Intelligent Data Acquisition Method for Cross-border E-commerce Guidance and Purchase Considering User Demand

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Abstract. At present, due to the unknown online procurement, and remote distance for the cross-border e-commerce shopping guide, business considerations for users were not so full. Based on this, a cross-border e-commerce shopping guide big data intelligent collection method considering user needs was proposed. Through the mobile port of big data to collect and explore the online social retail collection method of big data, it focused on promoting the way of big data onto intelligent collection, and promoted cross-border e-commerce shopping guide big data to better carry out commodity circulation of user needs. Experiments showed that the big data collection method studied in this paper better combined user needs and merchant profit, and helped to improve user experience.

Keywords: User needs · Cross-border E-commerce shopping guide · Big data · Intelligent acquisition · Optimization

1 Introduction

In the past ten years, with the Internet economy growing exponentially, e-commerce has achieved rapid and vigorous development in China, and people's shopping experience has gradually shifted from offline to online, that is, from physical operation to network operation; With the popularity of mobile devices such as mobile phones and tablets, online shopping penetration is still increasing [1]. As of the end of December 2013, the number of e-commerce platform users in China reached 302 million, and the proportion of online users using e-commerce platforms increased to 48.9%. According to the statistics of China Internet Network Information Center CNNIC, the total transaction volume of China's e-commerce platform online in 2013 was 1.85 trillion yuan, a year-on-year increase in 40.09% compared with previous years. It is expected that the growth rate will gradually slow down in the next few years in 2014 to 2017. The annual online shopping market will reach 21.6 trillion yuan to 2017 [2] (Fig. 1).

In this context, shopping websites represented by Tmall, Amazon, JD, etc. have gradually developed into a comprehensive shopping platform. The information architecture and user experience of the website are also becoming mature, and the initiative of consumers is stimulated by good humanized design [3]. At the same time, a large

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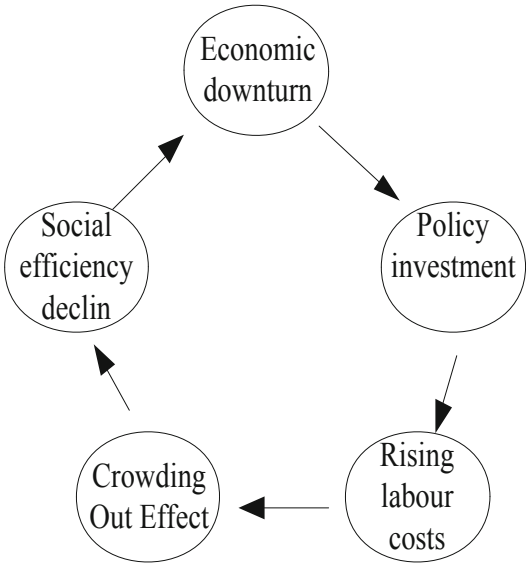

Fig. 1. Cross-border e-commerce shopping guide flow chart

number of goods and discount information outside the website occupy our vision, and the effectiveness of the information is greatly reduced. This is actually the lack of user experience and path design when the information reaches the online shopping user. Information access as the entrance to the e-commerce website plays a vital role in the distribution of traffic. However, the design research of the current design system is in a relatively blank stage [4]. How to better use the user experience design method to improve the efficiency of information access, and form a good user reputation, has long been a problem that has to be considered in front of the designer. Therefore, the establishment of a more complete information architecture, interactive interface, and access system has become a key step for the e-commerce platform to provide users with an excellent shopping experience [5].

2 Design of Intelligent Data Collection Method for Cross-border E-commerce Shopping Guide Big Data

2.1 Big Data Mobile Port Collection

Differentiating the two ports of the mobile PC, consumers can't do without the support of the terminal Internet access device. The terminal Internet access devices of China's network users are mainly composed of the start end represented by smart phones and tablets, and the PC side represented by W desktops and laptops. Compared with the PC, the convenience of the replacement side enables the consumer to purchase goods at any time, complete the payment online [6], track the inquiry order and other service functions. Of course, the value of the mobile end is not only to expand the source of

traffic, but also to better combine the various services of offline physical retail stores with local relevance and irreplaceability, so that online and offline channels are all connected and connected. The objectives are shown in Table 1.

