



# From Interpretation to Deduction: A Study on the Experience Design Method of Digitized Communication of Cultural Heritage

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**Abstract.** Based on the present situation of digital communication of cultural heritage at home and abroad, this article compares, analyzes and summarizes the current typical methods of digitized communication. At the same time, from the perspective of “interpretation and deduction”, combining with the scientific nature illustrated and artistry induced in the process of strategic analysis communication of experience design, typical theories and methods on digitalized communication of cultural heritage are analyzed and induced.

This article will explore the design method system of digitized communication of cultural heritage from the perspective of science and technology. The obtained data and information are of scientific and technological value. It will also provide scientific and methodological guidance for the status quo of the present cultural heritage. And from the point of view of creation, the artistic and cultural values behind the heritage will be reasonably and artistically induced and communicated.

**Keywords:** Cultural heritage · Digitization · Communication  
Experience design

## 1 Introduction

There have been dozens of conventions, recommendations, charters, declarations and principles born out by the international community since the 20th century in the field of cultural heritage protection. Through these international documents, many international organizations are constantly creating new consensus and using advanced protection concepts in this field, combining with the latest achievements of heritage protection practices, and making cultural heritage protection a concept of social consensus. As economic, social and technological developments continue to evolve and update, the protection of a single element of material and cultural heritage has developed towards the direction of the comprehensive protection of intangible elements such as society, environment and nature in which the heritage is located.

The production, dissemination, use and preservation of information resources are increasingly being digitized. After the process of digitized acquisition, digital preservation, digital representation, and digitized reconstruction, and cultural heritage goes through digital media interpretation; the deduction of cultural heritage with the digital media after scientific interpretation is now the main form of cultural heritage. In the process of digitized communication of cultural heritage, new characteristics are presented, which objectively put forward new requirements on the design methods in the process of communication experience.

## **2 Influences of Intervention of Digital Technology on Communication of Cultural Heritage**

First of all, the deep intervention of digital technology in modern society makes the heritage subject to the impact of transformation of “media”, the unique attributes of digital media have an impact on the whole process of recording, describing, rebuilding, interpreting, deducing and transmitting of cultural heritage. The digitalization of the heritage itself has changed its experience and mode in cultural heritage and communication.

Second, the use of technologies such as computers, the Internet and new media in the field of heritage digitization has changed the original simple subject-object relationship of the heritage, and formed a complex subject-object relationship that involves heritage owner – heritage manager – government – expert – audience and other stakeholders. The digitalized inheritance of cultural heritage will inevitably balance the relationship among all parties (inter-subjectivity).

Finally, the digital technology divides the audience of the heritage and different ways of viewing, accepting and participating in the interaction are formed. The understanding of the cultural essence and connotation of the heritage is also different. Different audiences also have different knowledge and interpretations of the digitalized heritage, which also influence each other (i.e., the inter-textuality of the heritage), and the inter-textuality brings more possibilities of interpretation and deduction of heritage.

Therefore, the field of cultural heritage, it refers to the intervention in the stages of “record – presentation – description – reconstruction – interpretation – deduction” by means of digital technology and the use of digital media to effectively convey the connotation of the value of cultural heritage. Digital cultural heritage, as a “bit-shaped” heritage, is a form of digital simulation of cultural heritage itself in the process of media conversion. It can present the system and value of the heritage itself from different attributes, levels and dimensions.

## **3 Essential Connotation of Digitalized Communication of Cultural Heritage**

The history of communication tells us: “People seek a more expressive means of media, so as to understand the material world in a more accurate, faster, more realistic way.”

From a media point of view, the development of communication is the media’s optimal choice. As McLuhan argues, “media technology is determined and irresistible in changing people’s perception patterns.” As a natural existence and historical existence, the digitalized process of cultural heritage is a traditional cultural regeneration model of cultural modernity, which connects the past and shows the process aesthetics of differentiated acquisition and modernity in terms of dimension (Fig. 1).

