

THE EFFICIENCY OF USING MOBILE APPLICATION FOR ENCOURAGE CULTURE TOURISM OF SCULPTURE AND ARCHITECTURE 9 TEMPLES IN BANGKOK, THAILAND

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Abstract- The mobile application has a necessary in tourism business to become available anywhere that use to find interesting knowledge of travel place. This paper aims to propose the efficiency of using the mobile application online system for encouraging culture tourism that focus on sculpture and architecture of 9 temples in Bangkok, Thailand by using panorama technique. This study collects interesting information of sculpture, painting and architecture in each legend temples. All information was designed and stored in a database that consist of image, text, animation, area place and map for helpful tourism. The mobile application is implemented in Eclipse, SQLite, android, Java SE, and panorama software. The result of the experiment is evaluated by user satisfaction and the expert evaluation that showed Mean and Standard deviation 3.98, 4.01 and 0.74, 0.69 respectively. Moreover, the number of tourism was an increase of 25.5% in the period 12 months, which will contribute to the economy of the community better in their places. Therefore, this mobile application can be used as a tool to promote cultural tourism on the other place.

Keywords- Culture Tourism, Sculpture and Architecture, Mobile Application.

I. INTRODUCTION

Now a day, Thailand is a main travel hub of Southeast Asia. Most tourism travel to Bangkok capital for visits amazing places and cultures. There are many interesting places and things such as beach, food, culture, service, and accommodation, Thai dance, Thai massage, Thai Music, Muay Thai, Grand Palace, the largest outdoor market of Asia (Chatuchak) and so on (Mekong Tourism, 2016). This is a well-worn destination on the tour group and backpacking trail. Everything is convenient, easy and friendly that so call "friendly land" or "smile land" with is ready to welcome visitors. The tourists can be faced Thai culture, learn and practice which are an integral part of Thai tradition. There are places of places and in UNESCO world heritage such Sukhothai, Ayutthaya, and Ban Chiang (UdonThani city). Bangkok is a big capital and the hub for most of the commercial and economical activities of the Kingdom in Asian that consists of government office, business, department store, shopping, education and Buddha temples. There are more than 10 million of populations. It successfully integrates between culture and innovation, which bring forward to the famous and appreciated by visitors for its versatility and multiple points of interests. Bangkok also defines travel for entertaining visitors to another place or Bangkok sightseeing such as Taxi service, Skytrain (BTS) and Underground train (MRT). In addition, the accommodation options demands of all tourists, from low to high end international such as guesthouses, apartment, mansion or hotel (Web Sawadee Public Company Limited (2016). Although Bangkok is a well-known city in wonderful or unseen place for tourism, but some tourism group remains weak of

information in vintage temples. Around these temples compose of something that has sentimental value of the Buddhists and people who love the arts. Especially, old architecture, art, pagoda, and community life that is proper for cultural tourism. Basically, both Wat Phra Kaew and Wat Pho are very popular for tourism, which is related to former Kings in the Chakri Dynasty. They are the main landmark of Bangkok is visiting that it's ready included of all program tour. However, in Bangkok have many temples in the same group and very interesting in an architectural splendor such as Wat Kanlayanamitra, Wat Chanasongkhram, Wat Rakhang, Wat Bowon, Wat Sra Ket, Wat Sutat and Wat Arun. These temples are still lack of information and publication in culture tourism group.

This paper aims to study, analysis and create the culture tourism mobile application by following the line of sculpture and architecture focus on 9 temples in Bangkok and to promote the culture tourism for increasing the tourist in the mentioned areas. The system consist of the detail 9 temples, map, history of the place, still image that presents by using virtual reality technique. All steps were analyzed and design by the system analysis. Besides, the author intends to collective and served the old original culture. In addition, this work wants to create awareness, serving, income in the community. All of these temples were presented in animation or virtual reality application that are being excited and surprised.

II. CULTURAL TOURISM INFORMATION

2.1. Cultural Tourism

Cultural tourism is an experience in cultural activity and observes outside your community, that concern

historical place, community cultural, culture and tradition, rural tourism and local tourism (Chavalnuch Utayan, 2015). Furthermore, the work area is focused with significant architecture, historical and cultural features. It plays the story of the social and human development through history as a result that describes the culture, knowledge and the values of the society. Most the value of architecture and the natural environment are the beauty and benefit from natural. Culture tourism also can reflect the evaluation of life and being of the people in each period as well. This is the main reason of the cultural tourism that wants to sell point to attract the attention of foreign tourists. Especially, Chinese Japan, American and Europe tourists are enjoying to visiting and learning the culture area, historical heritage, architecture and experience the lifestyle of the people living in each country (Krairoek Pinkaao, 2015). The culture tourists can be classified into 3 groups as describe below:

2.1.1 Historical tourism: the traveling to another place about archeology and history for watching and enjoying. The tourists have learned and understand that above the mention in the base of each area. It also raises awareness to preserve the heritage and values of the environment.