Table 1. Indexes

	Min	Max	Average value	Standard deviation	Kurtosis
Hl–1	2	5	5.61	0.948	759
Hl–2	2	5	5.12	0.912	759
Hl–3	2	5	6.26	0.881	759
H2–1	2	5	3.86	0.982	759
H2–2	2	5	4.98	0.901	759
H2–3	2	5	3.98	0.791	759
H2–4	2	5	3.09	0.819	759
H2–5	2	5	2.98	0.298	759
H2–6	2	5	2.00	1.920	759
H3–1	2	5	8.73	1.911	759
H3–2	2	5	4.98	1.910	759
H3–3	2	5	6.21	1.009	759
H3–4	2	5	7.02	1.091	759
H4–1	1	5	9.22	1.681	759
H4–2	2	5	3.92	0.879	759
H4–3	2	5	2.98	0.712	759
H4–4	1	5	4.01	0.971	759
H4–5	2	5	5.01	0.491	759

Therefore, the mobile terminal is neither a general extension of the PC side nor a simple complement of the PC side, but a more stage of the evolution of the network retail format. From the history of online retail format development [7], in the past ten years, the PC side is the main port for the development of online retail formats. However, with the gradual saturation of the desktop and notebook markets, the development speed of the PC-side shopping market tends to slow down, and the PC-side portal is gradually maturing. At the same time, with the development of mobile networks and the popularity of smart handwriting, the mobile shopping market has experienced explosive growth in recent years, and the mobile terminal has almost infiltrated into every aspect of online retail [6].

According to the statistics of iResearch, in 2011–2014, the transaction volume of the mobile shopping market was spurred from 11.68 billion yuan to 940.66 billion yuan, and the compounding rate was as high as 331%. The growth rate is far better than the PC-side shopping market. It is expected that the main move in the future development of online retail formats lies in the development of the mobile shopping market. However [8], because the screen of the mobile terminal is usually smaller, it can only describe products by limited words and photos, which makes consumers' product experience value low. Therefore, network zero enterprises should constantly improve

the design of mobile shopping scenes, actively promote mobile payment applications and other measures to enhance the development of mobile terminals. Secondly, at the same time, we will deepen the two domestic and international markets. On the one hand, we must promote the zero net Qiao road to sink, and actively develop the rural market [9].

2.2 Large Data Network Social Retail Collection

The essence of network social retail is the coincidence of social platform and network retailing, which refers to the process of retailing by network retail enterprises or individuals through social platform. Network social retailing combines the user resources of social platform sea children with the convenience of network retail. The reasons for the rise are mainly H aspects under W. First, the Internet business era, who can more quickly and more directly to mass users will represent unlimited business opportunities, and the rise of the mobile Internet has made the W Internet as a medium of social activities more and more common, with the help of this advantage, network social retail began to rise. Second, the traditional B2C or C2C network retail model has not been able to solve the trust problem between merchants and consumers, and social networking is a kind of social retail based on W strong relationship, sellers are selling goods. At the same time, it is also the feeling of selling friends, through this acquaintance relationship, the problem of trust between merchants and consumers is well solved. Third, online social retailing is a good way to help consumers solve the problem of "what to buy? Where to buy?". On the one hand, from the point of view of the hacker, social network retailing runs through the whole process of product purchase, such as store selection before purchase, product price comparison, communication with sellers during purchase, interaction, etc. evaluation, experience sharing, usage guidance, etc. On the other hand, from the perspective of network companies or individuals, accurate product marketing and promotion can be better achieved by actively cooperating with social media, network or social tools, as shown in Fig. 2.

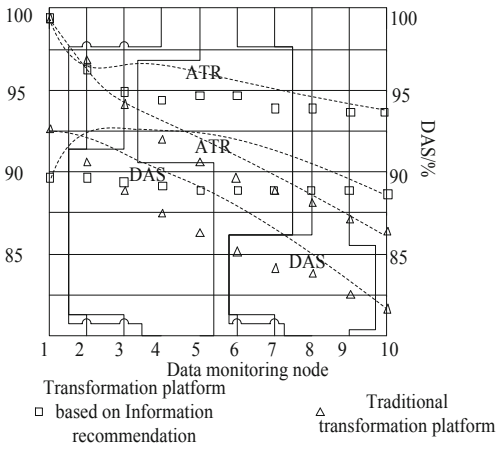

Fig. 2. Traditional B2C network sales trend

In addition, in the traditional B2C or C2C network retail period, the popularity of the online retail platform, the advertisements and information provided by the merchants, the ratings of the consumers to the merchants, or the evaluation of the products constitute the most important purchase basis for the consumers. However, today, when social platforms are prevalent, consumers are more inclined to consult their friends and friends in various social circles. It can be said that the process of online social retailing focusing on, sharing, communicating, discussing, interacting and other social elements in online retail transactions greatly caters to the trend of the times, and it will become an important direction for the evolution of online retail formats in the future. For any target highlighting, five different eigenvalues X{X1, X2, X3, X4, X5} can be extracted, then the membership functions are:

$$\mu(X) = e^{-D(X)} \tag{1}$$

Where

$$D_i(X) = |X_1 - M_1| + |X_2 - M_2| + |X_3 - M_3| + |X_4 - M_4| + |X_5 - M_5| \tag{2}$$

Based on this formula, the membership functions are:

$$\mu_{A1}(X), \mu_{A2}(X), \mu_{A3}(X), \mu_{A4}(X) \tag{3}$$

So the maximum is:

$$\alpha = \max[\mu_{A1}(X), \mu_{A2}(X), \mu_{A3}(X), \mu_{A4}(X)] \tag{4}$$

When $\mu_A(X) = \alpha$, then X belongs to the third category, namely, the sphere.