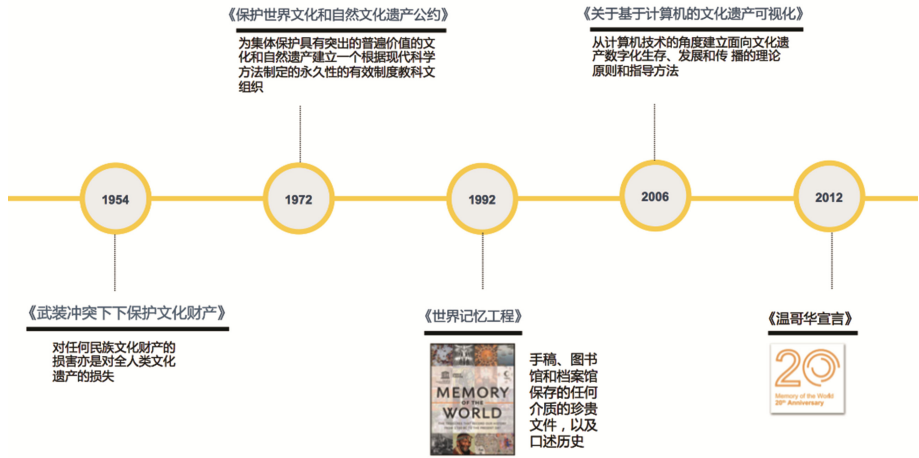


Fig. 1. International convention from 20<sup>th</sup> century

From the Memory of the World (MOW) of UNESCO in 1992, UNESCO Charter on the Preservation of the Digital Heritage which went into effect in 2003 and to Vancouver Declaration on the occasion of the 20th anniversary of MOW, the international community has brought enormous efforts to the digitalized preservation, protection and communication of cultural heritage. This span of 20 years has given people more understanding and consensus on the protection, development and utilization of digitalized cultural heritage. However, in the tide of digitalization, many difficulties such as the following have to be solved from the perspective of methodology in the process of digitized collection, protection, presentation and communication of cultural heritage:

### 3.1 Digitalized Protection of Cultural Heritage Is Greater Than the Protection of Embedded Value of Heritage

The original intention of digital protection was to transform the cultural heritage of material and nonphysical forms into digital forms widely used and easily communicated on computers and the Internet by technological means to achieve the permanent preservation and widespread communication of the heritage. At this stage, the digital process focuses on the recording, collection and preservation of data, the so-called “digital heritage protection” is merely storage of computer collected data in the hard disk, like “specimens” in the museum. It is still in the data “preservation” stage, and study on the

connotation and extension values and other relevant elements with data and information has not yet been carried out in-depth.

### **3.2 The Digitized Media Presentation of Cultural Heritage Is Greater Than the Exploration of Its Content**

Digitalized heritage is relatively untouchable, insensible, in-sniffable, invisible and inaudible as its natural form, and its nature and functions are demonstrated by means of other carriers. McLuhan, a Canadian scholar, has pointed out that “media is information” in his works. The characteristics of the media lead directly to people’s cognition of the cultural heritage they express. Therefore, the right medium shall be selected to comprehensively restore the natural environment, social environment and cultural environment in which the cultural heritage is located to change the status quo in the digitalization field that values media presentation and neglects heritage value.

### **3.3 Continuous Media and Content Updates Bring About “Heritagization” of Digitalized Heritage**

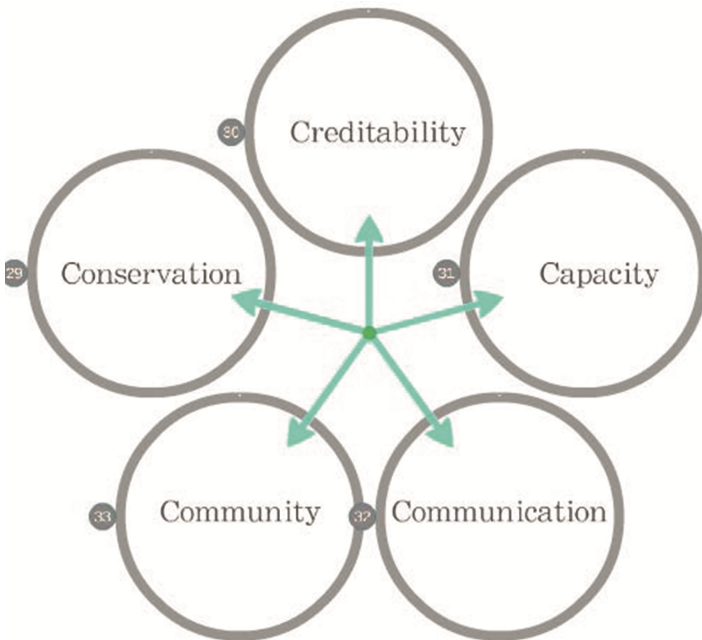
The major difference between “bit” and “atom” is that bit cannot be touched, smelled, seen or heard, it can only demonstrate its feature and function with the aid of other carriers, so digitized cultural heritage also face such problem, the characteristics of media can directly affect people’s cognition on the characteristics of cultural heritage. Therefore, the ultimate goal of cultural heritage digitization is to choose the right media and restore the original cultural heritage truthfully, including the natural environment, social environment and humanistic environment.

