

The Importance of Consumer Insights for Precision Marketing in the Era of Big Data

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Abstract: E-commerce developed so far has gradually changed from a crude incremental dividend to a refined operation, which examines the operation, marketing, technology, and serviceability of enterprises due to the highly intense competition. To maintain an advantage in the competition and achieve business growth, enterprises need to improve their influence continuously and seize opportunities to attract consumers' attention. Precision marketing has become one of the critical factors. The prerequisite for precision marketing is to have precise insights into consumers. The arrival of the big data era provides new ways and means for enterprises to gain insight into consumers. This article mainly emphasizes that enterprises can make use of all kinds of data, from collecting and organizing consumer data to final formulating marketing strategies and improving the marketing strategy through consumer insight research, rather than using the traditional method of depicting consumer profiles and one-sided formulation of marketing strategy. The article introduces the big data era, explains the necessity of consumer insight, and states the relationship between big data and precision marketing. Additionally, it describes consumer insight, mainly from utilizing big data to analyze the consumers and understand the advantages and potential loopholes of big data-driven consumer insight. With the popularization of the Internet and mobile devices, the traces left by users are becoming more comprehensive and wealthier. It is crucial for enterprises to conduct data analysis to dig and analyze consumer habits, experiences, and values to tightly link consumer insights and marketing communications to carry out precision marketing.

Keywords: big data, consumer insight, precision marketing, consumer profile

1. Introduction

Due to the rapid growth of social, economic, science, and technology, the era of big data based on the internet and network information technology has arrived. Big data is one of the critical technologies and concepts in today's social field, and at the same time, it will be the general direction of future development. As more and more social resources are networked and digitized, the value that big data can carry will be constantly mentioned and improved, and the application scope of big data will be constantly expanded. Therefore, in the future network era, big data itself can not only represent value, but also big data itself can create value. From the perspective of the overall solution of industrial internet, big data is becoming one of the critical production materials for enterprises. Enterprises can complete product design and innovation through big data. At the same time, they can also assist

business operations based on big data. A large amount of literature has studied precision marketing under big data, such as the Precision Marketing Model Based on Big Data written by Daowen Ren and Xuejun Liu in 2021. However, the importance of consumer insights for precision marketing in the era of big data has not been privileged. Data analytics and consumer insights in the traditional model do not assist companies in developing accurate marketing policies in the digital era. Ignoring the potential of big data to provide specialized data and information support in consumer insights has led to the under-saturation of some marketing policies and activities. This article discusses several aspects of applying big data technology in consumer demand analysis, including consumer shopping behavior, portraying user profiles, shopping basket analysis, and public opinion analysis. It also mentions the opportunities for consumer insights and new trends in precision marketing in the era of big data. In addition, by combining precision marketing and consumer insights in the era of big data, it elaborates on the application, impact, and potential value of big data-driven consumer insights in product marketing, thus reflecting the importance of observing and analyzing consumers based on big data mining and analysis for the implementation of precision marketing in the digital era.

2. Literature Review

2.1. Big Data

The era of big data refers to the era that uses data analysis and processing technology for in-depth mining and application when massive data is produced due to the development of information technology and the popularization of the Internet [1]. The world-renowned consulting firm McKinsey is the earliest to propose the arrival of the era of big data. McKinsey states that data has penetrated every industry and business function today, becoming an important production factor. The mining and utilization of massive amounts of data heralds the arrival of a new wave of productivity growth and consumer surplus [2]. Big Data has existed for some time in the fields of physics, biology, and environmental ecology, as well as in the military, finance, and communications industries, but has attracted attention in recent years because of the development of the internet and the information industry [3]. In short, the era of big data could be understood as the combination of massive data and cloud computing.

