

MOBILE LIFE PLATFORM BASED ON GIS

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Abstract: *This paper presented the design and implementation of a mobile life platform. Through Meta search engine and GIS technology, the platform has the ability of searching and gathering massive living information and displaying the information in the map. Living information of the platform has been reorganized, and all of the data have been saved into spatial database, thus presentation of information based on GIS technology become vivid to meet the needs of user to get accuracy and practical information. The paper first introduces the main features of the platform and system architecture, meanwhile the logical layers of the platform are introduced and the functions of every layer are described in detail. Then the paper described the brief function of client in the point of users, and the implement of GIS is analyzed specially. Final section concludes the paper.*

Key words: *mobile; platform; GIS; spatial database; Meta search engine*

I INTRODUCTION

With the development of wireless communication technology, capacity of mobile terminal to process and store information has been greatly improved, wireless network can carry high speed and large flow of data services. Mobile terminal can be used in office, word processing and other complex logic business. Most Telecom Carriers focus on development of data services^[1]. Telecom Carriers want to promote data services through the usage of intelligent terminal settings menu, increase ARPU (Average Revenue per User) value. The design and implement of a mobile life platform based on GIS technology is presented in the paper. Through Meta search engine and GIS technology, the platform has the ability of searching and gathering massive living information and displaying the information in the map. Living information of the platform has been reorganized, and all of the data have been saved into spatial database, thus presentation of information based on GIS technology become vivid to meet the needs of user to get accuracy and practical information.

The paper is organized as following: In section II, the paper introduces main features of the platform, design principles and system composition, meanwhile the logical and physical layers of the platform are introduced and the functions of every layer are described in detail. In section III, the paper described the brief function of client in the point of users, and

the implement of geographic information system technology is analyzed specially. In section IV, the thought of how to resolve the securities of the platform is described. And finally, we conclude this paper in section V.

II MAIN FEATURE and ARCHITECTURE of SYSTEM

A. Main Feature

Brief concept of mobile life platform is “mobile is the service”. We committed to creating a comprehensive platform for mobile life, help people access and share true and accurate information to make life more wonderful.

It has the following features :

- 1) *Convenient*: no matter where you are, if you have a cell phone to access the Internet, you can query information you want.
- 2) *Rich*: provide rich business information, user can browse mass of living information.
- 3) *Human touch service*: estimate distance between user and target business, user can browse to merchant via only pressing a key, merchant can send business information to the mobile terminal automatically and accurately.
- 4) *Friendly-interface*: Offer localization services, multimedia (text, image, audio and video) services, mobile blog, dating services and social services, etc.

B. Architecture of System

The platform is composed of background management system, client software. The architecture of system is shown as Fig 1.

