

NAGOYA JAPAN



Conference Program November 2015

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National Kaohsiung First University of Science and Technology

Yanhua Wu

Nanyang Technological University

Electrical and Electronic Engineering (2)

HIBARI, 6F

10:30-12:00, Friday, November 6

Session Chair: *Prof. Chaur-Chin Chen*

ACEAT-625

FPGA-Realization of a Six-Axis Servo Control IC for a Robot Manipulator

Ying-Shieh Kung | *Southern Taiwan University of Science and Technology*

Yu-Jen Chen | *Southern Taiwan University of Science and Technology*

Jin-Mu Lin | *Southern Taiwan University of Science and Technology*

Hsin-Hung Chou | *Industrial Technology Research Institute*

ACEAT-493

Data Visualization by PCA, LDA, and ICA

Tsun-Yu Yang | *National Tsing Hua University*

Chaur-Chin Chen | *National Tsing Hua University*

ACEAT-521

Prototyping of Mobile-Based Tourism Directory to Increase Tourism Potential and Enhance Role of Small and Medium Enterprises

Thomas Suselo | *University of Atma Jaya Yogyakarta*

Suyoto | *University of Atma Jaya Yogyakarta*

Yudi Dwiandiyanta | *University of Atma Jaya Yogyakarta*

ACEAT-577

The Estimation of Rotor Position and Speed for a Sensorless PMSM Drive Using High Frequency Signal Injection

Ying-Shieh Kung | *Southern Taiwan University of Science and Technology*

Risfendra Risfendra | *Southern Taiwan University of Science and Technology*

Yi-De Lin | *Southern Taiwan University of Science and Technology*

Liang-Chiao Huang | *Industrial Technology Research Institute*

ACEAT-521

Prototyping of Mobile-Based Tourism Directory to Increase Tourism Potential and Enhance Role of Small and Medium Enterprises

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Abstract

Currently Takes A Comprehensive Strategy and serious attention from various parties to improve and grow the economy of tourism in Yogyakarta. The tourism sector is support for the development of other sectors, and tourism is a phenomenon that will always affect the livelihood of surrounding communities also for Small Medium Enterprises (SMEs). By utilizing information technology, tourism information becomes more complete, clear and able to reach more tourists. Integration of information between tourism and business of SMEs is a must for giving tourist to know whole unexplored tourist destination and products in SMEs.

One such way is the use of technology to create a directory of tourism and directory of business. The integrated directory that not only describe the place of tourism, but also provide information on the surrounding small and medium enterprises that support the establishment of a comprehensive tourism environment. Prototype web-based tourism and business directory has been successfully created in previous research, showed that tourism directory can help the tourists to explore the tourist attractions more optimal and also help small and medium-erterprises (SMEs) business sector to be able to sell products to tourists.

Phase analysis of previous research has compiled a model of tourism and a model of business, especially describe the profile of tourism and the SMEs. From the tourism profile has been mapped conditions, the environment and the fact (actual content) sites and interactions with tourists. This paper will describe the development of mobile applications that integrate the previous prototype to optimize the use of tourism and business directory system. Utilization of mobile technology will allow users to interact on tourism and business directory system because it can be used anywhere, anytime.

Keywords : mobile application, information technology, prototype, tourism directory, SMEs

1. Introduction

In order to improve and grow the economy of tourism SMEs in Yogyakarta needed a comprehensive strategy and serious attention from various parties, particularly universities and government. The tourism sector is support for the development of other sectors, and tourism is a phenomenon that will always affect the livelihood of surrounding communities. By utilizing information technology, tourism information becomes more complete, clear and able to reach out to more travelers. The purpose of this information is to explain a potential tourist places so that the whole unexplored tourist destinations become more leverage^[11].