2.1.2 Cultural and traditional tourism: the traveler goes to watch festivals at the local residents then held that has the exiting in art for belief, acceptance, and respect in rituals gain, knowledge and understanding of the social and cultural conditions. The local residents have participated stump tourism management.

2.1.3 Rural tourism or village tourism: the tourist travels in the village and learns the rural lifestyle. It is the creative works that are special idea, unique, distinctive look for pleasure and knowledge creation in local knowledge. They obtained the local culture based on responsibility and awareness to preserve the heritage and values of the environment. The local people also have participation on tourism management (Varus Matahyomburus, 2014).

2.2. Mobile application for tourism

Nick Ostidick (2016) proposed the idea about mobile applications and how travel companies are leveraging the devices in your pocket right now to enhance their efficiency and agility in an increasing competitive global marketplace. It is available and no secret all tools like smart phone, tablet, laptop, and other mobile devices. In the case of e-commerce, mobile application also uses to support customer engagement and transaction. There are 5 important ways that the travel company can be used for success in an increasing digitized marketplace as customized services, increase communication, understand the consumer, streamlining transaction, and connectivity.

In addition, Olgo Kiilunen (2014) proposed the technique to enhance sustainable travel behavior among Generation Y based on mobile applications as solutions. The aim of this study was to investigate the possibility and find the best ways of using mobile applications to enhance sustainable travel behavior among Generation Y. This study uses an innovative ICT development as a tool of Travel Demand Management with the theoretical framework of the study embraces three main topics: sustainable tourism and sustainable purchasing in tourism; the role of mobile applications in tourism, sustainable tourism and technology acceptance model. The result shows 100 valid responses were analyzed using descriptive statistics and interpreted by themes.

2.3 Related Works

Wongtheera, Sukanya and Chouwassakum (2014) studied the potentiality of the cultural tourism of the Buddhist temples in PathumThani Province, Thailand.

They aim to study tourism potentiality of temples in PathumThani province and draw travel map that connect to all temples in the area. The objective of the study is to develop sources of cultural tourism by using the province dataset and interviewing various organizations on 11 temples. Both qualitative and quantitative techniques were used to experiment with their work. There are 44 people conducted by data analysis and in-depth interview on temple abbots, religious assistances, monks and community leaders for qualitative.

There are 384 people were conducted by questionnaires distribution to tourists in temples. The result shows many temples with tourism potentiality because of old places and materials. Most of the temples have beautiful scenery, wider spaces, and historical resources. In addition, in the field of culture and norms were found the remarkable Ubosatha, Vihara, and Buddha images. The temple location and public highway were found as relevant factors, along with food shops, temple tour schedule, and circle communication. The study suggested that two cultural tourism route mappings must be designed.

Buhalis and Law (2008), studied the progress in information technology and tourism management: 20 years on and 10 years after the internet "the state of e-Tourism research. They used a wide variety of sources, mainly in the tourism literature, this paper comprehensive reviews and analysis prior studies in the context of Internet applications for tourism. This work also shows future developments in e-Tourism and demonstrates critical changes that will influence the tourism industry structure. The result of its overview shows about the research and development efforts that have been endeavoring in the field, and the challenges in tourism factory.

Timothy & Boyd (2003) proposed a new idea to identify and classify the heritage tourism. First classification is tangible immovable resources such as building, rivers and natural location. Second is the tangible movable resource such as objects in museums or documents in archives. Third is intangibles such as values, customs, ceremonies, lifestyles; and the last group is including experiences such as festivals, arts and cultural events.

Jaruwan (2011) studied the attitudes and behaviors of Khon Kaen Tourists in order to increase labor hiring, household income distribution, and local development by focusing on tourism industry in the North-eastern of Thailand (I-saan). The tourism industry serves the tourists who have an interesting cultural tourism of I-saan culture such as dance, Dinosaurs track and Merit path, despite the importance of Khon Kaen province is the Northeastern Center of Education, Academic and Conference.

This research also studied the tourists motivations, attitudes and behaviors to develop a service the will offer the tourists' needs. They used the qualitative method by in-depth interview on 11 experts opinion in order to get the general view, and the quantitative method by floating questionnaires on 400 sample size of the tourists, and analyzed by Pearson' Correlation and Peason Chi-square. The results showed that the company employees or sales representative have the average monthly income of 15,000-25,000 Baht. Most of them are Khon Kaen and Bangkok residents. The motivation of tourists why they visit and spend leisure time in Khon Kaen is because they are cautious about the tourism model of ecology, culture, religion and entertainment of the place (Night Life).

III. RESEARCH METHODOLOGY

In order to develop the mobile application for this work, the authors collected the important information of sculpture and architecture in around 9 temples that are related to former Kings in the Chakri Dynasty. All data were collected from historian, archaeologist, tourists and the tourism official of Bangkok capital. The details of 9 temples were used in analysis and designing state that is needed to create and to develop the mobile application.

