

# A Global Multimedia Repository Concept for Digital Silk Roads Studies -Heritage of Historical and Cultural Resources in the Digital Age-

Kinji Ono<sup>†</sup>

This paper presents the concept and some technical issues to utilize advanced information technology for safeguarding, preserving, revitalizing and diffusing information on our historical and cultural resources by mainly referring to our ongoing project called “Digital Silk Roads”.

## 1. Introduction

Nowadays, in the digital age, historical and cultural resources are being built up in the digital form day by day. But these digital contents are, at the same time, disappearing on a daily basis.

On the other hand, information technology provides opportunities for recording, archiving and disseminating digitalized information on historical and cultural resources, creating space for intercultural dialogue and new cultural expressions.

In addition, large digital libraries become available and huge amounts of multimedia documents are accessible over the Internet with the increase of communications bandwidth and storage capacities.

By mainly referring to our ongoing project called “Digital Silk Roads”, this paper presents the concept and some issues to utilize advanced information technology for safeguarding, preserving, revitalizing and diffusing information on our cultural heritage so as to enhance cultural diversity in cyberspace and pass on such heritage to the future generation.

## 2. Some technical issues in the framework of the Digital Silk Roads studies

As is widely known, the “Silk Roads” consist of numerous routes that served for carrying silk and other products across the Eurasia continent. Among them, the most famous are the Desert Route from Xian to Kashgar in China, the Maritime Route from Venice to Osaka, the Steppe Route running through Central Asia, the Nomads’ Route in Mongolia, and the Buddhist Route in Nepal.



Fig.1 MAP of Silk Road

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<sup>†</sup> National Institute of Informatics (NII)

The UNESCO project called “Integral Study of the Silk Roads: Roads of Dialogue” mobilized numerous experts and institutions relating to these routes and succeeded in creating extensive networks for Silk Roads studies.

We are currently engaged in an international project called “**Digital Silk Roads**” in collaboration with UNESCO. This is an attempt to

link information technology and cultural studies in order to enhance interest in precious cultural assets along the historic trade routes called the Silk Road. This new project, “Digital Silk Roads”, aims to advance the knowledge accumulated through the past Silk Roads studies scientifically and promote the use of such knowledge not only among academics but also among the general public across the world.



Fig.2 Tokyo Symposium for Digital Silk Roads

### 3. Goal of the DSR Project

The goal of our “**Digital Silk Roads**” (**Shortly DSR**) project is to create Global Multimedia Repository (GMR) that can solve many problems concerning the preservation and dissemination of historical and cultural resources. We initially proposed this idea at the Tokyo Symposium for Digital Silk Roads, held in December 2001 at NII. GMR can be compared to an information storage platform where various digitalized multimedia

materials can be stored and utilized by a wide variety of people who are involved in research and educational activities on the Silk Road heritage. It will be an abundant resource for creating Web sites, museum exhibitions, and education materials such as CD-ROMs or DVDs. Building GMR is a big challenge, and requires an ability to store, access and retrieve large volumes of multilingual multimedia contents related to Silk Road.



Fig.3 GMR (Global Multimedia Repository)

