

DIGITAL MEDIA TO ENHANCE MUSEUM VISIT: EXPERIENCE IN DIGITIZING THE ROYAL MUSEUM OF KEDAH

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Abstract: *Royal Museum of Kedah is the place that preserves historical artifacts belongs to Kedah Royalties. Transforming these ancient artifacts into digital media was an effort to enhance the museum visit, especially for the new generation to understand about one of the earliest histories in Malaysia. This is an initial phase in which the work was offered to be a class project for UUM's multimedia student. As a result, four interactive digital applications were developed to fulfill the stated objective. Students' challenges and experiences in conducting this project were discussed.*

Keywords: *Museum Visit, Digital Artefacts, Royal Museum of Kedah, Student's Digitization Experience*

Introduction

Around the world, museums play the function of preserving the historic artifacts as well as making them available to be showcased to the public. Normally, museums use only real objects or artifacts as exhibits to convey information to their visitors. The artifacts are arranged to create a compelling storytelling for the museum visitors. Without a doubt, this would be a great challenge to the museum curators about how to attract the attention of visitors and at the same time enable them to understand the essence of the historical events through the displayed objects (Sylaiou, Mania, Karoulis, & White, 2010) (Sylaiou et al., 2010)(Wolff et al., 2014). Effective exhibition layout and arrangement will create a compelling experience for museum visitors and at the same time deliver knowledge to them.

Research has shown that museum visitors are not only interested in discovering all about individual objects, but also to understand the wider context of an exhibit, in terms of historical background and how it is related to other items on display (Carreras Cèsar, 2005). Within the last two decades, a new trend exists in which based on the involvement of the visitor during the visit. Therefore, museums were encouraged to exploit the use of ICT to be embedded into museums (Hansen & Fernie, 2010) (Wishart J., 2010). The use of such systems/applications

aims in two directions: firstly to attract more visitors to the museums and secondly to “pass” the knowledge to their visitors in a more effective way (Zaharias, Michael, & Chrysanthou, 2013).

The advancement of ICT has been utilized by many museums in the world by adopting it for various purposes, including in providing museum visitor augmented experiences while visiting the museum physically or online. Various research have reported that blending the technology into museum environment, has made a huge leap of the museum’s functions. In Malaysia, a few museums have also adopted this approach. For example, museum Melaka has created a Virtual Museum that mainly aims to preserve Melaka's historic and cultural heritage online for its posterity. Visitors can 'tour' the museum from the comfort of their homes. Additionally, this Virtual Museum has been of invaluable assistance to historians and students involved in research on Melaka. Unfortunately, this situation has remained underexplored for other museums in Malaysia including Kedah.

This paper will explain our experience in digitizing the museum artifacts in Kedah Royal Museum to enhancing the museum visit. This project involved students as the application developers and a lecturer as the supervisor to monitor their work. At the same time, a representative from the museum was also partly involved especially during the data collection and development phases. At the end, this paper will discuss the digital applications that were developed and how this would become the beginning of digital transformation in Kedah Royal Museum towards enhancing museum visit.

The Royal Museum of Kedah

The Royal Museum building is an old castle that was occupied by a few Sultans of Kedah. Various names are given as Istana Kota Setar, Mak Wan Besar Palace, Palace House Pelamin or Pelamin. This palace was completed in 1735 when the opening of Alor Setar as the administrative centre of Kedah was commemorated by the late Sultan Muhammad Jiwa Zainal Mu'adzam Shah II.

During World War II, Japanese forces had occupied the palace and used it as headquarters of several organizations before it was left without observation. In 1983, the palace was restored and turned into the Royal Museum (figure 1) during the Silver Jubilee celebrations of Tunku Abdul Halim, the Sultan, who then inaugurated the museum on July 25, 1983 (“Muzium di Raja”. 2017.) (Syah, 2013).



