Panoramic Virtual Museum: Representation or Simulation

Indah Tjahjawulan and Setiawan Sabana

Abstract—**Today, as the development of global networking technology has created a computer-based communication world, many museums in the world has set up a display of their collection and information by means of online media using different technologies of delivery; they even use three-dimensional imitation environment. Using computer technology virtual museum can simulate a room using panoramic virtual which is a panorama that enables visitors to go circling around the room completely (360 degree); they can look up and look down as well. This also creates a sensation as if they are actually present in the real museum. Based on the researches using examples of a number of panoramic museum such as the virtual museums of Smithsonian National Museum of Natural History, British National Gallery, High Museum of Art and Valentino Virtual Museum, we can concluded that virtual museum with equipped with panoramic virtual can be a representation, a repeated representation and simulation. However, those three processes are actually creating a new reality or also named as hyper-reality despite the fact that it cannot serve to the same extent as the actual museum.**

Index Terms—**Museum, panoramic virtual, representation, simulation.**

I. INTRODUCTION

A. Cyberspace Phenomenon

The speedy development of the computer network technology globally has created a new world named cyberspace [1]. It is a world of computer-based communication that offer new reality, which is virtual reality [2]. This development will be keep going and going endlessly. What is certain is that this development will make the virtual world become more open and touch all the activities of the people in the whole world. It brings huge and fundamental change in social and cultural order at global scale and changes the meaning of society, community, communication, social interaction and culture.

Slouka [3] suggested that today's global society has entered a new world where in it they can do anything exactly like what they can do in the real world, with the same level of experience, that is in the universe of cyberspace. According to Yasraf Amir Piliang (in Slouka), cyberspace with virtual reality offers people to live in alternative world, a world that is able to take over and replace the existing reality, which is more pleasant than the existing pleasure, which is more fantastic than the existing fantasy, which more exciting than the existing excitement. Cyberspace universe has led people enter to diverse sides of new reality which has never been imagined before, which is full of hope, pleasure, convenience, and exploration like teleshopping, teleconference, teledildonics, virtual café, virtual architecture, virtual museum, cybersex, cyber-party, and cyberorgasm. Today cyberspace is surely developed, spread extensively and fundamentally has changed the old definition of physical space, identity and community, and it also includes what the definition and form of a museum.

B. Museum

International Council of Museums (ICOM) defines museum as an established institution, museum is not for profit, it serves people with all their development, open for public and it has special task to gather, take care of, communicate and display artefacts concerning human identity for educational and recreational purposes. According to Ambrose and Paine [4] museum is a place to store heritage like culture, memory, and the hope of human beings. Ambrose and Paine also said that museum has three roles in the society; they are: 1) to make sure the maintenance and conservation of the cultural heritage; 2) to provide educational institutions, facilitate learning activities, cultural events and 3) to construct identity in the locations where they exist. So, it can be said that museum is not a place just for recreational education but is also a source of information about various interests of wider scale. Museum can even turn into a meeting place where people can gather for social activities such as seminar and workshop.

Prior to the cyber era, museum is a place where the objective of the visitors is to acquire more knowledge or to get confirmation on what they have already known by experiencing in person the more real form or the model, which is the imitation of the reality commonly known as representation[1]. Directly looking at and meeting with the representation of an event or collection as part of the efforts to match the knowledge and the result of personal interpretation of something. For that reason, the display of an event or collection along with the related information in a museum is so important to be presented and by doing so it can give meaning to the historic event or collection. In such context of museum, the experience of visiting to museum is a full-blown sensory experience (seeing, touching, smelling, listening and feeling). This sensory experience directly interacts and works to appreciate museum's collection and ambience or environment..

In this cyber era, museums – in the context proposed earlier – can still be found and visited. However, if someone wants to see the collection of certain museum, which is located faraway and unreachable, he/she doesn't need to come in

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[1] Representation: when reality cannot be presented, mediation is used to 'present the reality' in a form. When we see it, it comes in a form of representation.

person to that museum. They can look for that particular museum in the Internet. Many museums in the world have set up their displayed collection and related information accessible for online media using various technologies starting from just photo slideshow to three dimensional (3D) simulations that provide interaction just like in the real environment using certain electronic devices. The following is what Edgar and Sedgwick said about simulation:

"...The general consensus is that the simulacrum is not simply a copy of the copy: it somehow avoids contact with the ideal form. Given that the order of forms represents, for Plato, the rational ordering of the universe, the simulacrum comes to stand for that which is incommen-surable with conceptual rea-son." [5]

Simulation, in the words of Jean Baudrillard, is a creation of models of reality without any history or reference. And, still according to Baudrillard, simulation is where reality is not merely something that can be duplicated but also can duplicate itself [6].

