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# From archaeological artefact to unlimited heritage concept

## Redefining museum collection in the disruption era

ALI AKBAR

### ABSTRACT

The last two decades show how artefacts and heritage that have become museum collections have experienced the development of meaning. Along with that, disruption era, a period filled with changes caused by new innovations, which results in instability, during the last decade has affected various lines of life including museums. Meanwhile, the study on disruptive impacts on museums is considered rare, and specific studies in Indonesia, mainly in Jakarta, have not been found. This paper discusses the change of visitors' point of view on collection and the strategy to invite the public so that they are willing to visit museums during this time. The methods used in this research are literature studies, observation, and predictive analysis by applying the theory of disruptive innovation (King and Baatartogtokh 2015). It is concluded that museums should display real collection as well as intangible culture, try to present real natural environment, increase community members' participation, and keep themselves up-to-date with socio-cultural changes in the society.

### KEYWORDS

Archaeology; artefact; museum; heritage; disruption era; material culture.

### INTRODUCTION

The developments of archaeology and museums in various countries are different because they depend on various factors. In Indonesia, archaeology was brought and developed in the twentieth century by experts from Western Europe, especially the Dutch, considering Indonesia was the Dutch colony (Harkatiningsih et al. 2010: 1). The Dutch in Indonesia who had a concern

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on culture and were eager to collect things built a number of museums in Indonesia (Hardiati et al. 2014: 8).

The results of some archaeological research in the field are brought to museum and kept as collection to be preserved. Museum collections are studied by archaeologists and museum curators who mostly have a background in archaeology. Archaeologists as researchers in museums or curators who have the capacity to conduct research in museums still provide information about the collections. Some big artefacts such as ancient structures and buildings cannot be moved from their original locations; then some of them were turned into museum or open site museums. For such museums, the collections are the structures or the buildings and all things below the surface including the surrounding environment. Some big artefacts in the follow-up research are considered by the researchers to have important value if seen from the perspective of contemporary archaeology. The experts then give a recommendation to the government so that the artefacts could be officially declared as heritage.

Archaeology in various countries, especially in the western part of Europe, was considered developed and progressed rapidly. Many theories and ways to conduct archaeological research had been implemented in Western Europe in the 1960s. Decades later the archaeologists in Indonesia knew the methods to conduct archaeological research and implemented them. In terms of museum development, the museums in Western Europe are considered developed and grew fast as well as dynamically. Meanwhile, the development of museums in Indonesia is not so fast, and they tend to be left behind compared to those in Western Europe.

The above problem adds up with the phenomenon that has grown bigger during the last decade, called the Industrial Revolution 4.0. The industrial revolution was marked by human ability to create machines especially steam engine, which according to Gordon Childe (1965) is the third revolution known by human in the earth. The first revolution according to British archaeologists is the Neolithic Revolution or Agricultural Revolution when humans were able to fulfil their basic needs namely food; the second revolution is the Urban Revolution when humans were able to take advantage of all the devices in a system called the city. Industrial Revolution developed in such a way until it reached the fourth stage or 4.0 (Heiner et al. 2014). The first industrial revolution is the era when mechanization was discovered and developed. The second industrial revolution is the era of the intensive use of electrical energy. The third industrial revolution is the era of widespread digitalization. The fourth industrial revolution is the era of an advanced digitalization within factories, the combination of internet technologies, and future-oriented technologies (Heiner et al. 2014: 239).

During its implementation, the fourth industrial revolution has changed many aspects of society. One of them is the internet that is connected to many things, which is now referred to as the internet of things. Nowadays, there are big virtual data and the doers are called millennial society. The process of

change and development in the virtual world grows fast and the impacts on the real-world also grow quickly. Therefore, there are many aspects or fields in the real world that are disturbed or become uncertain, so this era is called the disruption era.

Millennial society often makes innovations in many aspects of life. These innovations are often called disruptive innovations, which generally consist of technological innovations. Some experts have relayed their thoughts regarding these disruptive innovations:

Many disruptive innovations are based on new and disruptive technologies. Disruptive technologies are technologies that introduce a different performance package from mainstream technologies and are inferior to mainstream technologies along the dimensions of performance that are most important to mainstream customers (Gholampour Rad 2017: 4).

Meanwhile, disruptive innovations according to Scott Anthony, president of innovation consultancy Innosight, are as follows:

Disruptive innovations create new markets or transform existing ones by offering simplicity, accessibility, and affordability. For example, the Nintendo Wii transformed the gaming market through simplicity; discount airlines transformed the airline industry with low prices, and Apple created entirely new markets with its iTunes and AppStore models (Scott Anthony in Leavy and Sterling 2010: 7).

Moreover, A. Crittenden, V. Crittenden, and W. Crittenden state:

[...] This digital transformation has led to the creation of new business models as disruptors have revamped operating models to take advantage of the vast amount of digital power in today's technologically savvy world. [...] Platform companies do not have to be digital, but most are even if they incorporate physical elements in the course of doing business and meeting customer needs (A. Crittenden, V. Crittenden, and W. Crittenden 2017: 15).

The disruptive era has affected many aspects of life and disrupted the growth of a lot of institutions or made them collapse. For instance, the result of research by A. Crittenden, V. Crittenden, and W. Crittenden (2017) has shown that disruption affects financial service, real estate, healthcare, and transportation due to the existence of new competitors that have come with various innovations. The competition is quite tough in those fields, so it creates a dichotomy between the traditional and the new ones. Some examples of the competition are those between traditional retail banks and online banks, traditional lenders and peer-to-peer markets, traditional asset managers and robot advisors, traditional brokers and online real-estate database providers, traditional hotels and consumer-owned listings, traditional office space and co-working space, traditional insurance companies and e-insurance, traditional doctor visit and telemedicine, traditional taxi service and ride sharing, and traditional transportation and peer-to-peer transportation (A. Crittenden, V. Crittenden, and W. Crittenden 2017: 16-21).