### **3.4 The Ways of Expression of Cultural Heritage in the Process of Digitized Communication Is Homogenized**

The process of globalization promoted by the rapid development of information and communication technologies has created unprecedented conditions for the intensification of cultural interactions, which have also affected the coexistence of cultural diversity. Cultural diversity is not only reflected in the style of development in a specific historical, geographical, cultural and economic environment, but also in the unique and pluralistic forms adopted by cultural groups in expressing and demonstrating their own cultural identity. The protection of cultural heritage is based on the global consensus on the protection of “cultural diversity.” The diversity and differentiation of cultural heritage are also the values of cultural heritage. Their tradition, artistry and scientific nature also show the basis on which common ground with all countries and nationalities are sought for. The ways in storage, exhibition, and communication expressed and showcased in digitalized cultural heritage protection are homogenized, which is in conflict with the original intention of diversity in expressions of heritage protection and that is also a problem in the field of digitalized heritage exhibition and communication.

## 4 Experience Design Method in Digitalized Communication Process

John Dewey argued that “communication, while being characteristic, has an instrumental and ultimate character, when it frees us from the weight of events and makes sense to our lives, it is instrumental.”<sup>1”</sup> Whether it is digitalized heritage or tangible heritage, its transmission with communication as a tool and symbols as a consensus, restructures and communicates the value of cultural heritage in the perspective of elaboration. The study of communication of heritage is to examine various social processes how a significant symbolic shape is created, understood, and applied. The meaning of cultural heritage is not inherent, but is generated from specific interpretation activities (Fig. 2).”



**Fig. 2.** 5“C” strategy of culture heritage preservation

Communication and experience are inextricably linked, and all communication is to create a process experience of information transmission. It can also be considered that the content of communication is experience: the experience of information, the experience of value, the experience of ritual and the experience of meaning. Information, values, ritual and meaning are lacking in the form of definite materialization in real life. This is especially true of the cultural heritage, and in some ways, digitalized heritage is a replica, which is consistent with Benjamin’s judgment of art in the era of mechanical reproduction. The “glow” effect of the value of patronage in the digital age, compared with the era of mechanical duplication, is much more weakened, and its display value

is also gradually diversified with the richness of the display media, that is to say, it has more opportunities for “display” in the public digital existence and the value of display is more diluted. Therefore, the “experience value” of heritage needed to be explored in depth (Fig. 3).

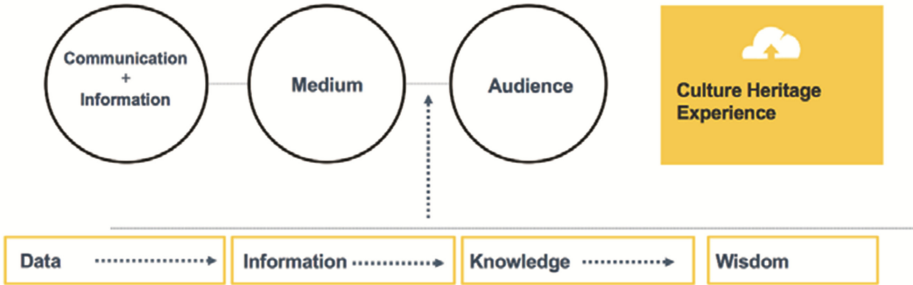


Fig. 3. Model of culture heritage experience

As a form of heritage in the information age, the digitalization of digitalized heritage is a process of constant selection. Reconstruction and interpretation are the starting points of digital communication activities. The heritage experience design is a new method of digital protection and inheritance of heritage. Digital technology as the “language” of the computer in “information age” considers “cultural heritage” as the target “statement” to be expressed, it expresses the “semantic meaning” of digitized existence of the public in the stage, so the realization of the cultural value experience behind the heritage is more natural, the author is convinced that the digital communication experience of shaping of the cultural heritage can proceed from the following points:

#### 4.1 Context Fusion - Diachronic and Synchronic Combination

Heritage is the art of time. Therefore, in the process of experience design of digitalized heritage, the historic context and the realistic context of heritage are unavoidable in this process. The diachronic context of the heritage answers the environment in which it forms, develops and declines. Through the restoration of history, the essence of the cultural heritage can be manifested and the metaphorical meaning of the “heritage” under the prevailing environmental conditions can be reflected rather than simply demonstrating the artistic height of the heritage itself from a visual art perspective. The synchronic context can find the content, media and narrative way of cultural heritage in the realistic environment in line with the cognition, values and aesthetic orientation of modern people. Under the objective premise of not violating the original intention of cultural heritage, the two should be interpreted under the diachronic and synchronic contexts so as to shape the value experience that heritage can feel in terms of time dimension.

