Exploring the enterprise marketing strategy innovation in the era of big data

Gang Zhang

Beijing Novartis Pharmaceutical Co., LTD., Changping, Beijing, 102200, China

Abstract: *Big data, a concept that stems from the need to process and analyze massive and continuously growing data resources, is characterized by core features such as high speed, diversity, high volume, and low value density. In the field of marketing, the definition and characteristics of big data imply that companies can collect and analyze information about consumer behavior, preferences, and feedback from a variety of sources, such as social media, online shopping records, and geolocation data. This in-depth mining and intelligent application of data enables companies to understand market dynamics and consumer needs more accurately, and thus develop more effective marketing strategies. The article takes the importance of enterprise marketing strategy innovation in the era of big data as the entry point, analyzes the problems in enterprise marketing in the era of big data, and discusses the enterprise marketing strategy innovation measures in the era of big data for related personnel's reference.*

Keywords: *big data era; enterprise marketing; strategic innovation*

1. Introduction

The advent of the Big Data era has had a profound impact on business marketing. Big data is not only defined as a massive, fast-generating and complex collection of data, but also, and more critically, its inherent insight and predictive power. By collecting and analyzing multi-dimensional data such as consumer behavior, preferences, social media feedback, etc., enterprises can more accurately portray consumer profiles and realize the marketing transformation from "casting a wide net" to "precise targeting". In the future, with the deep integration of AI and other advanced technologies with big data, data will become the core competitiveness of enterprise marketing. However, it is also necessary to pay attention to the construction of data ethics and regulatory environment, to ensure that while utilizing the value of data, to maintain a fair and just market order, to achieve sustainable business development.

2. The importance of enterprise marketing strategy innovation in the era of big data

In the era of big data, the importance of enterprise marketing strategy innovation is reflected in the following aspects: first of all, the application of big data technology enables enterprises to more accurately understand consumer demand and behavior patterns. By analyzing massive data, enterprises can discover potential market opportunities and formulate more personalized marketing strategies, thus improving marketing efficiency and effectiveness. Second, big data technology can help enterprises optimize resource allocation[1]. Through data-driven decision-making, enterprises can allocate marketing budgets more rationally and focus resources on areas that are most likely to bring returns, thus improving the overall marketing ROI. Again, the innovation of enterprise marketing strategy in the era of big data helps to improve the market competitiveness of enterprises. In the fierce market competition, enterprises that can quickly respond to market changes and timely adjust their marketing strategies are more likely to succeed. The application of big data technology enables enterprises to monitor the market dynamics in real time and respond quickly so as to take advantage of the competition. Finally, the innovation of enterprise marketing strategy in the era of big data helps enterprises build long-term customer relationships. Through in-depth analysis of customer data, enterprises can better understand customer needs and provide more attentive services, thus enhancing customer loyalty and establishing a stable customer base[2].

3. Problems in enterprise marketing in the era of big data

3.1. Lack of advanced marketing concept and strategic planning

In the era of big data, one of the challenges faced by enterprises is the lack of advanced marketing concepts and strategic planning[3]. As shown in Table 1. Many enterprises have not yet fully understood the potential of big data and still rely on traditional marketing methods. This backward concept and planning has led to the inability to fully utilize the advantages brought by big data in market positioning[4], product development and customer relationship management. To overcome this problem, companies need to cultivate a data-driven marketing mindset and make data analysis a core part of the decision-making process, so that they can better understand consumer needs, predict market trends, and develop more precise and effective marketing strategies. In addition, enterprises need to develop long-term strategic planning, closely integrate big data technology with marketing strategy, and ensure the innovation and foresight of marketing activities. In the context of big data, the continuous updating of marketing concepts and clear marketing strategy planning become key factors to ensure the success of enterprise marketing.