It's this environment of this three dimensional imitation which is called virtual reality. If a simulation environment is conditioned in terms of a museum, it then turns into a virtual museum. Museum virtual [7] is a museum without walls of which the architecture can change depending on who is the user, and it is a source of information for media storage that has regulated form and ability to convey information it possesses using a variety of methods.

II. VIRTUAL MUSEUM

Using the cutting edge computer technology, virtual museum has the ability to simulate a room using panoramic virtual, which is a panorama that allows visitors to look around the room (360°), look up and down and create sensation as if they were inside an actual museum. Using this panoramic visual, visitors are able to go to every corner of the museum, to zoom in and out, without having to move even a step into the museum. Through panoramic virtual museum, the visitors can select what they wish to see first. There is no regulation and particular order by which they should abide like when they go visit the actual museum. The following are some types of virtual museum that we can enjoy using panoramic virtual technique:

A. Smithsonian National Museum of Natural History [8]

Museum Virtual Smithsonian National Museum of Natural History Fig. 2 is an exact imitation of the real museum Fig. 1. If visitors step into the simulation of this virtual museum, at first they can see the appearance of the museum's interface and are able to choose the type of the tour the wish for: desktop virtual tour or mobile virtual tour. If they choose mobile virtual one, they can pick up a room just by clicking the icon of the room and waiting for several seconds the chosen room will be opened Fig. 2 and the visitors can freely explore its depth.

If they choose the mobile virtual tour Fig. 3, the visitors will get virtual experience, which is more complete than the mobile virtual can offer. It is because here the visitors are able

to see some artefacts with more detailed feature by only clicking the camera icon Fig. 5. Not all artefacts can be examined in detail; it's just those with a camera icon that are able to do that. Visitors are able as well to pick which room they with to get into by clicking the map at the far right, or clicking the arrow and the name of the room found on that floor Fig. 6. The room they have already entered will be marked with colour change on the icon. Since this virtual museum is an exact imitation of the real museum, what can be seen through virtual museum and what is seen directly on location is approximately the same. We can see and compare the picture of the museum room – Rotunda Fig. 1 with the virtual room – Rotunda Fig. 4.

Fig. 1. Photo of museum Interior.
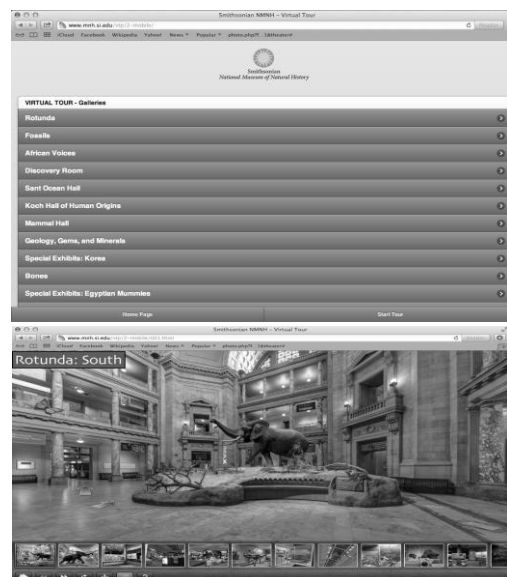

Fig. 2. Desktop virtual room.

Fig. 3. Mobile virtual room.

Fig. 4. Virtual room.

Fig. 5. Detail.

Fig. 6. Map.

B. British National Gallery [9]

Museum virtual British National Gallery Fig. 8 is also an imitation of the real museum Fig. 7. Like other virtual museums, when visitors step into the simulation of this museum, at first they can see the appearance of the interface of the museum and pick up which room they want to visit. Many rooms are available for the visitors to choose and enter and they can be picked through the museum map icon Fig. 8. Afterwards the visitors are able to enter and explore the room Fig. 9. In this virtual room, visitors can zoom in this object of work of art and they can click the object to get more detailed information about the object Fig. 10.

