



**PROCEEDING  
OF INTERNATIONAL CONFERENCE  
ON GREEN WORLD  
IN BUSINESS AND TECHNOLOGY**

3<sup>rd</sup>



*"Intellectual Property Right Based on  
Green Social Dynamics, Business and Science-Tech"*

29 March 2014  
Yogyakarta, Indonesia

ISSN 2355-553X

Published by :  
Ahmad Dahlan University  
Kapas Street No.9, Semaki, Umbul Harjo  
Yogyakarta 55165

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IN BUSINESS AND TECHNOLOGY**

*“Intellectual Property Right Based on Green Social Dynamics,  
Business and Science-TechIntellectual Property Right Based on  
Green Social Dynamics, Business and Science-Tech”*

**Author and Speaker**

Assoc. Prof. Dr. Zulkifli Mohamed Udin  
Assoc. Prof. Pharkphoom Panichayupa- karanant, Ph.D  
Anwarudin Hisyam, M.Sc., Ph.D.  
Armin A. Fullante, Ph.D.

**Reviewer**

Dr. Abdul Fadlil, M.T.  
Anton Yudhana, S.T., M.T., Ph.D.  
Dr. Rusydi Umar, M.T.  
Dr. Hj. Dwi Suhartanti, M.Si.  
Drs. Aris Thobirin, M.Si.

**Publisher**

Ahmad Dahlan University  
Jln. Kapas No. 9 Semaki, Yogyakarta 55166  
Tel. 0274-563515, Fax. 0274-564604

Proceeding of The 3<sup>nd</sup> International Conference on Green World in  
Bussiness and Technology.

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## FOREWORD FROM RECTOR OF AHMAD DAHLAN UNIVERSITY

The Guest of honor, Distinguished Delegates, Ladies and Gentlemen.

On behalf of the committee of The 3rd International Conference on Green World, Business and Technology 2014 and on my own behalf, I take great pleasure to welcome you to The 3rd International Conference on Green World, Business and Technology 2014.

The issues of global warming are causing human life to be uncomfortable. University of Ahmad Dahlan, as Center of Excellence, takes the lead to invite and bring together practitioners, scientists and environmentalists from various disciplines who are expected to contribute to the government of Indonesia and the world in preventing and overcoming all the consequences of environmental damage. Furthermore, University of Ahmad Dahlan accelerates global sustainability through organizing international conferences; publishing and dissemination of sustainable businesses, innovations and enterprises world-wide; Implementation of community development projects, and promoting & celebrating sustainable innovations.

As you may be aware, the Green Economy was the main focus of the Rio+20 Summit in Rio de Janeiro in Brazil in June 2012. As such the global community was focusing on the green economy agenda. According to UN, 2012 is a year of sustainable energy for all, therefore it is every ones' responsibility to engage in any act that produces or promotes sustainable energy in order to contribute to a green economy. The need to take action is now, as we proceed into the future. That is the reason why University of Ahmad Dahlan, since 2012, has been spearheading the production of green economies through the world clean technology summit as an important pillar in order to attain a sustainable future for all. I am pleased that this International conference has attracted a global attendance providing an opportunity for technology transfer and for participants to engage, interact with each other, exchange development contacts, inspire partnerships and pave a way forward for a sustainable future. This conference offers numerous exciting exposure and networking benefits, because of its enrichment with diversified themes to stimulate presentations, discussions, roundtable networking sessions, exhibitions, site-visits, as well as post-conference networking meetings, excursions and tourism.

It is our obligation to say thank you to all those people and organizations that are developing their nations with reduced or no harm to the environment. On this note I would like to congratulate all presenters and participants for being able to join this International conference.

Our pledge is to continue providing a global platform to promote sustainability, clean technology, as well as the production of green economies through strategic activities and events delivering global solutions.

I wish you an inspiring conference.

## **Foreword from the Chairman of the Committee ICGWBT 2014**

Assalamu'allikum.w.w.

Praise the presence of God, who has blessed us all with health, so that we can follow this ICGWBT 2014. I say thank you to all the organizers, who tel; ah work hard for the implementation ICGWBT 2014 well.

