

Research on the University Student Service System Based on Crowdsourcing

Haifeng Li and Wenjie Chen *

Dalian Jiaotong University, Dalian, Liaoning, China

*Corresponding author

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Abstract. As a new business model, crowdsourcing brings together the strength of the public to solve problems, which embodies the rise of co-creating value. Students need more and more information to get and store in campus life. The traditional campus model can not meet the needs of students. Based on the above background, this paper applies crowdsourcing technology to university campus, and mainly constructs a college student service system based on crowdsourcing. The system takes the mobile phone users in the campus as the mobile sensor nodes, and uses the collection of pictures, videos, images and other information to obtain all kinds of information needed in the campus, so as to help students obtain all kinds of information in the campus in a timely, efficient and comprehensive manner.

Research Background and Purpose

Research Background

With the rapid development of campus information construction, many colleges and universities have established and applied digital campus platform, in which, each college or department also has its own website or business system. These system platforms provide basic teaching management services, which bring convenience to teachers and students to a certain extent, but also bring some problems.

With the popularity of smart phones on campus and the coverage of all kinds of wired and wireless networks, smart phones and other mobile terminal devices integrate a variety of sensors, which have become an important tool for people to obtain all kinds of information, and play an increasingly important role in the Internet era. Using sensors in mobile terminals to provide human centered perception and computing has become a trend of social development. Teachers and students more expect to use the mobile terminal platform, not bound to sit in front of the computer, and make full use of the fragmented time to get information at any time. In this context, this paper applies crowdsourcing technology to university campus, uses crowdsourcing to build a college student service system based on crowdsourcing, mainly studies and solves the above problems.

Research Objective

In the Internet era, crowdsourcing mainly shows that it relies on the network platform to give full play to the creative value of users' diversified tacit knowledge resources, so as to realize the platform for users to raise questions and obtain solutions. With the continuous growth of user's knowledge level and ability, the desire to participate in creation and sharing is becoming stronger and stronger, especially with the continuous maturity of social network applications and communities. With the help of crowdsourcing, users can discover knowledge and solve problems.

Based on the needs of teachers and students' life and learning services, by means of crowdsourcing, through the collection of information resources, intelligent processing of information, and through new carriers of smart terminals such as mobile phones, it provides teachers and students with various functions such as intelligent application, campus activity information, news information push, and campus hot topic discovery. This not only meets the needs of college teachers and students who generally use mobile smart phones, but also relates to the innovation of campus management and a

systematic innovative work to improve the quality of life of teachers and students, which is of great educational significance.

Overview of Relevant Theoretical Knowledge

The Concept of Crowdsourcing

Crowdsourcing was first proposed by Jeff Howe in June 2006, which is another important business concept after the "long tail theory". According to Jeff Howe, crowdsourcing refers to that enterprises and public institutions outsource work tasks originally performed by their own employees to other non specific social masses through free and voluntary means. It breaks through the traditional organization mode and production mode, replaces the contract system with the incentive mechanism, and gives full play to the initiative and creativity of the grassroots masses.

The Main Role of Crowdsourcing

In the current research, the participants of crowdsourcing are generally divided into three roles, namely, the employer, the crowdsourcing intermediary and the contractor, as shown in Figure 1.