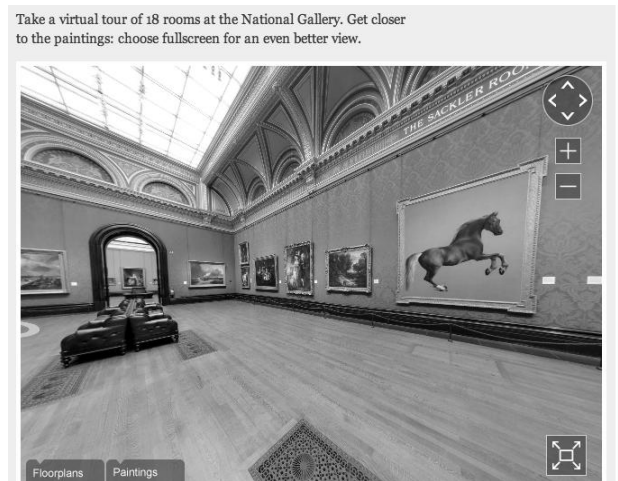Fig. 7. Photo of museum Interior.

Fig. 8. Virtual tour.

Fig. 9. Virtual room.

Fig. 10. Detail.

C. High Museum of Art [10]

Unlike the earlier two virtual museums mentioned above, which are museums with artefact collection that represent history and culture, High Museum of Art is a virtual museum of a natural conservation. This virtual museum imitates the real natural condition; its operating principle is the same as the other virtual museum, which is when they step into the museum simulation, the visitors will see the museum interface and pick up which location they want to visit Fig. 11. The visitors will then enter and explore the location of the natural conservation Fig. 12. In this virtual museum visitors can only explore by zooming in and out; they are not able to get the information about what they can directly click on the image.

Fig. 11. Interface.

Fig. 12. Virtual panoramic.

D. Valentino Virtual Museum [11]
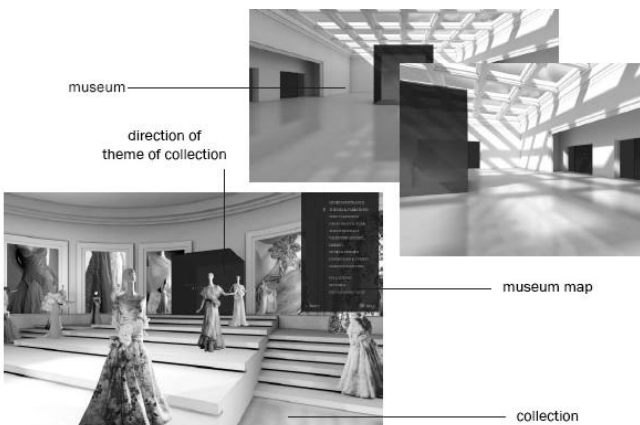

Fig. 13. Interface.

Fig. 14. Virtual room – Information of collection.

Valentino Virtual Museum is a private museum of the huge brand of Valentino. This museum is just like those other museums. It provides information on the history and the collection. The difference lies on the fact that the prior virtual museums are the imitation of the real museum and this Valentino Virtual Museum only exists in the virtual world.

This particular museum has a bit different operating system, which is not as easy as the other virtual museums. To access this virtual museum, visitors are required to download a special application Fig. 13 to allow them to get in, explore, see and get a variety of information on the collection Fig. 14. For a privately managed museum and the focus is only to provide information, the use of virtual technology is surely the most practical method, since it doesn't require special maintenance on the collection like the real fashion museums, and there is no limit for space to display the collection and provide different information.

III. PANORAMIC VIRTUAL MUSEUM: A REPRESENTATION OR MERELY SIMULATION?

The life of the cyber society depends so much to information and communication technology facilities. The significant development of computer and Internet has changed the society. Our society has become a computerized society and in this kind of computerized society that manipulates reality using different methods is allowed. This can be said as the other side of the great development of information and communication technology. Now reality is not just to be told, represented and extensively spread, but furthermore it can also be created, engineered and simulated, and even it is able to create new reality using men-made images, manipulation of fantasy, illusion and even hallucination and turns it into reality. A variety of imitating process using virtual technology can be analysed based on four examples: *Panoramic Virtual Museum* that are already described above:

In the virtual museum of High Museum of Art, the imitating process is a direct imitation from reality, or first representation, in this case is the reality of digitalized nature and environment. The imitating process is shown in this diagram:
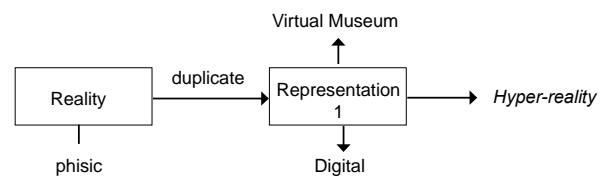

Diagram 1. Representation process.