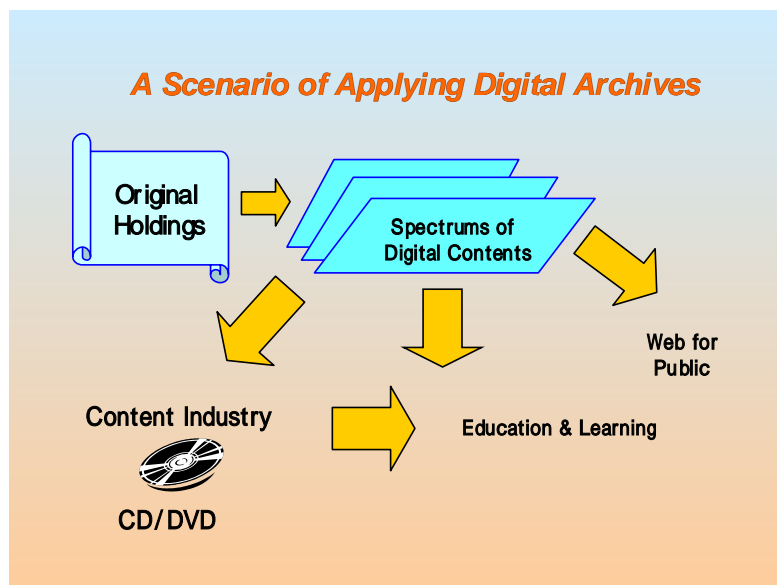


Fig.4 A Scenario of Applying Digital Archives

Our first task is to collect historical and cultural heritage resources such as photos, videos and documents and make them into digital contents.

The second task is to find a new automatic

**process to create metadata and annotation of these digital contents so as to improve access to multimedia information, retrieval and interaction with such information**

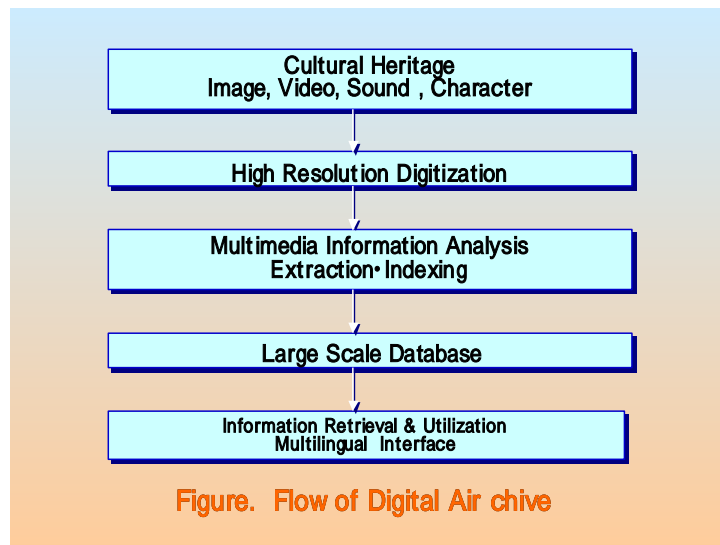


Fig.5 Flow of Digital Archive

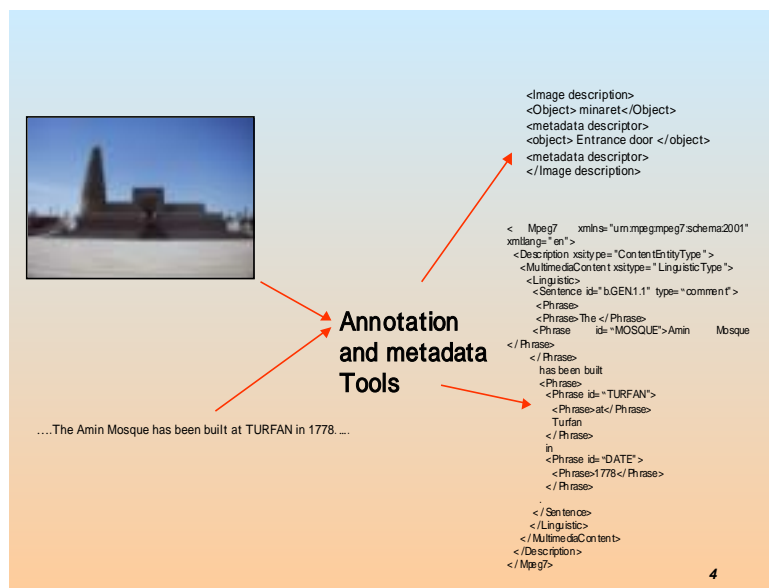


Fig.6 Annotation and Metadata Tools

The third task is to ensure interoperability to maintain the distributed multimedia repository system. Existing multimedia information systems such as digital museum, digital libraries have been built in isolation, using incompatible methods. In order to solve these problems, the emphasis is on finding architectures to provide a common framework for multimedia objects combination and exploitation in distributed

multimedia cultural heritage environments.

