CHAPTER I

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1.1 Introduction

The customs and habits of a society are a reflection of the intellectual achievements reached. These practices join a people and help in an understanding of their development through the ages. Hence it is necessary to propagate and elucidate all such matters of society, to one and all, and not as a privilege to just a few.

It is therefore imperative that accessibility of knowledge in its desired manner, which is understandable to a layman, and capable of easy communication to others, be a general yardstick for historical study.

But what do we understand by the term ‘Heritage’? Is it the history of the past societies? The traditions, oral or written, as past down, the thoughts and deeds of humans through the centuries. UNESCO (2006) outlines a part of it as: “Having at one time referred exclusively to the monumental remains of cultures, heritage as a concept has gradually come to include new categories such as the intangible, ethnographic, or industrial heritage. This is due to the fact that closer attention is now being paid to humankind, the dramatic arts, languages and traditional music, as well as to the information, spiritual and philosophical systems upon which creations are based. The concept of heritage in our time accordingly is an open one, reflecting living culture every bit as much as that of the past” (Gorman, 2007 cited in UNESCO, 2006).

The works, both mental and physical in various fields of activity are required to be assembled by experts in their areas of specialization, and there after stored in libraries in a manner, that is easily accessible and discernable. This however is more easily said than done. Considerable ancient documents in archives and libraries, traditional oral literature, diverse information in various forms of writing, the very basics of people’s thoughts and actions, are in real peril of being lost forever. A language, culture, society may vanish totally due to natural causes or human in, difference / ignorance.
It is often reported that paper is slowly being destroyed, metal corroded, leather, parchment or canvas are lost to natural causes like light, heat or dampness. Even more modern methods of preservation like magnetic tapes, or photo films, are gradually losing their effectiveness as a means of storage of information, again due to natural or even artificial causes. Unfortunately considerable data of ancient societies, their structures, thoughts, actions, their traditional languages, beliefs, have been irrevocably lost to date, and as time passes becomes obsolete and is forgotten.

The ravages of time, human neglect, and extreme climatic conditions, or even sheer ignorance, often destroyed priceless cultural records. It is therefore imperative that measures be taken at the earliest to save and preserve for posterity, our heritage and culture. The crying need therefore, is a solution, that will ensure preservation of ancient texts and easy modern accessibility, by the average student of that subject from anywhere in the world. This information can then be readily accessed on data bases of websites, as is becoming the latest trend in all fields of technical know how and educational literature. But digitization by itself is not a complete and lasting solution, to natural loss of cultural knowledge, as it is also prone to become obsolescent or corrupted by technical advances.

We must therefore be able to centrally i.e. internationally, have systems and procedures in place to obtain, store, preserve and propagate such records. This can be initiated using present procedures and agreements, methods and systems, under an overall convention that is legally sound, intellectually valid and technically achievable.

In the past, procedures and practices where put into place to save and store, literary or cultural works, so that they could the perused by concerned individuals. The methods used however to save the documents and preserve them there after for study, led to their restricted use, or more often than not, complete hindrance in their availability.

The different types of deterioration of heritage collection are reflected in wear and tear, shrinkage, cracks, brittleness, warping, bio-infestation, discoloration, abrasion, holes, dust, and dirt accumulation etc. Generally, these materials are susceptible to deterioration by the following factors:
a. Environmental (climate factors) like light, heat, humidity and moisture, dust and
dirt, water, etc.

b. Biological factors like microorganisms, insects and rodents.

c. Chemical factors

d. Human factors

e. Natural disasters (Madaan, 2011).

Digital preservation thus often takes away the sanctity of the origin source, and
acts more as a method of preservation, and hence the longevity of its use only gets
amplified.

The very importance of the documents, its purity and integrity can often be a
subject of discord, when the original source is unavailable. In the electronic form
considerable apparent originality may not be discernable. Also a subject matter being
electronically produced may not have its quality dependent on the source of the
subject, but one the techniques and methods used to interpret, store and disseminate,
for suitable user interaction.

For digital preservation therefore, it is useful to imitate or recreate the original
methods used for study of the source material, summarize the data obtained, utilize
the latest technological preservation systems, review the material in present day
context, relocate as desired, change the structure, and present the output in an
analogous manner.

From the time immemorial libraries have been the store house of knowledge and
called the temples of learning. One of the main functions of a library is preservation
of their collection for posterity. The present age, which is aptly called the ‘Digital
Age’, has revolutionized the important function of the libraries i.e., the ‘Preservation
Function’. Digitization is the main technique which has facilitated preservation, which
in its modern connotation is called ‘Digital Preservation’. There are many types of
library collection which are amenable for digitization, but heritage collection is more
important and is the need of the hour both in India and Iran. Both in India and Iran,
libraries have already initiated such work and the ‘Digital Preservation’ process is
going on. Hence, there is a need for the selection of this subject viz., “Digitization and
Digital Preservation of the Heritage Collection in Select Libraries in India and Iran:
A Comparative Study”.
Further, the result of the new change in technology is easier access to information. Digitization is new change in this age. By digitization of old documents and heritage collection we will make easier access to this information. Heritage collections are our culture and we must keep them safe and secure. Attaining this purpose requires digitization and digital preservation.

