

Research on Marketing and Profit Mode Innovation of Intelligent Mobile E-commerce

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Abstract: Mobile marketing is the use of wireless technology to provide customers with unique personalized services; wireless mobile marketing has changed the traditional marketing strategy to meet the needs of mobile customers and wireless devices. Based on the theory of profit model and the application of mobile electronic commerce and its main business, this paper analyzes and discusses the main profit mode of mobile electronic commerce. This paper analyzes the innovative mode of precision marketing in the innovative e-commerce mobile marketing model. The paper presents research on marketing and profit mode innovation of intelligent mobile e-commerce.

1. Introduction

At present, mobile e-commerce mainly provides a series of services including mobile payment, mobile internet shopping, mobile stock market, mobile entertainment, mobile ticketing, and mobile medical and so on. In addition, with the development of mobile e-commerce environment, many new forms and contents of mobile e-commerce will emerge one after another.

Mobile E-commerce is a new branch of E-commerce, but from the perspective of application, its development is the integration and development of wired E-commerce and it is a new form of E-commerce development. Mobile e-commerce will be traditional commerce and has been developed, but scattered e-commerce integration, the transfer and improvement of various business processes from wired to wireless, is a new breakthrough [1].

With the rapid development of mobile internet, mobile phone shopping has been paid more and more attention in the market. It is also widely predicted that in 2012, with the acceleration of the speed and depth of smartphone marketization, the new ecommerce environment, characterized by the fragmentation of nature, anywhere and time, will accelerate the emergence of the new ecommerce environment. According to eMarketer, a market research group, 50% of Americans now own smartphones. Experts also predict that 8% of all e-commerce transactions by 2015 will be done on mobile platforms. China's mobile ecommerce boom is no match, too, with Apple 4S's frenzied sales and several runs out of Xiaomi handsets. The next two years will be a crucial year for the rapid growth of the mobile Internet. Who can seize this rare opportunity will be able to stand out in the fierce competition.

E-commerce is B2B where it is e-commerce using wireless terminals such as mobile phone, PDA and palmtop computer. It combines the Internet, mobile communication technology, short-range communication technology and other information processing technologies to enable people to conduct all kinds of business activities at anytime, anywhere, anytime, anywhere, online and offline. E-payment online as well as various transactions, business activities, financial activities and related integrated services activities. With the rapid increase of mobile users, and the application of mobile communication technology in the field of information technology is to the depth of development, China's mobile e-commerce into the fast lane.

The core of business intelligence has three main aspects. On the one hand, improving the level of business decision-making is the purpose and function of the higher level of business intelligence. Can enterprises make good use of this function? The realization of this goal depends to a great extent

on the consciousness and mind of the leaders and the scientific and democratic elements of the corporate culture.

Intelligent agent can be seen as a black box, sensor aware of the environment, through the effector environment. At the same time, intelligent agent can also be regarded as the entity of knowledge processing. It is composed of knowledge base, rule base, inference engine and communication protocol between each agent [2]. It can complete knowledge discovery agent, communication cooperation agent, rule base application agent. Supervisory agent, knowledge base management agent, pushes agent and other functions.

The main characteristic of mobile e-commerce is flexible, simple and convenient. Mobile e-commerce can not only provide direct shopping on the Internet, but also a new channel for sales and promotion. It supports mobile Internet services comprehensively, and enables electronic payment of telecommunications, information, media and entertainment services.

Social media provides a wide range of data applications, including circles, Weibo and many other forms. In the social network, people more or less exist the so-called "strong relationship" and "weak relationship", which is reflected in the function of Tencent circle in the testing stage, and its social intelligence is relatively strong. The fusion of "strong relationship" and "weak relation" in social network is emphasized. Through fusion, a number of representative crowd labels are extracted.

2. Application of Intelligent Agent in Mobile E-commerce

One of the biggest advantages of mobile e-commerce is that mobile users can access the required services, applications, information and entertainment anytime and anywhere. Users can use their smartphones or PDA to find, select and purchase goods and services at their convenience. They can also make use of Internet-enabled mobile devices to deal with business interactions, such as business negotiations, placing orders, etc.

First of all, there are almost no laws and regulations on mobile electronic commerce, while the traditional laws and regulations of mobile commerce and electronic commerce cannot be fully applied to mobile electronic commerce. Improve the relevant laws and regulations as soon as possible are the important work of mobile e-commerce development. Secondly, mobile electronic commerce is a new thing, and the business model needs to be perfected gradually, and the construction of secure and flexible mobile payment mechanism is the key link to perfect the business model. Third, mobile e-commerce in distribution, payment and credit not only did not cross any traditional business bottlenecks, even the uncertainty of its location has increased the difficulty of distribution, identity confirmation and so on.