## **4.2 Combination of Virtual and Reality - Cross-Complementing Form and Content**

The in-depth development of the digital living model has not changed people's "physical character" and still needs a carrier that is sensible, accessible, smelling, audible and visible to provide a basic sense of existence and to balance the proportion of "virtual and reality" of content and media. Both the tangible and intangible cultural heritages have tangible and intangible characteristics, and are not isolated. In the process of digitization, especially in the process of deduction, communication and display, the proper balance of the tangible elements and intangible elements of the heritage shall be maintained so that the tangible material and cultural heritage may accompany "invisible" social and cultural practices and rituals and the intangible cultural heritage can be sensible, touchable, sniffable, audible, visible and carried by "visible" entities.

## **4.3 The Balance of "Interpretation" and "Deduction" - Science Interprets Process and Art Deduces Values**

Heritage protection began with the protection of its artistic value, and the process of digitization was the process of describing, restoring and displaying the artistic and scientific values of the cultural heritage. There is a difference between the digital form of the heritage and the heritage itself, and the heritage itself has a strong "readiness" without the need for other media-assisted self-exhibitions. The digital heritage changes the "format" of existence, and the state of heritage in the space and time is modeled. Therefore, under this "context", it is necessary to fully express the artistic value characteristics of cultural heritage and make reasonable art interpretation, set appropriate art guidance and expansion, bring the audience into the atmosphere artistic interpretation creates; the scientific, rational, natural ways of presentation shall be demonstrated and communicated in a balanced way.

## **4.4 Online Demonstration and Offline Verification**

The virtual environment built by computers and the Internet is the main stage of heritage experience, and digitalized interactive technology can also trigger the viewer's curiosity about real collections. Indian scholar Amrit Sudar holds the same view: "The easier it is to see the imagery of the collection, the more likely you are to have a strong desire to face it." Amrit Sudar has not had a chance to go to one of these museums in person for many years, and this regret became his motivation to set up Google's art project. The digitalized form of cultural heritage reorganizes the heritage itself, dissolves the geographical restrictions of the heritage, and gives the audience more freedom and choice to extend the depth and breadth of the heritage itself. Therefore, the online cultural heritage shaped by digital technology can play a demonstrative role, and the communication coverage of heritage experience is more extensive, and this can promote more people to come to reality to experience in person (Fig. 4).

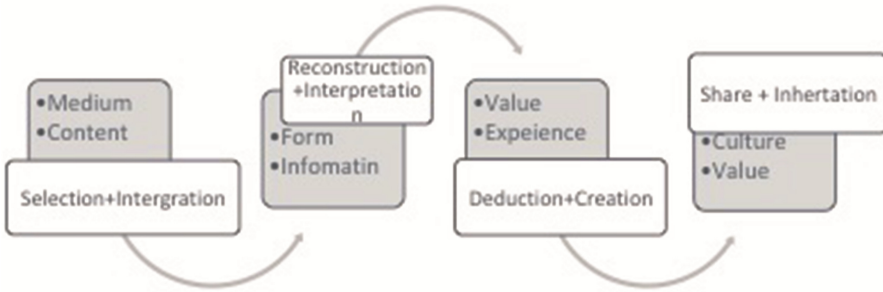


Fig. 4. Process of culture heritage experience communication

## 5 Conclusion

The process of digitized dissemination of cultural heritage can be regarded as a process of interpreting its information and value and deducing its meaning. Interpretation of cultural heritage, including its historical, artistic, technological and cultural values, is an important foundation in the process of communication. The scientific nature of the interpretation determines the authenticity and validity of the communication. The process of digitizing cultural heritage is the process of describing, restoring, displaying the artistic and scientific values of the cultural heritage. The heritage of digital form has changed the “format” of its own existence. Under the “simulated” state of space and time, it is necessary to fully represent the artistic value and characteristics of cultural heritage, carry out reasonable artistic deduction, and display and communicate the scientific nature, rationality and nature in a balanced way.

As another form of existence of heritage, it is a product of technological evolution and socio-economic development and a process of digitized existence of heritage. The introduction of the concept of experiential communication evades the “digital dilemma” currently facing the domain of heritage and combines the information presentation, interactive technology and environment construction involved in the digitalized design field of heritage. The “interpretation” and “deduction” carried out in the two dimensions of technology and science provide different audiences with a context suitable for the communication of heritage experience, create a new way for exchanges, interactions and communication among different cultures, and present some available theories, methods and tools for protection and display of cultural heritage, museum management, cultural and creative industries and other fields.

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