1.2 What is Digitization?

Witten and David (2003) defined digitization as the process of taking traditional library materials, that are in the form of books and papers and converting them to the electronic form, where they can be stored and manipulated by a computer. This basically involves changing analog data into a digital form, so that it is easier to access and also has a long study life. This process is not a separate activity to be viewed in isolation, but an active part of a library’s functioning.

As the main purposes of libraries are to acquire and preserve material, for the perusal of those who seek information, the benefit of having this material in digital form is quite obvious. The bulk of such information from varied sources can be stored in digital form using technology and can be kept for a long period of time in a better condition, while at the same time can be easily studied by greater numbers of scholars, in a present time period.

The major concern of today’s libraries is in the preservation of precious literary works, those are or have deteriorated alarmingly, and whose preservation is a costly and time consuming process. While getting all these works, from various libraries, into a digitized form, the libraries save in time and effort on the conservation of these works; preserve them more effectively, while ensuring that all this material is still available at any time for perusal.

Finally it can be stated that, digitization is mainly the process of conversion of written or printed records into electronic form. This can also be in audio imagery are a combination of above mentioned forms. The electronic output so created can then be placed on modern information providing systems like internet or intranet. This electronic output can also be in a Portable Document Format (DPF) on a Tagged Image File Format (TIFF).
It therefore now common, to find more and more information being digitized, and uploaded into the internet or on compact discs so that it is globally accessible, easily and quickly.

1.3 Digital Preservation

With rapid developments in information technology and communication systems, the organization and management of such information has also undergone major transformation (Mazumdar, 2009).

This has had a profound effect on library and information centers, mainly in the field of preservation, using digital methods on non digital documents. Conservation of digital resources to preserve our heritage can occur in many forms, be it in digital images, e-journals, data base records, websites, audio visual material or interactive programmes.

Preservation can be defined as a set of activities to ensure maintenance for a long time of documents, and also making ready accessibility incorporating latest technological advantages.

The Encyclopedia of Information Technology (Amjad, 2005) defines the term digital preservation as “The process of maintaining, in a condition suitable for use, materials produced in digital formats. Problems of physical preservation are compounded by the obsolescence of computer equipment, software and storage media. It also refers to the practice of digitizing materials, originally produced in non digital formats (print, film etc.), to prevent permanent loss due to deterioration of the physical medium.”

Hence digital preservation has two dimensions, firstly to preserve the material already in digital form and secondly to digitize and preserve material that is likely to get spoilt with time. Once this is done, then accessibility in a global scale of any material can be achieved. For such preservation, two processes are followed,

a. To create an image file of the material.

b. To scan and use processes to make the text file error free.

Once done these files can be stored in secondary devices and placed in appropriate storage areas.
1.4 Need for the Study

India and Iran are rich in terms of cultural heritage which going back thousand years. They have libraries and institutions which possess old documents in the form of manuscripts, rare books, artifacts, and such other materials apart from print media. These old documents include important information about religion, literature, history and tradition which written in different scripts. Further, they spread all over the countries and in some cases abroad. Therefore, digitization and digital preservation will be immense help to preserve these valuable documents in digital format for the accessibility for the scholars and the public.

In India, a substantial number of libraries and information centers have initiated digitization and digital preservation of cultural heritage activities. Indian society has created and preserved the resources of traditional and cultural heritage in various forms; however, thousands of ancient books and manuscripts remain in perishable palm leaves and urgently need digitization.

Similarly, Iranians also prefer to preserve and digitize their valuable culture and civilization. Gholamhosseinzadeh (2007) says digitization has been made in various fields by the use of information technology. Libraries like National Library and Archives of Iran, Museum and Documentation Centre of Parliament, and Museums and Documents Centre of Astan Quds have been done major activities in preservation and digitization of heritage collections.

According to Mastumura (2004), preservation of cultural heritage of all types has been one of the focuses of UNESCO’s activities. In view of the rapid growth of digital information, increasing concern for the preservation of such digital information for the next generation is required.

As stated earlier, both India and Iran are rich in terms of arts and cultural heritage resources (including manuscripts, rare books, works of art and artifacts), as well as scholarly resources generated in educational institutions. Further the literature survey revealed lack of study on digitization and digital preservation of heritage collections particularly in India and Iran. It is, therefore, important to study how the valuable heritage collections of India and Iran are preserved and digitized, what are the solutions for digital preservation policy, and how to ensure the preservation of
valuable information and cultural heritage resources, for their long-term preservation in digital format?