Characteristics of the big data era include large volumes, various types, low-value density, fast speeds, and high timeliness. The prominent characteristic of big data is its massive data size. With the development of information technology and the increasing size of the internet, everyone's life is recorded in big data, and thus, the data itself is growing explosively [4]. The sources of big data are various under the influence of a considerable number of internet users and other factors, so the types of big data are also diverse. In addition, with the broad application of the Internet of Things, information perception is ubiquitous, and there is a tremendous amount of information. However, the value density is low simultaneously for any valuable information extracted after processing the vast amount of basic data [5]. Moreover, the high-speed characteristics of big data are mainly reflected in the rapid growth of the amount of data and processing. With the help of the Internet, cloud computing, and other means, big data can be rapidly produced and disseminated [6].

In recent years, the IT communication industry, including the Internet, the Internet of Things, cloud computing, and other information technologies, has been developing rapidly, and the rapid growth of data has become a serious challenge and a valuable opportunity for many industries, so the modern information society has entered the era of big data. In fact, big data changes people's daily lives and work modes, enterprise operations, and business modes and even causes fundamental changes in scientific research mode [7]. Generally, big data refers to a collection of data that cannot be sensed, acquired, managed, processed, and serviced within a certain period of time by conventional machines and hardware and software tools. Network big data refers to the big data generated by interacting and

integrating the three worlds of people, machines, and things in cyberspace and available on the internet [8]. Applying data to life and production can effectively help people or enterprises to make more accurate judgments on information to take appropriate actions.

Big data technology can improve the efficiency of people's data utilization and achieve the reuse and repurposing of data, dramatically reducing transaction costs and enhancing the space for people to develop their potential. Individuals can carry out holographic longitudinal historical comparisons and horizontal reality comparisons of transactional information at low or no cost [9]. Big data technology can be rapidly derived from the emerging information industry, with cloud computing, the internet of things, and intelligent engineering technology linkage, supporting a new era of information technology [10]. Although big data was born in information and communication technology and is becoming more pervasive and mature, its impact on social and economic life is not limited to the technical level. More essentially, it provides an entirely new method for us to look at the world; that is, decision-making behavior will be increasingly based on data analysis, rather than in the past, with more experience and intuition to make [11].

2.2. Consumer insight

Consumer insights is a process of discovering the new and hidden needs of consumers and applying them to the marketing practice of an enterprise, which provides conditions for discovering new market opportunities and finding new strategic battles, thus becoming an effective way to improve marketing effectiveness and get rid of the market struggle [12]. Consumer insights can be applied to all aspects of an organization's marketing, brand management, and business, including strategy, product innovation, communication, and customer service. Basically, insight is the understanding of specific consumer behaviors, including their behaviors, needs, characteristics, and lifestyles. Consumer Insight means deeply understanding the consumer and consciously applying that understanding to help them satisfy their needs. Consumer insight also means that intelligent organizations can use it to position themselves better to meet customer or stakeholder needs, make a profit, control budgets, have peace of mind, and be ethical [13].

Because of the complexity of humans and scenarios, consumer insight methods vary in different situations. However, in general, there are a few more universal steps. To begin with, consumer stratification, a reasonable consumer insight program must be based on accurately finding the target consumer. Experts will first segment a more general consumer portrait through demographic characteristics and then continue the following segmentation through psychology and consumer behavior [14]. In addition, it aggregates consumption scenarios. When and where consumers use a product or service because of their needs are factors that must be considered for consumer insights, followed by obtaining consumer data. For example, questionnaire survey method, in-depth interview method, purchasing relevant services and data from third-party providers or looking for professional industry research organizations and data consultants to obtain industry survey reports [15]. Last but not least, analyze the consumer data. After obtaining valid consumer data, in-depth analysis is necessary to obtain valuable conclusions and thoughts. For internet products, funnel analysis can be done according to the user growth model. For example, the AARRR model represents acquisition, activation, retention, revenue, and referral [16].

Consumer insights significantly contribute to brand positions, creativity generation, and marketing themes. Consumer insights help brands to give a precise positioning of consumer attributes and enable them to choose the most appropriate marketing mediums that are highly aligned with the attributes of their audience [17]. Consumer insights can help brands generate creative messages that make a lasting impression on consumers. It provides direction for exploring creative ideas and campaign themes that resonate with target audiences. In the face of the crisis of product homogenization, more than simple

products are needed to attract customers. Hence, the differentiation of the message and resonance of consumers are crucial [18].