We extend our gratitude to the Dean of the Faculty of Industrial Technology, the Dean of the Faculty of Mathematics and Natural Sciences, Head of the Center for Intellectual Property Rights, the head of the Social Dynamics Study Center, which has support the fund, so ICGWBT 2014 be held on this day well and smoothly.

We extend our gratitude to the speakers, Assoc. Prof. Dr.. Zulkifli Mohamed Udin, Senior Lecturer, University Utara Malaysia (UUM); Assoc. Prof. Pharkphoom Panichayupa-karanant, Ph.D., Senior Lecturer, Prince of Songkla University; Armin A. Fullante, Ph.D., Director for Student Affairs, University of Nueva Caceres, Naga City, Philippines, for the willingness of all of you, as a speaker at this ICGWBT 2014.

This ICGWBT 2014 theme is "Intellectual Property Right Based on Green Social Dynamics, Business and Science-Tech", with a topic such topik, Agronomy (Agroindustrie, etc..). Biotechnology (Plant Tissue Culture, Microbiology, Biochemistry, etc..). Education. Environment (monitoring and modeling, policies and planning,, Clean Technologies, Green House Effect, Impacts of pollutions, etc..) Green Buildings & Smart homes, Green Economy (Accounting, finance, Marketing Business, etc..), Green Educational Technologies.Green food, Feed and Drink Technology, Green Manufacturing & Energy efficiency, Green Science (Computing trends, Biology, Chemistry, tc.), Green Technology (Engineering, Information and Communication, Technopreneurship, etc..), Health (Pharmacy, Nutrition, Medicine, etc..), Intellectual Property Right, Psychology, Religion, Sustainable development, Any other relevant conference topic.

Topics presented by Assoc. Prof. Pharkphoom Panichayupa- karanant, Ph.D, the Department of Pharmacognosy and Pharmaceutical Botany, Faculty of Pharmaceutical Sciences, Prince of Songkla University, Hat-Yai, Songkhla 90112, Thailand is "Standardization and Preparation of Active Constituent Rich Herbal Extracts". Topics presented by Dr.. ARMIN A. FULLANTE, University of Nueva Caceres ,Naga City, Philippines, is "Green Enviromental Education". Topics presented by Zulkifli Mohamed Udin, PhD, Associate Professor School of Technology Management and LogisticsUniversiti Utara Malaysia, is Intelectual

Property Right Roles In Green Business And Technology. Topics that will be delivered by Anwaruddin Hysam, M.Sc., Ph.D. Is Rare Earth Elements: Impact on Green Technology.

We extend our gratitude to the participants of the conference, either as participant and presenter, this activity may be useful for you all. In this iCGWBT 2014, attended by approximately 100 participant, and 50 call for papers as a presenter ..

In the next year, in 2015, God willing we will hold back ICGWBT that to 4, with speakers from 6 countries, namely Indonesia, Japan, Germany, the Philippines, Malaysia, and Thailand. We hope in the coming ICGWBT 2015, participants increased, followed by participants from various countries.

That's all I have to say is welcome, sorry if there are words that are less pleasing.

See you in 2015 ICGWBT to 4. Success to you all

Yogyakarta, 29th March 2019  
Chairman Program

Dr.Dwi Suhartanti.,M.Si



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## Location Based Service Application Design for Mobile Promotion SME's Product and the Nearest Bank Service Information

Merlinda Wibowo<sup>1</sup>, Herman Yuliansyah<sup>2</sup>

<sup>1,2</sup> Program Studi Teknik Informatika Universitas Ahmad Dahlan  
Jl. Prof. Dr. Soepomo, Janturan, Yogyakarta 55164.

