

# The Use of Digital Technologies in the Art World to Preserve Traumatic Cultural Legacies

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**Abstract.** For many centuries, people have used arts to express their concern in regard to oppression, injustice, and violence. The key motivation for this research is to the wider range of possibilities on how digital technologies can be utilized to reiterating the complicated and layered aspects of traumatic cultural legacies. The data and case studies for this qualitative-descriptive research is derived from numerous academic journals, books and reviews, and in-person visit to the exhibition; in which the chosen case studies are curated based on some predetermined conditions. This research will show how digital technology enable people to play and interact with historical exhibits, and eventually learn from it in an enjoyable way. Specifically, this research highlights the use of Virtual Reality (VR), 360 degrees video, interactive installation, Augmented Reality (AR) and gamification. In the end, this research maintains that digital technologies allow us to digitally preserve, access, and share our traumatic cultural legacies more easily. In the future it is surely offer more opportunities to preserve and promote culture in innovative ways.

## 1 Introduction

As social beings, we share our communal knowledge and experiences in the form of collective memory. It is the storage of shared norms, values, and experiences that help a community internally views themselves, and externally views the world. For a nation, collective memory is habitually perceived as the basis of a culture's identity and collective way of life. The persistence of collective memory is a substantial factor in the preservation of a culture, because through collective memory we can pass down communal traditions, stories, and beliefs. This shared understanding of the past helps to create a nation's collective identity, as well as a shared sense of heritage belonging.

Regretfully, as history records, not all collective memories are as right as rain. More often than not, there are always some horrible memories that we instinctively want to keep at bay. However, as a human we cannot undo things that has happened in the past. Instead of forgetting them, we have to acknowledge their existence. No matter how atrocious the episodes were, it is imperative that we preserve these traumatic cultural legacies as an integral part of our identity.

Arts have been used as a medium to record difficult and traumatic history for hundreds of years. We are now witnessing the shifts in the art world, from the traditional to the digital; and once this new mode took off, it revolutionizes the art world like never before. Technological-based solutions, including (but not limited to) digital displays, haptic interfaces, Augmented and Virtual Reality (AR/VR), and video games have flourished within the cultural heritage sector [1]. In line

with the rapid adoption of technology and its use in art sector, curators are now put forward the engagement and accessibility – and subsequently move the former focus on the physical art exhibits slightly backward.

There have been numerous studies in regard to the use of digital-based technology for culture sector. Similarly, there are abundant research on traumatic historical events. But very little of them put a focus on how these digital technologies has the potential value to preserve traumatic cultural history. Therefore, this research aims to connect the previous aforementioned studies, and show its readers a wider range of possibilities on how digital technologies can be utilized to retelling these somewhat complicated and layered aspects of traumatic cultural legacies.

To reach this argument, this research will start by exploring the notion of collective memory that becomes the source of cultural trauma. From this initial section, we can already see that art has been used as a medium to convey dark histories since hundreds of years ago. Next, we will discuss the shifting in the art world, from traditional to digital platforms. Following to that, it will be shown several case studies related to traumatic cultural events that has been presented to the public using digital platforms. These case studies were curated based on some predetermined conditions that will be explained in the discussion section. In continuation, we will examine with some weaknesses of these digital technologies. Despite those limitations, this research still maintains that the benefits of these technologies outweigh its flaws, and therefore it is concluded that digital technologies are indeed one of the ways to preserve our traumatic cultural legacies.

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By incorporating qualitative-descriptive research methodology to each case study, we will see the involvement of digital technologies to help delivering these so called ‘difficult history’. The qualitative-descriptive methodology was deliberately chosen since there is no pre-selection of research variables, no adjustment of variables, and no preceding obligation to any academic opinion of the research subject in this research – all of which tick the marks of this specific methodology [2]. Therefore, this method appropriately fitted with the data collection, data analysis and the objective in which this research is conducted.

## 2 Historic Cultural Trauma

The persistence of collective memory is a phenomenon that has been observed across cultures and societies for centuries. The act of memorizing urges us to ponder of what it means to take on other’s recollections and embody it into our lives. These recollections surpass time and place, generating empathy towards others [3]. Eisner termed a form of collective reminiscing that intertwine the past into the present and future as ‘prospective memory’ with a highlight on reminiscing as an active performance [4]. Memory is particularly envisioned and reconstructed ‘for that next generation’, never simply a nostalgic act [5]. In the context of traumatic history, collective memory is also a powerful tool of commemoration, letting people to evoke and share bygone stories, which can assist them to identify the roots and consequences of those unfortunate events.