With the popularization and deepening of Internet technology, e-commerce, a new business model, has been accepted by more and more people. However, due to the characteristics of openness, dynamic and heterogeneity of Internet itself, with its continuous development, the amount of information continues to expand, which brings a certain degree of trouble for people to obtain the information they need [3]. In order to solve this problem, intelligent electronic commerce system emerges as the times require. Intelligent electronic commerce system is based on the Internet, can replace people and has certain logical reasoning ability and self-learning ability. Intelligent electronic trading model is with communication ability. E-commerce based on intelligence can help people to complete a lot of tedious information processing, as is shown by equation (1), where W can bring a lot of convenience to people.

$$W = (I - \frac{Y_1^* Y_1^T}{Y_1^T Y_1^*} - \frac{Y_2^* Y_2^T}{Y_2^T Y_2^*} - \dots - \frac{Y_M^* Y_M^T}{Y_M^T Y_M^*}) W_0 \quad (1)$$

Mobile commerce has now become an extension of e-commerce, offering a smaller shape and a leaner experience. Gartner expects more unique features to emerge over the next 24 months and a richer mobile commerce capability. Mobile payment: while mobile payments will increasingly appear on high-end handsets starting in 2011, mobile solution providers need to provide cleaner and safer implementation solutions to reach more users. At the same time need to wake up the awareness

of users in this respect, expand the scope of services.

Business intelligence is the use of modern information technology to collect, manage and analyze structured and unstructured business data and information, create and accumulate business knowledge and insights, improve the level of business decision-making, and take effective business actions. Improve all kinds of business processes, improve the performance of all aspects of business, and enhance the comprehensive competitiveness of the wisdom and ability.

Intelligence is one of the most basic characteristics of intelligent agent technology. It mainly refers to the reasoning and learning ability of agents, that is, it has the rich knowledge, strategy and relevant data needed to solve problems, and it can carry out related reasoning and intelligent calculation. At the same time, the intelligent agent can capture the user's preference, interest and intention when the user does not give a very clear requirement, and complete the task in the best way. In addition, intelligent agents can filter and filter information and automatically reject requests that are unreasonable or potentially harmful to users.

Business intelligence solutions can help companies analyze the source of profits, the extent to which products contribute to total profits, whether advertising costs are proportional to sales, and so on. Cost reduction: business intelligence technology can help businesses determine where to reduce costs in areas that have the least impact on the business. The decision to reduce costs can be based on detailed target data.

In the workflow of intelligent agent, each agent has its own knowledge base. Information is then filtered according to user specific needs and recent interests in the user database. The function of the supervisory agent is to check whether there are previous similar information requirements in the knowledge base when the user puts forward his own information requirements, as is shown by equation(2) and if so, to extract the records of the previous requirements of the user in the knowledge base. It is sent to the user through a push agent [4].

$$G(x, y, \sigma) = (2\pi\sigma^2)^{-\frac{1}{2}} \exp\left(-\frac{x^2 + y^2}{2\sigma^2}\right) \quad (2)$$

The function of intelligent agent in the micro application level of electronic commerce is to search multiple websites simultaneously according to the special needs of users, to screen or monitor the commodity information, and finally to find the site where the qualified items are located for business activities. This kind of technology is evident in the large-scale commodity price comparison shopping website in China, which combines search engine technology with intelligent agent technology to provide users with price comparison of commodities. Daily lowest price delivery and other information services, the goal is to become a link between consumers and distributors of commodity price information exchange platform.

3. Research on Profit Mode of Mobile E-Commerce

The development of mobile e-commerce market is a gradual process and follows the general law of market development. It can be divided into four stages: introduction period, growth stage, development stage and maturity stage. According to the maturity of mobile e-commerce is market environment and the development of related technologies.

The profit model is the unique business structure that the enterprise relies on profit and the corresponding business structure in the market competition. The business structure of the enterprise mainly refers to the trading object, the content and the scale of the transaction, which are selected by the outside of the enterprise. Trading methods, trading channels, and it is trading environment, counterparties and other business contents and their space-time structure. The business structure of an enterprise mainly refers to the research, procurement, production, storage and transportation within an enterprise that meets the needs of the business structure. Marketing and other business content and its space-time structure, business structure reflects the situation of internal resource allocation, and business structure reflects the object and purpose of enterprise internal resource integration.

