

## Research on the construction path of regional target-based consumer navigation platform based on Internet of Things

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*Abstract: In the era of the proliferation of shopping software and a decline in the real economy, based on the development of the Internet of things; good prospects and efficient allocation of economic resources. To realize regional significance of the development of regional economy and consumers can choose faster and better to adapted for the purpose. We also choose to base on the regional type target consumer navigation platform of the Internet of things - an entity shop in tandem to navigation research on the construction path of small program.*

*Keywords: Internet of Things, regional consumption navigation platform, intelligent target consumption, user portrait, feasibility analysis.*

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### 1. INTRODUCTION

In the era of the flood of shopping software, physical stores are fading out of the sight of young people. It is difficult to shop around in life, and many times the results are not satisfactory. On the other hand, when shopping online, you only need to move your fingers and turn your eyes, and it takes ten minutes to choose the products you are satisfied with, so more and more people are willing to choose online shopping instead of physical store shopping. At the same time, however, with the emergence of online shopping, the information of merchants and users is asymmetric, the logistics process is complicated, the process is cumbersome, and the time and space span is large. Problems in the logistics process, such as difficulty in accountability, and users' unfamiliarity with the region or urgent demand-users are more in line with the actual demand for goods in the region, resulting in corresponding platform gaps and demands in the market. The Internet of Things is the most realistic trend at present.

For the purpose that consumers can choose better products faster, we choose to study the regional goal-oriented consumer navigation platform based on the Internet of Things-a small program that links navigation with physical stores. Users can search for the required products according to their own needs. The applet will search the shops selling the products, and attach the physical photos of

the products sold by each store. At the same time, the distance will be displayed next to it. Click the distance arrow to display the navigation to the store. Consumers can realize the demands of purchasing around, which is also conducive to developing the real economy in the urban area where they are located, alleviating the current decline of physical stores caused by e-commerce and reducing people's excessive dependence on online shopping software. In a sense, I also hope that everyone can not only stay at home, but also learn more about where they live while shopping. Not only that, many people will encounter the problem of missing various items when they go to new places for business or tourism, they are unfamiliar with local conditions, online shopping is inaccurate or time can't keep up. At this time, the regional target-oriented consumer navigation platform based on the Internet of Things will play its role. Among different choices of consumers, the regional target-oriented consumer navigation platform based on the Internet of Things will be the most cost-effective choice for consumers. Consumers can meet the characteristics of multi-choice, multi-comparison, quick response in time and space at the same time, and can meet the needs of consumers to the greatest extent.

## **2. MARKET ANALYSIS**

### **2.1 Consumer Market Analysis**

The Internet of Things——The "An Invisible Net Preventing All Escape" Connecting All Things "Cloud" life has gradually become the mainstream of daily life. As the engine of promoting the progress of the times, the Internet of things has also covered people's daily life, accelerated the in-depth integrated development of "cloud" consumption, and added vitality to the innovative development of digital economy. Applications of the Internet of things are everywhere, ranging from factory equipment detection and rail train monitoring to smart home, smart curtain and smart bracelet. Business giants such as Qualcomm, Tesla, Amazon have also turned their perspectives to the Internet of things. Internet of things technology is constantly accumulating and upgrading, and the corresponding industrial chain is in the stage of gradual improvement and maturity. However, in view of the influence of many factors such as science and technology, consumer concept and policy orientation, how to realize the coordinated development of alternating Internet of things consumption in the stage of consumption upgrading and transformation has become an important problem in the field of consumption and Internet of things development in the new era.

E-commerce Network Platform——"The First choice" For Consumer Shopping

The development of the Internet has changed people's living and consumption habits. More and more online consumption methods and Reference selection apps are also favored, becoming the "first choice" for consumer shopping. According to the 45th statistical report on China's Internet Development released by China Internet Information Center, the number of Internet users in China has reached 904 million, more than 710 million online shopping users, and the proportion of mobile Internet access is approximately 99.3%. E-commerce network platform has gradually become the preferred factor for people to consume, and reference and selection apps have quietly changed people's daily life. At the same time, due to the rapid development of digital information technology and the continuous improvement of public demand, the coverage of such apps has gradually expanded, and gradually developed from simple food, drink and travel information integration to evaluation and

reference, Experience integration, store search service and other innovative forms have penetrated all walks of life.

