

THE STUDY OF DIGITAL PRESERVATION IN MALAYSIAN CULTURAL
INSTITUTIONS

IMA RASHIDAH BINTI ISMAIL

UNIVERSITI TEKNOLOGI MALAYSIA

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Signature :
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Date : 17 August 2012

THE STUDY OF DIGITAL PRESERVATION IN MALAYSIAN CULTURAL
INSTITUTIONS

IMA RASHIDAH BINTI ISMAIL

A project submitted in partial fulfilment of the
requirement for the award of the degree of
Master of Computer Science (Information Security)

Advanced Informatics School
Universiti Teknologi Malaysia

AUGUST 2012

I declare that this thesis entitled “*The Study of Digital Preservation in Malaysian Cultural Institutions*” is the result of my own research except as cited in references. The thesis has not been accepted for any degree and is degree and is not concurrently submitted in candidature of any other degree.

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To my beloved mother, father, family and friends

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ABSTRACT

Our cultural and information heritage exists increasingly in digital forms especially in the cultural institutions since it keep all the heritages for future generation. The technologies use to create and enjoy the digital heritage have many advantages that explain their extraordinarily rapid take up in many parts of the world. But there are very serious challenges in keeping this already increasing digital heritage. The media use to carry and store it are unstable and the technology needed for access is quickly superseded by newer technologies. These challenges are not only technical in nature; they have organisational and societal dimensions as we struggle with the responsibility of keeping access lines open over extended periods of time, often with insufficient resources and uncertain strategies. A proposed assessment component model is identified. It consists: digital activity, institutional incentives, preservation policies and resource framework as attributes. Findings from previous case study on digitization projects in Malaysian cultural heritage institutions revealed two critical elements that are not being addressed by these institutions: digital preservation and digital risk management. In this project, a quantitative technique was chosen in evaluating the issues in digital preservation. Findings from the study show that the majority of cultural institutions in Malaysia are knowledgeable on the basic aspects of their digital resources but lack on the level of institutional awareness on digital preservation. Then, at the end of the report limitations and contributions of project, and the future work of the project were discusses.

ABSTRAK

Budaya, saintifik dan maklumat warisan kita wujud semakin banyak dalam bentuk digital terutamanya di institusi budaya semenjak ia menyimpan seluruh warisan untuk generasi yang akan datang. Kita menggunakan teknologi untuk mencipta dan menikmati warisan digital. Walaupun ia mempunyai banyak kelebihan positif, ia juga menyumbang kepada cabaran yang serius dalam mengekalkan warisan digital yang sudah semakin meningkat. Media yang digunakan untuk membawa dan menyimpannya adalah tidak stabil dan teknologi yang diperlukan untuk mengakses segera digantikan oleh teknologi yang baru. Cabaran-cabaran ini tidak hanya berbentuk teknikal sahaja, ia mempunyai dimensi organisasi kerana kita berjuang dengan tanggungjawab dalam memastikan akses kepada bahan digital dalam jangka panjang, sentiasa dengan sumber yang tidak mencukupi dan strategi yang tidak menentu. Satu model komponen penilaian dicadangkan. Sifatnya terdiri daripada: aktiviti digital, insentif institusi, dasar pemeliharaan dan rangka kerja sumber. Penemuan daripada kajian kes sebelum ini mengenai projek pendigitalan di institusi warisan budaya Malaysia mendedahkan dua elemen penting yang tidak ditangani oleh institusi-institusi ini: digital pemeliharaan dan pengurusan risiko digital. Dalam projek ini, satu teknik kuantitatif telah dipilih dalam menilai isu-isu dalam pemeliharaan digital. Penemuan daripada kajian menunjukkan bahawa majoriti institusi budaya di Malaysia adalah berpengetahuan mengenai aspek-aspek asas sumber digital mereka tetapi kekurangan pada tahap kesedaran institusi kepada pemeliharaan digital. Kemudian, pada akhir had laporan dan sumbangan projek, dan kerja projek pada masa hadapan adalah dibincangkan.

TABLE OF CONTENTS

| CHAPTER | TITLE | PAGE |
|----------|-------------------------------|----------|
| | DECLARATION | ii |
| | DEDICATION | iii |
| | ACKNOWLEDGEMENT | iv |
| | ABSTRACT | v |
| | ABSTRAK | vi |
| | TABLE OF CONTENTS | vii |
| | LIST OF TABLES | xi |
| | LIST OF FIGURES | xii |
| | LIST OF APPENDICES | xiv |
| 1 | INTRODUCTION | 1 |
| | 1.1 Overview | 1 |
| | 1.2 Background of the problem | 2 |
| | 1.3 Problem Statement | 3 |
| | 1.4 Project Objectives | 4 |
| | 1.5 Project Aim | 4 |
| | 1.6 Project Scope | 5 |
| | 1.7 Summary | 5 |
| 2 | LITERATURE REVIEW | 6 |
| | 2.1 Introduction | 6 |
| | 2.2 Definitions | 7 |

