors were affecting change agents' efforts?* Figure 20 illustrates the position of change agents in the LIM educational change process in Vietnam.

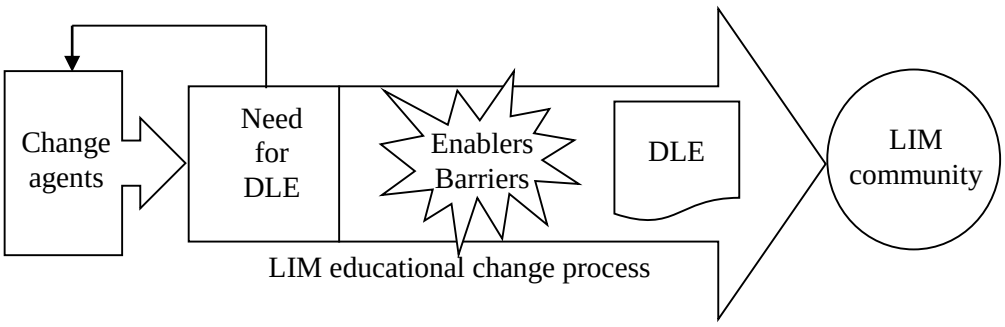

Figure 20: The LIM educational change process

In this process the need (of LIM practitioners and organisations) for DLE was promoted by change agents, thus fostering the development of DLE. For example, the change agents used their adoption of new ICT systems in their own organisations as examples to promote the need for DLE. The success of change agents was affected both by enablers and barriers existing within the Vietnamese environment.

Change agents as a positive factor

As identified in Chapter 7, change agents played three crucial roles in DLE development: (1) to understand the current issues/situation within the LIM field; (2) to explore and promote educational needs in the LIM field; and, (3) to advocate and try to initiate efforts for change in LIM education. In each of these roles, change agents had positive effects on the development of DLE in Vietnam (see Section 8.3.2).

The effect of change agents was examined through their roles in DLE development. In the LIM educational change process in Vietnam, the change agents recognised and understood the educational needs, and cooperated with educational stakeholders to develop and then bring DLE to the LIM community. They persuaded stakeholders to accept and develop DLE for LIM practitioners in Vietnam.

Rogers (2003) suggested that there are two types of diffusion systems: decentralised and centralised. I found that in Vietnam adopting a new idea/innovation such as library software and library standards in the LIM field generally involved a centralised system where the idea/innovation started from top levels and moved down to lower levels. In this system, change agents worked with the top level of management and influenced decision makers to decide whether the new thing (e.g., new software product, new technology, or new educational programme) should be introduced to the LIM community.

At a high level of management within stakeholder organisations, change agents acted as a catalyst for change. As can be seen in Section 5.1.5, leaders (managers, decision makers - officials, chairpersons, and deans) often acted in isolation. In some cases, there was a lack of mutual respect among these stakeholders. They blamed each other for slow progress in the LIM field. There was a weak degree of cooperation among government departments, LIM associations, libraries and LIM schools. The change agents built a relationship among these agencies. They encouraged top leaders to work together to introduce innovations in the LIM field (see Section 7.3.3).

Cooperating with professional associations was a useful strategy change agents used to effect change or deliver a new programme in the LIM field. In this research there were two LIM associations of which most LIM organisations and LIM practitioners were members. The data show that LIM associations did not have a strong impact on the LIM

profession (professional practice) and LIM education (see Section 6.2.4). However, through their connections with LIM organisations and LIM practitioners, these associations had varying degrees of impact on the development of DLs and DLE. Change agents recognised the influence of the associations, and worked with them at the beginning of the educational change process (see Chapter 7). Some DLE courses (or educational programmes which included DL subjects) were offered by LIM associations. In these courses, change agents played roles as explorers, coordinators and educators. For developing DLE, educators worked with change agents to raise the interest and impact of stakeholders in DLs.

I also found that the change agents used opinion leaders to promote new ideas and change the attitude of potential adopters. Rogers (2003) pointed out the important role of opinion leaders in introducing innovation in the community. He stated that "change agent success in securing adoption of innovations by clients is positively related to the extent that he or she works through opinion leaders" (p.388). Other research, such as that undertaken by Hallinger (2003), Valente and Pumpuang (2007), Yanyan, Shaoqian, Yonghe, Ronghuai and Kinshukc (2006) and Youngsang, Junseok and Daeho (2012) has also demonstrated that opinion leaders have a strong impact on the adoption of products or services in the diffusion process of technological innovation, and on adoption of new knowledge. Rogers (2003) suggested that it is necessary for change agents to use opinion leaders to make an effort for change. My data show that opinion leaders played an important role in promoting new educational programmes in the LIM field (see Section 5.2.5 and Chapter 7). Change agents used workshops, conferences and library journals to give exposure to opinion leaders in order to influence stakeholders' attitudes about DLs and DLE. For example, the term "digital libraries" and "digital librarians" were mentioned by many managers and decision makers and other stakeholders who had a strong influence in the LIM field. As a result there was a call for establishing new competencies for LIM practitioners.

Change agents also played an important role in changing stakeholder attitudes on DLs and DLE. They introduced concepts of DLs, digital content, and they identified the roles and competencies of librarians needed for DLs. Although there were different levels of understanding of DLs, the wide diffusion of DL concepts among stakeholders was an encouraging achievement of change agents and change organisations.

Barriers restricting change agent efforts in developing DLE

In Chapter 7, I demonstrated that change agents have achieved some significant results in developing DLE in Vietnam. However, in general, DLE was still between the initiation and the implementation phases. There were six main barriers to change agents in their efforts to promote the adoption of DLE: government management; the viewpoint of society about the LIM field; the lack of lecturers for DLE; the lack of cooperation among stakeholders; power distance in Vietnamese society; and stakeholders' reluctance to change.

As discussed in Sections 6.2.2 and 8.1.1 government management was a negative factor which limited the development of DLE. The restrictions in managing educational programmes/curricula limited the impact of change agents' efforts to influence stakeholders to develop and implement DLE. Some policies for the development of the LIM field were not implemented sufficiently by the government departments. This restricted LIM stakeholders in developing DLs, and directly affected the development of DLE.

Vietnamese society's view of the LIM field was examined in Section 6.3.2, and the hindering effects of this factor were discussed in Section 8.1.5. In these sections I demonstrated that the value of the LIM field, in particular libraries and information centres, was not recognised as important by society. This resulted in limited investment in the LIM field from the government which had a negative impact on change agents' efforts and led to the slow development of DLs and DLE.

Lack of cooperation among stakeholders was another barrier that change agents and LIM schools faced in developing DLE. Sections 5.1.5 and 7.3 show that although change agents tried to make connections among stakeholders, the lack of cooperation among them still existed and it challenged the change agents in getting agreement among libraries, schools and associations in terms of developing DLs and DLE. In LIM education, LIM schools did not work together in developing DLE. In the LIM field, there was only weak cooperation among libraries in developing DLs. There were conflicts among stakeholders in terms of digital competencies for LIM practitioners, digital library concepts and the development of DLs. All these challenges limited the impact of change agents' efforts in influencing the adoption of DLE.

I found that the cultural factor prevented some stakeholders from becoming change agents. In Vietnamese society, especially in the LIM field, a change agent needed to have power in terms of her or his position. This person has to be a manager, dean, official or any policy maker. Nobody would listen to him or her if he or she did not have power, or in other words, he or she did not have a strong voice in the LIM field. The need to have power can be explained by the cultural aspect in Vietnamese society where a high scale of power distance exists. In this society, a person who has less power does not receive respect from higher power people and thus cannot influence the LIM community. The LIM practitioner in Tay Ho Library was an example. He was a senior staff member who published research in DLs and was respected by other LIM practitioners in the LIM field. However, he could not influence the LIM community, because he was not a manager (see Chapter 7). Hofstede (2001) found that large power distance occurs in centralised authority systems. The research of Segon and Booth (2010) identified that Vietnam has a centralised management system and people accept that power has its privileges in the workplace. These are also aspects of Vietnamese society that I found in the LIM field.

Another aspect of culture which affected the efforts of change agents with regard to DLE is the attitudes of stakeholders to change. I found some stakeholders hesitated to make changes in LIM education. That issue made change agents struggle to influence and convince managers, deans as well as top leaders to bring about changes in LIM education. In general, LIM leaders chose the safe way to make decisions for change. Therefore, convincing leaders to take steps to advance change was challenging for change agents.

In summary, change agents played crucial roles in the development of DLE. They cooperated with educators to examine educational needs. They used opinion leaders and professional associations to expand the concept of DLs and change the attitude of stakeholders on competencies of LIM practitioners. By doing these things, change agents provided a foundation for DLE development. They acted as a catalyst among stakeholders who have a weak connection with each other. They were a positive factor for DLE development. However, there were many barriers which exist in Vietnam in the LIM field, society and government, which restricted change agents' efforts to develop DLE. These barriers need to be considered when change agents work with LIM schools and other stakeholder to develop DLE.

8.2. Model revision of contextual factors

In this section a revised model is presented based on the factors identified in the findings and their relationships to one another.

8.2.1 Change between initial model and revised model

I now explain how the factors have changed between the initial model and the revised model. Based on the results of the data analysis, I have revised the initial model presented in Chapter 3. Figure 21 shows the factors that have changed.

There are several key changes between the initial model and the final model. First, the *Social environment* factor is divided into three factors: *Government* (Section 8.1.1)*, IT infrastructure* (Section 8.1.4) and *Social and cultural values* (Section 8.1.5). The reason for the division is that the data indicate that the social environment is a big and complex component, which upon analysis involved three separate factors within the environment. *IT infrastructure* is a new factor which was not included in the initial model.

