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Development of Smart Tourism System on Website and Android Application Support Pakprak Community's Tourism, Muang District, Kanchanaburi Province

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Abstract - **The Research of "Development of Smart Tourism System on Website and Android Application support Pakprak Community's Tourism, Muang District, Kanchanaburi Province". The Objectives of this article were: 1) to design and develop the Android Application website, to support tourism in Pakprak community to become a Smart Tourism community, 2) to try out the Application website, with people who live or work in Pakprak community and general tourists in the area, and 3) to study the level of satisfaction of users towards the pattern of information present through the website to support tourism in Pakprak community to become a Smart Tourism community. It is an applied research. The research process consists of 3 steps: 1) system analysis 2) system development process and 3) system installation. The "Pakpraktivity" website and application performance test results from experts found that the level of feedback on overall website performance is at the highest level, with an average of 4.29 and the level of application performance feedback is at the highest level, with an average of 4.28. The satisfaction of users towards the website design feature is very high with an average of 4.15 and the satisfaction of the users towards the application design feature is at a high level with an average of 4.19.**

Keywords - **Website Development, Application Development, Pakprak Community, Smart Tourism**

I. INTRODUCTION

Nowadays, tourists in the digital age can connect to tourism services anywhere, anytime through electronic devices like computers, smartphones, tablets, etc., causing digital lifestyle trend that travelers will have to travel on their own more, which in line with the data survey project for analysis of in-depth tourist behavior in year 2014 found that foreign tourists travel by themselves more (82.60%), were interested in air tickets, accommodation booking or activities through the online system (52.99%). Influential sources of travel decisions making, social media online channels, including applications and websites (19.34%) [1].

However, there is still a 29% proportion of tourism business in Thailand that haven't gained any channel to communicate with

customers via smartphones and that means so much for a higher business opportunity for businesses and entrepreneurs who will develop an information technology system to increase competitiveness to move towards becoming a complete Smart Tourism.

"Pakprak Community", is a small and is the oldest community of Kanchanaburi. There are Chinese and Mon people who settled for trade. There are ancient buildings in both wooden and half-timbered, Sino-Portuguese style. Villagers and related agencies are pushing the Walking Street "117 years Pakprak, an ancient road and Kanchanaburi's story telling" project. It helps publishing local culture and let the tourists learn more about the story of community that still remain the simplicity according to the folk wisdom, backgrounds of figures during World War II [2].

Even though, Pakprak community has a long way of life and long history, the Pakprak walking street is still not as famous in the eyes of visitors as it should be. It needs to use modern media to design and accessible easily to all target groups to help telling the history of this community to other people.

The research team is interested in research on "Development of Smart Tourism System on Website and Android Application support Pakprak Community's Tourism, Muang District, Kanchanaburi Province" to increase the potential and the ability to compete in tourism that help producing the prototype community of Smart Tourism.

II. RESEARCH OBJECTIVES

1) To design and develop website, Android Application to support tourism in Pakprak community to become smart tourism.

2) To try out the website and Android Application with people who live or work in Pakprak community and general tourists.

3) To study the level of satisfaction of users towards the presentation format via the website and Android Application to support tourism in Pakprak community to become Smart Tourism.

III. RESEARCH METHODOLOGY

The research process consists of 3 steps as follows:

1) Work Systems Analysis

Population is people living in Pakprak community and tourists to travel around Pakprak Road, Muang District, Kachanaburi Provice.

Sample is random sampling divided into 2 groups: 1) People who live or work in Pakprak community. Using Purposive Sampling of 13 people to answer the interview form about the need to use digital technology in the development of community attractions and 2) Tourist groups for evaluation of website and application performance satisfaction "Pakpraktivity" uses an accidental sampling of 100 samples. By allowing the sample group to answer the evaluation form by themselves.

From data collection using in-depth interview of the users in order to study and analyze work systems, needs, found that users need websites and applications to support tourism in Pakprak community. The research team chose to use Unified Modeling Language (UML) as a tool for analyzing and Object-Oriented Design (OOP)by creating a use case model to show the user's work with the system and ER Diagram to display the database in the system Divided into various categories such as website, press release, activity news, member information, building / shop on Pakprak Walking Street, information notification system, data transmission through application JSON, Information reading system, Publicize the activity of the system to include activities via QR Code, navigation system in Pakprak Road area.

There are 3 types of system users: users via the website, users through the application and the system administrator.

2) System Development Process

In the development of information systems, the system development cycle is divided into 3 main parts: 1) Website development Pakpraktivity, write a program in the PHP language and use the MySQL database to store data by storing data press releases, news, activities, places, information, members, 2) Update the website to send that information as JSON by bringing the PHP language file to install on the server, and improved to support data transmission by designed it to be able to support user data collection from applications and support messaging via firebase cloud messaging, and 3) Develop applications on Android operating systems that can support smartphone Application Program Interface: API 16 or higher by retrieving data from JSON application to show use the Global Positioning System (GPS) technology to work and use QR code technology to work with.

3) System Installation

The research team tested the work at the simulation device and tested through real devices to find application errors and then publish the application in Google Play and evaluate the performance from experts. And satisfaction from users by working example as shown in Fig. 1.