#### Personalized Service--The "Coordinated Development" of Consumer Market

In addition to the traditional online shopping platform, the new offline consumption has also become a new increment of the market, better meeting the personalized and diversified needs of consumers. With the development of offline experience stores, users can not only compare and choose between different websites and sellers' stores, but also buy their favorite goods in the way of on-the-spot feeling through offline experience. In offline shopping, many young consumers prefer personalized goods, while older consumers pay more attention to high-quality service experience. A variety of consumer needs also directly stimulate other consumption. How to realize the coordinated development of personalized and accurate services and the consumer market has also become an urgent problem to be considered in the field of new generation consumption.

#### The Upsurge of Nostalgic Shop Exploration -- The "Contrarian Trend" of Real Consumption

Nostalgic consumption has become a trend. The strong return of "nostalgic style" makes major platforms launch nostalgic series products one after another, so as to promote new products. From the perspective of consumers, their consumption is more inclined to the traditional nostalgic style and prefer to find "good stores in deep alleys". Therefore, the upsurge of "exploring stores" in major platforms continues to emerge. Shop exploration is a business form that shows the commodity information or service attitude of shops to the public by means of on-the-spot investigation, so as to improve the exposure rate, realize customer drainage and obtain benefits. In the contemporary fast-paced environment, nostalgic exploration stores have become a major driving force for the development of physical consumption. The traditional retail industry innovates and operates in this way of leisure and entertainment, meets the spiritual needs of consumers in a unique way, re attracts consumers, and explores a road of "going against the trend".

## **2.2 Consumer Portrait**

The concept of user portrait was first proposed by Cooper, the "father of interaction design", which refers to the establishment of target user model for a series of real data to abstract the implicit needs of users by analyzing the data of users' living habits, social attributes and consumption preferences, and show them visually through continuous correction and feedback[1]. After strictly controlling the survey quality online and offline, we conducted a questionnaire and interview survey on the target population in the Yangtze River Delta, statistically analyzed the survey results, and obtained the portrait of consumer interest and satisfaction in Figure 1. As can be seen from Figure 1, for this consumption oriented platform, women have higher acceptance and interest than men. This shows that this consumption oriented platform is more attractive to women's social groups, which may be due to women being more sensitive to consumption and paying more attention to consumer services. It also shows that more attention should be paid to the user experience of the target female groups.

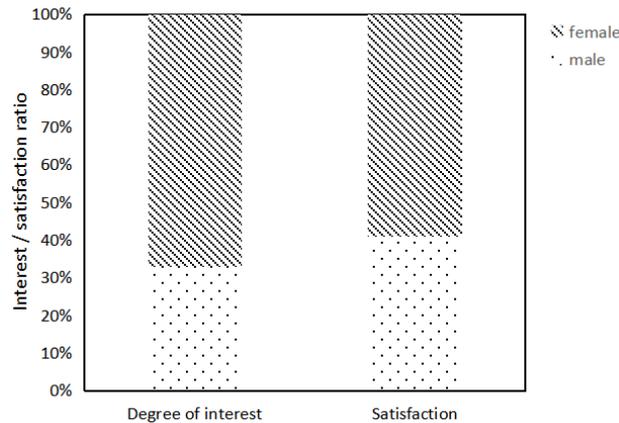


Figure 1: Portrait of Consumer Interest and Satisfaction

### 2.3 The feasibility analysis

The investment necessity

#### (1) The investment Environment Analysis

The Internet of Things (IoT) is an "important productivity" that drives the rapid development of society and is another trillion-dollar market after the communication network. IOT covers various fields from transportation and logistics to smart home, and various applications from sensors, cloud computing to controllers. It built up a comprehensive advantage of superior technology, good quality, high professionalism, low cost, and full satisfaction of customers' needs, and are able to continuously provide competitive products and services to our customers. Compared to intelligent traffic ERP (bus rapid transit system) management, smart parking or digital home with one multi-functional remote control of all terminals, etc. The shopping platform with urgent demand, market prospects and broad user demand, in the context of the epidemic era can also achieve rapid matching of users and merchants, users and products in the physical space, reducing time costs, geographic costs, etc. With a very good investment environment as well as the need for investment.

