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Digital Museum and User Experience: The Case of Google Art & Culture

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Abstract

Museum websites have evolved from offering information on the collections of institutions over the virtual space to providing the richer user experience. However, previous research in museology has mainly focused on the causal relationship between online users and actual visitors of physical museums, neglecting users' behaviour within the digital platform or human-computer interaction (HCI). This study aims to explore the way in which online users are affected by the interface tools of digital museums with a case study of the Google Art & Culture. Drawing on the concept of remediation [1], our analysis reinforces the interactivity based on its interface tools such as "Zoom-in" and "Museum View" for delivering information (transparency) and "User Gallery", "Share", and "Details" for compelling experience (reflectivity). The outcome of this research suggests ways in which museum professionals can develop and manage user interface of their institutions.

Keywords

Human-computer Interaction; Remediation; User experience; Digital Museum; Google Art & Culture

Introduction

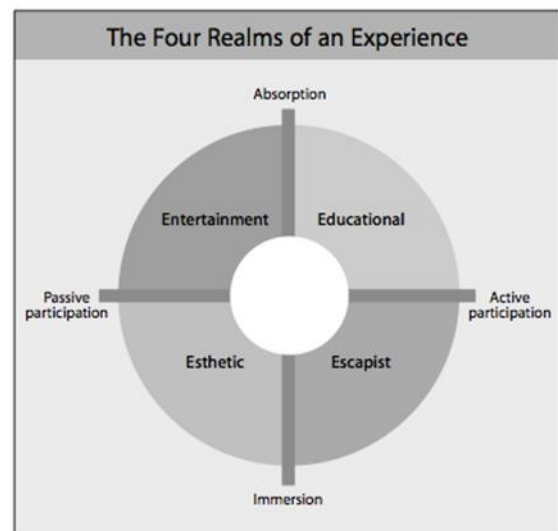
The development of technology has changed the way we create, provide, and possess arts. Particularly, the growth of using internet has had a significant impact on all levels of visual arts [2]. In particular, the websites of museum have been evolved from giving information of current and upcoming events in the institutions to affording richer virtual experiences of appreciating works of art [3]. However, few works have explored online users' engagement with the digital museum. We presume that users interact autonomously with the virtual museum provides "a genuine online visitor experience" [4]. This study has aimed to understand the extent to which the interactivity has been affected by the interface tools of digital museum. In this paper, we explore Google Art & Culture (previous known as Google Art Project, and henceforth GAC) as a case study with not focusing on the technical issues of our case, but emphasising upon the conceptual argument. We mainly argue that interactivity between online users and the GAC

within the quality of remediation [1], which is accomplished by analysing interface tools of the GAC.

Theoretical Background

There are several approaches to explain "user experience". According to Forlizzi and Battarbee (2004), user experience is caused by interaction between commodity and users [5]. According to the degree of interactivity, Pine and Gilmore (1998) analyse the experience in two dimensions: participation and connection [6]. Customers divide into active and passive groups, according to the degree of participation. Passive participation means that users do not affect the event. In contrast, with active participation, people are in a position to affect the performance significantly. Another approach is connection, in which users absorb or are immersed in the environment of the performance. Pine and Gilmore (1998) place the experience in four realms according to the previous two dimensions [6] (Figure 1).

Figure 1: The four realms of an experience [6]



We examine the related theories of the digitalisation of artworks closely. In the digital age, artworks represent in the new environment; computer. Indeed, interface is an important definition to represent the culture in the computer environment. The interface is expressed as a layer, posi-

tioned between user and system [7]. Interface design is explained in relation to the effect of remediation.

The new media theory of “remediation” was introduced by Bolter and Grusin (2000), as “formal logic by which new media refashion prior media forms” [1]. Remediation is one of the three characteristics of new media: remediation, immediacy and hypermediacy [1]. The term remediation means that new media fashion differently from older media. Immediacy and hypermediacy explain the process of remediation. Immediacy is visual depiction with the purpose of enabling viewers to forget the existence of the medium. Bolter and Grusin [1] offered virtual reality (VR), where the purpose of the media is to disappear, as an example to clarify immediacy. Approaching the term VR from human experience, the term of “presence” is similar with the immediacy; “it refers not to one’s surroundings as they exist in the physical world, but to the perception of those surroundings as mediated by both automatic and controlled mental processes” [8].