The impacts of the disruptive era are also felt by the museum. However, the concern and scientific study on the impacts and mainly the strategies to deal with them are lacking. One of the scientific studies has been conducted by Darren Peacock (2008), which he explains in his writing titled "Making ways for change; Museum, disruptive technologies, and organizational change". In his writing, Peacock focuses on digital information and communication technologies (ICTs) (Peacock 2008). Peacock believes that the disruptive era or what he calls the new world will affect organizations whose work is related to cultural heritage preservation. Peacock thinks that:

The place of cultural heritage and traditional cultural heritage organisations within the new world is still unclear and in flux. Digitisation, virtualisation, networking, syndication and user-generated and co-created content have shaken the sector's foundational constructs of authenticity, materiality, ownership, authority, and audience (Peacock 2008: 333).

The impacts of disruptive era on other aspects of museums, however, have not yet received much attention in the study of museology. Previous research has been conducted in Europe, but the disruptive era with different intensity occurs anywhere in the world. Based on the literature review, there is no study on the impacts of the disruptive era for museums in Indonesia, including Jakarta, the capital city of Indonesia. However, the disruptive era has impacted the people of Indonesia, especially in Jakarta, in fields such as in transportation. With the use of the internet, for example, people can choose between traditional taxi service, online taxi service (such as the one provided by Grab and Gojek), or ride sharing. The availability of these transportation methods is not only changing the socio-cultural aspects of the community but also the Indonesian government's regulations as well. Meanwhile, for the last two decades, there have also been developments in archaeology. In this discipline, there is a change of definition for artefact and heritage, mainly when the term "material culture" is introduced. Archaeology does not only study things, buildings, and a lot of objects of cultural heritage which are already old. These things that are not old or have just been created or are still used by people can also be studied in archaeology. Such form of cultural heritage is called material culture. Thus, recently there have been debates whether museum collections can consist of things, buildings, or various forms of cultural heritage that are not old yet.

Based on my initial observation, there have been changes in the visitors' perspective on museums. I conducted the observation by joining the meetings of museum management staff in Jakarta and directly visiting and observing a number of museums in Jakarta since early 2018. The number of museums in Jakarta, based on Indonesian Museum Association for Jakarta Branch "Paramita Jaya", is 46. The Association regularly holds meetings at least once a month, including the gallery and monument management meeting called "Temu Museum, Galeri, dan Monumen". This meeting discusses various topics such as the definition of collection, the interpretation of collection, the

role of curators, visitors' behaviour, the role of the community, and museum digitalization. Observations were also directly conducted in some museums, among which are Museum Bank Indonesia (Bank Indonesia Museum), Museum Mandiri (Mandiri Museum), Museum Sejarah Jakarta (Jakarta History Museum), Museum Seni Rupa dan Keramik (Museum of Fine Arts and Ceramics), Museum MACAN (Modern and Contemporary Art in Nusantara Museum), Museum Tragedi 12 Mei 1998 - Universitas Trisakti (Museum of May 12, 1998 Tragedy, University of Trisakti), Museum Bahari (Maritime Museum), Museum Nasional (National Museum), Museum di Tengah Kebun (Museum in the Middle of the Garden), Museum Basoeki Abdullah (Basoeki Abdullah Museum), and Museum Ciputra Artpreneur (Ciputra Artpreneur Museum).

Visitors tend to interpret collections based on their own perspective, so they do not need a curator or expert on a certain discipline. Nowadays there is a general phenomena that visitors who walk around using the guidance of a museum guide are also busy with their smartphones, so they do not really listen to the explanation of the museum guide. Many visitors prefer to find a place to take a selfie with the collections as background, but the information on the collections is not understood by them and their virtual friends who see the pictures of the collections in the virtual world through the smartphones. Certain people begin to gather and create a group on their own during the visit, so they seem to ignore the museum educator. In this case, even though people visit museums, the way of visiting, their perspective on a collection, and their level of information absorption have changed in this disruptive era. This is different from the traditional way in the past when visitors depended on the museum guide to obtain information. Meanwhile, museum management also experiences uncertainty with regard to handling visitors' behaviour as stated above. Besides, new museums have their own concepts on collections such as displaying replica and having new collections as a masterpiece. At this moment with the current technology we see that some museums try to show the collections virtually, but there are still museums that cannot do that due to limited budget.

#### TOPIC AND RESEARCH METHODOLOGY

Based on the above explanation, museums have experienced various uncertainties during disruptive era. The changes in society also happen fast, so museums' visitors as part of society basically have experienced significant socio-cultural changes. The change on the meaning of artefacts and cultural heritage objects has resulted in the change in the definition of museum collection. Various institutions have tried to redefine the things or services they offer and created various strategies on disruptive innovation. Meanwhile, most museums have not changed much if seen from their innovation's aspect. Innovations, as stated previously, do not have to be digital (A. Crittenden, V. Crittenden, and W. Crittenden 2017: 15). On the other hand, within the discipline of archaeology, new ideas have emerged. The changes of concepts

on artefacts certainly affect the main service offered by museums, namely the display of collections and information services.

Similar to other institutions, museums can also collapse if they cannot deal with new changes. The main topic of this paper is related to the future of museums during the disruptive era, specifically in Indonesia. The problem discussed is how to redefine museum collection in the midst of the changing meaning of artefacts and heritage. Another is how increase people's interest in visiting museums can be increased during this disruptive era.

This paper is the result of a research conducted using, first of all, a literature study on the disruptive era, its impacts on various fields, and the strategies to deal with it so that museums will not collapse. Next, the data on Indonesian people who use the internet were gathered. As mentioned previously, I observed the condition in some museums in Jakarta since early 2018.

The collected data then are analysed using predictive analysis. Predictive analysis, according to Waller and Fawcett (2013), has been used in a lot of fields such as manufacturing, retail, software production, and consultancy. Those fields are creatively discovering new applications of big data using predictive analytics to forecast customers' behaviour and customer relationship management. During this disruptive era, big data become more precious because they can be analysed in order to know disruptive trends and changes in the nature of the producers in the supply chain. By using big data, it is easier to have predictions of individual consumer behaviour (Waller and Fawcett 2013: 249-251). Waller and Fawcett further state:

Thus, the ability to predict consumer behaviour has implications for product innovation, production, distribution, and demand. This is not a futuristic claim, but an observation of existing trends (Waller and Fawcett 2013: 251).

During the interpretation stage, some current concepts and theories are used, among which is the theory of disruptive innovation. According to Christensen (2006), during the disruptive era there are two kinds of innovation, that is sustaining innovation and disruptive innovation. Sustaining innovation is an innovation that is generally done by the incumbents, referring to the existing players. Meanwhile, disruptive innovation, which generally uses disruptive technologies, can be done by various parties, so it has the possibility to win over the incumbent (Christensen 2006: 40).

The theory suggested by Christensen then is explained by Andrew A. King and Baljir Baatartogtokh (2015) so that it can be understood by the users. By understanding this theory (see Figure 1) both the incumbent and the disruptive player can see each other's performances. King and Baatartogtokh identified four elements of the theory of disruptive innovation: (1) that incumbents in a market are improving along the trajectory of sustaining innovation, (2) that they overshoot customer needs, (3) that they possess the capability to respond to disruptive threats, and (4) that incumbents end up floundering as a result of the disruption (King and Baatartogtokh 2015: 79).

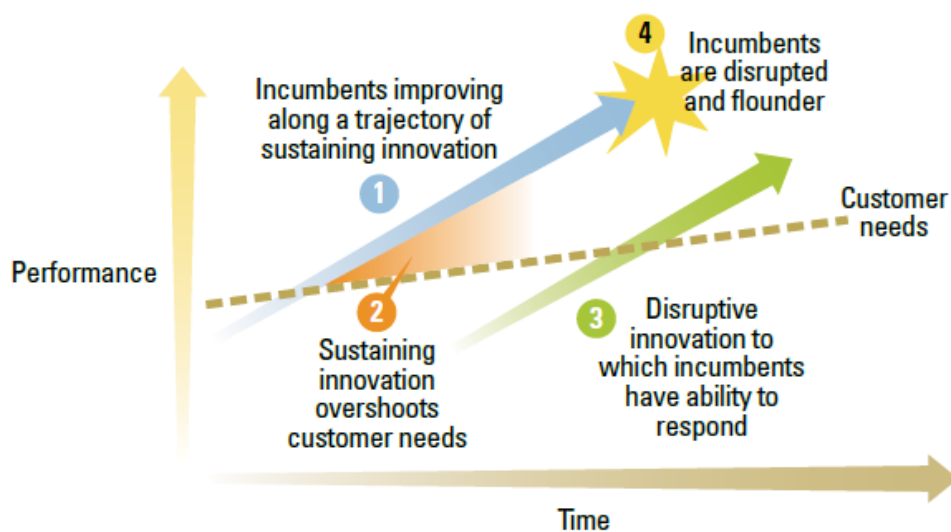


Figure 1. Four elements of the theory of disruptive innovation (King and Baatartogtokh 2015: 80).

This theory then is suggested to be implemented especially in the museums in Indonesia. It can be applied to both existing museum and new ones that will be established.

#### THE SOCIAL-CULTURAL CONDITION OF THE INDONESIAN SOCIETY DURING THE DISRUPTIVE ERA

The social-cultural condition of the Indonesian society experiences a lot of changes during the disruptive era. In this paper, some aspects regarding digital and virtual, cloud and crowd, and big data, will be further discussed, mainly those related to museums.

As humans started to exist on earth, they have basically lived on the land, which means staying, walking, interacting with other people, and even dying as well as being buried there. Some, although the number is fewer, stay and interact on the sea as well as spend most of their life on the sea. However, it can be said that no humans live and float in the air. The space travel or flying by airplanes is a relatively new phenomenon, and humans interact more with other humans on the land rather than in the air. The concept of air can also be understood as the "air" that is used in the disruptive era, referring to the virtual space or the "cloud" used by internet users, which is now filled with virtual data and icons. It cannot be seen, but humans can now interact in the "air", that is, with the medium of smartphones, tablets, laptops, and other communication devices that use the internet. Digitalization can represent humans in the virtual world, connect, and interact, or socialize intensively with other virtual icons, so phantom reality in the virtual world or hyperreality is formed. A human



can have a virtual icon, so there are many human representations or virtual crowd, the number of which can be more than that in the real world.

Humans create and relay virtual data in many forms such as picture, video, graph, drawing, and others, so that the virtual world is filled with data. The exchange of ideas and feedback on data can happen fast in the virtual world, so data can be duplicated and grown; then big data are formed. Big data are abundant and spread in the virtual world. The existing data can be from the government, private institutions, community, or individuals. The level of data accuracy becomes important, and data must be selected so that they can be further used. Data are often available in the level of non-government associations or community, then the government uses such data. Thus, researchers have a lot of choices of data, and the next task is to choose or sort the data. In this particular research, big data are needed to create predictive analysis and create a development plan by using a certain theory, in this case theory of disruptive innovation.

Based on the Press Release from the Ministry of Communication and Information Republic of Indonesia No. 53/HM/KOMINFO/02/2018, the number of internet users in Indonesia in 2017 reached 143.26 million people or 54.68% of the total number of citizens in Indonesia, which reaches about 262 million. There has been an increase of around 10.56 million people from the number obtained in the 2016 survey. The data given by the Ministry of Communication and Information come from the Survey of Penetration of Internet Users and Behaviour 2017 (Survey Penetrasi Pengguna dan Perilaku Internet 2017) conducted by the Indonesian Internet Service Provider Association (Asosiasi Penyelenggara Jasa Internet Indonesia, APJII) (<https://apjii.or.id/survey2017>).

Based on the APJII survey, as described on its official website, the significant growth of internet users in Indonesia can be seen. In 2008, for example, the number was 25 million, then respectively increased to 30 million in 2009, 42 million in 2010, 55 million in 2011, 63 million in 2012, 82 million in 2013, 88.1 in 2014, 110.2 million in 2015, 132.7 million in 2016, and 143.26 million in 2017 (<https://apjii.or.id/survey2017>). Based on the analysis of big data, the number of internet users in the following years is expected to continue to increase significantly. In 2018, the number of the internet user reached more than 150 million.

According to the APJII survey, the penetration of internet users based on the character of city/regency is divided into three categories, namely urban (72.41%), rural-urban (49.49%), and rural (48.25%). Jakarta, the capital city of Indonesia, is categorized as urban. This result of the survey also shows that the ownership of gadgets such as smartphones or tablets based on city or regency for urban is 70.96%. The services that are mostly accessed are chatting (89.35%), social media (87.13%), search engine (74.84%) and the least are online shops (8.12%), and banking (7.39%)

This survey has collected abundant and detailed data, some of which can be sorted based on museum needs and used for this research. The result

of the survey, for instance, has percentages of male and female users, the backgrounds of education, jobs, and economic levels of the internet users. The length of internet usage each week and each day can be seen as well. 65.98% of respondents use internet every day in a week. The internet usage in a day can reach 1-2 hours (43.89%), 4-7 hours (29.63%), more than 7 hours (26.48%). The intensity of humans in the virtual world surely brings social and cultural changes such as the use of time. The above data show that a lot of time is used by humans to do activities in the virtual world.

The Central Bureau of Statistics conducts regular research every three years in the form of national social and economic survey, especially on social, cultural, and educational module. The research was conducted in 2012 and 2015, but the 2018 data are not available yet in that government institution's website. Based on the research from The Central Bureau of Statistics, the percentage of Indonesians who visited historical heritage or cultural heritage sites is 2.55% in 2012 and 6.43% in 2015 (<https://sirusa.bps.go.id>). This number increases, but in general it is considered small since it is below 10%.

If data on the number of visits and the number of internet users are analysed, it can be predicted that the percentage of the number of visits will increase, but it will not be high, while the number of internet users is predicted to rise significantly. Disruption will occur due to the increase of internet users in the society, which affects the behaviour of museum visitors. It can be predicted that people in contemporary society like to interact in the virtual world. People who have free time will choose to surf and interact in the virtual world as one of the main choices done during the weekend. People will also visit the museum while interacting in the virtual world. Thus, the visit to museums can be predicted to decrease both in quantity and quality. This condition can threaten the existence and sustainability of a museum.

#### DEVELOPMENT OF THE DEFINITIONS OF ARTEFACT AND HERITAGE

Humans create various things or various living equipment. These things are representations of an event or situation left in a certain form. This situation involves certain forms that are related to other forms. For instance, during the construction of a place of worship, the main outcome is not only the building itself but also the equipment for production such as hammers. Aside from hammers, there are also measuring tools, buckets, chisels, a guidance book or a sketch of the building's plan, and others. The event does not only involve certain forms but also certain time and space.

Because of human activities, conducted both deliberately and unintentionally, and because of natural events, remains will decrease both in quantity and quality. Humans might deliberately forget an event because it is considered hurtful or irrelevant with the current condition during their daily life. Humans deliberately renovate a building so that the form changes or does vandalism to it so that its meaning decreases. Humans might unintentionally create fire resulting in damages. Natural disasters such as earthquake, tsunami, landslide, and flood can cause changes or damages in shape and location.

For instance, the landscape of a building might change its form because of an earthquake or a landslide.

The task of an archaeologist is to reconstruct an event in the past using the remaining things and remaining space. Things that are studied using archaeology are called artefacts. Artefact is a concept to give meaning to things considered material in archaeology. It can be said that artefact is a specific term for things studied in archaeology. Artefact is one category of data in archaeology. Artefact is a natural thing of which some parts or whole parts have been modified by humans and can be movable (Neustupny 1993: 25).

Some things are sometimes moved from their place because they will be further studied in the laboratory in order to know its age, material composition, and the way to use it. Some things are also moved because they are easy to break or become lost if they are left on their place. Also, some things are preserved so that public can know and learn from them. Some things moved to museums are called museum collection. Museum collection is generally an artefact that is rare, unique, and interesting as well as old.

Space that became the witness of an event in the past and has remnants is called "site" in archaeology (Neustupny 1993: 28). Such space if turned into a museum is called "site museum". In many sites, some artefacts are expected to be buried or still in their original place. Site and artefact that are expected to be inside are preserved because it is expected that the relation between one artefact and one another can be learnt well. Thus, site becomes important because it is the place when an event occurred, and it eases the effort to reconstruct an event in the past. Some sites related to a wide range of natural landslides and human-modified landscapes are called areas. Aside from artefact, a feature is one of data in archaeology. Features are basically things in the past that were attached on the land or seabed. Features cannot be moved unless their matrix (foundation) is damaged, for instance house, monument, structure of irrigation, port, and others. Thus, features are basically the type of artefact that cannot be moved from the site. The foundation of features and their surrounding natural landscape including animals, plants, and landslides are also studied in archaeology to get the overall picture on an event in the past. What is referred to as natural environment is one that is not intensively changed by humans, but it becomes part of human life, which in archaeology is called ecofact (Neustupny 1993: 29).

The result of archaeological research is knowledge that is generally shown in the form of a report. The report of research's result that shows knowledge is usually accompanied by pictures and drawings but dominated by text. Pictures and drawings are used to clarify something that is hard to describe in text. However, pictures and drawings in the report must fit in the rule or regulation in the discipline. Text also has some technical terms or terminology that are usually known and used in archaeology.

With such condition, a report basically is a representation of an event in the past that the researchers want to relay to their scholarly community namely, the archaeologists. Thus, another process is needed so that the report

can be read, seen, understood by the public. Within the digital and virtual context, knowledge produced in archaeology needs to be changed so that it can be understood by the public. It must have visual information and must be virtually shown so that it becomes more informative and interactive, especially for millennial society. We need to emphasize that in archaeology it is not only a thing or a museum collection that is reconstructed but also space and time. The result of reconstruction is relayed in a report, which is generally in the form of text. This textual report and collection that are real then are shown virtually by the museum. Some museums choose the strategy to turn the museum into a virtual museum.

Sustaining innovation by creating virtual museums is part of the theory of disruptive innovation, which can be put into the second category, namely overshoot customer needs. Museums as the incumbents which have real collections decide to create a virtual collection. Virtual collection in the virtual world can be acquired easily by many parties and those parties can make it theirs. The form of the virtual collection can also be changed both by adding and reducing that uses editing techniques. Another party that can be a virtual collector can create disruption in terms of the originality of virtual collection as well as the ownership of virtual collection in the virtual world. There will be museums who have real collection against other parties who have virtual collection and perform well in the virtual world, such as having a lot of followers.

Sustaining innovation as stated in the explanation above can be predicted to change society's consumption pattern. People change their method of assessing museum collections, from directly visiting a museum to surfing the internet in order to see a collection and read the report of a research's result virtually. Using skills in communication technology such as creating augmented reality and virtual reality, people can get interactive information in their own home without having to spend a certain amount of time to visit a museum. In this context, museums experience disruption because visitors might think they do not need to visit the museum after seeing representation of collection virtually using their own electronic devices. The further impact is that the number of visits to museum can decrease compared to the previous years. Such innovations turn museum into incumbent. By referring to the theory of disruptive innovation, specifically the fourth category of King and Baartartogtokh (2015), incumbents end up floundering as a result of the disruption (see also Figure 1 above).

Due to the development of archaeology, the definition of artefact has expanded and includes material culture, a shift caused by the development of ethnoarchaeology. The development of ethnoarchaeology has brought significant changes in archaeology. The discipline of archaeology initially studied artefacts to reconstruct a deceased society. Then, archaeology started to study things that are still used by the current society. The results of these studies serve as models or analogies used to explain a number of aspects related to things, such as how to make and use them in the past. In the end,

archaeology also focuses on present intangible forms such as language, knowledge, custom, and people's actions that are called mental culture. Lately, archaeology has also started to pay attention to things produced by contemporary society because basically archaeology studies people's culture in the past through their remnants and those remnants can be made in the present. Those things are often called material culture rather than artefact. The term artefact is then understood as referring old things. According to Oestigaard (2004: 26) "The role of ethnoarchaeology as material culture studies as an integral part of archaeology has hardly been criticised – simply because material culture is parts of the bedrock in the discipline".

Meanwhile, according to Olsen (2003: 89) "Saying that material culture has been ignored in the social and human sciences leaves out one discipline that has stubbornly continued to deal with things: archaeology. Recently, material culture studies have also been reinvented in the compounds of anthropology and cultural studies".

The main characteristics of material culture as it is currently understood, according to González-Ruibal (2012: 5-9), who also cited the opinions of some experts, can be formulated into ten points. Six of those points that are most relevant are the following:

1. Material culture is an inherent part of ourselves, of our own physical existence.
2. We are material beings immersed in a material world.
3. We cooperate actively in the making of the material world that surrounds us, but making things makes ourselves simultaneously.
4. Material culture has agency.
5. However, most objects are not symbolic in the same way as a text: the relationship between material culture and meaning is seldom completely conventional and arbitrary.
6. Most of the time, material culture works through the evocation of sets of practices that are not discursively perceived and that, sometimes, cannot be put into words.

By knowing the term material culture, the discipline of archaeology does not only study old things. The studied things can be new and even used by the current society. Things are studied because, according to archaeology, they are considered important for knowledge especially for the culture of the community that created and used them. Considering this importance, referring to things that are not too old, or even things recently made, now must be preserved and gathered to be part of museum collection. Museums must move fast to capture recent important events. Collections that are shown are things that are young. Things do not need to be unique, rare, or odd. Things collected by museums that are common and not old become interesting for visitors because they can save data or inform them about certain important events.

Museum administrators used to think that collections should be old,

unique, rare, and antique, which in archaeology are called artefact. Museums then relay more information about the past. Visiting museums means entering the time tunnel and exploring the past. With the development of the concept of material culture, museums basically can collect things of young age that are still abundant so that they do not need to be unique or rare. Such collections can still be used by the present society. This condition gives a chance for all parties to collect things and create their own museums. Contests and competitions become open due to the concept of material culture.

After discussing the development of artefact's meanings, which can be material culture, the following part will discuss the definition of heritage. Heritage is a term that needs to be further explained before we discuss museum collection during the disruptive era. The explanation includes the definition of heritage, which determines what heritage is, and the benefit of determining one thing as heritage.

During the early development of archaeology, things were defined as heritage if they were old and in the form of a physical material. Generally, a heritage object is an important thing in a relatively great size and cannot be moved unless we destroy its foundation. From an archaeological perspective, heritage generally refers to the category of data in the form of feature and location, which is called site. According to the Council of Europe (2001), as stated by Willems (2011), heritage in the old concept include monuments, buildings, and sites. Meanwhile, in the new concept, heritage refers to landscapes, urban areas, and historic environment or objects of cultural heritage.

In the early development of archaeology, objects were declared as heritage by the authority that was generally related to the ruler, either a government in a country or an international institution that included a number of countries. While determining whether an object is part of certain heritage or not, institutions ask for the opinions of experts or scholars, mainly the archaeologists who study the past. A certain object can be called heritage after going through a mechanism acknowledged by competent experts and determined by the authority.

The party who has the authority to determine one thing as heritage can be a country or a world body comprising of representatives from countries in the world. United Nations Educational, Scientific and Cultural Organization (UNESCO) is one of the world bodies that handles heritage in the world level. This institution has a convention called the Convention Concerning the Protection of World Cultural and Natural Heritage adopted by the General Conference at its seventeenth session in Paris, on 16 November 1972. In the convention, it is stated that each state party to this convention recognizes that it has the duty to ensure the identification, protection, conservation, preservation, and transmission to the future generations of cultural and natural heritage (<https://whc.unesco.org/en/convention>).

Things shall be considered as cultural heritage if they are monuments, groups of buildings, and sites that are of outstanding universal value from the

perspectives of history, art, and science. Meanwhile, things shall be considered as natural heritage if they are natural features consisting of physical and biological formations or groups of such formations, which are of outstanding universal value from the aesthetic or scientific point of view; geological and physiographical formations, and precisely delineated areas that constitute the habitat of threatened species of animals and plants of outstanding universal value from the point of view of science or conservation; and natural sites or precisely delineated natural areas of outstanding universal value from the point of view of science, conservation or natural beauty (<https://whc.unesco.org/en/convention>).

These three categories (monuments, groups of buildings, and sites) are included in the cultural heritage category, which in the archaeological term are called feature and site. Feature as stated previously is an artefact that cannot be moved if we do not destroy the foundation. These three categories are included in natural heritage that in archaeology are called ecofact and area.

Heritage in Indonesia is stipulated in the Law No. 11 Year 2010 on Cultural Properties applied from 25 November 2010. In this law, it is stated that heritage is material and can be sorted into five categories, namely (1) cultural properties of things, (2) cultural properties of buildings, (3) cultural properties of structures, (4) cultural properties of sites, and (5) cultural properties of areas. The first category in archaeology is more or less the same as artefact. The second and third categories in archaeology are more or less the same as features. The fourth category in archaeology is more or less the same as sites. The fifth category in archaeology is more or less the same as regions. Cultural properties of areas are comprised of animals, plants, and natural landscapes, which in archaeology are more or less the same as ecofacts.

In Indonesia, as mentioned previously, the government determines something as a heritage object. It can be seen from Law No. 11 Year 2010 on Cultural Properties. The process to determine one thing as a heritage object in Indonesia is done gradually. The government gets insights from an expert team from various disciplines, one of which is archaeology. After that, the government decides whether or not one thing is considered as heritage. The regent or mayor determines heritage in the regency or city level. The governor determines heritage in a province. The Ministry of Education and Culture determines heritage in the national level. The Ministry of Education and Culture helps the president to handle the cultural aspect. Based on the law, a heritage object that is determined in the national level can be suggested as World Heritage.

In the World Heritage list issued by UNESCO, there are four cultural world heritage objects from Indonesia, namely Borobudur Temple Compounds, Prambanan Temple Compounds, Sangiran Early Man Site, and Cultural Landscape of Bali Province the *Subak* System as a Manifestation of the Tri Hita Karana Philosophy (Akbar 2012; <https://whc.unesco.org/en/statesparties/id>). Besides, the government of the Republic of Indonesia has sent some documents to UNESCO so that the following sites can be determined as

tentative list UNESCO World Heritage, for example the Trowulan-Former Capital City of Majapahit Kingdom, Muarajambi Temple Compounds, Semarang Old Town, and Bawomataluo Site (<https://whc.unesco.org/en/statesparties/id>). Moreover, the documents of the Gunung Padang Site are prepared by the government of the Republic of Indonesia to be sent as Tentative List UNESCO World Heritage.

What are the benefits if objects are determined as a heritage? From the perspective of things, such objects are expected to be preserved from time to time. From the perspective of community to whom those things belong, which will become part of their identity, and is expected to form such a socio-cultural bond to the next generation in the future. Heritage basically is a thing, as part of the people in the past, but scholars and government think that it is important for contemporary people.

According to the Council of Europe (2001), as cited by Willems (2011), the roles of heritage in society in the old definition are uniting the nation and generating revenues from visitors, while in the new definition, it is to gain wider economic and social benefits. Heritage, according to Smith (2006: 3), is used to construct, reconstruct, and negotiate a range of identities, social, cultural values, and meanings in the present. Smith (2006: 4) also states

Heritage is about negotiation – about using the past, and collective or individual memories, to negotiate new ways of being and expressing identity. In this process heritage objects, sites, places or institutions like museums become cultural tools or props to facilitate this process – but do not themselves stand in for this process or act (Smith 2006: 4)

In the post-2000 era until now, the definition of heritage has developed significantly. For example, heritage that was initially tangible can now be in intangible form. In the beginning, heritage in general was a thing that no one used if seen from its original function. Now, heritage also includes remnants or objects that are still used by the people who created them and still practice the tradition. The behaviour of a society that is still alive can even be considered heritage, specifically intangible cultural heritage.

The development of the meaning of heritage as stated above is also seen in UNESCO, in which it experiences changes or additional conventions are established to accommodate new changes. During the UNESCO meeting in 2003, titled *The Convention for the Safeguarding of Intangible Cultural Heritage*, the definition of heritage was stipulated. The definition of Intangible Cultural Heritage as cited on the UNESCO website is as follows:

The “intangible cultural heritage” means the practices, representations, expressions, knowledge, skills – as well as the instruments, objects, artefacts, and cultural spaces associated therewith – that communities, groups and, in some cases, individuals recognize as part of their cultural heritage (<https://ich.unesco.org>).

During this disruptive era, the meaning of heritage is generally the same as



the one in the previous era, which is for the people and the next generation. However, if in the previous era its value and benefit were formulated by researchers or scholars and the government, during the disruptive era the value and benefit are formulated and determined by the people. Of course, the definition of heritage in the newest development is different from the concept of heritage stated by Smith; it is also different from what is stated in the UNESCO convention as well as in applied regulations in Indonesia.

Thus, during the disruptive era, there is an intense negotiation among some parties. The initial negotiation is between scholars and the government. This negotiation generally has measured indicators such as age, originality, previous academic research, and important values within the object, especially cultural and educational values. Meanwhile, the tough negotiation – due to a lot of indicators that need to be considered – is between the government and society regarding the society's or nation's vision and mission, land ownership, economy and tourism, and national unity; or at least it will not politically create disunity in the society or friction with other countries in the context of international relations.

With the development of the spirit to protect human rights, the desire to express oneself freely, and infinite ability to be creative using digital devices, heritage can be determined personally by an individual. This personal choice can then be spread in a friendship network virtually. Thus, if a lot of parties like it, it will become viral; if the members of this virtual group of society agree, then a thing can be heritage.

During the digital disruptive era, many aspects of life are connected by the internet, so changes occur fast. Within seconds, they can be responded by people anywhere with various backgrounds. Based on the above analysis, it can be predicted that fast and infinite changes in the definition of heritage can happen fast. Writers call it an unlimited heritage concept. Now, the current category of objects does not have to refer to things or buildings that are old and acknowledged by those having the capacity and determined by those having authority. Heritage now can be in the form of aspiration and social consensus. Society comprised of many people can also experience a pull and push of interest and passion, as well as change quickly due to the disruptive era, which is full of fluctuations and uncertainties. I need to reemphasize that the development of the heritage concept used by the current society is different from the concept mentioned by Smith, the UNESCO convention, and the Indonesian law on heritage.

One of the current developments, based on my observation, is that now in Indonesia, there are many private and personal museums. One of them is "Museum di Tengah Kebun" (Museum in the Middle of a Garden), a personal museum that relies on and sees the importance of purchasing collection from well-known auction halls, so the collection does not have information of its site and natural environment. The purchase is quite expensive, so the management thinks that the value of the collection is high; as such, it becomes a masterpiece. Besides, the museum bought a replica of masterpiece collection,

such as a statue or sculpture, from a famous museum in a foreign country. The replica of an original sculpture, for instance the sculpture of Isis, one of the Egyptian goddesses, is very expensive. Although only a replica, it is a limited edition. The replica collection, according to the management, is one of the masterpieces in the museum. This condition shows that the concept of originality no longer becomes a guiding principle. The concept of things is also left behind because collection can now be presented visually in the form of augmented reality and virtual reality, not as tangible objects.

The most recent development is the opening of MACAN Museum (Modern and Contemporary Art in Nusantara Museum), which organizes its displays differently in order to accommodate visitors, for example, visitors can take selfie photos easily because a lot of space is provided for that purpose. MACAN Museum, according to TIME, is included in TIME's 2018 list of the World's 100 Greatest Places along with Underwater Museum of Art in Florida, United State of America, and Louvre Abu Dhabi in United Arab Emirates (<https://time.com/collection/worlds-greatest-places-2018>). The entrance ticket to this museum is expensive compared to other museums in Indonesia. The collection shown is a contemporary collection and nothing is old. From my observation, I found that visitors seldom read the label or information on the panel. Many visitors do not even bother to see the detail of the collection. Visitors are interacting with collections by looking at them through the smartphone screen they hold, or their back is against the collections. Visitors are queuing at certain spots to take pictures, and then they are busy uploading them to social media. They are patiently queuing while waiting for their virtual friends to respond to their posts on social media. Later, some of their virtual friends seem to give *likes* and become interested in visiting the museum. Although the pictures of MACAN Museum spread widely in the virtual world and can be edited as needed, the willingness of the people to visit this museum directly is high. This type of museum is quite new in Indonesia and can be visited after registering online through the internet. The activity to visit museums is an irreplaceable experience, but the way people visit museums has changed significantly. If the indicator of success for a museum is the number of visitors, then MACAN Museum can be said as one of the successful museums in Indonesia.

The 4.0 Industrial Revolution, which has resulted in excessive dependence on the internet, causes various turbulences or uncertainties, as mentioned earlier it is called the disruptive era. The disruptive era is filled by people who are active on social media by communicating virtually. On the other hand, the development of archaeology brings a shift of meaning for artefact and heritage. Some of the artefact and heritage that have become museum collections have also caused the definition of collection to change as well. The effort of museums to create virtual museums then has the potential to discourage people from visiting museums because the representations of museum collections can be accessed through the internet. To encourage the digital generation to visit museums, new strategies are needed, especially by referring to the disruptive innovation theory.

## DEVELOPING PARTICIPATORY MUSEUM AND SUITABLE WITH NATURAL CONDITION

By referring to the disruptive innovation theory (consisting of four elements), during the disruptive era, museums must use the most relevant elements, which are elements number (1) that incumbents in a market are improving along the trajectory of sustaining innovation; and number (3) that they possess the capability to respond to disruptive threats (see Figure 1). During this disruptive era, museums should be active in the virtual world, including social media. Museum management must give an opportunity for the visitors to express themselves in museums. Museums are no longer a one-way medium that only shows information on collections from the management to the visitors. It must implement a two-way interaction between museum management and visitors (Akbar 2010).

According to Nina Simon (2010), there is an institution, namely The Traditional Institution, which only relies on the institution's management. Meanwhile, if there is interaction with another party outside the institution, it is referred to as the Participatory Institution. In the context of museums, Simon calls it a "participatory museum".

Simon (2010) cites the result of research by Forrester Research regarding social technographic profile. This profile is useful for businessmen to understand people using online social media. Forrester Research divides it into six categories namely: creators (24%), critics (37%), collectors (21%), joiners (51%), spectators (73%), and inactives (18%). Regarding these percentages, it should be noted that some people participate in more than one activity each month. The result of the research shows that those involved in social media but are inactive number only 18%, while the rest are active on social media along with their roles.

Using big data, Simon (2010) in her research makes a predictive analysis regarding customer behaviour after discovering what people do with, how active they are, and what capacity they use the internet. She then formulates a concept on the difference between traditional and participatory institutions. The traditional institution uses a one-way interaction, namely from the management to the visitors. Meanwhile, the participatory institution uses a two-way interaction. Simon then introduced the term "participatory museum" as one of the types of participatory institution. One of the main characteristics of participatory museum, according to Simon is that visitors can create, share, and connect with each other around content (Simon 2010: ii).

The participatory museum gives a chance to the visitors to create their own perspective on a certain collection, then share or distribute the perspective as well as try to be connected to other visitors, at least for the same collection they discuss. The effort to share and connect can rely on the internet so that they can communicate with each other. Then, those visitors who are active on social media network plan and create a program to be held in the museum (Simon 2010). Further development of the participatory museum is that visitors can create their own collection. They are given a chance to create both real and virtual collections based on the idea they get after looking at the museum

collection. Considering that visitors are given the freedom to interpret the collection they see as well as create their own network with other visitors who have interest in the same collection, there will be some interest groups who make their own collections in museums.

By using the participatory museum, all visitors can sort the museum collection they are interested in. The visitors' choice can be different from one another, but every visitor will spread the information to their own networks and invite them to visit the museum directly. Visitors can be predicted to flock participatory museums. Every visitor might have their own expression, interpretation, and creation that might be different from the vision and mission of the museum. If this happens, museums should get organized and strengthen themselves before and after visitors come to the museums. Museums that are not organized and do not strengthen themselves will only become a place for visitors to meet.

During the disruptive era, the definition of collection considered as masterpiece will also go through some developments. According to Akbar (2010), a masterpiece is an excellent collection of a museum. A collection can be a masterpiece generally because it is extraordinary, unique, rare, and full of a certain story; the most important aspect is that it must be "superlative", which means that it has to be referred to as the highest, the shortest, the oldest, or the most complete. Generally, a collection becomes a masterpiece after it is determined so by the museum after getting advice from experts and museum curators (Akbar 2010: 89-93). During the disruptive era, it is clear that visitors have the freedom to show interest and concern on certain collections; visitors can make their own interpretation, and they can determine a collection as a masterpiece based on their own opinion. The decision made by visitors to choose a certain collection to be a masterpiece might be different from that of the museum. The decision to participate in the management of museum collection, from the visitors' perspective, can also be in the form of coming up with their own creation from the idea they get after looking at museum collections. New objects as a result of visitors' creation may become new collections if spread and liked by many people on social media. A good masterpiece is not the one that provides the most information but the one that is captured and spread the most on social media.

The research on museum collections should be extensively spread so that visitors can get complete and thorough information based on the research. After that, collections and research results are shown using an interesting, interactive, and participative display including the digital ones. Of course, visitors' interpretation cannot be limited by museums although they have offered certain interpretations on the collections. The conflict between museums and visitors is inevitable. Museums need to get organized and make innovations during this disruptive era. Museums should give an opportunity for visitors to display their collection in the museum. Besides, museums should fully facilitate and support the display of visitors' collections in the visual area or by using social media. With the availability of complete

and thorough information based on research, visitors may create their own collections informed by valid information and data.

In this paper, aside from innovations for the existing museums, there should be innovations for a new museum. One example is the construction of a maritime museum. Indonesia is basically an archipelago, but there is no museum showing Indonesia's maritime culture completely and interestingly.

Based on my observation, some museums in Indonesia with a maritime theme have significant limits. They have old, unique, and rare collections but they lack information because they are not supported by research to reveal the meaning of the collections. Some museums show collections that are not very old; for instance, they can show photographs or videos of fishermen's life. Such collections are not unique because the items depicted on the photographs or in the videos are still used in the present and exist outside the museums. Therefore, they do not have a comparative excellence since parties outside the museums have the same things. Museums that show pictures and videos are usually less interesting because similar pictures and videos with better quality and more variety can be watched on the television at home or easily found on the internet. Some maritime museums, although close to the sea, keep their distance from the sea due to some considerations; for instance, sea wind brings salt mineral that can damage the collection. As a result, there is a considerable distance between museum buildings and the beach as well as the sea. Visitors are isolated in a room showing the display of the beach and sea, but they are separated from the real beach and sea.

The above condition shows that museums have basically become a medium to relay information that isolates the visitors. People who visit museums are simply icons or avatars in the old version that cannot actively make a choice. Museums use some strategies such as taking visitors through a time machine to the past; visitors are like passive avatars that follow the determined direction, only receive information, and cannot interact with other people and the natural environment outside the time machine. These are old strategies that are against the characteristics of the Fourth Industrial Revolution. Some shocks and disturbances during this revolution can hinder some aspects of the museums, and these museums can even die because of them. Museums that hold on to the old concept and strategies do not follow the changes in the disruptive era and cannot understand the social-cultural development of their society. Such museums face many competitors that can lead to their demise.

Based on the above explanation, while building museums during the disruptive era, aside from showing the collection of the past, they should show things from the present that are similar in form and function with things from the past. Maritime museums, for instance, can show present things to show their continuity with the things of the past. Museums, aside from showing tangible things, should show the intangible ones. Maritime museums, for instance, can show the video of fishermen's activities and provide an area that can be accessed by fishermen, so visitors can see the real activities of

fishermen. Museums can show not only the reconstruction of the past natural environment but also the current one as an integral part of museum exhibition. Maritime museums, for instance, could be built close to the beach and sea based on the real environment and ecosystem, so visitors can see the real beach and sea including taking pictures of them.

While building museums during the disruptive era, the contemporary trends of the era cannot be ignored. Museums should reconstruct not only the past society but also the current society that has relation with their past ancestors. Maritime museums should be built or placed in areas where the people still perform maritime activities or traditions. Aside from showing the reconstruction of the past, museums should show current situations along with the problems and how to solve them. Maritime museums also become part of maritime society by following social-cultural development including the current problems faced by maritime society. While constructing the future, museums should also play a role by involving active visitors in the movement to improve society. Maritime museums, for instance, should conduct research and advocacy to tackle current problems and become the driving force of change so that museums become more than simply places that provide knowledge of the past.

Museum collection is more or less like a celebrity on the television or the internet. Celebrities on the internet can be seen virtually, but such events like "meet and greet" in person will be more impactful compared to looking at them from the screen. Nevertheless, in the end, the pictures of both the celebrity and the fans will be uploaded on social media as proof that they have met in person because we are now living the disruptive era. This condition shows that the humans' need to see other humans or objects directly is still huge, and individual desire to exist cannot be limited. Museums should be able to maximize their potential by accommodating and taking advantage of this needs and desire.

Based on the above explanation, it is clear that the borders between the past and the present still remain but they seem to have blurred; there are now real and virtual realities. Real natural environment is still presented although there is virtual technology. The reconstruction of people in the past parallels the effort to reconstruct people in the present. The past environment is not only presented in the form of representation or in its artificial form but also in its form in the present. Virtual icons and activities are presented in the real world. Museums as incumbents should discern all those phenomena in detail and predict the trajectory. Museums cannot overshoot, that is, incorrectly predict visitors' needs, because doing so has the potential to make them collapse. Museums cannot cling to the old strategy, but they must create sustaining innovations by considering and living up to socio-cultural changes in the society while still retaining and presenting the natural environment which heritage objects belong to.

## CONCLUSION

The disruptive era, together with its impacts, has reminded us that a lot of institutions could collapse, and museums are no exception to this threat. Museums should change. If they do not, they will be left by people. During the disruptive era, people can create their own collection, make their own interpretation, and determine heritage based on their needs. The party such as archaeologists who have academic expertise in museum studies also experiences disruption because they have limited form and channel of communication. On the other hand, the millennial society has a huge access to relay their opinion so the conflict in the virtual world can be won by this group although they do not have a credible scientific background. The party such as the government also experiences disruption because it does not have power in the private and virtual space although they have authority in the real world. Thus, museums that interact with people, archaeologists, and the government, all of whom experience disruption, should make new innovations during this era. Those innovations should consider current social-cultural conditions of the society, which is heavily affected by the use of the internet. While still preserving the tangible natural environment from which heritage objects originated, it is imperative that museums live up to the new challenges brought about by the disruptive era.

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