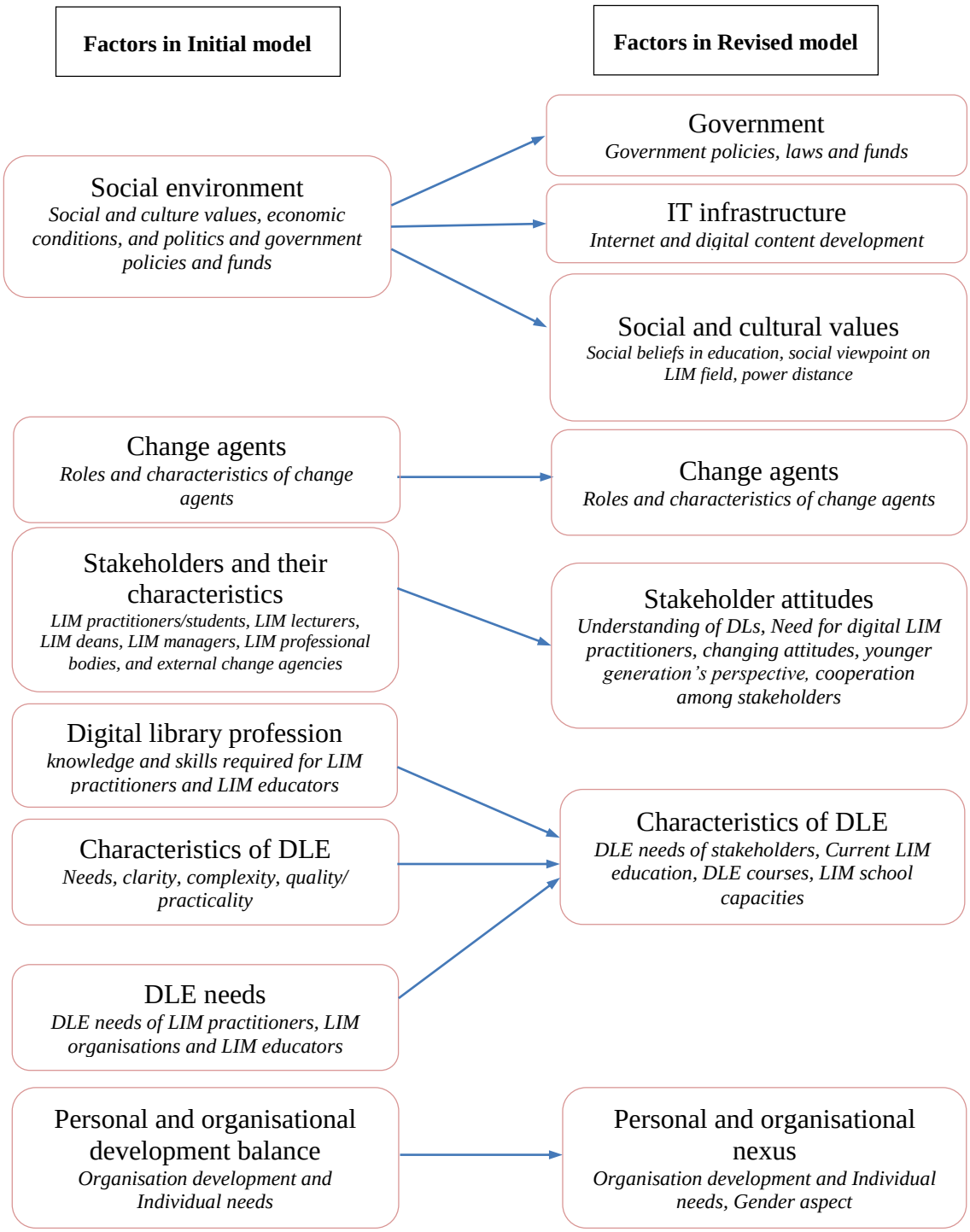

Figure 21: Change between initial model and revised model

Second, the *Stakeholders and their characteristics* factor and a part of *Digital library profession* factor are combined in a new *Stakeholder attitudes* factor (Section 8.1.2). The reason for this combination is the similarity between the stakeholders' perspectives on the importance of DLs to the profession's future and the LIM practitioners' viewpoints on digital competencies, both of which strongly affected the development of DLE.

Third, the *DLE needs* factor is merged into the *Characteristics of DLE* factor because the DLE needs were identified as a defining characteristic of DLE. Therefore, to avoid repetition, they were made into one factor. Initially, the *Digital library profession* factor was defined as the knowledge of and skills required for LIM practitioners and educators. Because the knowledge and skills were revealed by stakeholders through their expression of educational needs, the *Digital library profession* factor was also merged into the *Characteristics of DLE* factor.

The original *Personal and organisational development balance* factor was renamed the *Personal and organisational nexus* factor (see Section 5.3). The term "personal and organisational development balance" comes from Nowlen's (1988) model. It reflects the idea that the needs (for development) of individuals should be similar to or a part of the organisation's needs. This original term does not really express the close and complex relationship between the professional development needs of LIM practitioners and the needs of their organisation, as explained in Section 8.1.6. Therefore I use *Personal and organisational nexus* to explain the nature of this relationship more clearly.

8.2.2 The revised model

As I discussed in Section 8.1, I identified seven major contextual factors affecting DLE development in the Vietnamese context. These factors are grouped into three categories: external factors, which include G*overnment, IT infrastructure,* and *Social and cultural values;* internal factors, which include *Stakeholders' attitudes, DLE characteristics,* and the *Personal and organisational nexus*; and *Change agents* which is both an internal or external factor. These factors had different levels of influence on DLE development and are inter-related. The factors are presented in Figure 22 *Model of Factors Affecting DLE Development in Vietnam.*

There was a significant change in terms of model presentation. The factors were initially presented in a circle which had three layers, while the final model presents the factors as separate entities with relationships indicated by linking arrows. The reason for this change is because the revised model can present clearly three aspects that the former missed. First, it can present LIM educational change as a process, in which DLE development stands in the transition phase. Second, it demonstrates the relationships between factors as shown

by the arrows. Finally, it shows both the direct and indirect effects of the contextual factors on DLE development.

The ‘relationships” arrows present the relationships between factors rather than the type of relation. For example, the Change agents factor influences both the Government factor (especially in relation to policies and funds) and the Stakeholder attitudes factor (the need for digital LIM practitioners) (see Section 7.3). ‘Direct effect’ illustrates that a factor directly affects DLE development. For example, the Change agent factor directly affects policies and funds of the Government and strongly influences the Stakeholder attitudes. ‘Indirect effect’ means that a factor affects DLE development indirectly through other factors. For instance, the Social and cultural values factor influences DLE development indirectly through Stakeholder attitudes and the Personal and organisational nexus.

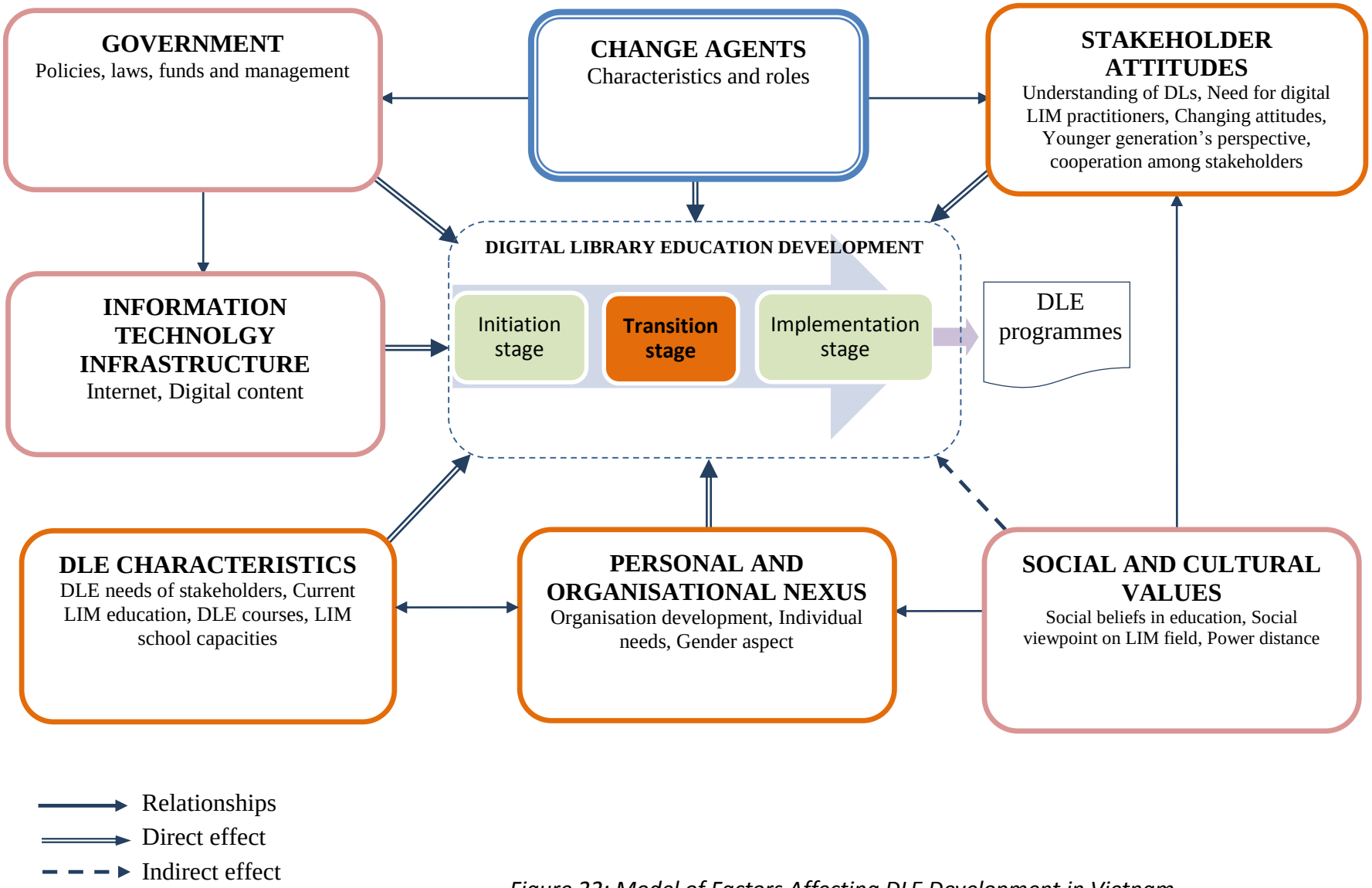

Figure 22: Model of Factors Affecting DLE Development in Vietnam

Government

The Vietnamese government is recognised as the most influential factor affecting the DLE development in Vietnam. The government acted both as an enabler and as a barrier with regard to the development of DLE. The factor was identified in Section 6.2 and discussed in Section 8.1.1.