Hypermediacy aims to reveal the viewer in the medium. Hypermediacy is characterised by multiplicity, in which all of the media are juxtaposed, overlap and interact. The various reactions by multimedia result in reconstructing the viewer’s experience. The multiple windows on a computer screen are the representative instance. These two characteristics, immediacy and hypermediacy, are not independent, but complementary.

Bolter and Gromala (2003) suggested two strategies to design an interface: transparency (immediacy) and reflectivity (hypermediacy) [9] (see Table 1). They refer to the transparency strategy as “Window”, which enables viewers to ignore the presence of media. On the other hand, they make reflectivity metaphorical as “Mirror”, which aims to give users a unique experience. With the strategy reflectivity, it is explained that viewers constitute the experience when surrounded with various forms of media. They noted that “each design is a combination of these two strategies” [9]. In other words, neither transparency nor reflectivity constructs interface design alone.

	Transparency	Reflectivity
Goal	information delivery	compelling experience
Metaphor	interface as window	interface as mirror
Response by user	look through interface	look at interface

Table 1. Interface design [9].

Methodology

Our paper provides a case study of a recent digital museum source, Google Art & Culture. The GAC provides “an ever-growing digital archive of the world’s greatest arts” [10]. We mainly collected data from reviewing various secondary sources including a journal articles, magazines, newspapers and books. Material was also gleaned from the Internet; published documents such as the official description

and instruction manual by Google, related information and interview script from the online newspapers and articles, as well as blogger project reviews, the script of recorded video of instruction the GAC by Amit Sood who is director of the GAC and transcriptions of interviewing with Sood by media. Moreover, one of the authors explored the interface of the GAC and provided information about the website practice

Google Art & Culture

Google introduced a new digital interface in 2011, the Google Art Project, which allows online users to experience virtual artworks. This project prepared for 18 months before launching to the public with the purpose of optimising the accessibility of museum’s artefacts [11]. Google started the project in cooperation with 17 museums. More institutions have become involved with the project and 151 institutions joined the project [12]. Two years after the launch, the project had expanded the territory, so that 287 museums have now participated in the project [13]. The project has changed its name to the GAC with also featuring historical artefacts. Moreover, the GAC is the hub of Google Cultural Institution, along with World Wonders Project and Archive exhibitions [14].

The interface provides more than 7.2 million digital images, which is offered by large and small museums in 60 countries [15]. The artworks provided fall into classic and modern genres, without limitation of figure (e.g. canvas, sculpture and furniture). The GAC has introduced several features on the official page: (1) the project presents high-resolution digital images of museum artefacts; (2) Google’s technology, “Street View”, enables users to experience the interior of the museums virtually; (3) users facilitate the creation of their own gallery, using project resources; (4) users can share their collection or a particular work with others through social networks [13].

Discussion and Analysis

The interface elements of the GAC are analysed below in terms of the effect of remediation.

The GAC as “Window”

“Zoom-In” and “Museum View” are interface components to make the GAC ‘Window’. In general, as we already noticed, transparent remediation (‘Window’) aims to seek information and enable the user to ignore the presence of the current medium [9].

Firstly, users are captivated by the interface whilst they zoom in to a particular painting. At that time, they lose sight of the fact that they are viewing it on a computer screen as they seek the details of the artwork. The interface of the GAC is immediate, by facilitating “Zoom-in” tools. Then, we pay attention on the tool behind this: high-resolution digital images. Users might be disturbed to remediate transparently when facilitating the “Zoom-in” tool with low-quality images. That is because they would face

a defective screen when zooming in on an image with low pixel density.

The GAC, then, provides immediacy with “Museum View”, using panoramic pictures. In other words, the medium becomes invisible in the viewers’ perception [16]. Therefore, the interface tool, “Museum View”, becomes the representative example of “Window”, which aims to convey information. In this context, users seek the information of an artwork’s position in an institution, whilst they navigate the institution with the interface tool. Moreover, this interface leads users to discover more detail of paintings through the practice of clicking the paintings during the virtual tour. The behaviour allows users to become absorbed into the project.

However, “Museum View” has an issue that operates against the maintenance of transparency: copyright restriction. Although Google tries to solve the problem [17], “Museum View” has blurred images. Alternatively, Google scans the inside of the institution avoiding a particular object with copyright limitation [18]. For instance, a user wants to find a painting in room A, which consists of blurred images. Users ignore the medium when they are in the hallway of the museum, but recognise the presence of the medium when they reach room A. This disturbs interactivity between users and the interface.