In 2023, the world's consumer trends will be influenced by digital transformation. As new technologies emerge, consumer demand for digital products and services grows. Businesses must accelerate digital transformation to provide a more personalized and convenient consumer experience [19]. Meanwhile, the younger generation of consumers will become the leading force in the market. These young people pay more attention to brands' social responsibility, environmental friendliness, and product innovation. They are willing to try new ways of consumption and are willing to use technology products to improve their quality of life [20].

2.3. Precision marketing

Precision marketing is a kind of marketing method for enterprises in modern society, which is based on the internet and network data through collecting and analyzing a large amount of information about target customers, making an acceptable division of target markets and customers, and making and developing the company's products and services according to different target customers [21]. This method can effectively satisfy customers' needs for products and services and significantly improve the company's economic efficiency. Compared with the traditional marketing model, it mainly stands in the customer's position, takes the customer's needs as the production goal of the enterprise, and uses the network to analyze the demand scientifically. Precision marketing requires companies to have more accurate, measurable, and high-return-on-investment marketing communications with more results and action-oriented marketing communications programs and investments in direct sales communications [22].

Precision marketing methods include tracking consumers across the entire chain, constructing user profiles, formulating targeted operational strategies, launching precision marketing, and selecting appropriate tools. A wide range of data collection channels and a massive database can help brands capture actual target consumers more precisely and quickly, and access market concerns more immediately and accurately. With the data, users can be tagged with various attributes, preferences, behavioral trajectories, and values to form a user profile. Based on various labels and customer insights, brands can then operate on consumers by tiers and groups, for example, tiering them according to user value and life cycle and tiering them according to tags such as geography, preference, behavioral trajectory, and source and establish marketing mechanisms such as innovative marketing, event marketing, holiday marketing, social marketing, and fission marketing to interact with consumers and cultivate consumer stickiness and loyalty continuously [23]. The core of precision marketing lies in user operations, and it is vital to have relevant tools to help carry customers and operate customer data. Brands can analyze their purchasing behavior through the data displayed by the CRM system, combining the types of products purchased by customers, prices, and purchasing frequency to analyze the customer's consumption habits and consumption psychology to provide them with targeted services and launch preferential activities of interest to customers [24].

Precision marketing can improve the accuracy of message delivery. The collected basic user information, consumer behavior information, and internet application information are integrated into a complete large-scale database. The analysis of data and information can help enterprises accurately find customers who meet the product's consumer positioning. It improves the waste of resources caused by the large volume and wide range of product information in the past, thus improving the efficiency of pushing advertising information [25]. Precision marketing can also efficiently maintain loyal customers. Big data can identify and take care of the needs of high brand loyalty and focus on maintaining loyalty so that companies have a stable source of customers. In addition, precision marketing can test marketing strategies. Big data can also decide whether the marketing plan is reasonable or not. Each marketing plan should apply to one or more groups categorized by big data

[26]. If marketing decisions are not made with clear audience groups and cannot be accurately placed on the right people, the program's efficiency will significantly reduce.

Network user behavior data generated by the database on the role of marketing is that when this user behavior data is structured and thoroughly mined and analyzed, it will become a precious asset for a business. Data can be labeled data through the analysis of user behavior, making them into a living human personality trait. In detail, it analyzes the network user behavior of gender, age, occupation, and preferences, mining the user's personality needs to form the user's data structure [27]. For data-driven precision marketing, the value it is expected to generate is to convey the right product or service to the right person at the right time through the right channel and in the right way, which is also the essence of precision marketing in the era of big data. Precision marketing is the future trend of enterprise marketing. It increases the total value of customers. Precision marketing realizes "one-to-one" marketing, and under the guidance of this concept, its product design takes complete account of the individual characteristics of consumer demand, enhances the adaptability of product value, and thus creates more excellent product value for customers [28].