<sup>1</sup>E-mail : merlindawibowo@gmail.com

<sup>2</sup>E-mail : herman.yuliansyah@tif.uad.ac.id

**Abstract.** The Micro, small, and medium enterprises play a significant role towards the community's economic so it should be supported and developed in order to make a tough and highly competitive economic player. Unfortunately, if we see the condition of the Micro, Small, and Medium Enterprises (SME's) in Yogyakarta city they are still in a frail condition in many aspects in developing their enterprises. Nowadays, most of the SMEs products have been recently published through SMEs exhibitions which are conducted by Communication Forum City Government in which were 14 sub-district participated. This publications effort have several obstacles in extending the publication area because right now is still limited in Yogyakarta city area

The Methodology used in this research is data collecting that is related to the research topic by observation, experiment and library research. This research analyzes the need of the application design like the customer need, SME's administrator need, its distribution and kind of bank service.

From the result of this research it can be concluded that a location based mobile promotion application design for a SME's product has been created, so it can be the marketing media of SME's product by utilising the push notification service to give the new and fast information. This application design could be used to extend the publication area and give the detailed information about the proposed location, the route, road direction so the consumer will not get lost, and also give detailed information about the SME's product, ATM (automatic Vending Machine) or the nearest branch bank so it can help the consumer while doing the transaction or whenever when they need the banking services.

**Key Words:** *location based services, mobile promotion, Micro, Small and Medium Enterprises (SME's)*

### 1 Introduction

Based on statistic data from Resource Development of Small and Medium Micro Enterprises (SME's) Yogyakarta city, the number of micro, small, and medium business sector in 2012 are 3983 central unit. SME's have several industrial branches; craft and common, Chemical and building material, metal and electronic, and Food Management, Clothing and Leather. Based on the number of SME's in Yogyakarta City, it can be seen that the potential of Micro, Small and Medium Enterprises (SME's) could give significant contribution towards the community economies so it should be supported and developed in order to make a tough and highly competitive economic player. . Unfortunately, if we see the condition of the Micro, Small, and Medium Enterprises (SME's) in Yogyakarta city still in a frail condition on many aspect to develop their enterprises. This is due to the neither capital aspect, nor its management. [1]

Publication as one way to introduce the SME's products to a wider community, by a good publication its expected that it could increase the income thus SME's can develop their business. Nowadays, most of the SME's product recently published on UMKM exhibition which is conducted by Communication Forum City Government followed by 14 sub-district. This publications effort have several obstacles in extending the publication area because right now is still limited in Yogyakarta city area [2].

The enthusiasm of the SME's product buyer is very good because the price is much cheaper than the normal price in the store. This is because they produce their own product. The location of SME's widespread in 14 sub-districts in Yogyakarta city surely make the prospective buyer will find difficulties in finding the existing central unit that they want.

Publication of SME's products done by holding a bazaar and SME's exhibitions. The purpose of this bazaar is to introduce the product of local society. Those products are the local product which have good quality and highly competitive product with other product in a national level. But, due to the lack of promotion the society do not know the product. Compare with the branded product, their quality is almost the same but the price is affordable. Therefore, this bazaar is expected to be a good promotion event by the SME's to introduce their product to the society.

Information technology especially the mobile technology could be used as a means of publication via online, by using this technology it is expected that it could extend the coverage area of publication. Nowadays, the online publication media is rapidly expanding because its easy to recognize even by the international society. From the smartphone growing with its own features, it could be used to solve the problem in SME's that is the marketing media of UMKM product which is haven't being recognized by the widespread society. Through this application, the SME's products could be easily published, fast and always give the newest information not only to the local society but also in the international level. Besides, in order to give the purposed location information, route, road signpost, and also the location of the target SME's so the buyer wouldn't get lost. Those SME's product are expected to increase the growing of economic.

## **2 Literature Review**

Research about analysis of advertising and promotion communication system using cell broadcast message BTS (Base Transceiver Station) on mobile phone for micro mobility marketing which is conducted by Firmansyah stated that marketing and advertising is one of important activity in company. Through advertising and marketing, information about the product will be delivered to the consumer. The use of information technology and telecommunication to convey related information with marketing has been used since this technology applied to fulfill the need. E-Marketing based internet and marketing telecommunication technology especially mobile marketing telecommunication technology (m-marketing) are the example of the application. Due to the application of

information technology and telecommunication especially marketing activity, thus one of the service which can be used as a means of marketing communication using the information technology and telecommunication is cell broadcast message service on BTS based on GSM (Global System for Mobile Application) communication technology. [3]