Le Goff explores that violent and catastrophic events, such as conquest, revolutions, and defeats resulted in collective trauma. His conception of it heavily bonds to the notion of cultural trauma, as both commence with a reflective departure and an unsuspecting re-enactment of an episode that one just cannot abandon [6]. Dissonant memory endures by resurrecting and insisting the past upon the present, and continually haunts us. In response to that, we are bound to engage with this past in inclusive and meaningful ways [7]. Of course, there is no single formula that is guaranteed to accomplish this challenge, but our willingness to acknowledge this traumatic legacy is an initial step to preserve this difficult memory. One of the mediums that has been used to express human’s thought and feeling is art.

Even before the invention of writing systems, human has poured their mind and emotions by using arts as medium. Painting is perhaps the easiest art genre that can be used as examples. In Théodore Géricault’s massive painting, *The Raft of the Medusa* (1818-19), people are re-introduced to the disastrous journey of French ship *Méduse* that was wrecked at the Atlantic coast of Africa in July 1816. During the accident, the decision was made to prioritize the governor, his kinfolk, and some elite individuals into the six lifeboats and crammed some other 150 passengers into a raft. Fifteen people were rescued from the raft, and only ten of them ultimately survived and able to pass on the horror of murder, cannibalism and all the misery they experienced. Back in the year when this masterpiece was exhibited in Paris Salon, it was

considered as truly radical work [8]. Almost similar to it, the slave ship tragedy in September 1781 was forever recorded J.M.W. Turner’s painting titled *Slavers Throwing Overboard the Dead and Dying, Typhon Coming On* (1840). In its ill-fated journey, the captain of the *Zong* ship commanded 132 African descendants to be thrown to the sea, in order to collect insurance compensation for the slave owners.

**Table 1.** Sampling of traditional artworks that dealt with traumatic events

Artworks’ Title	Q1. It has been shown to the public	Q2. It deals with traumatic event
Géricault’s <i>The Raft of the Medusa</i> (1818-19)	Yes	Yes
		<i>Méduse</i> ship incident
Turner’s <i>Slavers Throwing Overboard the Dead and Dying, Typhon Coming On</i> (1840)	Yes	Yes
		<i>Zong</i> ship incident

Table 1 shows sampling of traditional artworks that dealt with traumatic events. Both painting exposes the dark history of slavery in Europe. Although not blatantly a representation of the *Zong* incident, the Turner’s painting has become to be culturally paired with it, and by sharing the background story, the painting has become the ambassador of plentiful other, similar or associated, but lesser-known cruelties of slavery [9]. Similarly, *The Raft of the Medusa* is decoded as Géricault’s social condemnation concerning liberal sentiment against the enslavement of the bourgeoisie by the nobles, or as a warning on the subject of enslavement by the rise of factory economy [10]. In today’s 21<sup>st</sup> Century Western Europe – indisputably one the most developed regions in the world, this kind of subjects had become obsolete, for the practice of human slavery is no longer exist. But it does not mean we are free to forget the event. On the contrary, it is crucial for us to activate our collective memory on this cultural trauma, to prevent us from fell into similar abyss. In fact, we are walking on slippery slope, for even today, the gap of social inequality is still prevalent, following the same pattern in the past, only with different players in a different playground. Data in Table 1 will be used as blueprint for the curation process in this research.

While it is clearly shown that as a genre, painting has done its job to be the agent of historical preservation, we must admit that nowadays less and less people are entertained by something as static as painting. With the rise of digital technology, people are more engaged and inseparably live with digital media platforms. Thankfully, the art world also jumps into the wagon and has been transformed itself into multitude genres of digital art.

## 3 Discussion

### 3.1 Digital Shifting in the Art World

The exact date of the beginning of digital art is disputable, but artists and alike have started meddling in “computer

art” in computers around the 1970s. The embryo of what we’ve known today as internet and streaming media was initiated by artists who incorporate novel technology at that time such as videos, and satellites as tools for experimenting with live performance and networks [11]. It was the internet that become the driving force for new research tools and methods in digital history [12]. The art form travels across and beyond its medium and the manner which it augments, and/or challenges its previous models. Hence, the use term “new media” is rather fluid and keeps evolving its ranges, since the invention of even newer medium will potentially push the current medium into its moment of obsolescence [13]. Some areas in digital and media art forms comprise (but not restricted to) software art, computer-mediated installations, internet art, performance art, conceptual art, installation [14].