The *Government* factor has a relationship with both the *Change agents* factor and the *Information technology infrastructure* factor. The government was affected by change agents through their lobbying of new ideas or programmes (see Section 7.3 and 8.1.7). Some change agents used their organisations to influence the government in terms of developing standards, acquiring new technology, and changing educational requirements for the LIM field. Change agents said this was a good way to deliver new technologies/LIM standards to the LIM field in the Vietnamese environment in which central planning plays a critical role. Change agents, for example, were successful in approaching the relevant government ministries to allow for the introduction of integrated library systems and MARC21. In addition, they influenced MOET to allow for the introduction of the basic LIM educational programme. Change agents thus were able to reduce the limiting effects of the government's management control.

The *Government* factor has directly affected the development of the *Information technology infrastructure* factor, through policies that prioritised investment that created a basic IT infrastructure for education and other sectors. This created the environment needed for the development of DLs and DLE.

Stakeholder attitudes

Stakeholder attitudes is one of the most important factors that affected DLE development. This factor included the stakeholders' current understanding and viewpoints about DLs and DLE and included the needs of the LIM profession. This factor had both positive and negative effects on DLE development. This factor was identified in Section 5.1 and its effects were discussed in Section 8.1.2.

In its relationships with other factors, the *Stakeholders attitudes* factor are influenced both by the *Social and cultural values* and the *Change agents* factors. According to Wood (2000) the speed of the change process increases when the attitudes of stakeholders

change. Therefore, an important finding in my study was that change agents believed that it was necessary to help the various stakeholders to understand the DL concept, which in turn would help change their attitudes towards the importance of DLE development (see Section 7.3). Stakeholder attitudes were also affected by the *Social and cultural values* factor (discussed below). The attitudes and beliefs in society affected the stakeholders' dispositions about LIM work (see Sections 5.1 and 6.3).

Social and cultural values

The *Social and cultural values* factor was a barrier which restricted DLE development. Aspects of this factor, such as the attitudes in Vietnamese society to those in the LIM field, the lack of cooperation among LIM organisations, the stakeholders' reluctance to change, and the power distance in society, were all barriers to DLE development. This factor was identified in Section 6.3 and discussed in Section 8.1.5.

In its relationship with other factors, the *Social and cultural values* factor affected the *Stakeholder attitudes* factor (discussed above) and the *Personal and organisational nexus* factor. Power distance, an aspect of the *Social and cultural values* factor, restricted LIM practitioners stating their educational needs. This led to a 'conflict' relationship between individuals and organisations (see Sections 5.3 and 8.1.6).

Personal and organisational nexus

This factor was both an enabler and a barrier. The *Personal and organisational nexus* factor has relationships with the *Social and cultural values* factor (as discussed above) and the *DLE characteristics* factor. In its relationship with the *DLE characteristics* factor, the *Personal and organisational nexus* factor affected the educational needs of LIM practitioners. It would prompt DLE needs if it was a 'balanced' relationship, or restrict the need if it was a 'conflict' relationship (see Sections 5.3 and 8.1.6)

Digital library education characteristics

This factor includes the need for DLE, the DLE content in current LIM educational programmes, and the ability of LIM schools in developing and implementing DLE. The factor was both an enabler and barrier. The recognition of their need was an enabling factor for DLE development. However, the lack of lecturers who could implement DLE programmes was a barrier for DLE development. This factor was identified in Section 5.2

and discussed in Section 8.1.3. This factor has a relationship with the Personal and organisational nexus factor (see above).

Information technology infrastructure

The development of IT which created a technological infrastructure and a digital environment led to changes in the LIM field. The development of a national digital environment, the trends in using digital content and the need for staff who are competent with DLs, created the need for DLE. The IT infrastructure was an enabler for the development of DLE. This factor as identified in Section 6.1 and discussed in Section 8.1.4. The IT infrastructure factor was affected by the Government factor because of the impact of government policies and funding.

Change agents

The *Change agents* factor includes individual change agents and change organisations. Change agents were found to be an enabling factor. Their positive efforts to deliver DLE into the LIM field were identified in Chapter 7 and discussed in Section 8.1.7.

The *Change agen*ts factor has a direct relationship with both the *Government* factor (as discussed above) and the *Stakeholder attitudes* factor. With regard to the latter, change agents played an important role in changing stakeholder attitudes toward DLs and DLE, exploring and prompting the DLE needs of stakeholders (see Section 7.3.2).

In summary, the various factors had different levels of impact on DLE development. Some factors played important roles in DLE development and influenced other factors, while others had less impact on the development. In addition, each factor does not stand alone, rather it has relationships with others, and then come together they affect the DLE development.

8.3 Educational needs

In this section, I summarise the educational needs of LIM practitioners and other stakeholders who are involved in the development of DLs in Vietnam. This section gives a general picture of DL competencies for LIM practitioners and identifies groups of DLE learners.

8.3.1 Who will be offered digital library education

In my analysis of the data I found three kinds of stakeholders who need DLE: LIM practitioners (including LIM students), LIM managers and LIM educators.

LIM practitioners were the main group needing DLE. They needed DLE for their current and future work in LIM organisations. The data show that LIM practitioners did not have a full understanding about DLs and the requirements for working in the digital environment. LIM practitioners stated some key competencies that they wished to acquire in DLE which are discussed below in Section 8.3.2. Similarly, the competencies for future LIM practitioners were also stated by LIM managers (also employers). Their requirements for staff are an important reference that educators have to take into account when designing and offering DLE programmes. The DLE for LIM practitioners should focus on competencies that will help them improve their performance in the digital environment.

The second group of DLE learners is LIM managers. The data show that hardly any managers thoroughly understood the DL concept and requirements for the development of DLs, therefore, DLE must also be developed for LIM managers. With thousands of libraries and information centres in Vietnam, a large number of LIM managers need to update their knowledge relevant to DLs. The DLE for LIM managers must focus on increasing their knowledge of DL management.

The last group is LIM lecturers. It was somewhat surprising that LIM lecturers were identified as a key group given that they should be educators who teach DL subjects. The data show there is a lack of lecturers who can teach digital subjects. LIM schools need to prepare for developing DLE programmes by educating their academic staff. I found that some LIM schools did not have any academic staff who can teach DLE subjects. Their deans stated that they wanted their staff to update their knowledge for DLE. DLE for LIM educators would include the knowledge and skills described above for both LIM practitioners and LIM managers.

The educational needs of these three groups are prioritised in the following section. In this research, I do not try to identify the detail of DLE content or build a DLE programme, rather I identify the educational needs of stakeholders to help foster the development of

DLE. There was agreement among the stakeholders that formal LIM education, including DLE, has to educate a multi-skilled workforce for the digital age.

8.3.2 Digital library education content

In the data I discovered that the stakeholders identified four main areas of knowledge for LIM practitioners: library and information management science, information technology, foreign languages, and soft skills. Based on the educational needs of the stakeholders, Figure 23 presents digital library competencies for LIM practitioners. The size of each of the four balls approximates the relative proportion of each area in DLE according to the importance placed upon them by stakeholders.

Stakeholders such as managers, officials and educators believed that LIM practitioners should have the knowledge and skills of global and digital citizens. One obvious area in which LIM practitioners must have knowledge is IT because this field strongly impacts their roles in the digital age (Anderson & Gesin, 1997 ; D. K. Singh & Nazim, 2008).

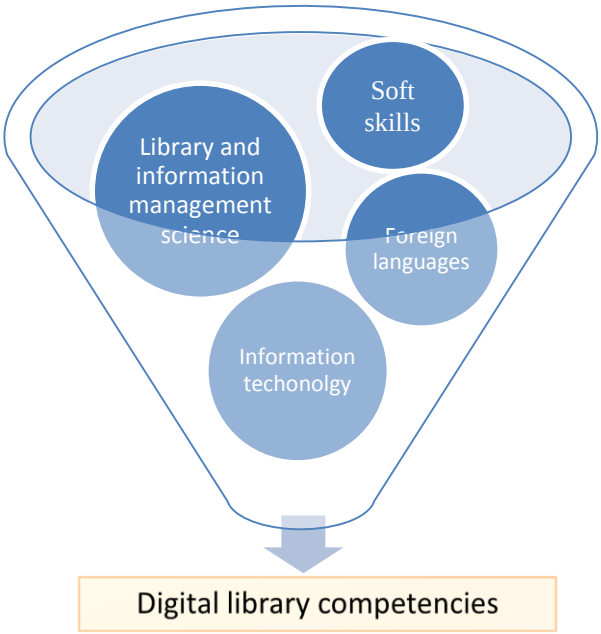

Figure 23: Four main areas of digital library competencies

Library and information science: this area of knowledge is an integral part of DLE. It must include the theoretical and practical aspect of LIM management processes such as acquisitions, information processing, archiving, and searching.

Information technology: there was some disagreement among stakeholders about the IT component. Some stakeholders thought LIM practitioners should be IT experts who can write code and manage an IT system. On the other hand, other stakeholders argued that LIM practitioners need to have only a general knowledge of IT, that is, the knowledge and skills that will help them manage their library computer systems. However, in Figure 24, I include some IT subjects as a reference for future DLE development and show a mix of LIM knowledge and IT knowledge, and some LIM subjects include components involving some knowledge of ICTs.

Foreign languages: LIM managers and LIM practitioners both believed that the ability to use a foreign language, especially English, should be compulsory for LIM practitioners in the digital age. Vietnamese libraries have to connect to other libraries in the world in order to satisfy the information needs of their users. Some managers specifically stated that they preferred to employ staff who have a language qualification. Murray and Welch (2009) foun d that LIM developments in Vietnam are progressing slowly because library staff have only a limited ability to use English, which is the language that most literature on DLs is being published.

Soft skills: Many stakeholders argued that LIM practitioners, like workers in other fields, need soft skills in order to succeed in their work and their daily lives. LIM managers and officials observed that the soft skills of LIM practitioners, such as problem solving and communication skills, were limited and therefore should be added to LIM education and DLE. According to some key stakeholders, critical thinking is one of the most important soft skills for LIM practitioners, especially for managers. This finding supports the conclusion of Lu (2012) who identified the increasing importance of critical thinking skills to deal with the exponential increase in information becoming available through digital libraries.

