

Precision Marketing Driven by the Internet Supply Chain in the New Retail Era

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Abstract—New retail is a new retail model combining smart retail, smart logistics and smart payment through the Internet, big data, artificial intelligence and other means to upgrade and transform the production, circulation and sales process of products, and deeply integrate online, offline and modern logistics. In the new retail era, big data is used to customize and personalize services to achieve precise marketing. The marketing path for brand development is to strengthen scene innovation and consumption experience, enhance shopping guide efficiency, and realize the integration of user, scene and media. With the development of artificial intelligence, the Internet of Things and the 5G era will usher in a new marketing environment. The core of the application of artificial intelligence technology to build intelligent service scenarios is centered on the user experience, and the seamless connection between marketing and demand is realized.

Keywords—New retail, scene marketing; Internet of things; precision marketing

I. INTERNET OF THINGS AND ITS RELATED CONCEPTS IN THE NEW RETAIL ERA

A. The Background and Concept of New Retail

The "new retail" was first proposed by Jack Ma at the cloud qi conference in Hangzhou in October 2016, and has received intense attention from all circles since then. The proposal and application of new retail conform to the current environment of economic transformation and upgrading in China. Economic development has shifted from high-speed growth to high-quality structural adjustment, expanding domestic demand, and promoting consumption upgrade. New consumption will be an important engine for China's economic development in the future. The new retail era is born in such a background, perhaps it is the rapid development of new kinetic energy is reshaping the city's competitiveness[1].

What is new retail? New retail means that enterprises upgrade and transform the production, circulation and sales process of products with the help of the Internet through big data, artificial intelligence and other means, so that online services, offline services and modern logistics can be deeply integrated[2]. It is a new retail model combining smart retail, smart logistics and smart payment. At present, typical formats related to new retail include unmanned retail (including unmanned shelves and unmanned convenience stores, etc.), intelligent stores combined with unmanned and manned stores,

new fresh supermarkets, and new consumption scenarios focusing on experience, among which there are some controversial enterprises and formats.

The premise of the emergence of new retail is the need to combine online and offline and logistics. The essence of the Internet is decentralization. It is necessary to optimize the complex chain of user products in the traditional industry to reduce the intermediate links, thereby improving the efficiency of users' purchase and use of products.

B. Internet of Things Technology

The Internet of Things technology integrates information sensing technologies such as infrared sensing, global positioning, biometrics, laser scanning, and radio frequency identification on the basis of the Internet and communication networks[3]. According to the agreed communication protocol, the objective micro-objects are connected to the Internet, and the information is transmitted and exchanged to achieve intelligent identification, location, control, tracking, monitoring and management. Internet of things technology is still a development of Internet technology, which is to carry out comprehensive electronization and informatization of people and things, and realize the comprehensive perception and interaction between people, people and things, and things and things. When goods are connected to the network, they will bring revolutionary changes to production and life, and for e-commerce that exists in the online world, it will usher in a new outbreak[4].

II. THE WAY OF PRECISION MARKETING OF BIG DATA DRIVEN BY THE SUPPLY CHAIN OF INTERNET OF THINGS

In the Internet era, brand marketing is to let more merchants release their capabilities and more consumers express their needs. In the Internet of things era, precision marketing research is to realize accurate perception, accurate design and accurate supply based on Internet of things technology[5].

Accurate marketing information perception refers to objectively and accurately knowing the status and changes of consumers and their related objective items, so as to provide a reliable basis for subsequent marketing activities. According to the implementation steps of marketing, business opportunity analysis and customer positioning all need to rely on sufficient market survey. However, even in the Internet era, information

is still insufficient and inaccurate, because the lack of information of most objective items and the inaccuracy of artificial information may cause the analysis results to deviate from the reality. Under the technology of Internet of things, information about people and things can be accurately recorded through various IOT devices, such as personal vital signs, movement track, relevant food and energy consumption, vehicle use, shopping information, environmental information, etc., which can be objectively reflected in various sensors, card readers and other devices.