It was helpful to the system analysis and programmer to make the system fast and works easily. The mobile application must be compatible to use all international tools and browsers. In this work, the techniques that were used to analyze and design were divided into 4 steps: system overview, use-case diagram, work flow diagram, and sequence diagram. In this paper, the workflow diagram and sequence diagram are shown in Figure 1-2 consequently.

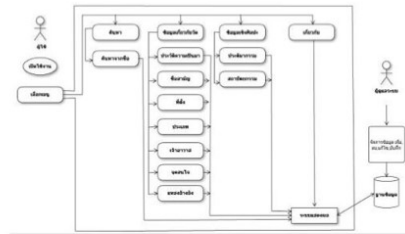


Fig.1. Work Flow Diagram

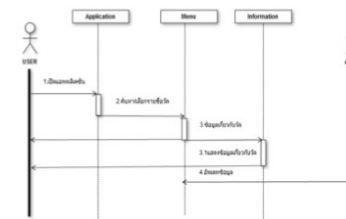


Fig.2. Sequence Diagram

IV. DETAILS EXPERIMENTAL AND RESULTS

In this study, the experimental was divided into 2 states: the developer of sculpture and architecture 9 temples mobile application and the evaluation of the performance and satisfaction of the mobile application

4.1. The Developing of Sculpture and Architecture 9 Temples Mobile Application.

In developing the mobile application of 9 temples related to the former Kings in Chakri Dynasty, Eclipse, SQLite, android, Java SE, and panorama software were used to implement and in coding it with a database. The system provides interesting details and information on the temples, places, the travel map, ticket price, time schedules, search system, categorization system and map. The home page displays the menu keys like location name search, arrow selection show, main menu, rotation menu and location map.

In addition, every temple image can be shown the closest destination that will depend on the user's preference. The user can be touched on the map or some area of the picture to see more information of each temple. In the backend of the system, the system administrator can use to manage the policy of the system such as log-in name and password. The system also allows the administrator to edit or update more information any time, as shown in Figure 3 (1-4).



Fig.3. (1-4) The example page of 9 temples mobile application

4.2 Evaluating the Performance and Satisfaction of the Sculpture and Architecture 9 Temples Mobile Application

To evaluate the performance and satisfaction of the sculpture and architecture 9 temples mobile application, we tested and evaluated the performance of the system by using the Black Box testing and Questionnaires. There are 7 experts and 40 users that were used to test the mobile application. Black Box testing was estimated in the error of the project as follows: functional requirement test, Function test, Usability test, Performance test and Security test. The functional Requirement test evaluates the ability of the system to support the requirements of the users and Functional test was used to evaluate the accuracy of the system as proposed by Amman & Offutt (2006) and Janpla & Kularbphetong (2014). The suitability of the system was tested by the Usability test. Performance test was used to estimate the processing speed of the system. Lastly, Security test was applied to evaluate the security of the system that was proposed by Laurie Williams (2006) as shown in Table 1 and Table 2.

Table1: Results of Black Box testing mobile application system with Experts and Users

Category testing	Experts		Users	
	\bar{x}	SD	\bar{x}	SD
1. Function Requirement Test	3.95	0.64	3.86	0.69
2. Functional Test	3.91	0.70	3.88	0.71
3. Usability Test	4.16	0.66	4.36	0.67
4. Performance Test	3.94	0.89	3.99	0.68
5. Security Test	3.95	0.81	3.98	0.70
Average Test	3.98	0.74	4.01	0.69

The results of the Black Box testing of the system as shown in Table 2 that a quality assessment of the system is good in all aspects and Mean were 3.98 and 4.01 and standard deviations were 0.74 and 0.69. It can be concluded that this mobile application is good to promote the sculpture and architecture 9 temples mobile application that related to former Kings in the Chakri Dynasty of Bangkok capital Thailand.

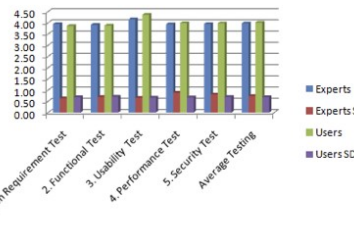


Table2: Results of Black Box testing mobile application system with Experts and Users

CONCLUSIONS AND DISCUSSION

The research is proposed an efficiency of using the Mobile Application for Encourage Culture, Tourism of Sculpture and Architecture 9 temples in Bangkok, Thailand. The system was implemented by using any software that consists of Eclipse, SQLite, android, Java SE, and panorama software. Black Box Testing

and Questionnaires were used to evaluate the system that was used by 10 experts and 40 users. The result showed a statistically significant difference of quality assessment of the system. This mobile application can be concluded that encourage culture tourism of sculpture and architecture 9 temples is efficient to promote culture tourism in Bangkok, Thailand. Furthermore, the comparison of the number of tourists between 2015 and 2016 shows that there was an increasing of 25.5% in tourism in the period of 12 months. Thus, the quality of the panorama website can be used a main information tool to promote the Encourage Culture tourism in 9 temples that related to former Kings in the Chakri Dynasty.

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