Figure 1: Royal Kedah Museum

Most of the artifacts in this museum belong to few sultans of Kedah such as Tunku Abdul Hamid, Tuanku Abdul Halim, and Sultan Badlishah; other artifacts belong to other royalties are also displayed in this Museum. One of the very valuable artifacts here is the ‘*Pingat Gajah Putih*’, a special artifact, granted by King Chulalongkorn of Thailand to Sultan Abdul Hamid of Kedah as a symbol of their good friendship. According to the museum personnel, until now, many

museum visitors from Thailand came and honored this artifact as the symbol of their King and cherished the close relationship between Kedah and Thailand sometimes ago.

Kedah Museums are still embracing the traditional ways of exhibiting and showcasing artifacts. Most of the artifacts are displayed in glass boxes with a minimal textual explanation. Visiting this museum will require the visitors to figure out what artifacts that they are looking at and to imagine how it was used. Some of the artifacts are even left unexplained, which makes the visit less effective.

There are few problems observed while visiting the museums. Firstly, visitors have a limited angle of viewing the artifacts as they are placed in glass boxes. Although it is purposely done so for preservation and safety purposes, it has denied the human behavior to touch and inspect any interesting artifacts. There is not much that visitors can do other than observing and reading the tag of the artifacts.

Secondly, the explanation of the artifacts is very brief, consisting only either the name of the artifacts and/or its brief explanation. For some unfortunate situation, the artifacts have no tag at all, thus, making the visit less interesting and ineffective. Although museum contains enormous stories from the past, the existing information only provide minimal knowledge, which contradicts the function of the museum as the historical knowledge repository.

Therefore, incorporating ICT in museum environment would probably shift the museum to become more welcoming to visitors especially to the new generation. Museum should be more inviting so the public could appreciate their culture and heritage and additionally, enabling the artifacts to be preserved digitally.

Digital Media In Enhancing Museum Visit

For decades, museums around the world have played major roles in collecting, preserving, and sharing the historic artifacts belong to its specific society. The collections then will be displayed to the public so that the younger generation (mainly) will understand their heritage and culture. However, for the last 10 – 15 years, the functions of a museum has broadened, which look at the evolving of museum from the place of heritage storage into places of binding society together, provides development of the local community as well as places of teaching and learning (Clarke et al., 2002) (Pellicer, 2014) (Wolff et al., 2014). This is due to the ability of the museum management to open up their vision into dynamic and fast changing world. We could see now, that museum is a must visit place in many places during our tour or vacation. The visit to the museum will provide visitor understanding on the heritage and local culture.

To make the visiting experience more impactful, many museums are exploiting the use of ICT applications and technology. Many museums now allow visitors to view the artifacts physically and also virtually (De Jaegher, De Waele, & Van Goethem, 2012). They also provide extra information by using technology in various forms such as kiosk and website, which has proven to be useful - providing an enhanced experience to the visit. However, this situation is still unavailable in Kedah Museums.

The use of technology at the museum might include the range of gadgets being added to assist the visit. Gadget such as iPad to guide gallery tours, eye-tracking devices to track gaze, and symbol decoding software can be seen in various museums around the world. Additionally, more than 850 million visits per year were recorded by the U.S. cultural institution. This has collected an impressive \$21 billion in direct economic activity. Although some criticizes was heard at some point, surprisingly, technology is not hindering the appreciation of physical art. In

fact, museum attendance has increase rapidly more than ever since computers and iPads entered the art realm, say some art experts. It is allowing visitors to experience art in a new way, while bringing exhibits to others that may never even set foot in the institution at all (Song, 2017).

Work Took Place

To develop the interactive application in enhancing museum visit at Kedah Royal Museum, we were working with multimedia students. The work was carried out in nearly one and a half years involving few classes such as User Centered Design, Multimedia Design, and Project I and Project II. The project was open to every student on those classes who were interested to involve in this project. No monetary incentives were given to the selected students but, they can use the interactive application as their class project (or case).