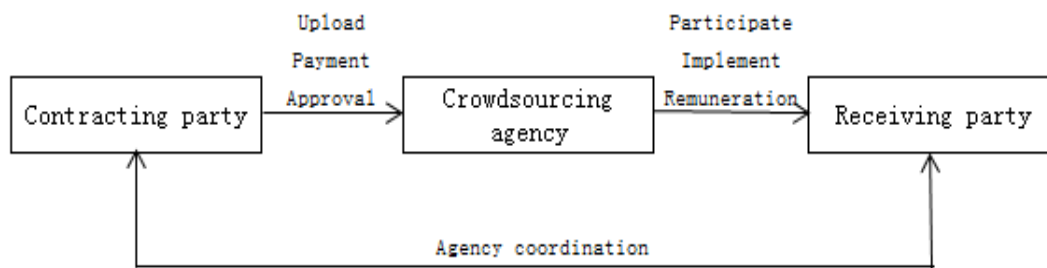


Figure 1. The main role of crowdsourcing

In our system, the employer is an Internet user, either a professional or an amateur. The receiver is also an Internet user, who knows the task situation on the crowdsourcing intermediary, puts forward the work application and the specific help that needs to be provided, performs the crowdsourcing task according to the requirements, keeps in touch with the employer in the process, and timely informs the work progress. After the task is completed, publish the final results on the crowdsourcing agency, evaluate the completion quality of the task, and accept rewards. Crowdsourcing intermediary is the communication platform between the employer and the receiver.

Characteristics of Crowdsourcing

The openness and boundlessness of crowdsourcing. Anyone can participate in crowdsourcing. ② the dynamics of crowdsourcing. The organizational structure in the relationship network changes dynamically according to the degree of member participation. The participants have strong autonomy. Crowdsourcing advocates the social culture of freedom, equality and innovation awareness, which has strong initiative and represents a self driving relationship. Participants choose to participate and innovate rationally according to their own needs.

Users participate in creativity. Users are the center of innovation, and user created content is a resource tool. Most of these content is spread through the Internet, including videos, blogs, user forum posts, etc., which contains the concept of creating value with users. The crowdsourcing product has five layers: general product, expanded product, potential product, expected product and core interest product. They all support users to participate in the creation personally

Operation Mode of Crowdsourcing

It is not difficult to find that the realization of crowdsourcing project is inseparable from two key

elements, namely the employer and the contractor. The employer is the initiator of crowdsourcing, and individuals, organizations and institutions can all be the employer. The time-consuming and labor-consuming tasks can be broken down into simple task units and published to self built platforms or third-party platforms. After the user completes the task, the scheme will be submitted to the server of the employer in time for collection. The crowdsourcing community is the receiving party. It is oriented to the public network dominated by amateurs. Based on the common interests, knowledge, tools and the community interaction services provided by the employer for users, it has the functions of interaction, participation and creation.

Module Design of University Student Service System Based on Crowdsourcing

The student service system based on crowdsourcing is mainly aimed at the students and teachers of the whole university. For the convenience of using and operating the system functions, we can further refine the functional requirements of each subsystem of the system, including the university library module, the campus activity information management module and the life service module.

University Library Module

After more than ten years of transformation, the library has undergone tremendous changes in service platform, literature carrier, reader management, information communication and other aspects, but its knowledge service mode is still lagging behind. Therefore, it is necessary and feasible to introduce crowdsourcing into the service of traditional university library.

Virtual reference service. The starting point is to ask questions from users, rely on the interaction between users and the team, find solutions to problems and provide them to users. Among them, the professional consulting team is composed of consultants and subject librarians with domain expertise, who go deep into users, so as to serve users.

Personalized knowledge customization and push service. Through close contact with each user, collecting, sorting out and mining user interest patterns, establishing user knowledge base to accurately push the most needed knowledge for users. Solutions to existing problems

Campus Activity Information Management Module

Functions of information management in university activities: users can search quickly according to the time type. Including real-time event notification and future event notification, etc. to get the latest information of the event. By using the power of the public, the situation of missing activity information is avoided. Users can quickly find by activity type. Including the recruitment, academic knowledge lectures, community activities, etc. of each college to learn more about the activities. Users can quickly search according to the activity site. Including indoor activities and outdoor activities, you can participate in activities in different places according to your own situation.

Functions in the information of community activities: Timely release of activity information. Club members can query the information of club activities according to key words such as activity type, activity time and activity location, so as to participate in club activities in time. Make creative proposals. With the help of people's power, according to external factors (such as weather conditions, weekends, commemorative days), provide the theme and time of the activities. It can interact with the school's award-winning system and encourage everyone to actively participate in it. Opinion collection. Through the release of crowdsourcing tasks, we can understand the needs of students for the community, collect and obtain students' suggestions, and improve the insufficient areas.