The fourth task is to develop suitable interfaces to the digital repository. How can various devices handle the presentation of multimedia information and adapt themselves to fit users' preferences, languages, capabilities, culture and needs? Multilingual interface is, therefore, the key issue to inter-cultural studies.

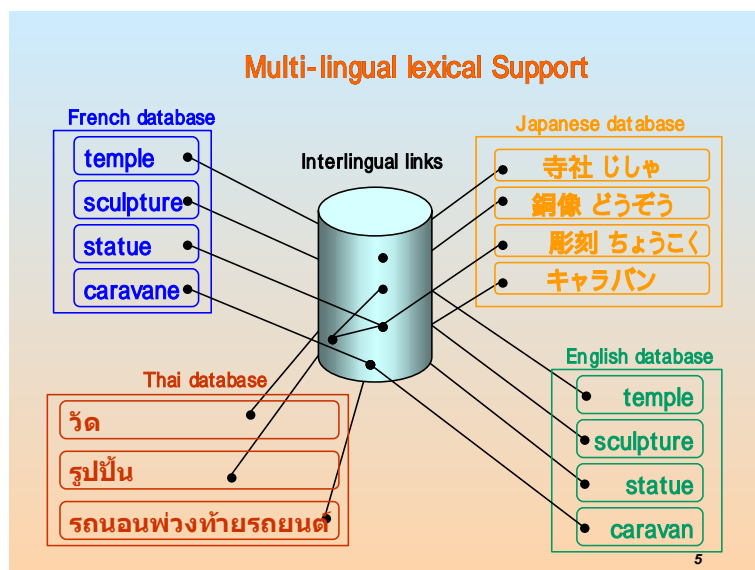


FIG.7 Multi-lingual lexical Support

**Creation of a Website Portal on the Digital Silk Roads Studies will provide benefits to users. The Web site portal on the Digital Silk Roads will aim at facilitating international**

**joint research by making important archive materials available online along with other related information.**

Here, I would like to propose the establishment of the “Virtual Laboratory for Digital Silk Roads”. You may ask, “why should it be ‘laboratory’ instead of a ‘museum’? Our answer is: what is aimed at is a forum where owners of cultural assets, researchers, information providers, and users can interact with one another through networks with the common goal of creating new historical and cultural assets.

Furthermore, it may be a good idea to hold virtual conferences, lectures, and educational training over networks. Empowerment of local institutions along the Silk Roads is a key to success of the Digital Silk Roads project. In addition, I call attention to possibilities of e-Learning on cultural diversity and cultural pluralism for inter-cultural dialogue by using multimedia materials derived from GMR for DSR.

If the Digital Silk Roads project proves successful, it will enable people to freely explore and experience some of the world’s greatest cultural

assets without actually visiting them, which have been merely a dream for many centuries. There is no doubt that the “Digital Silk Roads” project will have a significant impact on the enhancement of cultural diversity in the world.

#### 4. Conclusion

Currently the greatest concern for Japan as well as for the world seems to be revitalization of economy, and IT is widely seen as the key to achieve this goal. But I would like to suggest asking ourselves one grave question: is it possible to enrich our lives solely through pursuing economic development and technical advancement?

IT should be utilized so that it will bring the greatest benefit to humanity not only in terms of economy but also in terms of enriching our lives and cultures. I believe utilizing IT for preserving common historic and cultural heritage for mankind will certainly serve this goal.

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<**Kinji Ono**> Professor and Executive Director for Research at NII. He received B.Sc. from the University of Tokyo, M.S. in EE from Stanford University and Dr. of Eng. from the University of Tokyo. After serving as Director of Research Laboratories of KDD, he was assigned as Professor at NACSIS in 1993. His research interests covers information networking, distributed multimedia and digital archiving. He was awarded the Purple Ribbon Medal, the Prize of the Minister of the Science and Technology Agency, the Achievement Prize of IEICE. Fellow of IEEE, IEICE and IPSJ.