Made Sukarsa dan Gede Made Rupayana made a research about the mobile-based advertisement web design stated that nowadays the advertisement is not limited by the advertisement which is published in the printed media such as newspaper, magazine, and billboard on the roadside, nor the electronic media like radio and television, but now already extended to the cyberspace. Mobile-based classified advertising service is an SMS gateway-based services used to make an advertisement registration through SMS and published the advertisement on the internet. This service implemented using Delphi 7.0 programming language for the gateway SMS application, PHP for the web and J2ME for the mobile application. The advantage of this service are the availability of the advertisement SMS facility-based advertisement, the availability of site for publication and to manipulate advertisement data in internet (4)

### **3 Research Method**

#### **3.1 Research Subjects**

The subject of this research is the promotion of SME's product by designing the application as a marketing media for SME's product by using the Push Notification service, thus it could give new and fast information. Technology used are the geolocation, GPS and push notification from Google Cloud Messaging, so the SME's products could be easily recognized by the widespread society, fast and new also include the information of the nearest ATM machine or the bank branch so it would help the consumer while doing the transaction and need the banking service.

#### **3.2 Data Collection Method**

The data collecting Method in this research are as follows:

##### **3.2.1 Observation Method**

Observation method conducted by using direct observation of SME's Yogyakarta especially the center of SME's Kotagede (Paguyuban Senopati) and continued with the specific and systematic observation based on the real condition. Before having the approval of related party, the researcher do the field observation to ask the confirmation from the Government city on a Data Resources Development Sector of SMEs to take data of SMEs exist in Yogyakarta and to the SMEs Kotagede community to do the research on those place. Beside that, the researcher do the direct observation to ATM or the bank branches in DIY.



### **3.2.2 Experiment Method**

This method used by trying some location-based services which is similar with the location search system which will be made. The purpose is to know the lack and learn the services which is already exist.

### **3.2.3 Library Research Method**

This method is used by reading some literature such as books, magazine, journal and related article with this research topic; geolocation on Android Smartphone, Google Maps Service and also about Push Notification from Google Cloud Computing

## **4 Result Finding and Discussion**

### **4.1 Need Application Analysis**

Activities on this stage are analyzing the need to develop the mobile promotion application using the location-based service for SMEs, ATM and bank branches. Analysis activity refers to the observation result, interview, experiment and library research conducted by the researcher. The result of this system need analysis used as the base to decide the spesific search system which will be developed.

1. User
  - a. Do Find the SME's , ATM and bank branches location search through a form with many kinds of query, such as the name of SMEs, bank branch name, place, region, or the name of the expected product
  - b. Get the location and the route from the user location at that time to the SMEs location, ATM , and the expected bank branches
  - c. Get a brief information related to SMEs, ATM, and the nearest branch bank using the Push notification from Google Cloud Computing.
  - d. Get the detailed information about the desired SMEs, like the introduction of SMEs, phone number, address, and the promoted product (whether its new or old product with the discount offered)
  - e. Spread the short information about SMEs, ATM and the Bank Branch office with its location throught the social media like facebook or twitter
2. SMEs Administrator
  - a. Add the data of SMEs, ATM, and branch bank office location based on its place coordinate using the Google Maps, information of the promoted product (new product, discount, new event and etc) and category
  - b. Change and erase the location data of SMEs. ATM and branch bank office, information of the promoted product (new product, discount, new event and etc) and category
3. Bank in Yogyakarta Special Regions
  - a. Mapping the bank data services DIY in a form of ATM and branch bank so it can fullfill the need of society towards the banking services.
  - b. As the new services innovation which support the SMEs community.

- c. This system need the smartphone that support the geolocation like Android Smartphone.

## 4.2 Application Design

### 4.2.1 Workflow application

In the application that will be designed, the owner of SMEs fill the data/information related to the promoted product. This data could be connected with the Google Maps services to determine the coordinate location on the map. The users could access this application to get all the SMEs information using mobile devices. This mobile application could access all information which is exist in a web system as illustrated in Figure 1.