One such way is the use of technology to create a directory of tourism. Tourism directory that not only describe the place of tourism, but also to provide information about the surrounding small and medium enterprises that support the formation of an overall tourism environment. one of the information technology used is Google Maps API. Information system which utilizes the Google Maps API has been widely applied in various fields. Zhang^[13] conducted a development system for mapping geographic information. Gibin^[6] make the city of London cartographic applications using the Google Maps API. Google Maps API also been developed for information systems for tourists^[7].

Prototype of tourism and business directory has been created in previous research, showed that tourism directory can help the tourists to explore the tourist attractions more optimal and also help small and medium enterprises sector to sell their products to tourists.

Phase analysis of previous research has drawn up a model of tourism, especially describe the profile of tourism. Of the tourism profile has been mapped conditions, environment and reality (the actual content) sites and interactions with tourists. This paper will describe the development of mobile applications that integrate the previous prototype to optimize the use of tourism and business directory system.

1.1 Research Purpose

This research aims to build mobile application prototype of tourism and business directory and to integrate with existing system. The development is done in two stages:

1. The design of a prototype mobile application, include creating specifications, descriptions, and prototype software and / or hardware.

2. Integrating ; From the results of the prototype will be integrated with the existing system, which then improve existing system.

1.2 Research Urgency

The tourism sector is support for the development of other sectors, and tourism is a phenomenon that will always affect the livelihood of surrounding communities also for Small Medium Enterprises (SMEs). By utilizing information technology targeted tourism information becomes more complete, clear and can reach more travelers and tourist spots exposing other potential, so that the whole tourist destinations can be explored with more leverage.

One such way is done with the use of technology to map inside a web-based directory of tourism.

2. Literature Study

2.1 Tourism

Tourism is a phenomenon that affects the livelihood of surrounding communities. This is due to different cultural backgrounds, and the utilization of different resources. Tourism is a concept, not a sector-specific activities such as the transport sector with the obvious elements such as vehicles, roads, and so on^[9]. Thus, the tourism sector should not be forced to be a key development sectors, but better act as advocates for the construction sector, the other sectors. Locals also have interests that should be respected related to tourism development^[1]:

1. Not become victims of exploitation;
2. To be stable structure of social life;
3. Not negatively impact the use of elements of commercial culture;
4. No occurrence of excessive materialism and individualism;
5. No loss of access to natural resources;
6. Safety and comfort

2.2 Tourism Directory

Tourism directory system is a information technology based directory that lists all sorts of content related to the world of tourism. For the example, Yogyakarta tourism directory provides information, tips and reviews of attractions, hotel, restaurant and location of units of small and medium enterprises, so as to form a complete system environment to assist tourism, especially tourists^[11].

Tourism directory is particularly useful for tourists and for the wider community will be involved introducing the potential of beauty, tradition, and culture

of Yogyakarta with all its potential.

2.3 Micro, Small and Medium Enterprises (SMEs)

From initial observations that have been made on a number of SMEs, it turns out there are many parties involved in SME networks as shown in figure 1^[12].

According to Macpherson and Wilson^[6], to increase the capabilities of SMEs as one of the supporting units of the new economy, the role of Supply Chain Relationship (SCR) became one of the advantages. With more and more related to the various parties as well as structured management, competitiveness of SMEs will increase. The macro in the SCR process according to Chopra and Meindl^[2] include: Supplier Relationship Management, Internet Supply Chain Management (ISCM), and Customer Relationship Management (CRM).