Table 1: Example table of missing marketing concepts and strategic planning

serial number	Description of the problem	Suggested measures	intended effect
1	Lack of advanced marketing concepts	Conduct market research and learn industry best practices	Enhancing brand competitiveness
2	Lack of clarity in strategic planning	Setting long-term and short-term marketing goals	Clarify the direction of development and improve implementation

3.2. Problems of data security and privacy protection

In the era of big data, enterprises are able to collect and analyze massive amounts of consumer data to improve marketing efficiency and accuracy. However, the issues of data security and privacy protection in this process are becoming more and more prominent. In the data space, companies need to address the major challenge of privacy protection in the short term. On the one hand, enterprises can adopt technical means such as anonymization and de-identification to handle sensitive information and reduce the risk of data leakage. At the same time, they should establish a sound data life cycle management mechanism to ensure the security of data at all stages, including collection, storage, analysis and disposal. On the other hand, enterprises need to strengthen their awareness of legal compliance, follow GDPR and other relevant domestic and international laws and regulations, and obtain users' explicit consent when acquiring and using data.

In addition, enterprises can build privacy-protection-based analysis models, such as differential privacy techniques, which allow them to analyze data while protecting individual privacy. Through these strategies, enterprises can not only avoid reputational losses and legal disputes caused by data security issues, but also win the trust of consumers, thus gaining a long-term advantage in the competitive market environment.

3.3. Increased difficulty in data analysis and interpretation

With the arrival of the big data era, enterprises are facing unprecedented opportunities, but also accompanied by increased complexity of data analysis and interpretation. Big data is no longer just synonymous with massive information[5], it contains multi-dimensional features such as speed, diversity and value density, which makes the process of extracting valuable information from data more difficult. For example, the fusion analysis of heterogeneous data from multiple sources, such as consumer behavior data, social media data, and transaction data, requires companies to have cross-domain knowledge and advanced analytical skills. In addition, the updating of data analysis tools, such as the introduction of machine learning and artificial intelligence algorithms, requires marketers to continuously learn new analysis methods to adapt to the rapidly changing market environment.

Enterprises need to build data analysis teams, introduce data scientists, and utilize tools such as A/B testing and data mining to improve data interpretation skills. At the same time, establish data

governance mechanisms to ensure data quality and reduce the impact of "data noise" on decision-making. This means that companies need to turn data into insights that drive innovation and optimization of marketing strategies.

3.4. High investment costs for data analysis and integration technologies

In the era of big data, companies need to invest in advanced data analysis and integration technologies in order to improve the efficiency and accuracy of marketing[2]. However, this process is often accompanied by high costs. First, companies need to purchase and maintain high-performance hardware equipment, such as servers and storage systems, to process and analyze massive amounts of data. Second, companies need to bring in and train specialized data analysts and technicians, which involves not only recruitment costs but also ongoing training and education expenses. Finally, companies also need to invest in the latest data analytics software and tools, which often require expensive licensing fees.

3.5. Marketing strategies struggle to keep up with data changes

Another challenge that organizations face in the era of big data is the difficulty of marketing strategies to keep up with the rate of data changes. As data is updated rapidly, enterprises need to constantly adjust and optimize their marketing strategies to adapt to the changes in the market. However, many enterprises are lagging behind in this area and are unable to capture changes in consumer behavior and market trends in a timely manner, resulting in ineffective marketing campaigns.