| | | |
|----------|---|-----------|
| 2.2.1 | Digital Preservation | 7 |
| 2.2.2 | Cultural Heritage | 7 |
| 2.3 | Benefits of Digital Preservation | 8 |
| 2.4.1 | Legal Requirement | 11 |
| 2.4.2 | Accountability and Protection from Legal Action | 11 |
| 2.4.3 | Protecting the Long Term View | 12 |
| 2.4.4 | Protecting Investment | 12 |
| 2.4.5 | Enable the Opportunity of Future Re-use | 12 |
| 2.4 | Issues in Digital Preservation | 13 |
| 2.5.1 | Technological Issues | 14 |
| 2.5.2 | Organizational Issues | 15 |
| 2.5.3 | Legal Issues | 18 |
| 2.5 | Digital Preservation Techniques | 20 |
| 2.6 | Role of Cultural Heritage Institutions | 21 |
| 2.6.1 | Cultural Institutions in Malaysia | 22 |
| 2.7 | Summary | 25 |
| 3 | ASSESMENT OF MODEL DESIGN | 26 |
| 3.1 | Introduction | 26 |
| 3.2 | Previous Assessments Done in Digital Preservation | 26 |
| 3.2.1 | Digital Preservation Assessment in Wales, United Kingdom | 27 |
| 3.2.2 | Digital Preservation Assessment in New Zealand | 28 |
| 3.2.3 | Digital Preservation Assessment in Canada | 29 |
| 3.3 | The Proposed Assessment Model Design | 30 |
| 3.4 | Summary | 32 |
| 4 | RESEARCH METHODOLOGY | 32 |
| 4.1 | Introduction | 32 |
| 4.2 | Research Strategy | 32 |
| 4.3 | Selected Research Design | 35 |
| 4.4.1 | Phase 1: Preliminary Investigation | 36 |
| 4.4.2 | Phase 2: Research Model Design | 37 |
| 4.4.3 | Phase 3: The Survey | 37 |

| | | |
|----------|--|-----------|
| 4.4.4 | Phase 4: Data Statistical Analysis | 42 |
| 4.4 | Summary | 42 |
| 5 | FINDINGS AND ANALYSIS | 43 |
| 5.1 | Introduction | 43 |
| 5.2 | Analysis and Results | 44 |
| 5.2.1 | Profile of respondents | 45 |
| 5.2.2 | Respondent's with Course/Training Attendances | 48 |
| 5.2.3 | Digital activity in cultural institutions | 48 |
| 5.2.4 | Institutional incentives by cultural institutions in Malaysia | 56 |
| 5.2.5 | Preservation Policies | 60 |
| 5.2.6 | Resource framework | 64 |
| 5.3 | Summary | 72 |
| 6 | DISCUSSION AND CONCLUSION | 73 |
| 6.1 | Introduction | 73 |
| 6.2 | Summary of Project Findings | 74 |
| 6.2.1 | The Assessment Components in Digital Preservation | 74 |
| 6.2.2 | Findings on the Assessment to the Current States of Digital Preservation Challenges in Malaysian Cultural Institutions | 76 |
| 6.2.3 | Recommendations for the Malaysian cultural institutions | 78 |
| 6.3 | Contribution of Project | 75 |
| 6.4 | Limitations of Project and Future Work | 76 |
| 6.5 | Conclusion | 77 |
| | REFERENCES | 83 |
| | Appendix A | 87 |

Appendix B

LIST OF TABLES

| TABLE NO. | TITLE | PAGE |
|------------------|--|-------------|
| 2.1 | Summary of Digital Preservation Strategies | 23 |
| 4.1 | Questionnaire Distribution | 40 |
| 4.2 | Questionnaire Structure | 41 |
| 5.1 | Distribution of Cultural Institutions by Type | 44 |
| 5.2 | Respondent's Profile | 46 |
| 5.3 | Attending Course/Training in Digitisation and/or Digital Preservation | 48 |
| 5.4 | Depository Arrangement Established for Institution | 56 |
| 5.5 | Perception of Digital Preservation as Risk | 58 |
| 5.6 | Availability of Digital Preservation Policy/Strategy in Institution | 61 |
| 5.7 | Characteristics of Already Implemented Digital Preservation Policy | 63 |
| 5.8 | Adequate organizational expertise and technical expertise | 69 |

LIST OF FIGURES

| FIGURE NO. | TITLE | PAGE |
|-------------------|--|-------------|
| 2.1 | Existing preservation approaches (Lee et. al., 2002) | 21 |
| 3.1 | Proposed Assessment Component Model | 29 |
| 4.1 | Operational Framework | 36 |
| 4.2 | Steps to carry out the survey | 38 |
| 5.1 | Types of Digital Material | 50 |
| 5.2 | Type of file storage | 51 |
| 5.3 | Level of awareness to the current and future volume of digital materials | 53 |
| 5.4 | Action to extend the life of digital material | 54 |
| 5.5 | Existent of corporate risk management process in institution (N=32) | 57 |
| 5.6 | Availability of Digital Preservation within risk management process (N=32) | 57 |
| 5.7 | Institutional Motivations to Apply Digital Preservation | 59 |
| 5.8 | Institutional Awareness on Legal Issues | 60 |
| 5.9 | Institutional Responds on Documents Interpreted as Supporting Digital Preservation | 62 |
| 5.10 | Cultural Institutions Funding Requirement | 65 |
| 5.11 | Allocations of Financial Resources and Identification of Potential Funding | 66 |
| 5.12 | Percentages of Staff Specifically Responsible for Digital Preservation Responsibilities | 67 |