A. Make Use of Big Data to Provide Customized and Personalized Services and Realize Precision Marketing.

Artificial intelligence can quickly match customer preferences in the context of big data. Machines recommend related goods to customers through their browsing trajectories and purchase records, and build virtual shopping scenarios, to achieve precise marketing and improve shopping efficiency. Meanwhile, due to a deeper understanding of customer needs in the context of big data, enterprises can cooperate with customers to jointly develop products that better meet consumer needs and reduce information searching costs. Therefore, personalized and customized services can effectively improve customer experience.

When IKEA was engaged in personalized service, it chose to cooperate with Huami Technology to achieve better precision marketing. Huami technology is the manufacturer of xiaomi bracelet and a leading wearable device brand in the world which has user number over 100 million. Huami will record the data when people wear bracelets and watches, record sports data, stand on the body fat scale to see the results of fitness during this time are good, then draw a healthy map, and deeply explore the user's movements and sleep data, let the data speak, and finally extend the industrial chain to various fields such as medical health. IKEA and Huami cooperate to push IKEA adjustable mattress to some users whose sleep quality needs to be improved and adjusted through their sleep data, so as to help users choose suitable mattress to improve their sleep, and also to provide customized bedding for users. This process achieves better personalized service precision marketing through large data.

B. Strengthen Scene Innovation and Consumption Experience, Enhance the Efficiency of Shopping Guide, and Realize the Integration of Users, Scene and Media

The main feature of the new retail is to emphasize the scene innovation and consumer experience, that is, taking the customer experience as the core and using artificial intelligence, big data, cloud computing and other high-tech to build a new shopping scene, so that customers can feel the value of products or services in the scene, and then promote customer satisfaction and loyalty. The core of the new retail is to improve the user experience, provide a wider range of experiential consumer services, consumer scenarios. While traditional retail emphasizes product, function, price and location, the new retail emphasizes life, experience, service and scene.

Scene innovation is based on the appeal of "entertainment, interaction and experience", and integrates entertainment, art, humanities and other trans-boundary theme elements in the commercial environment, forming a new commercial space and atmosphere, giving customers humanized care and enriching diversified experience. Its core is "people", and all work is carried out around consumers. The fundamental purpose of applying artificial intelligence technology to build intelligent service scenarios is to achieve seamless connection between marketing and demand and improve customer experience. The role of customers is no longer a pure marketing object, but more of a value co-creator identity, and enterprise interaction. Enterprises can improve customer perceived value more pertinently and establish emotional connection with them. For example, a bookstore is not only a place to sell books, but an intellectual fashion and a personalized lifestyle. The business scope includes cafes, games, children's toys, beauty clothing, flower shop restaurants, etc. In such a complex, customers can understand various product information by scanning code, can participate in various somatosensory games to experience the fun of the game, and become a co-creator of these event scenes by visiting the photo consumption experience to realize fashion + social + entertainment comprehensive experience.

With the further improvement of AR technology, face recognition is becoming more and more accurate. Big data is refined and operated around the characteristics of people, which can create personalized scene atmosphere and activities. The more personalized the shopping around a scene, the more concentrated the users are. Therefore, it can be considered to make a crowd-casting around the user's age, gender, geographical distribution, income and other user portraits. On the one hand, it can help us to identify the user more effectively, on the other hand, it can further stimulate consumer demand. For the young people around 20 years old, we can precisely push some local supermarket shopping cards combined with geographical distribution, which is also the embodiment of unbounded retail. For Taobao users, many businesses have launched online virtual experience, such as virtual makeup, virtual fitting, and so on, and Ali's "Wisdom Store" expands virtual fitting to offline, hoping to provide customers with fast and convenient shopping experience. We also can try to use the recommendation method of intelligent waterfall flow to plan scenarios, and expand the single judgment dimension of consumer behavior into one consumption scenario, which covers the recommendation of life stage, consumer demand, interest preferences and other factors. It will be more precise and humanized. The recommendation mechanism of Taobao "guess what you like" has exceeded 10,000 fine consumption scenario. For some people in scenic spots or amusement parks, we can precisely push some surrounding catering information or road guide information, in order to improve user experience and achieve accurate marketing.