Hence the investigator felt the need to study digitization and digital preservation of these valuable heritage collections in selecte libraries in India and Iran.

For the purpose of the present study, the investigator has identified fifteen libraries in India and Iran which possess heritage collection and have initiated digital preservation activities.

1.5 Statement of the Problem

There are document resources, especially manuscripts and rare books, which are very valuable, but they are not allowed to be accessed due to concerns of damage to original documents. Documents need to be examined for optimum utilization of their knowledge store, therefore libraries in India and Iran plan a detailed study of these manuscripts and rare books. By digitization, the originals can be safely secured and the copies used by researchers for any required information.

The stage of digitization of such documents, their preservation and different procedures adopted is being reviewed. Different procedures adapted.

The present research problem is conceived under the title “Digitization and Digital Preservation of the Heritage Collection in Select Libraries in India and Iran: A Comparative Study”.

1.6 Concepts Defined

Some of the concepts present in the statement of the problem are defined here. They are: digitization, digital preservation, and heritage collection.

(a) Digitization

According to Harrod’s Librarians Glossary (Peytherch, 2000) “Digitization is the process of transferring information content from a traditional format into a digitally-readable version. Typically a scanner would be used for this purpose when digitizing a printed book; digital imaging of manuscripts, paintings, prints etc, is also covered by this term. Digitization is now quite favored as part of the drive to improve preservation techniques, as fragile originals need not be handled afterwards except in
specialized circumstances. Access is greatly improved, as digitized texts can be readily searched, and digital images of faded or difficult originals can be computer-enhanced. Several national libraries have started digitization programmes for Brittle books, delicate or rare materials”.

Digitization refers to the conversion of an item be it printed text, manuscripts, images or sound film and video recording from one format (usually print or analogue) into a digital one.

Digitizing or digitization is representing an object, image, sound, document or a signal (usually an analog signal) by a discrete set of its points or samples. The result is called “digital representation” or, more specifically, a “digital image”, for the object, and “digital form”, for the signal. Strictly speaking, digitizing means simply capturing an analog signal in digital form, but digitizing texts is also used to mean converting the image to text, via optical character recognition (McQuail, 2000).

(b) Digital Preservation

According to Harrods’s Librarians’ Glossary (Peytherch, 2000) “Digital Preservation is:

a. Use of digitization as a preservation technique

b. The methods of keeping digital materials ‘alive’ so that they remain review copies of books, which are submitted for the purpose by the publishers”.

According to Cornell University Library, “Digital preservation encompasses a broad range of activities designed to extend the usable life of machine readable computer files and protect them from media failure, physical loss and obsolescence”.

According to Russell (2009) “Digital preservation is a process by which digital data is preserved in digital form in order to ensure the usability, durability and intellectual integrity of the information contained therein. A more precise definition is: the storage, maintenance and accessibility of a digital object over the long term, usually as a consequence of applying one or more digital preservation strategies. These strategies may include technology preservation, technology emulation or data migration”. 
(c) Heritage Collection

Heritage is explained in UNESCO documents as “our legacy from the past, what we live with today, and what we pass on to future generations”. A “Heritage” is something that is, or should be, passed from generation to generation, because it is valued.

In the present context, this definition is considered to mean the term “heritage collection” in select libraries. Therefore it includes literary, artifacts, historical works, scientific research, incunabula, manuscripts, palm leaves and such other materials, old edition books not available in the market, books in fine editions, unique documents, such as official documents, government reports, and music records.

1.7 Scope and Limitation

Heritage object are valuable items which consists of works like buildings, rock inscriptions, sculptures, manuscripts, rare books (published near 16\textsuperscript{th}, 17th century) etc which are a valuable source of knowledge. Therefore, this study is limited to heritage resources such as manuscripts and rare books.

There are many libraries digitizing their collections. There are many libraries having manuscripts and rare books, but this study covers only those libraries which possess major collections of manuscripts and rare books. Further, the study covers those which have started digitization for their heritage collections.

The geographical scope of the study is limited to the selected libraries in India and Iran. The main reasons for choosing these libraries are: Firstly, they are the major libraries in India and Iran based on heritage resources and they have taken steps towards digitization of these resources. Secondly, they are also located in different states and in different geographical positions in India and Iran. The names of select libraries are presented in chapter III.
1.8  Scheme of the Study

The thesis is presented in the following seven chapters:

Chapter I: Introduction

Chapter II: Review of Literature

Chapter III: Objectives, Hypotheses and Methodology

Chapter IV: Profile of Libraries in India and Iran

Chapter V: Part I
Analysis and Interpretation of Data: Digitization and Digital Preservation in Libraries of India and Iran

Chapter VI: Part II
Analysis and Interpretation of Data: Response of Users of Libraries in India and Iran

Chapter VII: Summary of Findings, Recommendations and Conclusion

Bibliographical references and questionnaires are provided at the end.