#### (2) Market Research

Online shopping platform is developing rapidly, but at the same time has the characteristics of untrue data, doubtful product quality, asymmetric supply and demand information, multi-dimensional extension of time and space, complicated processes, and many processes in the middle way thus leading to online shopping problems, and the emergence of problems difficult to solve. The disadvantage of physical shopping compared to online shopping is that it is not possible to achieve multiple comparisons of the same product selection, which requires delays in manpower and time, etc. The construction of the regional target-based consumer navigation platform based on the Internet of Things we studied can comprehensively solve most of the shortcomings of the above-mentioned problems, and is precisely an effective platform for solving user's needs and time and space constraints as well as information asymmetry of user businesses to products at present. In the user's time urgency, the need to quickly find the target object after comparison as well as the demand for real experience, ensure product quality, to achieve the user's needs to meet the situation. In the same time to make up for the shortcomings of online shopping and physical shopping that is competitive. Our platform will focus on the views and attitudes of youth groups towards target-oriented consumer navigation platforms, and use youth groups as the main users. The youth group has the characteristics of fast acceptance of new things, strong adaptability, high ability to use the platform, strong ability to

adapt to the general background, and has a certain Internet platform foundation, etc. For the promotion and operation of the platform, the market development has a very good user base.

#### Technical feasibility

Combined with satellite positioning technology, GSM/GRPS/CDMA mobile communication technology, and GIS geographic information system, IoT is able to use GPS technology within the coverage of Internet and mobile communication networks, greatly reducing usage and maintenance costs, while enabling multiple interactions from end-to-end.

From the small program APP, Bengbu City began pilot operations, low cost, in the pilot phase to complete the analysis of operational results of the project, operational risk testing, user business satisfaction test, to achieve full operation of the APP online.

#### Organizational feasibility

In the early stage, the team makes a reasonable project implementation schedule and designs a reasonable organizational structure. In the selection of organizational personnel, we will choose experienced managers. Based on the market research results, we will select suitable merchant groups, write targeted merchant entry plans, and communicate with them to form a group of merchants for initial operation testing and establish a good collaborative relationship. And develop appropriate training programs for members in the internal development of the organization to ensure smooth execution of projects.

#### Economic feasibility

The regional target-based consumer navigation platform based on IoT has high economic benefits in achieving effective regional economic resource allocation, regional economic development, increasing supply, improving commodity trading environment, and improving people's quality of life.

#### Risk Factors and Countermeasures

##### (1) Market and social risks

Some of the navigation software on the market has the corresponding product recommendation function, with functional overlap; several major users commonly used shopping software has a certain market monopoly, the platform is difficult to have a competitive scale.

##### Countermeasures

We implement regional features in the platform, and there may be uneven regional resources in the software commonly used in the market, and the platform does not fit the region. The platform from a small scope, it to close to the characteristics of the region, more detailed to win; in the platform publicity to implement to each household near the business district, so that the user base is more practical, but also in the small area research to carve out a more refined user, market portrait.

##### (2) Technology Risk

The platform may be inaccurate when matching merchant user information and has the problem of low customer satisfaction.

##### Countermeasures

For the initial construction of the path, through oriented analysis, to explore the user satisfaction of consumer groups and merchants respectively, to supplement and improve the defective parts, to exchange and discuss the difficult issues, to sum up the experience and further improve the development path.

### **3. IMPLEMENTATION PATH**

We plan to make a merchant navigation applet, which is similar to the combination of the current shopping software and navigation software. Considering the details of the applet function and the original intention of the applet design, the usable range of the software initially covers only a small urban area. People can search for the name of the commodity they need to buy to get the shops selling the commodity in their own urban area, and the store address will be attached at the bottom of each store, together with navigation arrows. After clicking in, there will be a navigation route from the current location to the store. Click on other locations to get the details and evaluation of the products sold in the store. Consumers can choose their favorite products in the applet according to their own preferences, and then go to the corresponding store according to the navigation. In a certain space, we can realize the selection and comparison of commodities and the effective allocation of resources, so as to benefit businesses and users at the same time, improve the efficiency of commodity allocation and improve regional economic benefits.

### **4. CONCLUSION**

Combined with the broad prospects of the development of the Internet of Things and the significance of enhancing the real economy of the region, through the analysis of the consumer market and user portrait of Bengbu City, a feasibility analysis report of the research on the construction path of regional target-based consumer navigation platform based on Internet of Things has been formed, and we built a certain prototype design of the corresponding platform path. It is hoped that in the future the design will be applied in practice to build a regional target-oriented consumer navigation platform based on the Internet of Things, which has a good investment environment and market demand prospects.

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