Museum and heritage institutions – a place where arts are commonly exhibited, have been so far responsive to the prospective uses of smart technology. They welcome the usage of widely spread devices such as mobile phones in order to engage with their audiences. Surely, mobile phone’s audio-visual capabilities enable its users not just to extended information, but also diverse sensory and interactivity experiences [15]. In a more advanced setting, museum also uses higher types of technology, such as interactive screens and installations, virtual reality (VR) headsets and many other kinds of technology which facilitate the visitors to engage with the museum’s contents [16]. Long gone the days where arts (and other forms of exhibition) are kept in a high pedestal or inside vitrine; untouchable and inaccessible to its audience, and the only way to enjoy it is by passively looking at it. In this day and age, the keyword is engagement. Of course, in terms of its security and preservation, it does not mean people are now allowed to freely touch and play with the museum’s exhibits. But now we have invented many creative ways to play with historical exhibits and learn from it in a fun way.

Play is not singular. A type of play that is principally appropriate in the museum setting is *pretense play*; where visitors able to, for instance, pretend to be somebody from another time, and/or to interact with famous historical figures [17]. Play can also anchor on the construction of immersive experiences, inviting visitors to enter a constructed digital dimension through deeply reflecting their ambiances or emotions [18]. By bringing the visitors’ mind as if they are entering the world where historical events took place surely required individual’s imagination. But by immersing themselves within the same ground filled with particular artefacts, or meeting with some notable heroic figures help them to have a better understanding of the cause and effect of specific situations in the past [19]. This is particularly useful for the cases of traumatic cultural events, that often have a complicated, layered, and ambiguous circumstances.

### 3.2 The use of digital platforms to re-enact traumatic historical events

A renowned academic study by Rosenzweig and Thelen [20] concluded that while Americans were profoundly

engrossed with history, they have a limited attraction on study of the past; and instead, they want to experience the history personally. Therefore, their study embraces a “participatory culture” that potentially allow public to explore, perceive, and reflect the history for themselves. More recently, a study from Kee, Poitras and Compeau support this idea with their “quest mode” approach [21]. Departed from these insights, this research is now trying to connect the previous aforementioned studies and show its readers a wider range of possibilities on how digital technologies can be utilized to explore difficult histories.

In accordance with the qualitative-descriptive methods which stated that allow any sampling technique to reach its goals, which is to acquire cases considered rich in material with the objective of saturating the data [2]; the data collection for this research was derived from numerous academic journals, books and reviews, and in-person visit to the exhibition. All the gathered case studies were then collectively curated. As Hans-Ulrich Obrist defined, in its most simple form, curating is about “connecting cultures, bringing their elements into proximity with each other – the task of curating is to make junctions, to allow different elements to touch.” [22]. In this project, the similarity among the chosen case studies is determined through some series of variables, regarding their audiences, content, and medium.

**Table2.** Exhibitions that highlight traumatic events by using digital technologies

Case Study’s Title	Q1. It has been shown to the public	Q2. It deals with traumatic event	Q3. It incorporates digital technologies
Case Study 1 Thresholds	Yes	Yes	Yes
		Chartist riot	Virtual Reality (VR)
Case Study 2 Auschwitz-Birkenau Walkthrough	Yes	Yes	Yes
		Nazi’s Holocaust	360 Degrees Video
Case Study 3 Gentayangan (Haunted)	Yes	Yes	Yes
		G30S/PKI	Interactive Installation
Case Study 4 Niagara 1812 and Queenston 1812	Yes	Yes	Yes
		Battle of Queenston Heights	Augmented Reality (AR) & Gamification

Table 2 shows several case studies that has been curated based on some predetermined conditions, by using the previous information on Table 1 as a blueprint. The first two conditions were based on questions derived from Table 1. Additionally, the third question – which were dealt with the use of digital technologies, was added to reflect the shifting in the art field:

- Question 1: Has it been shown to the public?
- Question 2: Does it deal with traumatic event?
- Question 3: Does it incorporate digital technologies?

To pass this curation stage, the answers to all those three ‘Yes/No’ questions has to be ‘Yes’. Further curation was proceeded to filter them, so that each case study representing the incorporation of different types of digital

technology. There are many spectrums of digital technology, but for the purpose of this research, classification falls into: Virtual Reality (VR), 360 degrees video, interactive installation, Augmented Reality (AR) and gamification.