4. Enterprise marketing strategy innovation measures in the era of big data

4.1. Innovative upgrading of marketing concepts and optimization of marketing strategies

First of all, it is necessary to change the original marketing concept of the enterprise, break through the traditional marketing strategy, and establish the integrated development mode of "online + offline"; use big data analysis and mobile Internet and other technologies to improve the enterprise's competitiveness in the market. With the progress of Internet technology, the number of online shopping is increasing. Therefore, enterprises should not only get rid of the traditional "offline" sales model, but also actively utilize network technology to actively develop online marketing platform[1]. In this context, enterprises should actively change the marketing concept and method, and combined with their own actual situation, the use of the Internet to optimize the marketing structure. Secondly, with the help of big data technology, the marketing platform has been greatly expanded. With the development of the Internet, big data has gradually become the main means for people to obtain information and a new business model. For many enterprises, the C2B business strategy makes them feel uncomfortable, but in fact, these are consumer-centered, allocating all resources according to the needs of consumers, thus avoiding unnecessary waste of resources. In this way, an online sales and service platform can be built. By breaking the limitations of the traditional sales platform, it improves the adaptability to the market, expands the marketing field, improves the service level, and promotes the development of enterprise marketing to a higher level. Finally, the excellent marketing ideas at home and abroad to learn from, and according to the actual situation of the enterprise, the corresponding innovative development. As an emerging information technology, digital technology is a new kind of information technology produced by integrating modern technology and Internet technology together[6]. In China, because the concept of digital marketing was put forward relatively late, it is difficult to meet the increasingly diversified consumer demand. In the context of the rapid development of Internet technology, the advanced marketing concepts of the West came into being, which are very different from the traditional concepts in China. Enterprises in the development of marketing strategy, should be combined with China's national conditions, drawing on foreign advanced market concepts, and actively explore and utilize creative marketing ideas to ensure the combination of marketing strategy and innovative power.

4.2. Establish data governance and quality control mechanisms

To ensure data security and quality, enterprises should establish good data governance mechanisms. This includes establishing clear guidelines for data management, implementing data security measures, and conducting quality monitoring. This approach allows organizations to manage their data assets efficiently and ensure the accuracy and security of their data. Data governance mechanisms should

cover the entire process of data collection, storage, processing, and analysis. At the same time, the enterprise should also conduct regular quality checks on the data to correct errors and inconsistencies and ensure the high quality of the data.

4.3. Adopt advanced data analysis tools and technologies

With the development of technology, a variety of new data analysis tools and technologies are emerging. Enterprises should actively use artificial intelligence, machine learning, big data and other technical means to improve the efficiency and depth of big data analysis. These technologies not only enable enterprises to better understand the market and consumers, but also maximize the improvement of their business decision-making process. For example, the use of machine learning models, which can automate the processing of massive amounts of data, can quickly identify the behavioral patterns of consumption and make predictions about market trends[7]. This automated and intelligent analysis method can effectively improve the precision and speed of data processing.

4.4. Reasonable adoption of cloud computing services and professional data analysis services to control enterprise input costs

Enterprises can consider adopting cloud computing services to reduce upfront investment costs through pay-as-you-go. The cloud computing platform can provide elastic computing resources so that enterprises can adjust the use of resources according to actual demand, thus effectively controlling costs. At the same time, enterprises can cooperate with professional data analytics service providers to utilize external resources and expertise to reduce internal investment and operating costs. In addition, enterprises can share data resources and analytical capabilities by establishing partnerships to reduce the cost burden on individual enterprises. Through collaboration, enterprises can jointly develop and use advanced analytical models and algorithms to improve data processing efficiency and reduce duplication of investment. At the same time, enterprises can participate in industry alliances to jointly develop data standards and sharing mechanisms to promote the circulation and utilization of data and further reduce the cost of data analysis and integration. In conclusion, despite the high investment costs of data analysis and integration technologies in the big data era, by adopting strategies such as cloud computing services, cooperation with professional data analysis service providers and establishing partnerships, enterprises can effectively control costs and improve the efficiency and accuracy of marketing.

4.5. Establish marketing strategy adjustment mechanism

First, enterprises should establish a real-time data monitoring system, collect consumer behavior data through various channels, and analyze market dynamics in a timely manner. Secondly, enterprises need to cultivate a fast-responding marketing team that can quickly adjust marketing strategies according to data changes[8]. In addition, enterprises can utilize machine learning and artificial intelligence technology to predict market trends through algorithms, providing a scientific basis for marketing decisions. Finally, enterprises should also strengthen cooperation with technology providers and utilize advanced analytical tools and platforms to improve the efficiency of data processing and analysis. As shown in Table 2. Through these measures, enterprises can better adapt to data changes and develop more flexible and effective marketing strategies to stay ahead in the competitive market.