C. In the New Retail Era, the Logistics Supply Chain is Used Offline to Achieve Precise Marketing.

With the development of mobile internet, big data, Internet of things, artificial intelligence and other scientific and technological means, we can connect online + offline + logistics data to achieve the comprehensive sharing of data

such as membership, payment, inventory and service centered on consumers, so as to realize the deep integration of online and offline, and rebuild and upgrade the whole process of production, circulation, display, marketing, sales and after-sales of commodities.

For example, if a consumer purchases a game keyboard on the Jingdong platform, when the product is shipped out, the big data will match the preferential information of a computer chair according to the user's usage habits and the information in the shipped product to the user, in the transportation. Express packaging is a flowing scenic line in the process of transportation. Through express warehouse operation, transportation, dispatch, community post station, company front desk and other links, it has a direct relationship with thousands of logistics and distribution personnel, customer service personnel and consumers every day, making the advertising audience wider, and carton advertising accurately reaches the online shopping crowd. Thousands of subdivisions of industry portraits, eye-catching exposure to advertising information. In addition, under various logistics supply chains, such as self-contained cabinets, physical terminals, UAV series of formation performances, distribution services, and so on, according to different promotion needs, according to Jingdong big data orders and user dimension accurate estimation, we can freely choose different delivery methods to achieve accurate offline delivery.

III. THE OPPORTUNITIES AND CHALLENGES FOR THE FUTURE DEVELOPMENT OF PRECISION MARKETING OF INTERNET OF THINGS

Artificial intelligence technology is a universal technology with wide application field and large influence scope, and its application is not limited to a specific industry or industry. Everything has two sides. The application of artificial intelligence in business brings a lot of convenience as well as some thought-provoking opportunities and challenges.

A. *With the Development of Artificial Intelligence, Precision Marketing in the Era of Fragmented Scenes has Become a Breakthrough Point for Future Merchants.*

The space time of consumption is fragmented, resulting in the fragmentation of consumer decisions. As a link between users and content, the scene becomes a traffic portal that cannot be ignored in the era of fragmentation. In the face of fragmentation of channels and fragmentation of consumption decisions, the contacts of brand owners in contact with consumers are becoming more and more fixed. Advertisers can no longer find consumers in a wait-and-see fashion. Only by connecting fragmented and diversified scenes can each side seize the fragmented time of consumers.

B. *The Development of AI Has Strong Openness and Uncertainty.*

Under the low threshold of algorithm-based, any programmer can develop and use AI programs. Such as the development of face recognition technology and the security of face payment. And the hot-skinned scissors for taking photos may expose fingerprints, etc. These are all future thinking.

Although the development of artificial intelligence can replace repetitive labor, greatly reduce the human cost, but how to make use of artificial intelligence equipment more effectively control the offline outlets, as well as how to effectively control offline dynamic changing retail shelves at any time, how will these dynamic information for the effective use of our logistics system services, these are all need to explore.

IV. CONCLUSION

Artificial intelligence technology can significantly improve the quality and efficiency of the retail industry. Different from the traditional single data source, The artificial intelligence technology integrates big data and combines with its own intelligent algorithm system can accurately predict consumer demand, and create personalized and customized scenes around customers, meet customer interaction requirements and improve customer experience. On the other hand, artificial intelligence can help businesses greatly reduce repetitive labor and cut costs. Amazon Go is a typical case that after the customer had entered the store for the first time and completed the certification, he only needs to "brush his face" to directly pay the bill without queuing, which greatly facilitates the shopping process of the customer.

Scenario marketing is a core path for artificial intelligence to affect the customer experience. The perceived usefulness and perceived ease of use of artificial intelligence technology positively promote customer interaction and pleasure in scene marketing, thus promoting the development of customer satisfaction and customer loyalty. In the era of new retail, customized, personalized services with big data, and realize precise marketing, strengthen the innovation and the consumer experience, scene guide to enhance efficiency and implement user, scenarios, media fusion penetration is marketing brand development path. With the development of artificial intelligence, the Internet of things combined with 5G era will usher in a new marketing environment. The core of enterprise application of artificial intelligence technology to build intelligent service scenarios centers on user experience to achieve seamless connection between marketing and demand.

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