

## Design of Location-based User Customized Local Information System

Jooyoung Ko<sup>1</sup>, Eunmi Jung<sup>1</sup>, Andrew G. Kim<sup>2</sup>,  
Hyenki Kim<sup>1</sup>

<sup>1</sup> Dept. of Multimedia Engineering, Andong National University,  
388 Seongcheon-Dong, Andong-City, Gyeongsangbuk-Do, Republic of Korea  
sonice@andong.ac.kr, jeilc@naver.com, hkkim@anu.ac.kr

<sup>2</sup> Appsol.kr INC, 2<sup>nd</sup> floor, 61, Sicheong-ro, Yeongju-si, Gyeongsangbuk-do, Korea  
geoner@appsol.kr

<sup>1</sup>Corresponding author: Hyenki Kim, hkkim@anu.ac.kr

**Abstract.** These days, a large number of people are using a smartphone regardless of their gender and age. As smartphones have become mundane, many services are provided in association with smartphones. The main purposes of mobile internet are to obtain various data and information and to communicate with others. On that account, this study designed the system that would provide customized local information using user location data

**Keywords:** Location based system, Smartphone, Local information provision system

### 1 Introduction

According to the report published by the National Internet Development Agency of Korea, learning data and information and communication were found to account for the largest proportion in terms of use purpose of mobile Internet [1].

As such, the use of smartphone and mobile Internet has become a tool that is often used in our daily lives.

In regard to the previous studies on the use of smartphone, the study of Hwang [2] examined the current usage of smartphone among the female university students. Online community was found to be the most frequently used service for the female university students. In contrast, information search was the most popular service among the general users. The number of app-based services has increased in recent days. Diverse app related studies have been conducted. The study of Lee [3] and Park [4] researched the customer management system construction method for location-based applications. In addition, several studies have examined the Internet virtual space. The study of Lee [5] showed that providing information taking place in such virtual space as Internet blog would have a significant impact on real spaces and also virtual spaces and real spaces were interacting with each other. This study aims to provide local news and living information on the basis of user location. Furthermore,

this study aims to provide employment information based on the aforementioned local news and living information. Lastly, this study aims to design a system to provide customized information that allows businesses and consumers to make direct transactions between them. The proposed system is a customized information system for efficient management, which forms a suitable system for various users including information providers, advertisers, businesses and general users. This thesis is expected to help develop a customized system suitable for different types of users.

## 2 Design of Location-based Customized Local Information System

### 2.1 Structure of local information system

The proposed system provides local information. In addition, businesses can utilize this system for the purposes of advertising their business and selling their products. Furthermore, users can receive the best information that they can get at a particular location on the basis of their location information. Therefore, it is necessary to build a system structure and environment suitable for diverse users. Figure 1 shows the structure of the system proposed in this study.

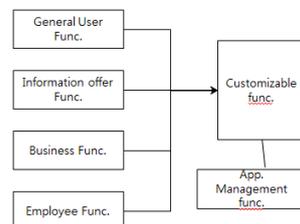


Fig. 1. The structure of the proposed system

The proposed system has a structure in which various types of users can access and provide and receive information. Database should also be designed and managed in an efficient manner.

## 3 Design of user interface in the proposed system

This study first created an app that reflected the system proposed in this study. This app allows users to receive information. This app offers the screen for users, the screen for information providers, the screen for businesses and the screen for employees. Moreover, the functions customized for each of the aforementioned

parties were developed. Figure 2 shows the app screen for users, information offer, business, and employee.



Fig. 2. App Screen for users, information offer, business, and employee

This app also allows users to open their respective screen in order to use relevant functions. Those food delivery businesses need the app screen for businesses and the app screen for employees. The app screen for businesses need the functions for providing restaurant related advertising and food introduction. Moreover, they need a function to manage their employees and confirm work progress. As for employees, they need to manage two cases: joining a company and leaving a company. When a person joins a company, a business should register this employee. When a person leaves a company, a business should process his or her retirement in order to remove retired employee information from database. This study aims to provide an efficient work environment for businesses by offering suitable app functions and database for diverse users. Add to this, this study offers locally available information on the basis of user location. Figure 3 shows the app screen for the location-based service.

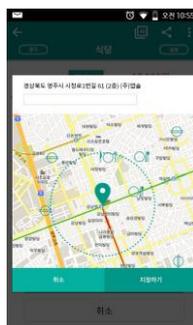


Fig. 3. Location-based services app screen

## 4 Conclusion

Smartphone is widely used regardless of region and age. Indeed, smartphone users enjoy various services via many different apps. This study designed the system that provided customized local information for diverse users by leveraging a smartphone app. In particular, this app was designed to accommodate various types of users including general users, businesses, employees and information providers. Moreover, the database was designed to enable users to access diverse information so that they could receive necessary information. Especially, this app separated the access phases to database for business owners and employees. In this way, business owners could manage their employees in an efficient manner. Lastly, general users could find the distance information in their respective region, from which they could get relevant services on the basis of their location. That is, relevant services could be provided to general users in an efficient manner. It is expected that the system designed in this study can provide suitable functions for many different users and environments.

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