Knowledge map of DLE

The criteria I used to categorise the competencies in Figure 24 are based on existing models of topics in DLE (Pomerantz, Abbas, & Mostafa, 2009; Pomerantz et al. 2006). The knowledge map (core competencies) of DLE for LIM practitioners in Vietnam in Figure 24 was extracted from the educational needs stated by stakeholders, and digital library subjects in current LIM curricula identified in the documentary evidence (see Chapter 5).

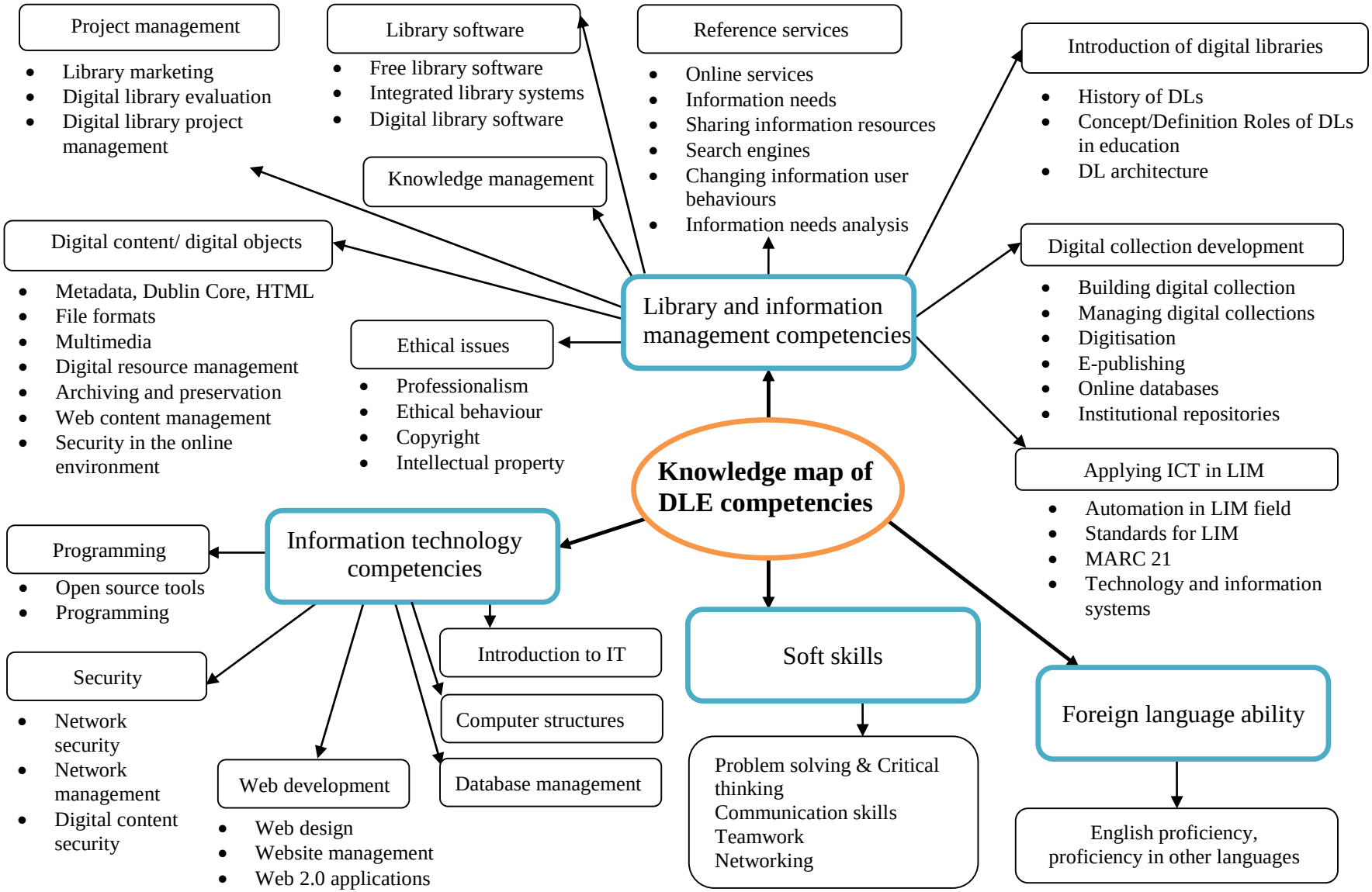

Figure 24: Knowledge map of DLE competencies

Format of digital library education programmes

In this study all of the deans agreed that building a full DLE programme was a challenging task, but sooner or later, LIM schools had to introduce one. The schools could not ignore the changes occurring in the LIM profession which needs practitioners who have adequate digital competency. Some deans suggested, for a transitional period, LIM schools need to integrate DLE subjects into their current educational programmes. An integrated educational program which mixes the subjects of traditional libraries and DLs is a suitable programme for LIM practitioners (see Section 5.2.3). This solution was also suggested by some researchers for educational institutions that wanted to develop DLE programmes (Coleman, 2002; Ma, Clegg, & O'Brien, 2006; Yang et al., 2006).

Two formats for DLE were suggested by stakeholders. DLE should be introduced as continuing professional education (CPE), and as formal education.

According to participants in this study, for CPE, DLE programmes should be driven by the learning goals of LIM practitioners. DLE programmes should be offered by LIM schools with university credits or through LIM organisations with non-credit courses. LIM organisations can customise the DLE programmes and offer DLE through their own employee training activities. Stakeholders suggested that agencies such as libraries, LIM schools, two LIM professional associations and the Alpha Ministry should cooperate in developing DLE as CPE in the LIM field. Any of these agencies can offer DLE courses. The purpose of these programmes should be to help current LIM practitioners who do not have digital competencies enhance their working abilities in the digital environment.

In Vietnam, online study or distance learning is quite new as a teaching and learning method in the LIM field, but some stakeholders suggested that DLE should be organised as online courses that help LIM practitioners to study at any place and any time. Though online education is popular for librarians in many parts of the world (Bond, 2013; Francis, 2013; Jackson, 2013), it is new for LIM practitioners in Vietnam who normally study via the traditional method in which learners have to attend classes in person.

Educational materials (such as academic research and journal articles), workshops and conferences are channels for CPE in DLE. According to Benson, (2013), Jones (1978), K. A. Mason (2013) and Root (2013) these materials play important roles in CPE for

LIM practitioners, providing LIM practitioners with opportunities to acquire the latest knowledge. In my research, these information resources were strongly recommended for LIM managers and educators who had many opportunities for this kind of CPE.

The second DLE format discussed by stakeholders was formal education, which is offered by LIM schools with university level credits. This is the format through which learners will get degrees or certificates in DLE from the university. I found that stakeholders generally preferred formal and full DLE programmes rather than short courses. This can be explained by two reasons. First, it is the cultural aspect in which stakeholders think that having a degree will give them good opportunities for promotion within their profession. Second, the current DLE sources in Vietnam and possibly for some similar countries do not meet the demands of the LIM profession. As a result, LIM educators thought that for long-term DL development, formal DLE programmes should be a priority of LIM schools. LIM educators understood that developing a full DLE programme is a challenging task for LIM schools, but all of them are already beginning to prepare for it.

8.4 Conclusion

In this chapter I revised the initial model of factors affecting DLE development in Vietnam. I explained the reasons for revising the model and provided a detailed overview of the various contextual factors and their relationships with other factors. I also identified the potential learners of DLE and I prioritised their core needs for DLE.

By identifying the factors enabling and hindering DLE, I have provided findings that are important for the development of DLE in Vietnam. Change agents and other stakeholders can use the enablers to speed up the on-going change process in LIM education, and they can attempt to find solutions to reduce the negative effects of the barriers.

Chapter 9 Research implications and conclusion

"Sharing knowledge occurs when people are genuinely interested in helping one another develop new capacities for action; it is about creating learning processes."

Peter Senge – MIT

My research set out to investigate the contextual factors affecting the development of digital library education (DLE) in Vietnam. My reason and motivation were that the LIM field in Vietnam has developed steadily in the last two decades in terms of IT application and digital resource development, but LIM education has not caught up with the concomitant demands. In addition, there is the need for education to provide digital competence for LIM practitioners, but there is no existing full DLE programme for Vietnamese LIM practitioners. This situation has led to a shortage of suitably qualified library staff in the LIM field. I, as a librarian, digital consultant and now a LIM lecturer, was concerned with the existing gap between the LIM profession and LIM education. I believed it should be possible to discover the reasons for this situation. This inspired me to undertake research in order to explore and understand the environment for LIM educational change caused by the appearance of DLE. My study sought to address two research questions (RQs):

- RQ1: What are the contextual factors affecting the development of digital library education (DLE) in Vietnam?
- RQ2: How do these contextual factors affect the development of digital library education in Vietnam?

In order to answer these questions, I developed an initial model based on findings from the literature review and the theoretical frameworks of Fullan's educational change theory, Nowlen's Performance Model in continuing education for practitioners, and Rogers's Diffusion of Innovations theory. I used a qualitative research approach based on interviews (semi-structured interviews with individuals), focus groups, and documentary evidence (annual reports of LIM organisations and government documents). Interviewees were chosen from various organisations involved in the development of DLE. They were LIM practitioners (librarians and information professionals), LIM managers, LIM

lecturers, deans, officials (policy makers, heads of state agencies, and chairpersons of professional associations), and LIM students.

The purposes of this chapter are to provide a synthesis of the key findings and arguments of my research, and make a connection between my research and the LIM research community. For these purposes, this chapter: synthesises key findings of the research with regard to the research problem and research questions; reports the contribution of the research in terms of theoretical implications and practical implications; identifies the limitations of the research; and discusses directions for future studies.

9.1 Empirical findings

The main findings are presented and discussed in four chapters: Chapter 5 Internal factors, Chapter 6 External factors, Chapter 7 Change agents and Chapter 8 Revised model and discussion. The ultimate findings are condensed into *Figure 22: The Model of Factors Affecting the Development of Digital Library Education in Vietnam.* In this section I synthesise the empirical findings to answer the two research questions of the study.

In Table 14 I synthesise three aspects of the contextual factors: their characteristics, their effects on DLE development, and the related factors.