2.4. Consumer insights in the era of big data

Big data-driven consumer insights are the process of analyzing consumer profiles, preferences, behaviors, and consumption journeys in an accurate, timely, and three-dimensional manner through advanced research methods. There are several aspects of the application of big data technology in consumer demand analysis. Firstly, personalized recommendation. Analyzing consumers' shopping, browsing, and other behaviors through big data technology to understand consumers' interests and preferences to recommend goods and services that meet their needs, and to improve consumers' willingness to buy and their satisfaction. Secondly, user profiles. Collect and analyze consumers' demographics, interests, behavioral preferences, and other information through big data technology to form consumers' user profiles, understand consumers' needs and behaviors, and support enterprises in formulating accurate marketing strategies [29]. Thirdly, shopping basket analysis. Analyze the combination and quantity of products in consumers' shopping baskets through big data technology to understand consumers' needs and purchasing behaviors and provide enterprises with more accurate product combinations and pricing strategies. Lastly, public opinion analysis. Analyze the comments and feedback on social media, forums, and other platforms through big data technology to understand consumers' attitudes and needs towards enterprises and products, providing references for enterprises to develop targeted brand and marketing strategies [30].

Big data-driven consumer insights have these advantages. Authenticity, analyzing users' behavioral habits in different consumption scenarios, truly reflecting consumers' purchasing preferences, and eliminating the interference of consumer psychology. Three-dimensionality. From consumers' purchase intention to checkout preferences, it encompasses both time and space dimensions and paints a comprehensive picture of consumers. Timeliness. Due to the rapid development of the internet, big data can collect data in real-time and reflect it to the decision-making level, keeping up with market changes and even predicting market trends [31].

Potential problems with big data-based consumer insights include data quality issues. The environment in which the big data era operates is highly dynamic, and errors and inaccuracies can affect research accuracy and data reliability. In addition, algorithm and technology issues are also a concern. There are many data sources in the era of big data, so one of the challenges is choosing a suitable algorithm for data processing and analysis. Moreover, an enterprise is facing legal and privacy protection challenges. The need for companies to comply with relevant legal requirements for processing and using consumer data, as well as protecting consumer privacy, are challenges that companies must face [32]. Understanding and interpreting data is an important issue due to the massive amount of data in the era of big data as well.

Big data consumer profiles are panoramic, transparent, highly accurate, and dynamic compared to traditional consumer insights. Consumer portraits in the era of big data can face almost all users and deal with massive amounts of user-related data. Compared with relatively biased sampling analysis, the large sample size handled by consumer profiling significantly reduces statistical deviation. Due to the development of information technology, especially with the popularization of mobile internet, the dimension of data that can be captured by consumer profiling is comprehensive. It is no longer limited to static or simple dynamic data such as transaction records. The big data consumer portrait can present the whole picture of the consumer rather than a partial picture from various dimensions according to the needs of use. In addition, accurate deep insights reduce the risk of subjective factors interfering with the accuracy of the results [33]. In fact, consumer behavior changes over time, in context and the environment. Preferences change, needs change, and motivations change. Therefore, consumer profiles should be dynamic and, in time, may even need to overturn and eliminate past profiles.

2.5. The importance of consumer insight for precision marketing

Two core applications of consumer insights in product marketing include user insights when defining a new product and user insights when communicating with marketing. When designing a product, it is often necessary to find out what users really want and what makes it different from competitors, and actual user insights take work to come by. Market research is a reliable way to get deep user insights into general consumer products [34]. In fact, the genuine desire of users will be hidden and form potential inconformity. The specific products that users need require marketers to carefully analyze the consumer logic and usage habits behind the users before they can extract the actual user insights from them.