The students were asked to develop an interactive application to enhance the museum visit by given a short scenario about Kedah Royal Museum. Once the groups were selected to join the project, they were required to fulfill the requirement that has been set up. Students need to submit the project phase by phase basis such as a proposal, requirement analysis, storyboarding, development, and documentation. The lecturer acted as their supervisor who helped them throughout the project phases. Students also conducted independent fieldwork such as observation and interviewed the museum personnel to get richer data during the requirement gathering phase.

Results and Findings

In total, there were more than six projects involved in the development of Kedah Royal Museum interactive application, with more than 30 students (4 – 5 students in one group). Each of the interactive application were evaluated using product rubric that includes its objectives, audience, font, navigation, graphical elements, enhance multimedia elements, layout, and aesthetic appeal. This was done to rate the products according to our scale as it was planned to be proposed to the museum. We only accepted interactive products that achieves 85% marks and above. This marks indicated that the project has achieved ‘A’ rank based on UUM’s grading marks. As a result, four interactive applications have fulfilled the stated requirement.

Interactive Application

The interactive products produced can be categorized into two categories, which are using mobile platform or web-based platform. We believe that the trend of mobile application has set the mind that mobile application is the suitable platform for enhancing museum visit.

Mobile Platform Digital Artifacts

The first application was developed by a group of multimedia students from User Centered Design Class session 2014/2015 (figure 2 – Mobile App 1). This is a digital map of Kedah Royal Museum that was developed in a mobile platform. Users need to get this application in the Museum front desk and it can guide visitor during their visit to the museum. The map was divided into sections of gallery available in the Kedah Royal Museum. When they entered the gallery, the users can view the exhibited digital artifacts. It was also accompanied by textual explanation about the displayed digital artifacts. This application provides still images as well as videos for the museum visitors.

Second is the Kedah Royal Museum mobile map, which was developed by students in User Centered Design Class session 2015/2016 (figure 2 – Mobile App 2). There were four students in the group. The application acted as a guide to the museum visitor during their visit. The application contains the map of the museum, and on the map, it shows some artifacts in a specific gallery. When the artifact is clicked, it will provide more detail explanation in form of text, still

images, and videos. This digital artifact was brought to ITEX 2015 exhibition in Kuala Lumpur and won a silver medal. Some monetary incentives were given to this group as a token of appreciation for winning this competition granted by UUM.



Figure 2: Kedah Royal Museum Mobile Application

The third digital museum artifact was developed by students from User Centered Class in the second session of 2015/2016 (figure 2 – Mobile App 3). The application was developed using a mobile platform and it explains about the royal accessories displayed in the Museum.

Each selected accessory has explanation in forms of text and digital still images. Each of the explanation was adapted from the museum and also other resources verified by the museum personnel. It contains rich still picture that provides view of the artifacts from few angles.

Web Based Platform Digital Artefacts

Around the works museum collection has been exhibited in online form particularly website (Lopatovska, Bierlein, Lember, & Meyer 2013) (Alwi, Saidin, & Shaari, 2017.) and has become popular recently. Among the project created, there was only one web-based digital artifacts developed by the student in the User Centered Design class for second term of 2015/2016. This web-based digital artifact illustrates the royal marriage processes (figure 3). The web-based digital artifacts explain in quite detail about the royal marriage processes for Kedah royalty. Each of the explanation was in still images and text. No video was embedded into this application as they said that the video has slow down their web loading process.



Figure 3: Kedah Royal Museum Web-Based Application

Digital Media Utilization

The development of Kedah Royal Museum interactive application has shown that student utilized the fundamental digital media as follows.

Still Images

Digital still images were one of the prominent media used in this application. The still images were taken from various viewpoints that enable the user to view the artifacts clearly. They were trying to be creative with the shots of the images that offer alternatives for the visitor to view from few angles. Thus, makes the artifacts more clear.