In response to RQ1, the research found that DLE development in Vietnam is a complex process involving seven major factors: the *Vietnamese government* with its policies, laws and funding; *stakeholders' attitude* to DLs and DLE and their level of understanding of the DL concept; *DLE characteristics* such as DLE needs, DL subjects/courses in current LIM curricula, and the ability of LIM schools to develop DLE; *IT infrastructure* with the development of the Internet and the trend to use digital content; *social and cultural values* such as social beliefs in education, limited cooperation among stakeholders, power distance, the attitude of society to the LIM field, the younger generation's perspective, and attitudes to change; the *personal and organisational nexus* balancing the needs of LIM practitioners with their organisations; and, *change agents* and their roles in DLE development. All these factors are included in Figure 22 which illustrates the effects of these factors on the development of DLE and their inter-related nature.

Table 14: Contextual factors and their aspects

Aspects of factors / Factors	Characteristics	Effects on DLE development	Related factors
Government	- Policies, laws and funding for IT and education as well as the LIM field - Educational development strategies - Management issues	- Creating a foundational environment for the LIM field and DLE development - Restricting DLE development by top-down management style - Restricting DLE development through limited budgets	- Change agents - IT infrastructure
Stakeholder attitudes	- Have ideas and understanding about DL and DLE but none of it clear. Use DL as a fashion term - Consider DLs are the future of the LIM field - Need digital librarians for DL development	- Creating the educational needs for DLE - Motivating libraries to move to the digital environment - Limiting change in the LIM field and the development of DLs - Restricting the change process in LIM education	- Change agents - Social and cultural values
DLE characteristics	- Existing needs for DLE - Existing short courses but no full DLE programme - Limited infrastructure for developing DLE - Lack of lecturers for DLE	- Recognising DLE need encourages LIM schools to develop DLE programmes - Limiting the implementation of DL subjects	- Government
IT Infrastructure	- Increase in Internet/users - Digital content trend	- Creating a basic technological environment for DL and DLE development - Creating need for digital librarians	- Government
Social and cultural values	- LIM field is not an attractive career - Stakeholders hesitate to change - Lack of cooperation - Power Distance	- Limiting stakeholders making change in LIM field as well as in LIM education - Limiting LIM schools with regard to change in educational programmes	- Stakeholder attitudes - Personal and organisational nexus
Personal and organisational nexus	- Conflicting needs - Essential for developing qualified staff	- Limiting the opportunities for DLE for LIM practitioners - Organisations can give educational opportunities for LIM practitioners, especially women	- Social and cultural values
Change agents	- Individual change agents - Organisational change agents	- Exploring and enhancing DLE need - Influencing changes in the LIM field and LIM education - Raising awareness of the importance of DLE in the LIM community	- Government - Stakeholder attitudes

In response to RQ2, the research findings indicate that the contextual factors have different levels of effects and there are relationships among these factors. However, the

government factor is always the most influential factor. The development of LIM education is, ultimately, founded on policies, laws and funding. My research, however, also found that there are issues around the effectiveness of some aspects of government management. The centralised management (top-down system), power distance, and the poor quality of policy implementation by government departments hindered change in LIM education as well as the development of DLE. The government factor had both positive and negative impacts on DLE development. See Sections 6.2 and 8.1.1.

Stakeholder attitudes to DLs and DLE for LIM practitioners were both an enabler and a barrier. The positive viewpoint, which considered DLs as the future of the LIM field, encouraged LIM managers to move forward to DLs. Libraries' need for staff with digital competencies has created the requirement for LIM schools to make changes to their educational programmes. However, the unclear understanding among stakeholders about the nature of DLs has limited development of DLs in the field. In addition, LIM practitioners appear to be unable or unwilling to state clearly their needs for DLE. See Sections 5.1 and 8.1.2.

DLE characteristics were based on the education needs of LIM practitioners, the existence of DLE programmes in the LIM field, and the capacity of LIM schools for DLE development. The research findings indicate that there is an educational need for DLE. This need requires LIM schools to add more DL subjects to their curricula, and to develop DLE programmes. Despite the actual needs from the LIM field, no full DLE programme has yet been introduced. LIM schools lack lecturers who can teach DL subjects. Barriers are government control of the curricula, and obstructions placed in the path of change by older lecturers. Removing both barriers will assist DLE development. . See Sections 5.2 and 8.1.3.

The *Information Technology infrastructure* created a positive environment for the development of DLs and DLE. The development of the Internet, the trend for using digital content and the e-government plan in Vietnam require the LIM profession to modernise libraries and information centres. National IT development provides an adequate technical infrastructure for LIM modernisation, including DL development. This development requires a new labour force that can work effectively in the new digital environment. LIM practitioners are thus now required by libraries to acquire digital competence. See Sections 6.1 and 8.1.4.

Social and cultural values were hindering factors affecting DLE development. The social beliefs in education (i.e., the focus on getting a degree rather than knowledge) have discouraged learners from expressing their actual educational needs. The lack of cooperation among stakeholders is restricting the development of DLs and DLE and high power distance is preventing LIM schools from activating educational change. The attitude of society to the LIM field has reduced the perceived value of libraries as well as LIM practitioners. It also has limited investments in the LIM field from the government and society. The reluctance of stakeholders to change was a barrier to LIM educational change. In contrast, the younger generation's (LIM practitioners and lecturers) perspective was a positive factor for DLE development and change in the LIM field. See Sections 6.3 and 8.1.5.

Personal and organisational nexus affected DLE development both positively and negatively. There is a relationship between individual learning needs and organisational learning needs. The individual learning needs were affected by LIM managers' attitude to staff development (see Section 5.3 and 8.1.6). In some libraries, there was a conflict between individual and organisational learning needs with negative results for both sides. An awareness of this conflict has prevented LIM practitioners from fully stating their educational needs. On the other hand, in some libraries, individuals and managers held similar viewpoints on staff development. This condition encourages LIM practitioners to attend educational programmes creating mutual benefits for both organisation and individuals. It will also benefit organisations if more women (who are the majority of employees) can be encouraged to take CPD opportunities. See Sections 5.3 and 8.1.6.

Change agents positively affected DLE development. They helped LIM educators to recognise the actual needs of DLE in the LIM field. They raised awareness of DLs and DLE within the LIM community. They influenced LIM managers on the need for digital competence of LIM practitioners, and then convinced the managers to send staff to DLE (as continuing education). Change agents made a connection between LIM schools and libraries in terms of helping these organisations to reach an agreement on the DL competence of LIM practitioners. The research found that cultural factors prevented some stakeholders from becoming change agents, and limited change agents' roles and success, nevertheless, finding and encouraging effective change agents is a huge positive for DLE development. See chapter 7 and Section 8.1.7.

Taken together, the research findings indicate that no factor exists in isolation – all the factors interact with others. The interrelated nature of the various factors is evident in their impacts on the development of DLE at different levels and in various ways, and reinforces the statement at the beginning of my thesis that developing DLE is a complex process and involves many issues. Research such as mine that focuses on exploring the contextual factors will speed up the development of DLE in Vietnam.

Last but not least, the findings on the educational needs of LIM practitioners and the core knowledge of digital competence for LIM practitioners inform one of the first steps for developing a DLE programme in Vietnam. The educational needs of LIM practitioners on DLE reflect the current situation of DLs. In many organisations the development of a digital library is still at a very early stage. The findings indicate that LIM practitioners frame their educational needs in terms of preparation for their future tasks rather than as requirements of their current work. This perception of the need for an education for the future provides an accurate picture of the current state of DL development.

9.2 Implications and contributions

In this section I discuss the application in practice and the contribution to theories of my research results.

9.2.1 Practical implications

The research findings have a number of important implications for LIM educational and professional practice. Though the study was conducted in Vietnam and its outcomes are especially relevant to the LIM field in Vietnam, the findings can also be used to support LIM educational development in similar developing countries, such as those in the Mekong Delta region of Southeast Asia.

First, LIM educators (LIM schools) can use the contextual model of factors affecting DLE development to help develop a DLE programme and thus move from what Fullan (2007) described as the transition phase to the implementation phase. My research identifies factors that act as enablers and factors that act as barriers, and the relationships between these factors. These findings help educators to be aware of the challenges as well as opportunities they will face in developing a DLE programme. They (educators) must take the initiative in developing DLE in terms of preventing negative impacts and encouraging

positive impacts. One of the critical ways of employing the contextual model is focusing on the relationships between the contextual factors to reduce barriers for DLE development. Educators can use some positive factors to counteract the negative factors. For example, the stakeholder's hesitation to change can be reduced by the efforts of change agents and helpful government policies.

In addition, LIM education in Vietnam can use the findings of the research (for example, needs for qualified human resources from LIM practice, needs for DLE programmes from LIM practice, the attitudes of LIM stakeholders to DLs) as evidence to change LIM education. My research shows the need for DLE. This finding is a warning as well as an encouragement for LIM schools take to action to develop DLE.

Second, the research findings can be used to enhance LIM stakeholders' understanding about the environment in which DLs and DLE are being developed. For instance, the research provides a picture of DL development in the LIM field and outlines the stakeholders' vision of DLE for Vietnamese LIM practitioners. Change agents can use these findings as a general document to help key stakeholders such as LIM managers, policy makers and heads of government agencies to understand the current situation of the LIM field. Based on that, change agents can emphasise the importance of developing digital competencies for LIM practitioners and raise an awareness of this issue in the LIM community.

Third, in terms of governmental management in LIM education, two important changes need to be made by government departments. First, the strict control of the LIM curriculum should be reduced so that the LIM schools can take control of their curriculum development. This will make LIM schools more independent and active in deciding curriculum content and developing educational programmes that meet the needs of the various members of their community. Second, government departments should play the role of catalyst to make all LIM schools work together in developing DLE.

Fourth, the government (functional government departments), LIM organisations, LIM schools and professional associations can use the findings to develop relevant policies for LIM education such as a staff development policy and a curriculum management policy, as well as to facilitate the LIM field in enhancing staff quality and developing DLs.

Fifth, educators can use the *knowledge map of DLE competencies* to develop content for DLE programmes for the implementation phase, and hopefully from there into the institutionalisation phase during which DLE will be embedded into LIM educational programmes throughout Vietnam. When developing a DLE programme, the educational needs of stakeholders need to be examined thoroughly in order to identify content for the programme. To assist this process, the knowledge map in this study can be used to analyse the needs of LIM stakeholders in Vietnam. Based on four main areas (library and information management competencies; information technology competencies; soft skills; and foreign language ability) in the knowledge map, the map helps LIM schools to explore the educational needs of LIM practitioners. This is more likely to be successful if all organisations agree to cooperate effectively.