All four chosen case studies above became the sampling to represent different technologies. Each category has their respective challenge to explain and reenact traumatic historical events by using digital technologies as its vehicle.

### 3.2.1 Virtual Reality (VR)

*Thresholds* is a virtual reality exhibition in the form of a museum installation by the artist Mat Collishaw in partnership with the Mixed Reality Laboratory at the University of Nottingham, UK. First exhibited in 2017, *Thresholds* reenacts an exhibition by Henry Fox Talbot called 'Model Room' that was happened back in the summer of 1839 in Birmingham. In this original display, Talbot exhibited the total of 93 of his 'Photogenic Drawings'. While the focus of 'Model Room' was on Talbot's photographic oeuvre, it happens that during that summer there were Chartist uprisings in the area [23] [24]. This Chartist demonstration was a series of political marches which demanded six main transformations to the British electoral system, with the worst unrest happened in Newport, which resulted in the slaughter of 22 demonstrators, and wounded many [25]. In the virtual world of *Thresholds* this uprising can be seen occurred outside the window. By doing this, Collishaw built a line between past and present-day, both in terms of the excitement of new experiences and in terms of the anxieties they fuel [26].

Technically, *Thresholds* incorporate a 'substitutional reality' in which a 3-dimensional virtual model is superimposed on its equivalent physical set to convey the impression of passive haptics, in which real feeling of physical tactile seem to be in line with digital audio and visual stimuli. By sporting a backpack PC and wireless head-mounted display, the visitors were invited to explore the room, freely touching almost anything in the area, and transport back in time as they peered out of windows, as if they are first-handedly witnessing furious demonstrators outside. In the visitors' movement data log report, it is stated that windows were particularly a popular location, with many visitors lingering at the sight of the uprising [27].

Even though the main focus on both the original exhibition and the contemporary Collishaw's exhibition anchored around the city of Birmingham's role in the history of photography, there is a sizable probability that after experiencing the VR in the exhibition, the visitors will then be curious to know more about the traumatic history of the Chartist riot. As one of the benefits of the VR is no matter how dangerous that imaginary world is, in reality they are experiencing it from a 'safe space' [28]. By experiencing the event, they were effectively preserving the one of the desolate episodes in British political history. It is a reminder that the development of democracy in the UK does not happen overnight and

should never be taken for granted. This is one of the reasons why VR are so attractive, it has the capability to deliver lessons to its audience without patronizing, instead, it invites its viewer to imagine themselves in a different realm and allows them to actually *be there*, facing a different existence in a digital universe.

### 3.2.2 360 Degrees Video

Produced by Discover Cracow (2016), the 'Auschwitz-Birkenau Walkthrough' is unlike any stereotype promotional tourist videos. On the contrary, it is a heart-wrenching journey of one of the largest German Nazi Concentration Camp on World War II, or what's left of it. Publicly available in Discover Cracow's Youtube channel, anyone can interact with this virtual 360 degrees tour to see inside the concentration camp and imagining what it was like to be in Auschwitz in-person. With the 360 degrees video capabilities, the viewer holds the authority to explore the roads and railway leading to the camp, the empty-looking neighborhoods, and a glimpse of interior of the Auschwitz Museum today.

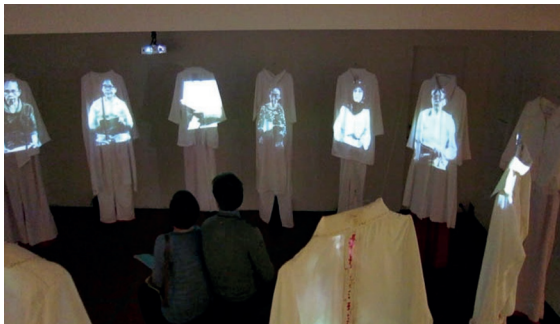
Although it is a fairly short video, just under four-minutes long, it captures the essence as of why UNESCO decided to put the city into its World Heritage List. History tells that this very place is a symbol of what nationalism can lead to [29]. Full of irony, as the video shows empty streets in any direction, we drag our pointer is, we cannot help but imagine the scream of over 1.1 million people who have died during the camp's active period. That figure is bigger than the combined number of the American and British losses during the World War II. It also struck us that while our vision captures the bright sunny Auschwitz' broad daylight, how contrasting when it is combined with the melancholic melodious instrument of the audio that accompany this 360 degrees video.