When $\mu_A(X) = \beta$, then X belongs to the second category, namely, the triangular prism.

When $\mu_A(X) = \delta$, then X belongs to the first category, namely, the cube.

3 Experimental Results and Analysis

In order to ensure the effectiveness of the research on the intelligent data collection method of cross-border e-commerce shopping guide big data considering the needs of users, this experiment was carried out. The experiment of cross-border e-commerce shopping guide big data intelligent collection method considering user needs selected two types of programs. In the experiment, the two types of experimental targets are placed in the same debugging environment, in order to observe the data intelligent integration goals in different time, and record the data at any time. The schematic diagrams of the experimental demonstration results are shown in Figs. 3 and 4, respectively.

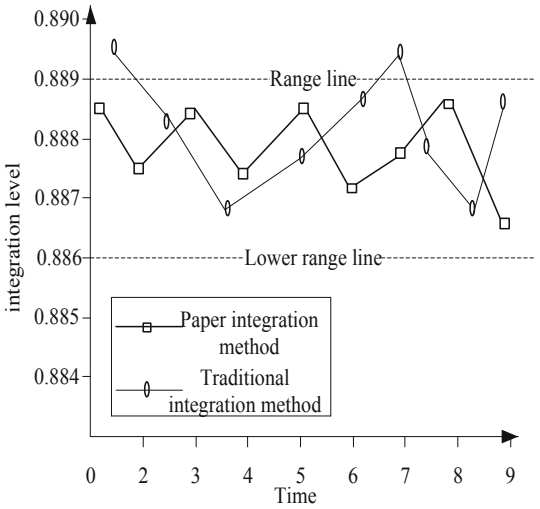

Fig. 3. Experimental target result structure chart

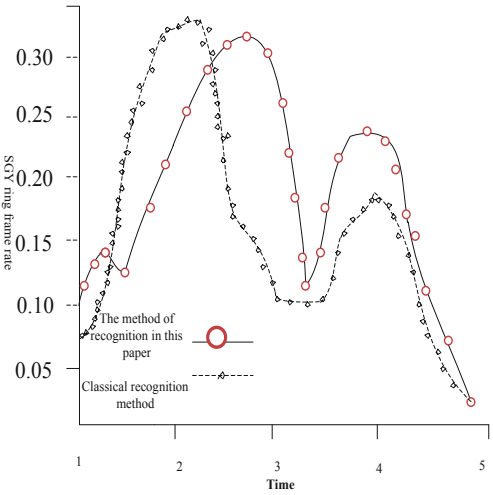

Fig. 4. Experimental intention trend structure

At present, first- and second-tier cities are the user concentration areas of online retail enterprises, and also the core area of competition in the network sales market. However, the development of online retail enterprises in first- and second-tier cities is gradually deepening. The more successful the online retail enterprises in the first- and second-tier cities The smaller, at the same time, with the speed of urbanization construction and the improvement of rural residents' ability to eliminate. The potential of the rural online retail market is huge. According to the statistical report in the Internet information of China, as of June 2015, the number of netizens in China reached 6.68,

of which the proportion of netizens in rural areas was 27.9%, compared with the end of 2014 there are 8 million people increased. However, the Internet penetration rate in rural areas of China is only 30.1%. Compared with the penetration rate of 64.2% in urban areas, there is still much room for growth in rural areas. Moreover, in the population aged 10–40, the Internet penetration rate in rural areas is 15–27% points lower than that in urban areas. This part of the population happens to be a relatively low-difficult Internet population, and there is much room for conversion in the future. Therefore, online retail enterprises should focus on promoting the sinking of online retail channels and actively develop rural markets. On the other hand, we must promote the development of cross-border network retailing and fully expand overseas markets.

4 Conclusions

This paper mainly studies the intelligent data collection method for cross-border e-commerce shopping guide big data considering user needs. It fully considers the specific needs of online users to collect intelligent collection methods from cross-border e-commerce shopping guide big data, and optimize cross-border e-commerce shopping guides. In order to help us get more reference value cross-border e-commerce shopping guide big data, for us to better use and use cross-border e-commerce shopping guide big data to improve the use of online users.

Through the analysis of this paper, we can know that the research on cross-border e-commerce shopping guide big data intelligent collection method considering user needs has important and far-reaching significance. Although, in recent years, the cross-border e-commerce shopping guide big data intelligent collection method considering user needs has achieved great gains. There are still many problems waiting for us to solve. To this end, we must not be afraid of difficulties, overcome difficulties, and constantly improve the cross-border e-commerce shopping guide big data intelligent collection method to consider user needs, to obtain effective image information, in turn, it is better to improve the user demand for cross-border e-commerce shopping guide big data intelligent collection method business services.

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