Mobile social network applications are the fastest growing of the 19 categories of applications detected by Gartner. In the future, global social networking sites will work with third parties to provide services through an open API, and may evolve into infrastructure providers, playing a database role and providing user data. Mobile search: the new app will bring mobile search to another level, where users can book, buy tickets, etc. Gartner recommends that search providers provide a user experience around mobile devices that allows users to access results quickly. And be able to take immediate action. Mobile device vendors can work with search providers, or buy search providers, integrate related technologies, and provide differentiated user experiences.

The feature of the mobile Internet is that it connects countless points to points, and the o2o is not just about mobile phone customers buying online. We can now see all kinds of QR codes in subway stations, cinemas and shops. These seemingly simple things actually facilitate our lives.

Due to the advantages of e-reading, such as expanded mobile phone, larger and clearer screen, higher capacity, easy identification of user, convenient payment and so on, mobile e-reading is becoming a popular and rapid spread. Digital content makes electronic reading rich, combined with the interactive advantages of mobile multimedia, not only to increase music, animation, video and other new reading feelings, but also to bring this feeling around at any time. The boom in the mobile-reading market is predictable.

The profit mode of mobile payment, the electronic and mobile payment means is an inevitable trend. The development of mobile payment service indicates the deep integration of mobile industry and financial industry. In the near future, consumers can use mobile phones with payment and authentication functions to buy tickets and movie tickets, open doors, borrow books, and serve as membership cards [5]. It can realize the combination of mobile communication and financial service, as well as the combination of wired communication and wireless communication, as is shown by equation (3), so that consumers can enjoy convenient and safe financial life services.

$$H_{j,L}(f) = H_{1,L}(2^{j-1}f) \prod_{k=0}^{j-2} G_{1,L}(2^k f) \quad (3)$$

With the increasing popularity of portable electronic products and the increasing demand for location information, the market demand for mobile positioning services will increase rapidly. With the infiltration of social network into the real world, mobile location function will pay more attention to personalized information service in the future. Cell phones remind users of friends, friends and even strangers who are linked to their physical location.

Data transmission and security requirements are low in this phase, and there is usually a simple partnership between operators, banks and content providers. The market promoters of mobile e-commerce are mainly mobile communication network operators and mobile equipment technology manufacturers with large investment and negative returns in the near future. Other market participants are making active preparations.

With the increasing acceptance of mobile payment by mobile users, with the help of their own huge user resources, operators can also find more profit space away from mobile payment itself. For example, to provide advertising services to the merchants in the industry chain of mobile payment, the profit model is extended to the rear of the industrial chain.

In the virtual world of mobile network, service community will become the focus. Communities can extend different user experiences and improve their stickiness to the enterprise. The increase in broadband will spur innovation in mobile Internet services, and many of the user's needs will be met on mobile phones. Mobile phone has the characteristics of anytime, anywhere communication, so that SNS in the development of mobile field has a certain innate advantage.

4. Research on Marketing and Profit Mode Innovation of Intelligent Mobile E-Commerce

According to marketing guru Philip Kotler's theory of precision marketing, "companies need more accurate, measurable and high return on investment marketing communication, more results-oriented and action-oriented marketing communication plans," There is also a growing focus on

direct sales communication investment. Enterprises engaged in e-commerce also pay more and more attention to accurate marketing, which is more efficient than traditional advertising, and both business owners and advertisers emphasize the realization of precision marketing on the basis of individualization. There is no doubt that in the rapid development of Internet technology and means today, accurate and effective communication is the focus of attention.

In the form of advertising, mobile advertising is a forward-looking business model, which may become the driving force for the prosperity of the next generation mobile Internet. Driven by the Mobile Web1.0 tide, the Internet business is transitioning to the mobile Internet, and as the fundamental profit model of the Internet prosperity, advertising will undoubtedly set off a new revolution in the mobile Internet business model. Lead mobile Internet business to prosperity.

The cooperative screening function at the micro level of intelligent agents can also be recommended after comparing the purchasing habits of users with those of other consumers. This technology has been realized in most of the current e-commerce websites. Technology has also been relatively mature. For example, the Dangdang online Bookstore in China uses a membership system for management. After the users first log in and purchase activities, the books related to the interests of the users will be listed on the side for the users to refer to and purchase. This saves time for users to search for books of interest and also acquires user preferences to help companies personalize advertising and product referrals to users.

Mobile operators have made an unstoppable move into mobile media, creating conflicts with newspapers, radio, television and independent WAP sites. Mobile operators are not willing to do only networks and channels, but to rely on their own advantages in the market, users, channels, information networks, and so on, trying to integrate content providers and network service providers. Equipment systems and terminal manufacturers, as well as end users, form their own industrial chain. In order to reduce unnecessary loss, accelerate the pace of our country in this round of information technology reform.