All things considered, it is immersion quality in the 360° video that facilitated the viewers as if they are present in the environment, no different than the physical journey itself. By creating an impactful connection to a location in comparison with 2D imagery, this 360 degrees video shows its effectiveness to be a tool for researchers alike [30]. However, as the nature of any video, the success of this 360 degrees video is very much dependent to the decision of its creator to curate which footage that they need to include in the video – the footage that supposedly gives the room for the viewer to exercise their freedom in exploring the space presented in the video. The success of any 360 degrees video is partly determined by how well it distributes that authoritative element and its ability to encourage the viewer to engage with the video. Otherwise, it would not be any different with ordinary video.

### 3.2.3 Interactive Installation

Most of the times, the best source of the archival of traumatic cultural legacies comes in the form of testimony of the people who live and witness the event. This is especially true for many contemporary Indonesian artists whose works revolve around current political issues, such

as gender critique, ecological destruction, and human rights violations. Testimony that materializes in the form art becomes vital, especially when it is needed to fill the gaps where truth and its supplementary legal proof are deemed as ambiguous [31]. Performance art produced by Agung Kurniawan do exactly that. His work was titled *Gentayangan* (Haunted), and it was originally performed in Yogyakarta, Indonesia. The casts of the performance comprised activists affiliated with Indonesian communist party, specifically *Gerwani* (Indonesian Women's Movement). These women activists were politically charged, culturally apt, and actively involved in many cultural activities in back in the 1960s [32]. Subsequent to it, in 1965, history records one of the most traumatic tragedy in the Indonesian historical narration. In the event that was dubbed as *G30S/PKI*, most *Gerwani* activists were imprisoned without trials, undergone lengthy and tense control and interrogation [33], for the purpose of annihilate the communism dogma. Numerous of them were also brutally tortured and raped by the military [34]. These women strived to communicate using traditional singing and humming, allegories and internal anecdotes. These properties were refabricated in Agung's performance. Each performance reenacts their defiance [33]. This original production was selected to represent Indonesia at the *Europalia Arts Festival 2017* in Brussels, Belgium.



**Fig. 1.** The interactive installations of *Gentayangan* (Haunted) reenactment "Power & Other Things" Exhibition – Europalia Arts Festival, BOZAR, Brussels, Belgium (Photograph by: L. Suhardjono, 2017)

Due to some factors and circumstances (i.e., the distance, the old age of the performers, the financial), it was decided that instead of bringing the whole production to perform live in Brussels; the best way to export this production was by modify it into an interactive installation, using the assistance of digital technology. The video recording of the women's act was then beamed onto the outfit that the casts wore during the performance and acted as avatar to the casts. Agung deliberately positioned his installation as if the women circling the audience (Fig.1).

This installation was deemed as successful and have the element of interactivity thanks to its deliberate circle arrangement. From the visitor's point of view, as if they were forced to sit in the middle of the room and became the center of attention. It feels like they were being scrutinized by a troop of ghost-like women who talked in foreign languages. Naturally, let alone interaction, even

the visitors' existence became part of the installation itself; and when it happens the power play is reversed, and the question arise: who's watching who? This arrangement instinctively triggered a sense of alienation, since the visitors had no clue what these women were speaking about.

### 3.2.4 Augmented Reality (AR) and Gamification

Both *Niagara 1812* and *Queenston 1812* are two of the location-based mobile application on iOS that provide an immersive experience for its users. These apps assist its user on a tour around the villages of Niagara and Queenston, Ontario. Both sites were used to be location of the fiercest war in 1812. The apps users explore history in an engaging and captivating way by using Augmented Reality (AR) to map out the sites, and give them a greater understanding of the past, as well as the events that took place in these locations. With these apps, users can also access detailed descriptions of the battles and their significance, as well as historic photos and audio files. What set these apps apart from similar platform is its incorporation of gamification element, where the users are challenged to solve a historical mystery. This gamification element arguably is the most effective way to engage its users to the understanding of the past [35].