The GAC as “Mirror”

On the GAC, “User gallery”, “Compare”, “Share” and “Details” contribute to make a compelling experience from reflecting the user in the interface.

Based on the “Save” function, the “User gallery”, “Compare” and “Share” tools help viewers to reflect themselves in the GAC. The interface tool, “Compare”, enables viewers to construct their experience. Viewers appreciate that this is not simply a digital image, but that they are achieving their own goal by customising the computer screen. Thus, this tool elicits a unique experience from users. Secondly, “User gallery” is the component resulting in participation. Through selecting and saving their favourite artworks, the user reflects their sense of identity in the interface.

In addition to this, the users share their gallery by commenting on the artworks. This behaviour allows users to have a new experience that it would not be possible to have in another digital museum. Lastly, through the “Share” tool, the resources remediate reflectively. Previous work has reported that the use of bloggers’ social media relates to reflective remediation [18]. On the GAC, users share an entire user gallery or a particular painting in order to discuss this with others. Therefore, a shared image in social media is the channel by which the users interact with others.

Previously, Bolter and Gromala (2003) have noted that the characteristic of reflective remediation is multiplicity [9]. The “Detail” tool is to draw a multiplicity. The “Detail” tool in practice enables the user to view information relating to a certain object. The information consists of various kinds of media: text, videos, pictures and hyperlink. For

example, the users appreciate a digital image simultaneously with reading text or playing a video. Moreover, the computer screen is overlapped with the museum’s website when users click the hyperlink of painting’s owner detail. In this way, diverse media surround viewers and these media comprise the users’ experience.

Indeed, the elements are not clearly divided into transparency and reflectivity. That is because transparent and reflective remediation is complementary [9]. The GAC elements that have been mentioned stand between “Window” and “Mirror”. For example, the media become transparent during a virtual tour and users reflects themselves in the media when they click a discrete painting.

Interactive digital museum.

Pine and Gilmore (1998) notes that visiting museum is “Esthetic” experience in their classification [6]. While the visitors of gallery are usually passive, they are immersed in museum by surround environment. In the case of digital museum, we argue that the experience of users is “Educational” users are active; although users navigate around digital museum, their surrounded environment, computer, is not enough to make them immerse in digital museum. In this paper, the GAC is categorised as “Escapist” (Figure 1) and we insist that designing effective interface tools in the platform enhances the quality of remediation, which contributes to encouraging users to be active and immersed in the GAC. As such, the digital interfaces, “Zoon-in” and “Museum View”, enable media to be invisible, which allows users to be immersed by the GAC. Moreover, the reflective elements, “User gallery”, “Share”, and “Compare”, lead users to actively reflect their identity in the GAC, thereby users immerse themselves in the interface.

Conclusion

Previous research on museum limits their research scope within exploring the relationship between the physical museum and their website. However, this paper begins with considering the digital museum as users’ independent activities. Therefore, this paper describes that the digital museum becomes an interactive platform by examining the GAC. We analyse the findings of a case study from the conceptual lens of remediation. Two tools, “Zoom-in” and “Museum view” play roles in terms of transparent remediation, whereas reflective remediation arises through the practice of “User gallery”, “Compare”, “Share” and “Details”. From elements with stimulating transparency, active users become absorbed in the interface and reflective features on the interface enable them to immerse themselves in the GAC.

The outcome of analysing the GAC makes the implication for curators engaging with the digitalisation of museum. Indeed, the role of curators evolved from placing artworks in historical context on the wall of museum to structuring the aesthetic experience of art and communicating to audiences in the 1960s [20]. In other words, curators began to encourage the active and direct engagement with works of art by offering interactive spaces to visitors [21]. To pro-

vide interactive space in digital museum, curators should consider following aspects. Firstly, the latest technologies on the interface are essential resources to enhance remediation quality, which contributes to positive users' experience. Secondly, digital museum needs elements that allow users to reflect themselves into the interface, which designs unique experience for users.

With exploring the GAC from a different angle, lastly, new research agendas can be aroused: it is an interesting point why Google proceeds with this project. Google has stressed that the department of leading the project is non-for-profit sector. Despite the announcement by the head of the project and the fact that the GAC is freeware [22], Google is still able to earn potential profits. For example, although there are no advertisements during usage of the GAC, the website operation gives opportunity for Google to use their search engine or expose their advertisements, potentially. In the point of intangible aspects, the investment in the non-profit sector helps Google improve their brand status. In this way, we will explore the relationship between museums and Google or discuss how the GAC impacts changes in audience perception about Google.

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