Taken together the findings suggest a new direction for the LIM field in developing human resources in Vietnam. My research shows clearly that there is conflict among educators currently providing education for the LIM profession. It also points out that there is no general agreement in terms of LIM practitioners' competencies. LIM organisations that are educational providers and the LIM profession who are educational receivers have some different viewpoints on competencies for LIM practitioners. My findings on DLE needs, viewpoints on digital library development as the future of the Vietnamese LIM field, and requirements for future LIM practitioners, can be used to reduce the conflict. The findings also reinforce the view that developing educational programmes that provide digital competence for LIM practitioners is the appropriate direction for LIM education.

9.2.2 Theoretical contributions

In terms of the educational change literature, the primary contribution of my research is its exploration of factors affecting LIM educational change in a developing country like Vietnam. The existing research demonstrates that developing DLE is a complex proposition (Myburgh & Tammaro, 2013; Saracevic & Dalbello, 2001; Weech, 2007); however, this research has been conducted mostly in developed countries rather than in developing countries. My research unclouds the understanding of the contextual environment of a developing country by providing contextual factors affecting DLE development. This research contributes a model of factors affecting DLE development

(Figure 22) to the theories that help us understand educational change in the LIM field in developing countries.

This study also affirms that Fullan's (2007) Educational Change theory, which frames educational change as a complex process and counsels that the introduction of a new education programme faces many challenges, is applicable within a developing country such as Vietnam. The model developed in this study demonstrates that research on educational change can and should be undertaken in the contextual environment where change is happening. The components of new knowledge that this model contributes are as follows. First, it identifies factors affecting higher educational change in a specific context – a developing country, and examines their negative and positive effects on DLE development. Second, it shows that these factors do not exist independently, rather they are inter-related in how they affect change in LIM education. The factors can influence and be influenced by other factors. Third, the model illustrates the type of relationships between factors, providing a framework for anyone who is pursuing or researching educational change in a similar situation. For example, one potential application of this model is to provide an initial framework to examine LIM educational change in Mekong Delta countries which have similar conditions to Vietnam. And finally, the research demonstrates that Fullan's Educational Change theory is suitable for investigating an innovation such as DLE which is in the transition phase, and then supporting its forward movement to the implementation and institutionalisation phases during which curricula will be established for DLE programmes, and those programmes will be implemented across the country.

My research, with its focus on DLE development in Vietnam, has added two key contextual factors to those from Fullan's theory. They are the *personal and organisational nexus* from Nowlen (1988) and *IT infrastructure*. The relationship between practitioners' needs and their organisation's need is an important factor affecting the development of DLE. Because this nexus influences the demand for the development of educational programmes, it suggests that the LIM field should pay attention to the balance between the needs of individuals and their organisations. Encouraging organisations to be more positive and proactive in offering CPD opportunities, and making it worthwhile for individuals to complete CPD studies, will be beneficial for all parties. The second factor that can be added to the previous theoretical model is *IT infrastructure*. The development of a strong IT infrastructure has a strong effect in terms of creating a positive environment

for a nation's development (Myburgh & Tammaro, 2013). In my research I found that the expanding IT infrastructure in Vietnam created a favourable environment for DLE development and was therefore a valuable addition to the conceptual model. Thus, the two additional factors strengthened the conceptual model for use in the context of a developing country such as Vietnam.

Finally, my research has confirmed that Fullan's concept of a change agent is unsuitable for research investigating higher educational change in an Asian developing country like Vietnam. Fullan's (2007) view that all stakeholders are change agents is not viable in a country with high power distance such as Vietnam. However, Rogers' change agent concept was applicable for examining change agents' roles in the Vietnamese context because it helped to identify those stakeholders with sufficient authority to make a considered effort to introduce DLE to the LIM community, and it identified the impact of the various contextual factors on their efforts. Therefore, a key theoretical contribution of my study is the combination of Rogers' change agent concept with Fullan's Educational Change theory to examine educational change in a developing country like Vietnam.

9.3 Limitations of the research

There are five limitations that may have impacted on this research.

First, my research adopted the interpretivist perspective and used qualitative methods (documents and interviews) to investigate the contextual factors affecting DLE in Vietnam. Its interpretivist focus means the research is limited in its generalisability.

Second, because of purposive sampling the research participants might not have been representative of the stakeholder population. Though every effort was made to be objective, the selection of participants might have been affected by my personal views. To reduce this limitation, I developed a priori criteria for choosing research organisations and participants and also based my choices of interviewees on the recommendations of managers, deans and other key stakeholders.

Third, the research focused only on the Vietnamese context and sought to understand factors affecting DLE development in Vietnam. Having said this, the model of factors affecting DLE development can be tested to determine its efficacy in other disciplines and in other developing countries. Researchers such as Murray and Welch (2009),

Johnson (2009), Phuritsabam and Devi (2009), and Nieuwenhuysen (2011) have all studied LIM education in developing countries, and though my research was conducted only in Vietnam it nonetheless contributes to this expanding body of knowledge.

Fourth, language translation could be a limitation of my thesis. I collected data in Vietnamese, but the results were written in English, so there were possible shortcomings in translating the results. To reduce this limitation I employed an expert translator to check all of my translations.

Finally, the issues which relate to reliability and validity might affect the results of this study. The reliability of the research findings must depend largely upon how broad and representative the final sample of interviewees was of the total LIM field in Vietnam. The researcher is very familiar with the LIM field in Vietnam and is aware of all the key institutions and individuals. These were identified for interviews and focus groups using a priori criteria, thus giving credibility to the claim that the final results are a reliable representation of the whole field. By concentrating on semi-structured interviews the research avoided the worst of bias but it has to be allowed that some bias may have entered the results through the researcher's presence, which might have been avoided if a different person had conducted the interviews and focus groups. To do this though, would have lost the researcher's knowledge of the field that gave reliability to the data mentioned previously in this paragraph.

The semi-structured nature of the interviews inevitably has had an impact on validity, with an obvious outcome being a lessening of the resulting data's validity if compared to what might have been produced by a very structured interview protocol. Nevertheless, as the interviewer had a clear idea of the concepts at the centre of the research questions, some confidence can be given to the data that resulted from the interviews and focus groups. The questions used were clearly directed at the target of digital library education and there was no deviation from that purpose during the interviews.

9.4 Recommendations for further research

Emerging from my findings there are several areas identified for further research.

The evidence from my research shows that DLE is in the transition phase, and suggests that there is a significant need for DLE for LIM practitioners in Vietnam. However, my

research did not aim to assess the total need; rather it explored the need as an influencing factor of DLE development. In other words, it examined how the need affected DLE development. In order to develop DLE programmes and move into what Fullan (2003) describes as the implementation phase of change, educational needs from the LIM field should be assessed thoroughly. Ultimately, assessing the educational needs of current LIM practitioners is considered an important subject for further research. A complete picture of the educational needs of LIM practitioners should be explored in order to assist with the development of DLE programmes. In particular, future research should identify the gap between the knowledge of current LIM practitioners and the content that LIM schools are providing in their current educational programmes. An educational needs assessment of LIM practitioners can be implemented following the framework provided by Dorner, Gorman and Calvert (2015). Using their approach, the educational needs assessment should explore three levels of needs:

- the needs of the client groups, i.e., the LIM practitioners/students and LIM organisations for the competencies required to provide effective DL resources and services;
- the needs of the DLE providers, i.e., LIM lecturers for the knowledge required to teach the DL subjects to meet the client groups' needs; and,
- the needs of the LIM schools for the infrastructure required to offer DLE programmes.

Another area that would benefit from further investigation is the lack of communication and cooperation within the LIM community in Vietnam. In my study, I found that communication and cooperation did not exist or was very weak among library schools, among libraries, between library schools and libraries, between libraries and their staff, and between the associations and the preceding groups. This reluctance to communicate and cooperate was a major obstacle to DLE development and appears to be a common problem for the Vietnamese LIM community. Some of this reluctance might be explainable using Hofstede's (2001) dimensions of culture. According to the Hofstede Centre (n.d.), Vietnam is a society with high power distance. This dimension of Vietnam's culture gives reason for the reluctance for communication and cooperation across different levels in the hierarchical structure of Vietnamese society. However, the Hofstede

Centre identifies Vietnam also being a feminine society, that is, a society in which "managers strive for consensus, [and] people value equality, solidarity and quality in their working lives. Conflicts are resolved by compromise and negotiation … An effective manager is a supportive one, and decision making is achieved through involvement." Given that I found library staff in most LIM institutions were reluctant to express their educational needs for DLE to their managers, and these managers made decisions on their own for the benefit solely of their organisation without consideration of their staff members' needs, there must be other factors affecting managers' decision-making for staff training, and factors affecting both communication and cooperation. Yet, though I found the lack of adequate budgets for staff training was an issue for managers, it was not something that library practitioners in their interviews identified as relevant to their managers' decision making for the CPE of their staff. Similarly, the lack of communication and cooperation in Vietnam among libraries, among library schools, and between library schools and libraries, adds to the need for research on this topic.

A third area for investigation focuses on the model of contextual factors affecting DLE development in Vietnam, which is the major theoretical outcome of this research. Further research should be done to assess this model – by testing its applicability in future educational developments in the LIM field in Vietnam, and to educational change involving technological innovations in other professions, such as nursing or journalism. Given the developing country context of my research, the model of contextual factors should also be tested in other developing countries, such as the Philippines and Indonesia, both of which have well-established tertiary-level LIS education systems.

9.5 Conclusion and last thoughts

My research provides an understanding of the Vietnamese environment for DLE development. It not only explains the reasons for the slow LIM educational change process in Vietnam in respect of developing DLE, it also emphasises that change in education is hard and complex and involves a variety of factors. It is important to note that understanding the contextual environment is the foundation for educational change.

Working in the digital environment is the future for LIM practitioners in the digital age. Sooner or later LIM practitioners in Vietnam, as well as in other developing countries, have to face the challenges of IT development and the digital working environment.

Therefore, developing human resources with sufficient digital competence is important for the LIM field because it helps the field accomplish its roles in the digital age.