There is still a massive chasm between translating product benefits into perceived user benefits. There are three main ways to cross this gap. Firstly, start by studying the positioning slogans of successful competitors. Successful competitors normally capture the essential demand points of target users, and their positioning slogans reflect, to some extent, the primary reasons and facts for users' purchases. Secondly, start by studying consumer use scenarios and habits. Study the use of the product's use scenarios and user habits, reconstruct the entire process of user consumption of the product, and discover new user perception points and points that still need to be fully satisfied. Evaluate the intensity of users' attention to these perception points to reconstruct the communication concept [35]. Thirdly, starting from the study of consumer values. Values are people's perceptions, judgments, and preferences about things outside the world, and the depth of values affects the user's favorability of a brand. Studying and summarizing the values of target users and communicating with them using words, images, events, and stories of their favorite values are necessary for brand communication [36]. Enterprises need to study and combine values based on the times and values based on the people to develop communication content.

Consumer insight is the cornerstone of product development and innovation. Accurately discovering and grasping consumer needs is the foundation of product development and innovation. At the same time, consumer insight is also the lifeline of successful marketing. Insights are the foundation of business marketing, and good consumer insights can bring brands marketing ideas with business value. Through in-depth insights, brands can communicate the differentiation of their product positioning in the communication process and meet users' needs functionally and emotionally. For any marketing campaign, the first thing that matters is a deep understanding of the consumer [37]. Only with deep and detailed consumer insights can firms determine their products' positioning, target consumer-satisfying products' development, and match the channels and marketing campaigns for precise marketing.

From a macro point of view, as the level of economic development rises. Material life is greatly enriched, many market areas have escaped from the traces of the shortage economy era and entered the consumer-centered buyer's economy era, and consumers have become a more vital force in the competition of marketing. With the changes in the marketing environment, fragmentation has become the keyword of marketing in the 21st century, and both media and consumer fragmentation have led to continuous changes in the consumer market [38]. Consumer surveys based on quantitative research are being tested in the new marketing environment. The new era and market environment require enterprises to pay close attention to the potential psychological factors of consumers in the marketing process to grasp the trend. In addition, in prosperous material life, consumers' choices of commodities are becoming more diversified, and people seldom consider the satisfaction of the physiological level when choosing commodities, but rather consider the satisfaction of the psychological level more. It is challenging to use quantitative research tools to gain insights into the psychological level of consumers, so consumer insights have been put on the agenda of academics and marketers [39]. To a certain extent, consumer insights can avoid the problem of bias caused by too much adherence to quantitative analysis. The deep-seated factors can best explain consumer purchasing behaviors after researching consumers' psychology and behaviors from the surface to the inside. They can provide a directional strategy for enterprise marketing [40]. Consumer insight can help enterprises find the real reasons and market opportunities behind the appearance, which helps enterprises find a more accurate brand positioning, make product development and improvement more targeted so that enterprises can more precisely and efficiently get out of the market predicament, develop a more differentiated marketing strategy, and be in a favorable position in the market competition.

3. Conclusion

This paper mainly introduces the definition, characteristics, application, and impact of consumer insights and precision marketing in the era of big data from partial concepts to integral understanding. Then, it lists the opportunities, misunderstandings, and reflections of consumer behavioural insights by combining them with the background of big data. Finally, and most importantly, the importance of consumer insights for precision marketing in the era of big data is demonstrated by explaining the impact of consumer insights trends on precision marketing and the marketing value brought by consumer insights reports. In the era of big data, using data analysis tools for effective consumer insights helps companies adopt more precise marketing methods and strategies, effectively improving the company's economic efficiency and market share. In the current market environment, the precise marketing model is a vital trend in transforming and optimizing marketing methods. In the era of big data, in order to make the precise marketing mode better applied to enterprises and contribute more to the development of enterprises, it is necessary to change the original marketing concept and traditional consumer insight methods in the shortest possible time and utilize the big data technology to provide professional data and information support for the enterprises to a more accurate consumer portrait and more accurate marketing programs. Overall, this article analyzes the importance of consumer insights for precision marketing in the era of big data through the refinement of qualification and reminds enterprises that in today's increasingly fierce competition, big data consumer insights are an essential part of the enterprise to shift to the consumer as the core but also to gain and understand the customer's psychology, and precision marketing is a necessary way to go through.

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