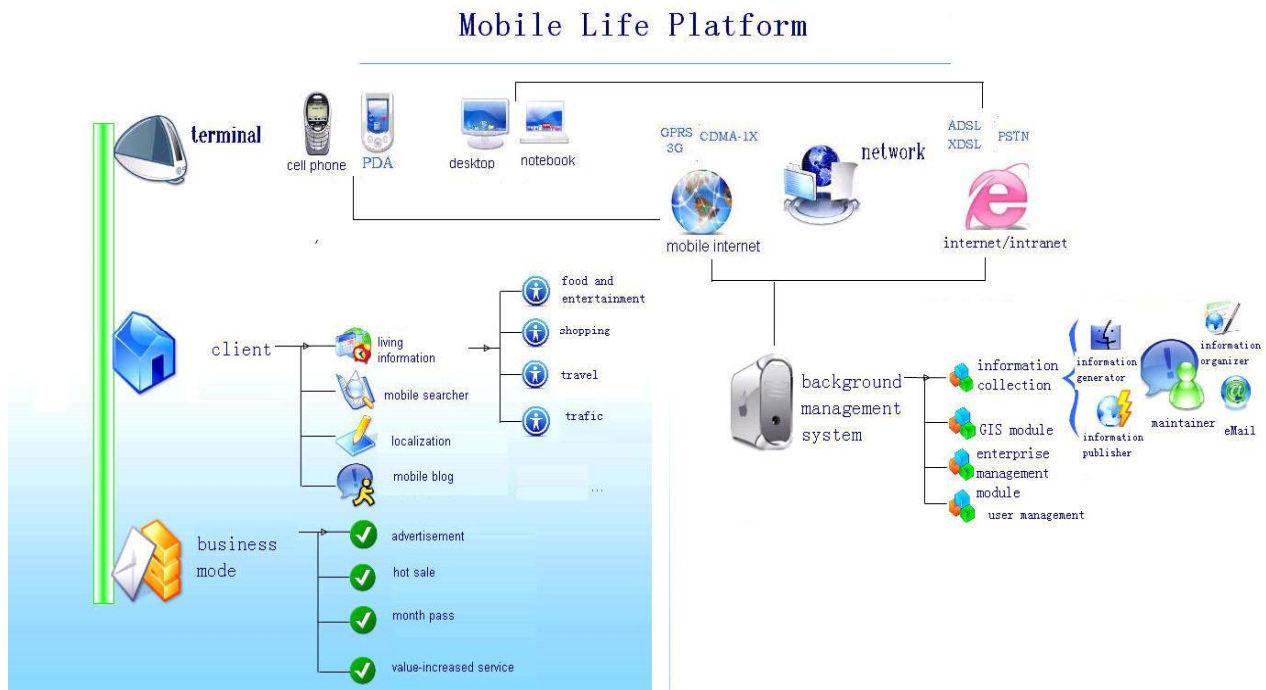


Figure 1. The architecture of system

Background management system concludes information collection subsystem, GIS module, enterprise management module, user management module.

Information collection has three components: Information Generator of the platform search topics related through network information search technology, computer sort information primarily. Information organizer of platform will

organized the information and save the information into spatial database. Information publisher has two functions: Firstly, push the information to terminal of customer, secondly, provide on-demand services. Maintainer can carry on human intervention.

GIS module reorganized data according regional characteristics, behavioral characteristics, personality traits, age and interactive features, and all of the data have been saved into spatial database. Enterprise management module is responsible for maintenance of enterprise information. User management module carries on registration and Integration Statistics of user.

Type of user terminal varied. User who holds cell phone or PDA can access the services via mobile internet, User who uses desktop or notebook can access the services via internet. In the view of user, they can enjoy the service of localization, mobile blog, mobile searcher, and living information. Earnings can be gotten by advertisements of business, monthly fee of user, other income from value-increased service.