Figure 1 Application Workflow

### 4.2.2 Information Workflow

Based on application workflow shown in Figure 1, so it could illustrate the information workflow that will be happened, that is the owner of SMEs will input the data and save it into the database. Then, using the Push notifications facility, the data will be transferred into the mobile application so the user could see the required data.



Figure 2 Information Workflow

### 4.2.3 Grafical User Interface

1. Splashscreen interface. Figure 3 is the start up screen when the application opened.



**Figure 3** *Splashscreen* Interface



**Figure 4** Menu Interface

2. Main Menu Application Interface. Figure 4 is the main menu application interface. On those main menu have two facilities to see the information related to SMEs and Bank services-related information
3. SMEs interface. Figure 5 show the nearest SMEs with the user's position. The searching could be based on the appropriate keywords



**Figure 5** The nearest SMEs interface



**Figure 6** Required menu when one of SMEs location chosen

4. Required Menu when one of the SMEs location chosen.
5. SMEs Map Interface. Figure 7 interface show the map from SMEs location, here the user could know the nearest route to the targeted SMEs location.



**Figure 7** SMEs Map Interface



**Figure 8** Main Product Menu Interface

6. Main Product Interface Menu. Figure 8 show the chosen promoted product.

7. New Product Menu Interface. Figure 9 show the newest product which promoted by the chosen SMEs.



**Figure 9** The new Product Menu Interface



**Figure 10** The detailed product interface

8. Detail Product Interface. The detailed interface from one of the SMEs product as in Figure 10.  
9. The newest Information Menu Interface. Figure 11 show the newest information offered by the business owner.



**Figure 11** The newest Information Menu Interface



**Figure 12** Bank Services Map Interface

10. Bank Services Map Interface. Show in Figure 12.  
11. Push Notification Information Interface. Show in Figure 13.



**Figure 13** Push Notification Information Interface

#### 4.2.4 Web service Grafic User Interface

1. Login Menu Interface. Figure 14, the interface when administrator enter the web service page.



Figure 14 Login Page Interface

2. Admin Dashboard Interface. Figure 15 is the admin dashboard interface. Admin could manage the existing data.

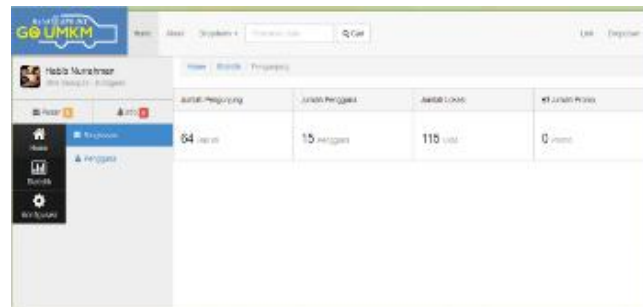


Figure 15 Admin Dashboard Interface

3. The Interface Visitor Statistic Data. The user of SMEs could see the visitor statistic data as seen in Figure 16.



Figure 16 The visitor Statistic Data Interface

### 4.3 Application Testing

#### 4.3.1 Black Box Test.

Black Box test is a testing process done by the people in SMEs Kotagede central business to measure the level of validity and stability location-based service for

SMEs mobile promotion and the nearest bank service information by observe the output from every suggestion.

#### 4.3.2 Alpha Test.

Alpha test is the testing system done by the smartphone user. This testing system could be seen from the graphical User Interface convenience and the course of the existing facilities. Alpha test done by 10 Android Smartphone user located in the SMEs Kotagede, Yogyakarta central nearby.

## 5 Conclusion

Based on the research finding and discussion, the conclusion are as follows:

1. Has been made an mobile promotion application design using the location-based SMEs product so it will be the marketing media for the SMEs products by utilize the push notification service to give the newest information.
2. This application design could extend the publication area and give the information about the targeted location, route, direction thus the prospective buyer wouldn't get lost and also giving the detailed information about the SMEs product.
3. This design application also could give the information about the ATM location or the nearest branch bank so it can help the consumer when they do the transaction or when they need the bank services.

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