My research brings to the attention of the LIM field in Vietnam, as well as to policy makers, that developing a new DLE programme is necessary and urgent for LIM practitioners. My research can be considered as a foundation for developing DLE as well as for LIM educational change in Vietnam. It will raise an awareness of DLs and DLE within the Vietnamese LIM community, especially in LIM education. Hallam (2007) said that developing LIM education requires collaboration all the time. I hope my research will be of interest to LIM educators, researchers and professionals, and encourage them to work together in order to develop LIM education as well as DLE for LIM practitioners.

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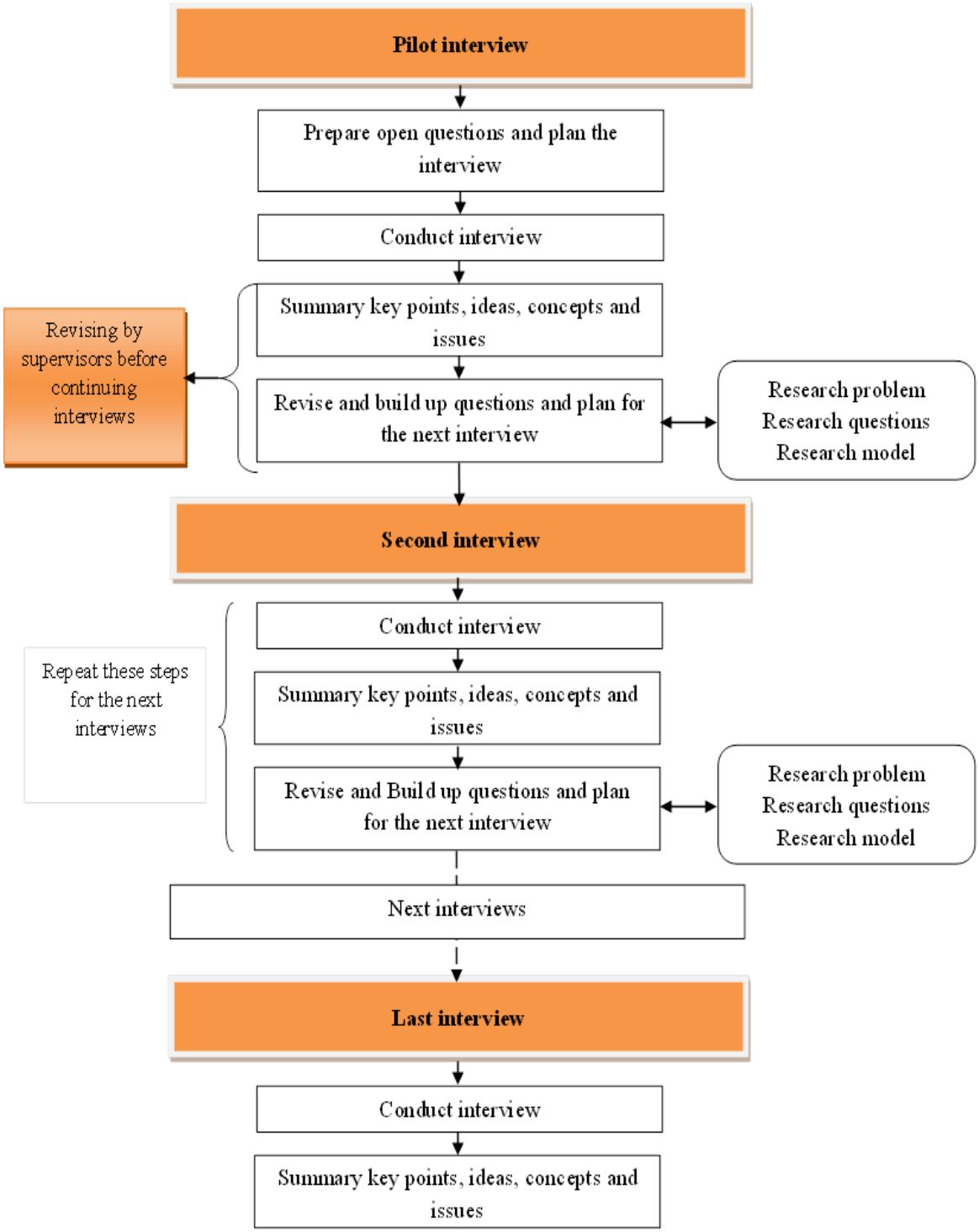
Appendix 1 Interview protocol

1. Interview strategy



2. Interview process

I should be following the stages of the interview to ensure every interview goes smooth.

Stage 1: Preparation

- Contact interviewees/organisation to arrange an interview, make schedule for the interview.
- Check equipment for the interview: recorders, batteries, laptop, notebooks, pens and so on.
- Contact the interviewees the day before the interview.

Stage 2: Conduct the interview

- Introduce the study and myself.
- Make a clear statement of the purposes of the interview, ensure the interviewees are anonymous in the study, emphasise the important role of interviewees for the research, and make clear that their participation is voluntary
- Describe the format of the interview, and indicate how long the interview normally takes.
- Provide evidence that confirms I am a PhD student, and provide email and phone number to ensure respondents have a chance to ask any questions.
- Verify the recorder before starting the interview.
- Keep the interview running smooth, let interviewees have chances to provide their full feedback, encourage the silent interviewee to participate, control the time.
- Write down any observations made during the interview.
- Thank respondents for their participation.

State 3: Close the interview

- Copy and backup all audio files to the safe driver.
- Summarise the interview with the keys points
- Restructure my written notes and make comments for the later data analysis.
- Make recommendations for the next interview.

3.Sample of key interview questions

Questions for LIM practitioners

1. What is your educational background?
2. How long have you been working in this organisation? And what are your tasks in your organisation?
3. What is your view on the roles of the LIM field in our society?
4. What are skills and knowledge that you think are important for your job?
5. What courses relating to digital libraries have you taken?
6. What are your learning needs in terms of digital libraries' competence
7. What enables or prevents you from participating in continuing education?

Questions for LIM managers

1. What is your educational background?
2. What is your view on the roles of leaders in the development of the LIM field?
3. What DL projects has your organisation carried out?
4. What is your view on the roles of the LIM field in our society?
5. What are the educational needs of librarians in your organisation?
6. How can you balance the development of organisation and staff? And what are challenges?
7. In your opinion, what are the issues (enablers or hindrances) for the development of DLs and DLE in Vietnam? How do they affect DLE development?
8. Who do you think are change agent(s) in the LIM field? What are the characteristics and roles of change agent(s) in the LIM field?

Questions for LIM deans

1. How has the curriculum changed in the last 10 years? Have subjects which relate to digital libraries been introduced?
2. Why is it important or unimportant for your programme to provide courses in DLE? For current students? As continuing education for practitioners?

3. What are your strategies and plans for implementing digital library education in the near future?
4. If someone advised you to add more subjects relating to information technologies and digital libraries into the current curricula, What would you think?
5. What are the challenges if a LIM practitioner/organisation wants to introduce an idea or technology in the LIM field?
6. In your opinion, what are the key issues (enablers or barriers) for DLE development? For example, has your LIM programme implemented any development for DLE that has been successful/unsuccessful? What in particular, has facilitated/held back this development?
7. Which person or persons in your institution are trying to establish DL courses or programmes?
8. Who do you think are change agent(s) in the LIM field? What are the characteristics and roles of change agent(s) in the LIM field?
9. What are the roles of the government in LIM education?
10. From your perceptions, are there any other factors that should be considered with regard to DLE development?

Questions for LIM lecturers

1. What subjects are you teaching?
2. If someone advised you to add more DLE subjects in the current curricular, what would your perception?
3. Have you been asked to teach a DL subject? If yes, what are challenges?
4. What are your view of DLE development in Vietnam?

Questions for Officials

1. What plan does the government have for developing DL in universities/the LIM system?
2. What you have been doing for LIM education/the LIM profession?
3. What are government's strategies for the development of LIM education?

4. What role should the professional associations play?
5. What has been done by the professional associations in terms of professional development?
6. What are the challenges for introducing a new idea or technology?
7. Who do you think are change agent(s) in the LIM field? What are the characteristics and roles of change agent(s) in the LIM field?

Questions for students

1. What is your reason for choosing to study in this field? And what is your perception of your future jobs
2. What is your evaluation of the current LIM educational programme?
3. What are your favourite subjects in the educational programme? Why?
4. What knowledge and skills do you desire to acquire?
5. What is your image of the LIM profession in the digital age?

Appendix 2 Letter of introduction, Information sheets and Consent forms

1. Letter of introduction from supervisors

SCHOOL OF INFORMATION MANAGEMENT
TE KURA TIAKI WHAKAWHITI KŌRERO
ROOM 119, EASTERFIELD BUILDING, KELBURN PARADE, WELLINGTON PO Box 600, Wellington 6140, New Zealand
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Letter of Introduction

12 April 2011

Re: Introduction of Do Van Hung for his fieldwork in Vietnam

To Whom It May Concern:

This is to introduce Do Van Hung, a PhD student from the School of Information Management, Victoria University of Wellington, New Zealand, specialising in the area of digital library education. Hung is doing this study as part of his PhD. I am the primary supervisor for his doctoral research.

His research focuses on the contextual factors affecting the development of digital library education in Vietnam and his aim is to develop a model that can be used for this purpose which will provide great support for digital library education in Vietnam. Hung's thesis therefore will help decision-makers, educators, practitioner and students – and ultimately will benefit organisations in Vietnam such as universities, libraries and government agencies that need librarians with the competencies required to implement and manage effective digital libraries for the 21st century.

To gather the required data, Hung plans to conduct focus groups and interviews with librarians, information professionals, and educators in library and information education, officials, managers and deans at libraries, information centres, educational institutions and relevant government departments in Vietnam. It is the hope of the School of Information Management and Victoria University of Wellington that you give your time, experience and patience to Hung during his data collection. Your cooperation is essential to the success to this study.

Yours sincerely,

Dr. Daniel G. Dorner
Senior Lecturer and PhD Programme Director
School of Information Management

2. Consent to access research organisation

VICTORIA
UNIVERSITY OF WELLINGTON

Consent to access research organisation

Contextual factors affecting the development of digital library education in Vietnam

I have been introduced to and understand the objectives of this study. I have had an opportunity to ask questions and have them answered to my satisfaction. I consent to staff at my institution/organisation to participate in a focus group for this research.