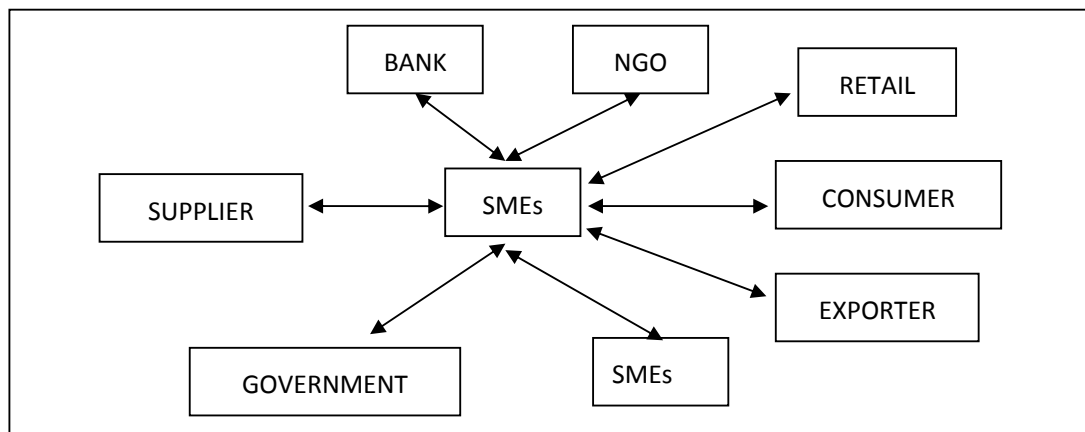


Figure 1. Network of SMEs with various parties

Lang et al^[4] showed that SRM and CRM activity can actually be matched and integrated to generate the maximum profit. To integrate SRM, ISCM, and CRM requires appropriate information system. In principle, the various components of information systems are interconnected and work together to collect, process, store, and disseminate information to support decision making, coordination, control, analysis and visualization in an organization^[5].

SME marketing activity has evolved into a virtual business^[8,10]. Conceptually, barriers and opportunities in SMEs is the utilization of information technology in achieving information and use.

3. Research Stages

This study is an extension of previous research which includes three main aspects, first is the preparation of tourism and business directory model, secondly is the design and development of tourism and business directory of potential applications using the Google Maps API and multimedia, and third is implementation of tourism directory. In this research is focused on the development of mobile-based application.

Prototype made and developed in the form of mobile applications and is integrated with the previous system. The initial step of this research is to identify business directories and tourism directory that was created earlier.

3.1 Business Directory

From the initial observation, SMEs establish networking with suppliers and customers with a variety of shapes and ways. Consumers SMEs in part a direct consumers who buy in large quantities, most are of the handicrafts retailers, galleries, and some are exporters. SMEs suppliers are predominantly SMEs as well.

3.2 Tourism Directory

A guide app tourist transport will be more effective and efficient usage with proper information technology. With some of the technology applied, the application guides are able to provide the speed tourist transport services, and processing of accurate data, so that data can be directly seen by the user. Tourism directory delivers information about tourism category, tourism spot, attraction and transportation.

Application of the many tourist transport previously made, but the problem is the location of development and program developers that are used vary.

3.3 Integration of Tourism Directory and Business Directory

The integration process is to combine both businesses in the directory of tourism and business directories that can be mapped an area with tourism potential immediate business. Integration of tourism and business directory be described in the form of entity-relationship as figure 2.