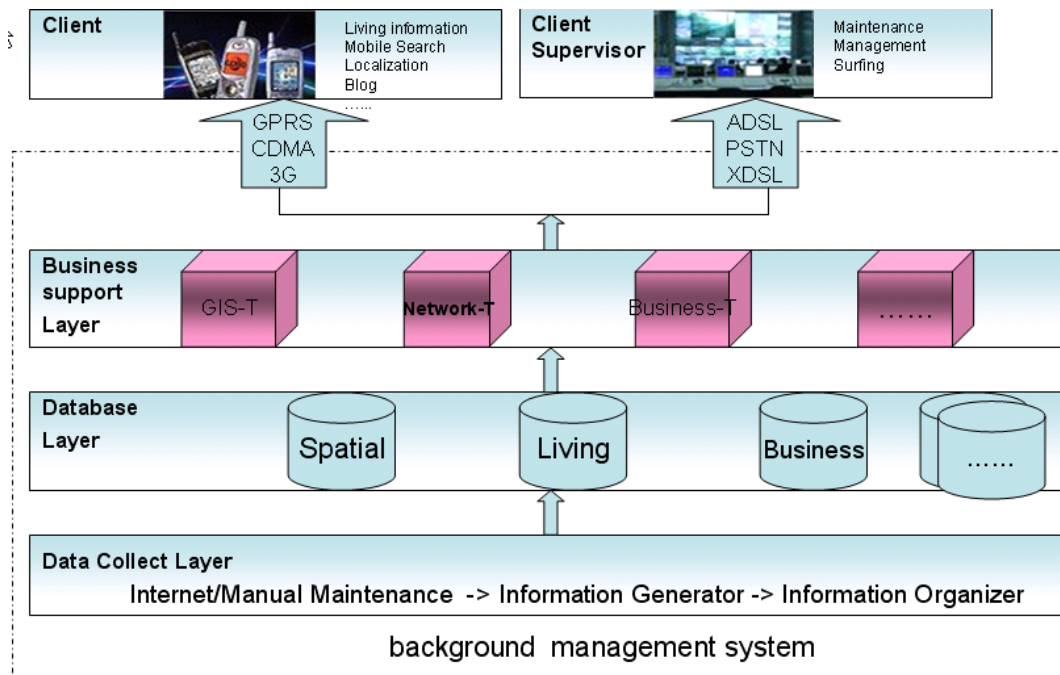


Figure 2. Logical layers of platform

Logical layers of the platform are shown as Fig 2. Background management system have three layers: Data collect layer, database layer, business support layer. Functions of every layer list as following:

Data collect layer: The source of data is from internet pages and can be maintained by supervisor. Information generator search and gather massive living information from internet, meanwhile, supervisor can input some business information manually. The original data will be reorganized by information organizer as data with regional characteristics, behavioral characteristics, personality traits, age and interactive features, and all of the data will be saved into spatial database and other database.

Database layer: all the information is saved into database because of good performance of database. Information is saved into different database according their means.

Business support layer: the layer is a important layer because it solve common and key problems such as network communicate, GIS response, interface format, etc.

Client: Client can explore into client pages to maintain their data such as registration information, set their appreciation, etc, they can surf the web page via WAP.

III CLIENT SOFTWARE

The section will describe the client software in the view of user. The function of client software is shown as Fig 3.

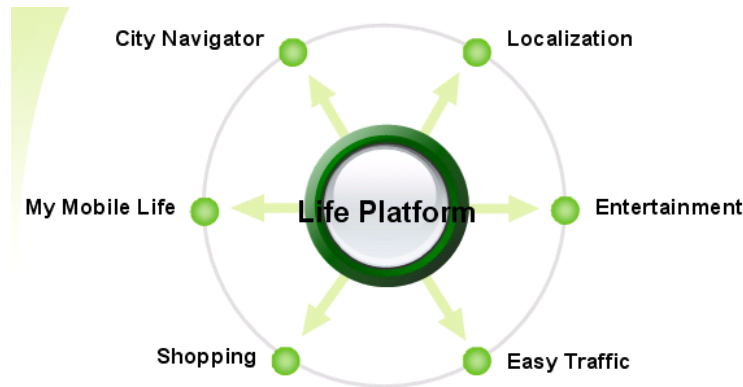


Figure 3. Schematic Diagram of client software

A. CITY NAVIGATOR

When users click the menu item, the default city is currently located city. At the same time a list of other cities is listed to facilitate the user to switch. User can query the current city's weather forecast, the latest city information, transportation and tourism information, etc.

B. LOCALIZATION

The module mainly achieves the real-time localization, and provides dynamically living-related services link near the current location of user. Localization can be achieved by two ways: 1 Based on GPS of cell phone; 2 If cell phone hasn't GPS function, using CELL ID (Mobile Station) to localization [2].

C. MY MOBILE LIFE

The module have user life as center, and have the e-map as a carrier to provide mobile dating, mobile blog, shopping, music, video, life and other functions of geographical labels. E-map can carry on live-update via mobile network.

The paper doesn't describe other function detail because of the capacity of paper.

IV CASE STUDY

The section introduce implement of the platform. A java web application illustrates the use of the platform. The following are the screenshots of application.



1. 周边搜索;
2. 从此处到某地;
3. 附近好友提示;
4. 记录我的生活标签

Figure 4. localization



Figure 5. City Navigator



Figure 6. entertainment

V CONCLUSION

The paper presents the design and implement of mobile life platform based on GIS technology, the platform can help mobile user to get accurate and rich information. The paper gives a whole and practice solution for living application of mobile user, the solution can be extended to other mobile application after adjusting.

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