Text

Detail explanation of the artifacts is mainly using text. The text was taken from the original sources; however, it was being manipulated by the student. They were making the text easier to understand and at the same time tried to provide sufficient information to the visitor.

Audio

The audio of classical and traditional music was used at some of the application. The positive side was that all the audio provided were chosen carefully to suit the theme of traditional Malay. However, the negative aspect was that no group or applications developed had optimized the advantages of audio such as a narrative or verbal explanation of the display artifacts.

Video

A few videos were also embedded in the applications. One of the videos explains about *Nobat* that is highly associated with Kedah royalty. *Nobat* is very special and usually played during the Sultan coronation. The video is available in the museum library and available to be used by the student for their application. Other videos were shot by the student themselves. They tried to provide the clear picture of some of the artifacts and produced videos to better explained the artifacts.

Technological Approaches

As stated in the previous section, mobile became the choice of the development platform. According to the students, the selection of mobile platform was due to the popularity of the mobile platform (Chamillard, 2006). Furthermore, most of them were familiar with the mobile environment in developing multimedia related application. This is very important to them, as they need to concentrate more on collecting the museum artifacts data and convert it into digital form. As the museum has no digital repository for preserving its data, all data conversion needs to be made from scratch. They need to find, select and choose the suitable artifacts to be included in their application. Therefore, as the duration of the application development is short, students avoided to learn new development platform.

Another group has responded that their study shows that many museums in the world have created touch interaction situated display during visiting the museum. This would be interesting; however, the display would not always be feasible because of few factors such as position, size of the display and might be acquired by multiple visitors at the same time. Therefore, they proposed the used of mobile devices which can be more personal.

The group that developed the web-based artifacts said that the difficulties in searching information about Royal Museum of Kedah and its contents have encouraged them to develop the web-based application. The web-based application is more accessible and allow the visitor to browse the content before physically visit the place.

Challenges

The development process was done by the students (in groups) and monitored by the lecturers throughout the project phases. Students have reported few challenges while working with the museum.

Royal Museum of Kedah is still very lacking in having a systematic and rich information repository. Most of the information is only available in the form of what was being displayed in the artifacts boxes. Both text and image form is very simple without any further detail explanation.

Students have difficulties in developing the detail explanation of the product either in text or images. There are no images available in various angles that can be easily manipulated by them when they want to turn it into more advance digital media. They need to take the picture themselves, however, this required permission letter that need to be granted earlier. Moreover, during the photo session the picture was taken from outside the glass box, thus reducing the picture quality. Students expected that they are able to lift up the box so that the picture can be taken more clearly from various angles. However, this situation was impossible as the museum guide refused to do so and required them to have another special permission. This situation has demotivated the students' enthusiasm thus, forcing them to accept just any available resources offered by the museum personnel. Although the Museum seems to be keen towards embracing ICT into the museum environment, the stated challenges should be address accordingly.

Conclusion

As contribution to the society, the museum project was a trial into connecting the university to the community. Although we can easily pay for some amount of money to software developers to produce museum digital artifacts that would encourage museum visitor, we believe that researching the main problem of the museum would be more beneficial for all. On the other hands, involving students in this project would also benefit the student in applying all the theories learned in the classroom, and as well as practicing both their technical and soft skill to the real environment. Students need to understand that developing an interactive application for project class would be so much different compared to developing an interactive application for the real organization. Dealing with the real organization, there are a lot of issues that needs to be taken into consideration before making any decision.

Although there are only four products that have been selected, the digitization of the artifacts is possible and promising. Even though we hope that a more advance digital media is used in the development process, these four products were considered as a good start. We understand their struggle in facing the challenges that somehow limit their ability to come out with an advanced digital media product in limited time and resources.

The next phase is to implement these interactive products in the real setting towards learning on how visitor would accept this new approach of museum visit. As none of these artifacts has been formally showcased to the museum, we would like to plan one for the next collaboration phase.

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