Life Service Module

The function of crowdsourcing in clothing, food, housing and transportation: According to today's weather conditions, teachers and students can publish on the platform to describe the cold and hot degree of the current weather, and provide some good reference opinions for the friends who have not yet gone out to wear clothes. Recommend food according to personal eating preferences and customs. According to the type of food, the recommended high praise rate, high discount etc.

System Technical Method and Feasibility Analysis

Mobile App Development Technology

To develop a mobile app application software, there are several steps, which are simply requirements、prototype、design、front and rear end test online. The specific work of each development process is as follows.

User demand analysis: discuss and study the functions and requirements of the crowdsourcing based college student service system, evaluate its feasibility, and divide the ideas step by step, subdivide them into specific demand function points.

System function prototype design: according to the defined requirements, plan app functions, design pages and overall layout, and output the prototype design drawings of each page of APP according to the jump logic of each page.

UI visual design: according to the prototype of the system function, the UI designer uses art pictures to display and cut the pictures, carries out the color matching and design of UI interface, and finally produces high fidelity design renderings of each app page of the system. The UI rendering is basically the same as the final app's page effect.

App development: after the app developers get the UI design drawings, they will develop the functions and interfaces according to the renderings of each UI interface. Use Mysql to build the database and develop the server, App and PC.

App project testing: after the development of APP functions, testers will test the whole app and find some problems in the program. Generally, developers need to debug the problems found by testers synchronously.

Publish to the store. IOS is submitted to Apple's app store, and Android is submitted to major android app stores in China. After the project test, the app needs to be packaged and signed.

Feasibility Analysis

The emergence and development of crowdsourcing model benefits from the popularity of the network and the enhancement of the awareness of network users' participation. The development of information environment has provided strong support for the application of crowdsourcing model in the construction of characteristic resources:

The popularity of Internet is very high. At the same time, it is convenient for users to participate in the construction of smart campus resources.

The implementation of Web 2.0 technology and idea can cultivate user participation. When users participate in the survey of library information organization mode under the environment of Web 2.0, it is found that more than 40% of users are familiar with Web2.0 technologies such as microblog, blog, Wiki, tag, etc., more than 36% of users use these technologies in daily life, and more than 50% of users are willing to participate in them. It can be seen that users have a high degree of recognition and willingness to participate in information organizations.

The new generation of users pay more attention to the realization of self-worth. Users are not satisfied with passive waiting, they are more willing to create content actively and pay more attention to the realization of self-worth. And crowdsourcing just caters to the needs of users.

Summary

Based on the mobile Internet information platform, according to the needs of university teachers and students' study and life service, this paper designs and constructs a university student service system based on crowdsourcing, which integrates library information, campus activity information push notice, life service information and other functions, and brings convenience to the campus life of Teachers and students. In this paper, can be summarized as follows.

Considering the special characteristics of colleges and universities, as an essential teaching resource, the library is a feasible and meaningful new idea in the network era, which includes the concept of crowdsourcing and relies on the innovation of the public. University library plays an

indispensable role in the field of teaching and scientific research. It uses its own resources to carry out subject services, provides users with more scientific and structured subject knowledge, and provides targeted resource services for users in different disciplines or research fields in a timely and efficient manner. The establishment of information sharing and exchange platform and the expansion of learning space can effectively improve the service demand and quality of public libraries.

Based on the inspiration of the events that have experienced the campus activities and social activities, such as the blocking and promotion of untimely events, and the feelings of events closely related to people's lives, such as clothing, food, housing and transportation, express delivery, etc., crowdsourcing and life are closely linked to facilitate our lives. At the same time, for the community, in the mobile network environment, the construction of the university community management platform actively mobilized the enthusiasm of students' self-development, stimulated the potential creativity, and promoted the vigorous development of the university community work.

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