The profit model of mobile phone game form, after information society will be entertainment society. PC games drive personal computer hot buying, online games can be said to save China's Internet industry, mobile phone games will set off the next mobile Internet business war. With the development of industry technology, there will be some revolutionary qualitative changes on the mobile device terminal, which will bring about the jump of the user experience: strengthen the game tactile feedback technology, and truly feel the scene of explosion, collision and shooting on the screen through the joystick. The subtle information in the game is passed on to the user, making the mobile phone feel better to play the game [6]. It can be predicted that mobile games as the killer profit model of the mobile Internet will undoubtedly set off a new change in the business model of mobile Internet.

Mobile communication media, commonly known as mobile media, can be understood as a combination of network and information dissemination functions, digitizing various text, image, audio and video information through data transmission technology. And then transmit the brand-new media to a wide range of users. The development of wireless network makes mobile phone have almost all the advantages of network media at the same time. Because of its medium mobile phone characteristics, mobile media also has compatibility, integration, as is shown by equation (4), R is closeness and ease of interaction, become a "body temperature media." It has the following characteristics that other media cannot compete with it.

$$R^n u^{(0)} = \sum_{i=1}^N \alpha_i R^n e_i + \sum_{i=N+1}^M \alpha_i R^n e_i = \sum_{i=1}^N \alpha_i \lambda_i^n e_i + \sum_{i=N+1}^M \alpha_i \lambda_i^n e_i \quad (4)$$

At the macro level, e-commerce users are mainly large enterprises, research institutions, media organizations, etc. They need professional, up-to-date and collated information to provide information to users in the form of intelligence information to help them make decisions and research. Providing such services requires strong information access and strong information system support from providers. At the micro level, the user groups of e-commerce are mainly small merchants and ordinary consumers linked by price. The main business of the website is to ensure that

the online shops of small businesses operate properly and consumers can easily access price information.

The profit mode of mobile phone content sharing service, mobile phone picture, audio, video sharing is considered to be an important application of 3G mobile phone business in the future. In the future, the Internet needs digital content for storage, processing and so on, allowing users to share pictures, audio and video clips with friends will grow rapidly. With the solution of three constraints, such as terminal, content and network, the mobile phone sharing service will develop rapidly. Users can upload their own pictures, video to blog space, and can use it to back up files. Share files with friends or publish them publicly. The development of shared services can maximize the interactivity of the mobile Internet, the content is to gather popularity, attract customers on the basis.

The profit-making model of mobile phone search, mobile search engine integration search concept, intelligent search, semantic Internet and other concepts, integrated with a variety of search methods, can provide a wider range of vertical and horizontal search experience, Pay more attention to enhance the user's use experience. Mobile phone search provides users with convenient and fast mobile content search, the search results are more relevant, users can customize their search engines and determine Internet content, which gives users a considerable degree of freedom and flexibility. Users are obsessed with a well-organized mobile search service. For operators, it is necessary to increase investment and active participation in search field, accelerate the integration of mobile search engine and mobile value-added service, and help search engine transform to information product integration platform.

5. Summary

Based on the analysis and induction of the existing profit model of mobile commerce, this paper concludes that the profit model of mobile e-commerce is to fully exploit and integrate the main business of mobile e-commerce. This paper uses the method of comparative analysis. This paper analyzes the differences, advantages and disadvantages of mobile electronic commerce and traditional electronic commerce from the aspects of value composition, income source, service characteristics, role in value chain and business model. Intelligent agent has become an effective method to solve the problem of electronic commerce information processing in Internet information space. It has strong attraction to both sides of electronic commerce. The electronic commerce based on intelligent agent technology will be a promising direction.

References

- [1] Xie Yincheng, the application of mobile e-commerce in enterprises. Jiangsu business theory. 2009 (10):105-110.
- [2] Wang Chong, Wu Jianbao, Wang Yanqing, empirical study on the impact of transaction cost on Consumer perceived value in Mobile E-commerce. Chinese management science. 2016 (08):256-263.
- [3] Li Zhu, Liu Minghao, Research on the connotation and characteristics of customer loyalty in Mobile E-commerce. e-Business. 2016 (01):88-98.
- [4] Yu Rangrui, mobile e-commerce interactive marketing and its application model research. Market research. 2018 (02).
- [5] He Xinghu, on mobile e-commerce interactive marketing and application model analysis. The shopping mall is modernized. 2015 (12):34-45.
- [6] Zhang Yi, mobile e-commerce interactive marketing model analysis. Modern economic information. 2017 (22):226-238.