Signed: _____

Name: ___

Organisation: _____

Date: 13/5/2011

3. Information sheet for focus group

SIM HEC Application Form

TE WHARE WĀNANGA O TE ĀTOKO O TE IKA A MĀUI
VICTORIA
UNIVERSITY OF WELLINGTON

SCHOOL OF INFORMATION MANAGEMENT

Participant Information Sheet
(Focus group interviews)

Project title: Contextual factors affecting the development of digital library education in Vietnam

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Researcher: Do Van Hung, PhD student, School of Information Management (SIM), Victoria University of Wellington.

Dear participant,

Thank you for your interest in participating in this research study exploring and understanding contextual factors affecting digital library education (DLE) development in Vietnam. I am currently studying towards a PhD degree at Victoria University of Wellington, New Zealand. This project forms a part of my PhD requirements.

Research context and goal

Education for library and information managers has changed at an increasing rate over the last decades. The development of digital libraries has driven some change for ten years or more, but now the speed of this change is becoming increasingly rapid as new technology makes a greater impact on the practice of digital librarianship. In Vietnam, many libraries and information centres have applied information technology (IT) to manage their system and services in the last two decades. During this time more information in libraries has become available only in digital form and many libraries have begun to create their own digital collections of important resources. The development of digital libraries as well as the application of IT in libraries has led to a need for practitioners who are capable of working effectively in the digital environment. In Vietnam, there is also a need now for DLE for its practitioners in libraries and information centres From this situation, therefore, the present research seeks to fill a gap not only in our knowledge of DLE in Vietnam, but also to contribute to developments in this area.

The main objectives of this study are to identify and understand the factors affecting the development of DLE in Vietnam, and to use those factors as a foundation for establishing a contextual model that will help individuals involved in the design, and implementation of DLE programmes in Vietnam.

Participation

I would like to ask you to be a participant in a focus group for my research. If you agree, you will participate in an audio-recorded focus group discussion anticipated to last 60-90 minutes. Since the focus group involves 4 to 5 research participants, each participant will be asked to indicate time-slots for which she/he is available for the focus group session. Your participation in this research is voluntary and no payment will be offered for participation. We will arrange the schedule for the focus group in subsequent communication. In the focus group session, we will discuss issues relating to library and information education in Vietnam, especially focussing on education for digital libraries, such as the needs for DLE and competences of librarians.

If you agree to participate in my research, this means that:

You agree to participate in the focus group session which will be audio recorded and then transcribed.

Confidentiality of information shared within the focus group session is of fundamental importance. It is essential that any information discussed within the focus groups will be treated as confidential by you as well as by all of the other research participants.

All raw data will be kept confidential, and will be kept in a locked filing cabinet and password protected files. It wll be accessible only to me and my supervisors. Only data in aggregated form will be used in the thesis and in any articles published in academic journals or presentations at conferences so that you and your organisation will not be identifiable.

You agree to the results of this research being published in my PhD thesis and academic or professional journals, or being presented at relevant conferences. Note that a copy of my thesis will be deposited in the Victoria University of Wellington Library, and will be available electronically in the institutional repository.

You have the right to withdraw at any point up to the start of the focus group session or during the focus group session, but any data collected up to the point of withdrawal cannot be removed.

This research has been approved by the Human Ethics Committee of Victoria University of Wellington. If you would like to volunteer and are selected to take part in the study, you will be asked to confirm your agreement by signing a written consent form.

If you wish to receive an electronic copy of my findings, please indicate this on the attached "consent to participation" form

Contact details

If you have any further questions regarding this project, please contact to me via my email: hungvan.do@vuw.ac.nz, or my supervisors, Daniel G. Dorner (dan.dorner@vuw.ac.nz) and Philip Calvert (philip.calvert@vuw.ac.nz).

I am very much appreciated for your participation in my study. It is very important and decides the success of the project. Thank you very much.

Your sincerely,

Do Van Hung
PhD Student
hungvan.do@vuw.ac.nz

4. Consent form for focus group

VICTORIA
UNIVERSITY OF WELLINGTON

SCHOOL OF INFORMATION MANAGEMENT

Consent to participation in research
(Focus group interviews)

Project title: Contextual factors affecting the development of digital library education in Vietnam

Please tick the boxes to indicate that you have read and agree with the following statements:

☑ I have been introduced to and understood the explanation of this study and have had an opportunity to ask questions and have them answered to my satisfaction

☑ I agree to the interviews being audio recorded.

☑ I have the right to withdraw at any point up to the start of the focus group session or during the focus group session, but any data collected up to that point of withdrawal cannot be removed.

☑ I agree to keep any information confidential that is discussed within the focus group session.

☑ I understand that the data gathered in the focus group session will be kept secure at all times, and will be kept confidential to the researcher and the researcher's supervisors and it will be destroyed two years after the conclusion of the project. The data will only be used for academic purposes of the researcher's PhD thesis, journals or relevant conferences.

☑ I understand that my name and the name of my organisation will not be used in the study, and the audio material will not be used in any way that will identify me.

☑ I would like to receive a summary of this project's results when it is completed

☑ I agree to take part in this research.

Signed: _

Name: ___

Date: 27/7/2011

Contact details (email or postal address) if you wish to receive a summary of this study:

@gmail.com

5. Information sheet for individual interviews

SIM HEC Application Form

TE WHARE WĀNANGA O TE ĀPOKO O TE IKA A MĀUI
VICTORIA
UNIVERSITY OF WELLINGTON

SCHOOL OF INFORMATION MANAGEMENT

Participant Information Sheet
(Individual interviews)

Project title: Contextual factors affecting the development of digital library education in Vietnam

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Researcher: Do Van Hung, PhD student, School of Information Management (SIM), Victoria University of Wellington.

Dear participant,

Thank you for your interest in participating in this research study exploring and understanding contextual factors affecting digital library education (DLE) development in Vietnam. I am currently studying towards a PhD degree at Victoria University of Wellington, New Zealand. This project forms a part of my PhD requirements.

Research context and goal

Education for library and information managers has changed at an increasing rate over the last decades. The development of digital libraries has driven some change for ten years or more, but now the speed of this change is becoming increasingly rapid as new technology makes a greater impact on the practice of digital librarianship.

In Vietnam, many libraries and information centres have applied information technology (IT) to manage their system and services in the last two decades. During this time more information in libraries has become available only in digital form and many libraries have begun to create their own digital collections of important resources. The development of digital libraries as well as the application of IT in libraries has led to a need for practitioners who are capable of working effectively in the digital environment. In Vietnam, there is also a need now for DLE for its practitioners in libraries and information centres. From this situation, therefore, the present research seeks to fill a gap not only in our knowledge of DLE in Vietnam, but also to contribute to developments in this area.

The main objectives of this study are to identify and understand the factors affecting the development of DLE in Vietnam, and to use those factors as a foundation for establishing a contextual model that will help individuals involved in the design, and implementation of DLE programmes in Vietnam.

Participation

I would like to ask you to be an interviewee for my research. If you agree, you will be asked to take part in an interview which will take approximately 45 minutes. Your participation in this research is voluntary and no payment will be offered for participation. We will arrange the schedule for the interview in subsequent communication. In the interview session, we will discuss the issues relating to library and information education in Vietnam, especially focussing on education for digital libraries, such as the needs for DLE, staff development, strategies and so on.

In addition, I would like to collect documents from your institution that will help me to understand the institutional context. These include annual reports, training reports (last five years), promotion policies, human resource development plans, etc. The documents can be posted to me or given to me when I come to conduct the interviews.

If you agree to participate in my research, this means that:

- You agree to participate in an interview that will be audio recorded and then transcribed. However, you can ask me to switch off the recorder at any time during the interview session and you are free to refuse to answer specific questions.

All raw data will be kept confidential, and will be kept in a locked filing cabinet and password protected files. It wll be accessible only to me and my supervisors. Only data in aggregated form will be used in the thesis and in any articles published in academic journals or presentations at conferences so that you and your organisation will not be identifiable.

- You agree to the results of this research being published in my PhD thesis and academic or professional journals, or being presented at relevant conferences. Note that a copy of my thesis will be deposited in the Victoria University of Wellington Library, and will be available electronically in the institutional repository.

- If you want to withdraw from the research, please let me know as soon as possible before 1 September 2011. In this case the information contributed by you will be destroyed.

This research has been approved by the Human Ethics Committee of Victoria University of Wellington. If you would like to volunteer and are selected to take part in the study, you will be asked to confirm your agreement by signing a written consent form.

If you wish to receive an electronic copy of my findings, please indicate this on the attached "consent to participation" form

Contact details

If you have any further questions regarding this project, please contact me via email: hungvan.do@vuw.ac.nz, or my supervisors, Daniel G. Dorner (dan.dorner@vuw.ac.nz) and Philip Calvert (philip.calvert@vuw.ac.nz).

I am very much appreciated for your participation in my study. It is very important and decides the success of the project. Thank you very much.

Your sincerely,

Do Van Hung
PhD Student
hungvan.do@vuw.ac.nz

6.Consent form for individual interviews

VICTORIA
UNIVERSITY OF WELLINGTON

SCHOOL OF INFORMATION MANAGEMENT

Consent to participation in research
(Individual interviews)

Project title: Contextual factors affecting the development of digital library education in Vietnam

Please tick the boxes to indicate that you have read and agree with the following statements:

☑ I have been introduced to and understood the explanation of this study and have had an opportunity to ask questions and have them answered to my satisfaction

☑ I agree to the interviews being audio recorded.

☑ I understand that I can withdraw myself (or any information I have provided) from this study before 1 September 2011, and all my information will be removed from the study.

☑ I understand that the data I provide will be kept secure at all times, and will be kept confidential to the researcher and the researcher's supervisors and it will be destroyed two years after the conclusion of the project. The data will only be used for the researcher's PhD thesis, journal articles or conference presentations.

☑ I understand that neither my name nor the name of my institution will be used in the study, and the information that I provide will not be used in any way that will identify me.

☑ I would like to receive a summary of this project's results when it is completed.

☑ I agree to take part in this research.

Signed:

Name: _

Date: 03/08/2011

Contact details (email or postal address) if you wish to receive a summary of this study: