



Historical Disruption Through Technology

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History is a branch of knowledge that has been dominated by the development of information technology. It is explicitly seen from the occurrence of two waves of historical disruption. The first wave occurred in the 20th century when history was confronted by the invention of the phonograph by Thomas Alva Edison in 1877. The phonograph technology has the ability to record sounds. Not long after that, history responded to it by presenting innovation in the form of strengthening oral sources and oral history. With phonograph technology, oral sources as historical sources, some of which were initially marginalised, quickly increased in status and then had equal position with other historical sources which previously dominated history, namely written sources. The second wave of historical disruption took place in the last decade of the 20th century and was intensified in the first and second decades of the 21st century when internet technology presented almost unlimited amounts of digital data. The leap of information technology, which has been moving very dynamically until now, presents innovations in the form of the presence of new historical sources, namely visual sources, both in the form of moving images and immovable images, as well as the presence of new historical constructs, namely visual history. The reality of the historical disruption existence in the two waves explicitly not only shows the friendliness of history but also shows the ability of it in dealing with the development of information technology at the same time. The friendliness and ability seem to always be a feature of history in dealing with various changes which will occur in the future, including changes caused by Industrial Revolution 4.0.

Key words: *Historical Disruption, Phonograph, Internet Technology.*

Introduction

Combining two words, disruption and history, is like uniting two conflicting things. Imagine that disruption is identical to a movement and dynamic which are sometimes difficult to be predicted. Even if they can be predicted, their achievements are often much faster or beyond what is predicted in advance. On the other hand, history is often identified with a stagnation, routine, and most importantly regularity, especially when talking about the process of making history as an event (history as past actuality) into history as a story (history as written). However, if these two vocabularies are explored further, they actually become interdependent. Disruption without history will be an innovation or movement which cannot be read clearly, especially to make sense of how far the leap of change has occurred. On the contrary, as changes continue to move more dynamically, history without disruption existence will become a science which loses its role and contribution in reconstructing and interpreting the past.

Related to historical disruption, historians, aspiring historians or historical activists or enthusiasts, must always have an improvisational mindset, a construction of thinking which never stops developing new things in line with the needs of the era. Without disruptive thinking, history may be abandoned because it is considered to have no use in explaining and interpreting the past. About this disruption, Kasali (2017), said that "[w]e are facing a new era - the era of disruption. This era requires disruptive regulation, disruptive culture, disruptive mindset, and disruptive marketing". In relation to the necessity to disrupt, history also basically must conduct disruptive regulation, in its relation to methods; disruptive culture, in relation to historical sources; disruptive mindset, in relation to historical philosophy; and disruptive marketing, in relation to the construction of historical stories.

Identifying Disruption

Disruption or disruptive innovation can be said to be the most popular vocabulary in the first two decades of the 21st century. The discussion of disruption is always related to the figure of the inventor of the Disruption Theory, namely Clayton M. Christensen. The thoughts presented by Christensen (1997) appear to be true in various parts of the world. Disruption is not only a trending topic in America and Europe but also has hit various countries in Asia and Africa, including Indonesia (Burke et al., 1983); (Dunn, & Paula, 2015).

Never imagined before, disruption has changed so many patterns of human behaviour. Because of disruption, people nowadays are more familiar with an online-based taxi than a conventional taxi. They are also more familiar with online shopping rather than conventional shopping. In addition, disruption causes most people feel that it is enough to keep in touch digitally and increasingly marginalise true hospitality. In showing condolences too, it is

considered enough to be delivered digitally, while *takziah* becomes marginalised. Disruption also causes people to think that doing phubbing is a normal thing. Moreover, it causes people to feel more comfortable having digital money than conventional money. Furthermore, in term of human to human relationship emotionally, disruption causes people to be more comfortable to confide in each other digitally rather than conventionally. Relationships between children and parents or relationships among family members have had a very serious shift in function. Because of disruption, lectures are no longer limited by spatial barriers (classroomless). Also, the boundaries between countries change to be merely imaginary lines, not to say that the world has entered a borderless era, but it is diverse, unclear, and is constantly changing, and also engenders new residents called a global society. Finally, because of disruption, it is very likely that there will be more fundamental changes which occur in human civilisation, today and tomorrow.

Actually, from the perspective of history, disruption is not something new, because throughout the course of the history of human civilisation, disruption has always coloured human life (Dunn et al., 2014); (Grant, 2007).

For instance, the change from the stone age to the metal age was a disruption, as well as the change from the paleolithic era to the mesolithic era and later the neolithic era. The difference lies in the substance, the media, and the speed of movement of the disruption itself. The challenge and response theory developed by Toynbee (1946) is one of the strongest pieces of evidence that the disruption has always coloured the lives of humankind. In response to the challenges faced, disruption is basically an important causative factor which makes humans able to survive until now. Without disruption, it is impossible for humanity's success to develop to its most up-to-date condition. However, once again, what distinguishes disruption occurring before the 21st century with disruption in the 21st century is the substance, the media, and the speed of the disruption itself.

Thereby, what is the meaning of that disruption then? Kasali (2017) briefly defines disruption as innovation. Furthermore, Kasali (2017) said that disruption will replace all old physical technology with digital technology which produces something which is completely new and more efficient, also more useful.

The First Wave of Historical Disruption

As a branch of science, history does substantially contain studies of the stories of the past. Nevertheless, in its efforts to examine problems in the past, it always experiences dynamic movements, especially at the level of methodology. This dynamic movement of historical methodology in studying the past can be categorised as a historical disruption or a part of what is called disruptive regulation. Historical disruption is possible because history is



basically a science which is friendly with technological developments, especially information and communication technology.

Historians certainly will not forget that the closeness of history with information technology engendered the first major disruption in history in the 20th century. This happens when information technology invents recording tool technology, in the form of the phonograph (britannica, June 24, 2018). With this invention of the phonograph by Thomas Alva Edison in 1877 (Thompson, 1978), for the first time there was a device which could play, store and record sound. Due to this invention of the phonograph, in subsequent developments, history becomes friendly to what is called an oral source. Oral sources, which were originally marginalised from historical sources and were considered as second-class citizens after written sources, slowly but surely gained an honourable position. Phonograph technology makes oral sources have the equal position or caste as written sources. With the phonograph, oral sources that were previously "formless" possess a clear form. Oral sources cannot only be proven in the form of sound recordings but can also be transcribed into written sources (Dienaputra, 2013).

This invention of the phonograph in subsequent developments issues a new method in history writing, namely the oral history method, as well as presents a new construct of history writing, namely oral history. In this connection, the United States can be said as the pioneer in the development of Oral History. The pioneering of the United States in developing Oral History became even more apparent when Allan Nevins in 1948 established the Oral History Research Office at Columbia University, New York. Through this Oral History Research Office, Oral History is widely written and developed throughout the world. Even though it was too late, Indonesia in the eighth decade of the 20th century finally felt the influence of the disruption of the history of this first wave. This happened when the National Archives of the Republic of Indonesia (ANRI), through Jose Rizal Chaniago, initiated research and exploration of oral history, especially excavation of oral history in periods when there were poorly written in 1942-1945 (Rasooli & Abedini, 2017).

If ANRI became the first document storage institution which took a part in developing oral history, then the Department of History of Universitas Padjadjaran could be proud of being the leading Department of History in Indonesia which introduced Oral History to its students. The Oral History course since 1998 has entered new subjects into the Department of History curriculum. The existence of an Oral History course continues until this day and is becoming a subject which attracts students' interest. Unlike other courses, this Oral History course not only provides students with hard skills, but also a stock of soft skills. In its most recent development, since 2008, Oral History has become a postgraduate education program at the Colombia University, under the name Oral History Master of Arts (OHMA). This interdisciplinary master program was initially opened focusing on documenting, preserving,

and interpreting historical information based on personal experience, but in its development then focusing on interviews and interpretative methods, and linking at least six scientific disciplines, they are history, sociology, literature, anthropology, psychology, and public health (Columbia News, retrieved 22 June 2018).

The Second Wave of Historical Disruption

The first wave of historical disruption experienced by history seems not to be the only one and the last disruption. In contemporary developments, information technology has again developed very rapidly and continues to move dynamically. Internet technology began to roll since the beginning of the eighth decade of the 20th century and developed massively in the last decade of the 20th century. It appeared to be the locomotive of various changes, both the predicted and unpredicted ones. The presence of this internet technology in a relatively fast period of time soon after that also changed human civilisation from paper culture to paperless culture. No one could have imagined that the presence of the internet would completely eradicate telegram technology, which for almost a century ruled the world of telecommunications (Hart-Davis, 2012); (Luhulima, 2012). No one could have expected the presence of the internet to eradicate most of the role of the Post Office which for more than a century became a medium of communication among various places in parts of the world, including various regions in Indonesia.

For history studies, which for a long time relied heavily on historical sources written on paper, the effects of this shift in civilisation quickly began to be felt. Now, it is not easy any more to find sources written on paper for historical events that occurred in the 21st century. But on the other hand, it is easy to find written sources on digital media, not only written sources but also visual sources.

The visual source itself relies on the visual concept given by Barnard (1998) as everything that can be seen. In a broad sense, it can be understood as a historical source which includes everything that can be clearly seen. Meanwhile, in the narrow sense, visual sources only include historical sources in the form of moving images and still visuals which includes photographs, paintings or maps. Photographs as a rich source of visual history of Indonesia has coloured Indonesian history since the early 20th century. Moving pictures include documentary films or journalistic products, both television and online media (Dienaputra, 2018). Visual sources in the narrow sense become the main historical sources used in the reconstruction of Visual History (Dienaputra, 2011).

The reality of the rapid development of information technology in the end requires historians to disrupt the second wave of history. The second wave of historical disruption is needed, not only to overcome the overflowing of the latest generation of historical sources, namely visual



sources, but also to answer the need for historical reconstruction which is in accordance with the needs and demands of the era. The omission of that developing reality may result in historians losing their role as scientists in charge of reconstructing and interpreting the past for the importance of the present and the future.

It should be stated here that although the visual source is referred to as the latest generation of historical sources, actually its existence has long been recognised in the branch science of history. Related to that, Gilbert J Garraghan can be said to be the first historian who methodologically recognises the existence of visual sources. According to Garraghan (1957), besides oral sources and written sources, other classifications which are official historical sources are picture (pictorial) or figure (figured). The terms pictorial and figured are representations of visual sources in the form of still images. Garraghan's statement of this visual source did not seem to attract many historians. This could be due to the abundance of written sources or it could also be the ignorance of historians in utilising visual sources as a medium of historical reconstruction. Therefore, for some time the visual sources seemed sound asleep because not many people touched or used it.

Relevant to the situation, it is not surprising if then the disruptive thought to answer the challenge was first carried out by a filmmaker and well-known director, Steven Spielberg. In the decade of the 20th century, supplied with his experience when making the Schindler's List film, Spielberg began introducing a new construct in the reconstruction of history which he called Visual History. His work in developing visual history became increasingly productive in 1994 when at that time he founded the Shoah Foundation Institute for Visual History and Education of the University of Southern California (USC Shoah Foundation Institute for Visual History and Education). Through that institution he founded, Spielberg then made many visual sources through interviewing historical actors recorded using audio-visual media. Those interviewed by the Shoah Foundation were generally those who were victims of humanitarian disasters (genocides, holocaust).

In the most recent development, the Shoah Foundation has succeeded in gathering videos of testimonies from victims as well as witnesses to the genocide incident that occurred in Cambodia, Armenia, Nanjing, and Guatemala. The testimony videos of victims of genocide in Cambodia during the Khmer Rouge regime (1975-1979) were made by the Documentation Center of Cambodia (DC-Cam). In Armenia, the making of the video testimony of the 1915 genocide victims, the first genocidal incident in 20th century, was carried out in collaboration with The Armenian Film Foundation, made in April 2010. While in Nanjing, the video making of slaughtering victims in the 1937 Nanjing Massacre, also known as the Rape of Nanjing, was carried out in collaboration with the Nanjing Massacre Memorial Hall. In Guatemala, the video making of victims of genocide was also carried out in collaboration with La Fundación de Antropología Forense de Guatemala (FAFG), a forensic organisation



in Guatemala. The genocide incident in Guatemala occurred during the civil war from the beginning of the 1980s to 1996. In that incident, about 200,000 people died.

Shoah Foundation's hard work in making testimonial videos is widely used by various institutions in the world, including leading universities, such as, Columbia University, Cornell University, University of Melbourne, University of Michigan, University of California, Ohio State University, Stanford University, University of Minnesota, Yale University, Monash University, University of Toronto, and Freie Universitat. Moreover, the results of the studies on the testimonial videos have been written in the form of scientific articles, books and dissertations in several universities in America, Europe, and Australia.

In relation to visual history, to be able to reconstruct it, it is clear that scientific collaboration is needed between history and other sciences, one of them is Fine Arts and Design. The scientific collaboration between History and Art and Design makes visual sources readable as historical reconstruction media. Fine Arts and Design provides methodological assistance in the form of Visual Methodology to unpack and read visual sources. One of the theories that can be used to explore visual sources is Content Analysis Theory (Rose, 2007). Content Analysis Theory is based on calculating the frequency of certain visual elements occurrence contained in an image used as a research sample and then analysing the frequency of the occurrence of that visual element. There are at least four stages of work undertaken in operationalising Content Analysis. First, determines sample images (finding images). Determination of the sample image at least can be pursued by four strategies, namely random, stratified, systematic, and cluster. By using the Content Analysis method, visual facts can be interpreted into a series of interrelated stories. Second, determines or specifies the categories of coding in the image which will be used as analysis material. Third, implements coding for images based on preset codes. Fourth, analyses the coding results. The ability of Fine Arts and Design to contribute both in theories and concepts to the reading and interpretation of visual sources makes Visual History appear as the main product of the second wave of the historical disruption.

The existence of visual history as the main product of the second wave of historical disruption is also marked by the increasing number of published works of visual history. They are *Warrior: A Visual History of The Fighting Man*, by R.G. Grant; *Knives and Swords: A Visual History* by Chris McNab (General Editor); *History: The Definitive Visual Guide, From the Dawn of Civilization to the Present Day*, by Adam Hart-Davis (Editorial Consultant); *The Civil War: A Visual History*, by Jemima Dunne dan Paula Regan (Senior Editor); *Gun: A Visual History*, by Chris Stone (Editor); *A Visual History of the Future*, by Nick Dunn, Paul Cureton, dan Serena Pollastri; *Flin Flon A Visual History 1933-1983*, by Stephanie Jarvis, Lois Burke, dan Joyce Henderson; *World War II: The Definitive Visual*



History, From Blitzkrieg to the Atom Bomb, by Alison Sturgeon (Senior Editor); and World War I: The Definitive Visual History, From Sarajevo to Versailles, by Grant (2014).

The influence of massive development of visual history and visual sources in various parts of the world slowly but surely is also felt in Indonesia. Works on visual history have begun to emerge, including scientific works within made by students at various levels of education, whether in the form of either undergraduate thesis, thesis, or dissertations. Beyond that, the work of visual history publications appear. One of them is the work of James Luhulima entitled *Sejarah Mobil & Kisah Kehadiran Mobil di Negeri Ini* (The History of The Car and Its Emergence in This Country).

In relation to visual sources, the importance of the visual sources existence also seems to have been realised by the National Archives of the Republic of Indonesia (ANRI). It is seen from the filing system in ANRI which offers an important space for visual sources. Visual sources basically can be in the form of paper files or non-paper files. For non-paper archives, as in the categorisation applied at ANRI, visual sources can appear in three archive forms. The first ones are machine readable archives which are like microfilms and microfiches. While the second one in the form of new media archives, such as films, photographs, and videos. And the last one is called electronic archives, it can be in the form of computer archives and digital archives. Furthermore, in terms of appearance, visual sources are not textual sources but non-textual sources (Lohanda, 2011).

Besides ANRI, the National Library of the Republic of Indonesia (PNRI) has also given much greater attention to visual resources. In fact, on its website, PNRI specifically lists Digital Collections, which are divided into Mixed Materials, Cartographic Materials, Micro Forms, Manuscripts, Monographs, Electronic Sources, Periodical Publishing, Graphic Materials, Music, Sound Recording, Films, Video Recording, and the Indonesian Policy Study Repository. In addition to those thirteen types of collections, digital PNRI collections include dictionaries, online magazines and legal products. In particular, for the visual sources in the form of still images, they are featured in the Mixed Materials collection. In there are featured hundreds of photos of various important historical events that occurred in the country (McNab, 2010); (Stone, 2012). Interestingly, in its magnificent new 24-storey building on Jalan Medan Merdeka Selatan, PNRI even dedicates two floors specifically for visual sources, which is in the 8th floor for the Audiovisual Collection and the 16th floor for the Collection of Photos, Maps and Paintings.

Seeing the reality developing nowadays, it is most likely that in the near future visual history will become the best of the reconstruction models of historical stories in various parts of the world, including in Indonesia. Under these conditions history, where the task is to reconstruct and interpret history as events becomes history as stories, will not lose its contribution and

role in society. Conversely, history will be increasingly needed by society and with its new look will also be more interesting and more easily understood by the public. History will not be boring with its story presented in writing but it will be an interesting construction because it is rich in images, both moving and not-moving, and presented artistically. If previously, it took tens or even hundreds of sheets of paper to tell a historical event, then with Visual History it is sufficient to deliver within 5 to 15 minutes for the short type of film or documentary and 30 to 60 minutes for the long type of film. Even if a timeline is made, the historical event is sufficient to be displayed on one page only. Through Visual History, the research results of undergraduate and graduate students will not only stay in library or archive cabinets, but will also spread to various corners of the country and the corners of the world. Extraordinarily, it does not take so long to present.

Conclusion

Historical disruption has a substantial characteristic of innovation in conducting studies of the past. Innovation applies not only to the level of historical sources but also, more importantly, to the method or way of reconstructing history as events into history as stories (Sturgeon, 2009). Seeing this reality, it is clear that historical disruption is very much needed by history as a branch of science and by historians, because it will at least provide some advantages to history and historians.

The first great advantage of historical disruption is the growth of the ability of history to read and anticipate the development of the era. With it, history will always be able to adjust to the needs of the era where it belongs. Even though history talks about the past, it is a science that does not lose the present and the future. For history, the past is merely a matter of medium to reconstruct history as events into history as stories while the methods to reconstruct, including sources of reconstruction, will always move dynamically according to the development of human civilisation.

The second big advantage is that it gives space for historians to make efforts to develop their competencies and abilities in the middle of the development of information and communication technology which moves very dynamically. The First Wave of Historical Disruption which engendered oral sources and Oral History encouraged historians to cultivate oral sources and place them honourably in an equal position to written sources. The Second Wave of Historical Disruption, which is now ongoing, engendered visual sources as well as visual history. At this time, historians are not only forced to be friendly towards visual sources but are also demanded to improve their quality and competence to be able to produce visual history works in various forms, such as timelines, historical comics, documentaries and historical films, including historical films in the form of animated films.



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