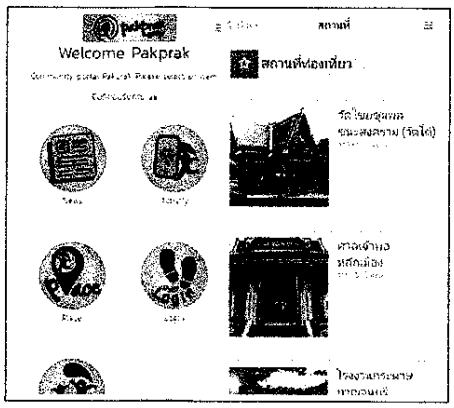

Fig. 1 Display on Android Application

Install the website for users and webmaster store the website information at http://www.pakpraktivity.com as fig. 2.

Fig. 2 Website Display on http://www.pakpraktivity.com

IV. RESULT

A. The Results of Evaluating the Effectiveness of Websites and Applications from Experts

The researchers tested the effectiveness of websites and applications from 5 computer program experts. The performance evaluation form is in the 4 evaluation frameworks: 1) Security Test; 2) Functional Requirement Test; 3) Functional Test; and 4) Usability Test [3] as shown in Table I.

TABLE I
AVERAGE AND STANDARD DEVIATION FROM EXPERT OPINIONS ON PAKPRAKTIVITY WEBSITE AND APPLICATION EFFICACY

An Efficacy of Pakpraktivity	Level of Website		Level of Application	
	$\bar{x}$	SD	$\bar{x}$	SD
1. Functional Requirement Test	4.30 (Very high)	0.590	4.50 (Very high)	0.372
2. Functional Test	4.32 (Very high	0.746	4.30 (Very high)	0.699
3. Usability Test	4.24 (Very high)	0.411	4.35 (Very high)	0.363
4. Security Test	4.33 (Very high)	0.623	4.00 (High)	0.849
Total	**4.29 (Very high)**	**0.558**	**4.28 (Very high)**	**0.485**

From Table I, it was found that most experts have a level of feedback on website performance of "Pakpraktivity" overall is at the highest level, with an average of 4.29.

Experts gave comments towards application performance, overall is at the highest level, with an average of 4.28.

B. Results of the Satisfaction Assessment of Users of Pakpraktivity Websites and Applications

TABLE II
AVERAGE AND STANDARD DEVIATION OF USERS' SATISFACTION WITH PAKPRAKTIVITY WEBSITE AND APPLICATIONS

The Satisfaction of Pakpraktivity Website and Application	Level	
	$\bar{x}$	SD
1. Usability Test of Pakpraktivity website	4.15 (High)	0.500
2. Usability Test of Pakpraktivity application	4.19 (High)	0.489

From Table II, users of the website "Pakpraktivity" is satisfied with the website design features, at a high level with an average of 4.15 and users of the application satisfied with the application design features at a high level, with an average of 4.19.

V. DISCUSSION AND CONCLUSION

According to the results of the satisfaction assessment of websites and applications "Pakpraktivity" above, have led to the conclusion of the research and discussion of research results in website design and development application to support tourism in Pakprak community to become a smart tourism community.

"Pakpraktivity" Website and application development can provide historical information of Pakprak community which create activities between tourists and tourist attractions in the middle period. The community has applied digital technology to disseminate community tourism information, which is a part of the Pakprak community development model to become a Smart Community Model and is also a model of being a Smart Tourism, which the researchers brought the theory of system development cycle (SDLC) to use as a guide in designing and developing the "Pakpraktivity" websites and applications, based on the system development cycle consisting of 7 steps: 1) problem determination; 2) demand analysis; 3) element design; 4) development; 5) testing; 6) Implementation; and 7) Maintenance in according to [4] which mentioned that the development of the system is a guideline for finding system development needs and system testing and the researchers have adopted the Unified Modeling Language (UML) theory to analyze and design the system to illustrate the model of the system being developed using the use case diagram showing the users in the system and the system model. The system can be divided into 2 parts as follows.

1) Research results of website development of http://pakpraktivity.com/ found that the researchers used the PHP language program and the MySQL database to develop the system by assembling information screens, public relations, activities, membership information, building information, detailed information about activity integration and designed the system to support Firebase Cloud Message with a satisfactory level of usage was in the highest level with an average of 4.15 which corresponds to [5] that is studied on "The development of a decision support system for searching places to travel via smartphones, case study of Kanchanaburi province" by applied to mobile phone technology in connection with the internet network so that interested people can find information about various places and attractions, as well as show the map location by using the decision table technique coupled with the creation of online maps, the results of the study showed that the system satisfaction values from the general users average of 4.24. Satisfaction with the system was at a good level. We can conclude that the system can be used as well.

2) Research on the development of Pakprak applications on smartphones, android operating systems, found that the researchers used the program assembled by Home screen, press release, announcement, activity announcement, building information on Pakprak Walking Street, log in and details of the organizer. The level of satisfaction of users was at a high level with an average of 4.19, which is close to the research of [6] that develops tourism application in Sakon Nakhon Province on the android operating system. The evaluation of the satisfaction of the users of the application

found that the satisfaction of the use is at a high level, with an average of 3.99 and overall satisfaction at a high level. The average value was 4.06. Overall, the system users were satisfied at a high level. The average value was 4.03. Therefore, the use of applications on smartphones to promote news and use in navigation was appropriate.

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