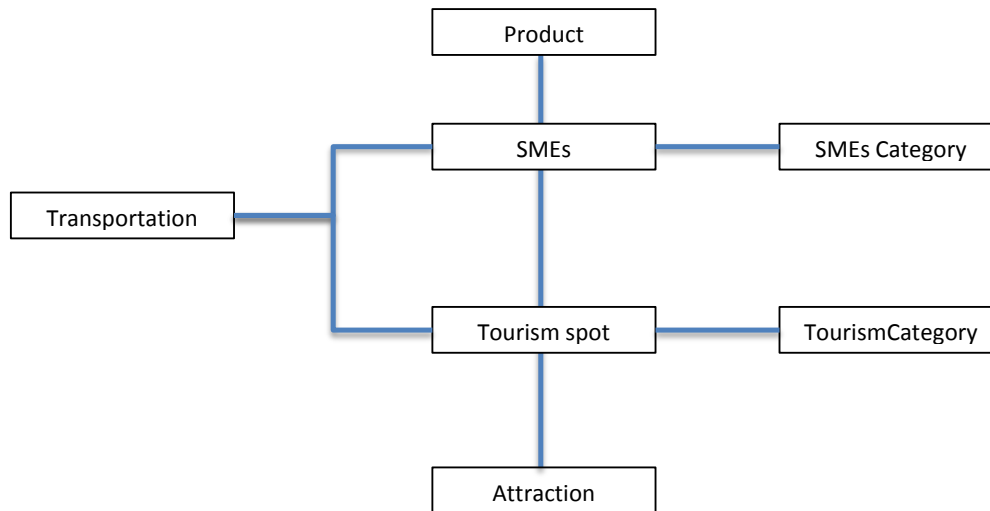


Figure 2. Entity Relationship Business Directory and Tourism Directory

Tourism spot is the entity that places data-tourism tourism along with the attribute name of the place, description, latitude longitude position, and the pictures location. There is a tourism spot in the category relations, tourism spots that can divide into several categories, like nature, history and cultural tours, culinary tours, city tours.

Attraction is an entity types are held in a tourism attraction spot, there are two categories, daily and big attraction. Tourism spots will relate to SMEs entities, such as entities which contains data of the SMEs, along with the attributes of a name, description, position (longitude and latitude). Other entities are data products (goods or services) provided by SMEs.

SMEs also has a relationship with the entity that categorizes the SMEs category SMEs business, such as handicraft, daily goods, pharmacies and herbs, other services. If a user has a directory of business and tourism SMEs user can explore all the potential associated with tourism and business with ease, each location will show dots adjacent tourism and business. Tourism and business potential of adjacent mapped in the same directory, each related entity will optimize the search, categorization, management and acquisition of information for the user.

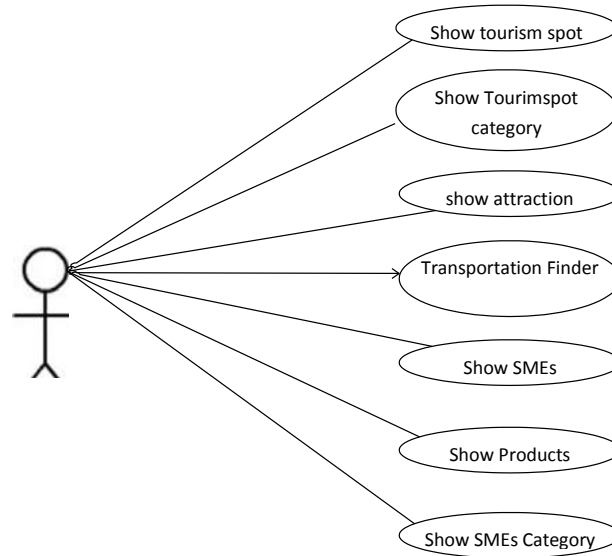


Figure 3. Use Case Diagram integrated tourism and business directory.

In the back-end system, both the SMEs and tourism operators can still perform their business process by using the old system, as well as managing the attractions by tourism operators, or manage products conducted by SMEs business owners. These systems integrate the business directory database directory of tourism and develop the functions of the business processes of both.

The focus of this research is on mobile devices, where the mobile device is a device which make it easier for users to perform their activities in accordance with the principle of mobile. Figure 3 is a description of the use case for the user.

With the integrated system the user can control all the business and tourism information in one system. Tourism management and integrated SMEs business will bring benefits to tourism itself and including SMEs. Each spot will be seen the potential of the tourism potential of the existing business, thus SME business is expected to become more visible and more business transactions that occur in SMEs.

Conclusion

1. Design and prototype of the mobile-based tourism directory has been created.
2. Integration of the tourism and business directory system make the system more robust in supporting the success of tourism and SMEs.
3. SMEs are expected in the next step can use the system regularly so that the impact of the implementation more measurable.
4. Need to do more in-depth analysis on the use and effects system for users outside SMEs to get feedback for system maintenance.

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