As it happens in any battle, there must be two sides of it, the winner side and the loser side. History records that the Battle of Queenston Heights was momentous for the Canadian nationalist, when together with the British force, they defeated the Americans. On the contrary, this very same battle was considered a traumatic event that bring down the morale of the American throughout the United States. These location-based apps are suitable tools to show how the geographical and topological factors played important element that become the source of strategic failure for the American. Visiting the site and having the sight of the rapid-flowing river and the sharp and daunting hill brings the circumstances of the War of 1812 to life. Augmented reality (AR) can then be used to provide historical context and detail, uncovering how the landscape appeared in the past. This can help users gain a better understanding of why the invading forces were so eager to control the heights, and why the British General Brock was so determined to reconquer them. Here the contextualization with AR works perfectly, by allowing people to uncover details and stories that have otherwise been lost to time, particularly in places where the landscape has changed since the historic events in question [18].

The overall experience of these AR apps feels active and fun especially with the additional gamification component, that prevent the users from merely touring the historic spots, but also take part in activities such as puzzle solving, finding clues, attempting the quizzes – basically things that opposite to the stereotype of boring history lessons in class. The apps invite its users to actually reenact the history in their own fun way, and in the process, it blurs the notion of playing with, and playing within history [36]. As in characteristic Indeed, this gaming feature may have the unintended effect of

somewhat waning the seriousness of the historical battle, but at the same time it brings the topic back in a way that has relevancy with the younger audience.

### 3.3 The weakness of digital technologies for historical purposes

After a lengthy discussion on the beneficial aspects of the use of digital technology, it is only fair that we also acknowledge that the current technology that we have so far still possesses considerable number of weaknesses. Here are some of the weaknesses, starting from the general concern to a more specific concerns in regard to the historical and traumatic cultural legacy context.

- In terms of the physical gadget, despite years of development, some of these technological devices are still too big, too heavy, uncomfortable to be worn, and most of all, they are still relatively expensive [28]
- In terms of the user experience, there is a possibility that the use of the technology (as in gadgets, the digitally made visual representation, and/or the gamification aspects) might grab the visitors' attention more than the physical exhibit. We can see it happens for example when the visitor seems could not leave their gaze from the screen, instead of giving their appreciation to the original artefact [37] [38] [39].
- In terms of the technological advancement (or lack thereof), it happens that some time the sensitivity level of the technology is unmatched with the expectation. For example, ambient light may be the culprit behind the malfunction in AR technology, or in some other cases some users missed the location-based markers. [40].
- Since the technology itself is fairly new, most it is rather challenging to determine the efficacy of the AR technology on the implementation they use and/or develop [41]. In terms of traumatic cultural legacy context, not all cases/exhibitions/events that fall into this category are suitable to use this so-called high-end technology.
- In the case of gamification, there is a risk that the users are more concerned to mechanics of the quest or became too competitive to the point they forgot about the heritage aspects of the whole experience [42] [43]. Traumatic cultural legacies often times have complicated background stories in itself. To have them combined with gaming element might overwhelm the user who needs to process the whole elements simultaneously.
- The layered aspect caused by the use of technology may confuse its users to the point they are unable to differentiate which elements grounded in sound historical evidence and which parts that are actually a dramatic interpretation for the sake of entertainment [44]. Again, while it might be a good source to build a storyline, there is a danger that these convoluted stories blur the mind of its users.

## 4 Conclusion

For centuries, arts have served as a powerful medium to document difficult and traumatic histories. Artists have used arts in their work to express their concern in regard to oppression, injustice, and violence. It has also served as a reminder of the collective memory of the past, so that we can remember the painful events and never forget. Art also provides a way for us to reflect on our current issues, to remind us of how far we have come and how far we still have to go. Art is a powerful tool to help us understand the world around us, and to record our history, both good and bad.

From the research above we have seen many of the beneficial sides of using various digital technologies in the art world to preserve traumatic cultural legacies. Includes to this but not limited to the use of VR, AR, 360 degrees videos, interactive installation, and gamification. Surely all of these platforms are not without their limitations, in fact, it has many flaws. Similarly, this research also has its limitations as well. The use of curatorial techniques to get the sampling for the case studies leaves room for improvement. Given more variety of projects that fits the predetermined conditions, open the possibility to expand this research into a longer discussion and/or analysis. Furthermore, the constant changing and breakthrough in the technological sector means that we will surely use even newer technologies beyond the ones we have discussed in this research – which might make this writing seems to be obsolete.

However, all things considered, the prospects for the development of technologies are very exciting. These technologies offer unprecedented opportunities to preserve and promote culture in innovative ways. With its help, it is easier for us to capture and share our stories in ways that weren't possible before, including traumatic stories with more detail and emotion than ever before. They allow us to digitally preserve, share, and access our difficult and traumatic cultural legacies, making it accessible to both physical and virtual audiences.

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