LIST OF APPENDICES

| APPENDIX | TITLE | PAGE |
|-----------------|---------------------------------|-------------|
| A | Project Gantt Charts | 87 |
| B | Set of Questionnaire for Survey | 88 |

CHAPTER 1

INTRODUCTION

1.1 Overview

Digital preservation as stated by Hedstrom (1997) “is the planning, resource allocation, and application of preservation methods and technologies necessary to ensure that digital information of continuing value remains accessible and usable” whereas Doyle, Viktor and Paquet (2009), using the word long-term digital preservation defined it as the process where this process will maintain the digital objects through time in ensuring continued access. As stated by Consultative Committee for Space Data Systems (2002), the word long-term is described as long enough to be worried of the impacts towards the change of technologies including the changing of user community or the support for new media and data formats.

Nowadays, it can be seen that there is an increasing amount of information being created and stored digitally. Furthermore, there are number of methods or formats for this information to be stored, especially with the advancement of new technologies and software. However, since technology is rapidly changing, the format of older digital data may become obsolete making the digital data unreadable. Indeed, in many cases newer software is able to read the format. However, some of

the information in that file may still be altered or lost during the transformation process.

Lessons learnt from history specify that information can be created and also destroyed in the blink of an eye. Take the example of story on Julius Caesar. If the famous Alexandria Library was not burned down, the history might probably change into something else. Archeologists have done their best to set the piece of records they found together in order to develop an understanding of the past. However, many things are still not shed to light. In other words, preserving a history is essential in order to sustain the cultural heritage of a country. This is so that the future generation is able to learn and appreciate their history.

1.2 Background of the problem

Findings from previous case study on digitization projects in Malaysian cultural heritage institutions (Zuraidah A. M. and Aliza I., 2010) revealed two critical elements that are not being addressed by these institutions. They are digital preservation and digital risk management. Where digital archives and digital libraries are concerned globally since it is becoming a trend come up with a digital library so information can be disseminated easily, digital preservation is becoming one of the most pressing challenges. This is because it concerns with whether the information can be accessed even after it has been stored for a long time.

In addition, the rapid changes and advance developments in file formats as well as technical evolvement in hardware and information technology infrastructure has resulted in a highly complex and diverse matter with regards to preserving and retrieving digital objects in the long run. These digital objects are national assets that need to be preserved for future generations. The electronic content has to be

maintained and sustained to ensure accessibility and usability over time. The complexity and the diversity of these facts is one of the challenges of digital preservation as a research discipline.

Archives, libraries and research institutions are primarily dealing with these challenges of long-term preservation. Other related organizations in government, large industries and even private sectors are increasingly facing this problem too. Thus, further investigation into this matter is justified to understand the complexity and adversity of how do we preserve our digital memory in ensuring the accessibility of these materials for our future generations.

1.3 Problem Statement

As stated by Rand (2007), national libraries nowadays are increasingly concerned with the future of its digital contents. In general, most countries usually will have a national deposit to archive its printed publications and this is often managed by the national library or other national depositories such as museum and archive. It will be preserved in a protected environment to avoid from aging or decaying.

However, as the world is moving from paper-based printing to online publishing, the national deposits too will shift as well to adapt to the environment. Therefore, with the bloom and increase of digital materials, it will be a challenge for those institutional to make sure the digitized data is able to be accessed in the next 10 or 20 years since digital materials are not inherently permanent. Unlike the physical evidence of human activity, digital materials will vanish or become unusable unless they are actively preserved now. Hence, a study on this issue is reasonable in

understanding on how to preserve the digital memory in ensuring its accessibility to the future generations.

1.4 Project Objectives

The objectives of this project will be as follow:

1. To identify the assessment components in digital preservation;
2. To assess the current states of digital preservation in Malaysian cultural heritage; and
3. To propose a strategic listings for digital preservation on Malaysian cultural institutions.

1.5 Project Aim

The aim of this research study is to assess the current states of digital preservation in the context of cultural institutions in Malaysia and to propose strategic listings for its digital preservation. Since in Malaysia digitization projects are heavily done by the cultural institutions, it is hope that by assessing the current states and having this proposed strategic listings it can help to better understand the institution and come out with solutions with regard to digital preservation programme.

1.6 Project Scope

The scope of the project is limited to the public cultural institutions and these institutions are within Malaysia only. In specific, 50 public cultural institutions were chosen for this study and it consists of libraries, museums, archives and art galleries. In addition, the instrument used in this study is questionnaire.

1.7 Summary

This chapter has discussed the overview of this research study where a brief introductory of digital preservation was given. It highlights the concern of access for digital material in the future, which motivates the author to indulge. It also presents the project objectives that serves as the foundation upon which the project is carried out. Lastly, the chapter summary is presented.

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