Discussing this imitating process of the Smithsonian National Museum of Natural History and British National Gallery, it is disclosed that those two museums have become more distant from the actual reality as those two virtual museums are the representation of the actual museum, which are also only a representation of the actual reality. To have clearer idea about this process of imitation, let us look at the following diagram:

For Valentino virtual museum the imitating process is just for its artefacts, while the universe of the museum itself is just an imagination, a fantasy. Referring to Baudrillard, this process of imitation that is not underpinned by reality is called simulation. The simulation process is described in the diagram below:
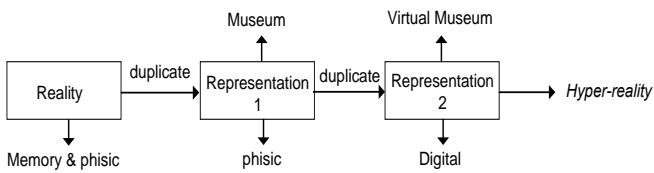
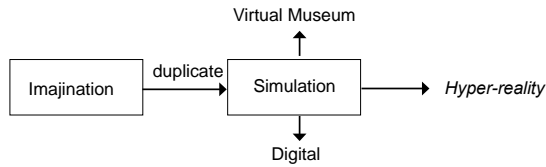Diagram 2. Repetition of representation process.

Diagram 3. Simulation process.

Virtual museum, in the context of sharing role with the society, is to support the educational institutions, to offer facilities for learning activities, and for cultural events and by doing these it serves as one of the important information delivery because: 1) virtual museum has such extensive range as it can bring something so faraway using simple and speedy method; 2) virtual museum is able to display the collection and information data without having to be limited by space (unlimited space). However, virtual museums have to deal with constraints. The role of museum as a conservation of historical heritage is only limited to data collecting and documentation.

Other than that, exploring into an actual museum, seeing and feeling the aroma of grandeur, antiquity, or high level of sophistication that emerge from a representation of the first stage reality (Diagram 1) and second stage representation (Diagram 2) is certainly different from exploring the same room using Internet, where such experience would be limited only at the visual level. Of course, this happens mostly when the visitors only explore the virtual museum in the form of simulation (Diagram 3).

The physical form resulting from the first and the second representation (see Diagram 1 and Diagram 2) against the experience in the museum is very important, mostly those relating to the natural history context, for example the Smithsonian National Museum of Natural History Fig. 1-6 and natural conservation like High Museum of Art Fig. 11-12. Is the transformation of information from physical to virtual form adequate? The answer for this question we have yet been able to answer and needs further research. But, it is understandable that the experience to enter the representation of the natural universe at Smithsonian National Museum of Natural History, the room dedicated for the collection of plants and insects in the location of the actual museum that fills with natural aura[2] the aroma of plants and the sounds of insects that can be by the visitors that is allowed by full-blown sensory contact will undoubtedly provide further knowledge than when the visitors only have the experience of entering the same room through virtual world Fig. 16. It's the also the case of the virtual museum of natural conservation like High

Museum Of Art Fig. 11-12, with virtual method, the visitors can only capture different forms and colours without depth and other sensation.

Fig. 15. Virtual room.

Similar to the experience of being present in the actual art museum, the visitors who, with their own eyes, see the artists' masterpieces, able to feel the splendour and opulence of the aura of the building and the art works at the British National Gallery, they cannot get those things from virtual experiences although they are in fact so look alike Fig. 7-10. Specifically for Valentino's haute couture gowns, probably we can see the shapes and colours by making use of virtual museum Fig. 13-15 but are we able to feel its texture? Are we able to see the details of the complexity of the pattern cutting and variety of the materials being used?

IV. CONCLUSION

Based on a number of museums that are being analysed and taking into account the imitating process that takes place, it can be concluded that it is so possible that virtual museums with panoramic virtual technology become a representation, a repeated representation, and a simulation. However, these three processes all bring about a new reality or hyper-reality. At the end of the day this hyper-reality of virtual museum is able to create a condition where visitors will stop thinking about the actual museum, will not recall the concept of space, distance and relation with the environment as they are so overwhelmed with and immersed in the technology; and this phenomenon is called hyperspace [12].

As an information media that allow people to widen their knowledge, virtual museum is a useful breakthrough, a ground-breaking technology, however, whatever the situation is, it is necessary for us to realize that the knowledge collected from direct interaction with the objects, and the fact that museum can serve as a meeting place, a point where people gather and meet directly in an event and the other important thing is the role of museum as a place to take care and conserve cultural heritage, actual museum is irreplaceable, it cannot be replace by this virtual experience.

REFERENCES

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