Table 2: Marketing Strategy Adjustment Mechanism Table

move	step	goal
1	Establishment of real-time data monitoring system	Collect consumer behavior data through various channels and analyze market dynamics in a timely manner
2	Developing a responsive marketing team	Ability to quickly adjust marketing strategies based on data changes
3	Leveraging Machine Learning and Artificial Intelligence Technologies	Predicting market trends through algorithms to provide a scientific basis for marketing decisions
4	Strengthening cooperation with technology providers	Utilize advanced analytical tools and platforms to improve the efficiency of data processing and analysis

5. Emphasize data analysis, strengthen customer relationship management

In the context of the big data era, enterprises in the marketing process should pay attention to the analysis of customer data, and on this basis, constantly improve customer relationship management, through the establishment of customer files, to understand the customer's consumption needs and consumption preferences, so as to provide targeted products and services. In addition, enterprises should also analyze the marketing data in depth through big data analysis technology, explore the potential value of the data, so as to develop a more scientific and reasonable marketing program, and constantly meet customer demand. In this case, enterprises can understand the changes in market demand through market research, and combine with big data technology to predict and analyze the changes in market demand, so as to develop more scientific and reasonable marketing programs. In the context of the big data era, enterprises should also strengthen customer relationship management, and develop marketing strategies based on the data information in customer relationship management. In this case, enterprises can use big data analysis technology to analyze and predict customer consumption behavior, and then develop targeted marketing programs based on customer consumption behavior and consumption habits.In the wave of the big data era, enterprises must actively embrace data as a core force to enhance competitiveness. Through refined data management and intelligent marketing tools, enterprises can not only better meet customer needs, but also stand out in the competitive market and achieve sustainable development.

6. Building a specialized talent team and strengthening data analysis capabilities

Enterprises wanting to achieve good development must pay attention to the construction of the talent team. In the context of the big data era, enterprises should strengthen the construction of the talent team, provide employees with a good development platform, and improve the professionalism of employees. When enterprises introduce talents, they should pay attention to the personal development and ability cultivation of employees and enhance their self-learning consciousness. At the same time, enterprises should also encourage employees to carry out independent study, improve the comprehensive quality and business level of employees, and provide them with more development opportunities. In this process, the enterprise can make full use of internal and external resources, constantly optimize the talent training mode, improve the comprehensive quality and business level of employees within the enterprise.

In addition, enterprises should also actively introduce high-level talents to promote the innovation of enterprise marketing work. In addition, enterprises should also develop a perfect talent management system and incentive mechanism, and constantly improve the enthusiasm and initiative of employees. In this case, enterprise marketing personnel can make full use of big data technology and related software tools to provide effective guidance for enterprise marketing work.

7. Conclusion

To summarize, with the arrival of the big data era, marketing strategies are undergoing profound changes. Big data not only helps companies understand consumer needs more accurately, but also provides unprecedented possibilities for product customization and marketing decisions. In the future, a global perspective will make data marketing strategies even more challenging. Differences in data regulations in different countries and regions require enterprises to be globally adaptable and flexible in adjusting their data strategies. In short companies need to continue to innovate, build a data-driven culture, cultivate relevant talent, and invest in technology platforms to cope with this fast-changing era and achieve continuous optimization of marketing and competitive advantage.

References

[1] Xie Fei. Analysis of enterprise marketing strategy innovation in the era of big data[J]. Mall Modernization, 2024,(16):51-53.
[2] Zhu Lin. Research on the innovation of enterprise marketing strategy in the era of big data[J]. Old Brand Marketing, 2024,(11):27-29.
[3] Cai Yulin. Analyzing the innovation of enterprise marketing strategy in the era of big data[J]. Marketing, 2024, (10):17-19.
[4] Xiao Ran. Exploration of enterprise marketing strategy strategy based on big data era[J].

Economist, 2024,(04):283-284.

[5] Chen Ze. Discussion on enterprise marketing innovation strategy under the background of big data era [J]. Marketing World, 2024,(06):12-14.

[6] Pan Mingzhao. Research on enterprise marketing strategy innovation in big data era[J]. Market Outlook, 2023,(18):24-26.

[7] Sheng Jie. Enterprise marketing strategy innovation based on the background of big data era[J]. Modern marketing (upper ten), 2023,(09):158-160.

[8] Luo Chunbao. Research on Marketing Innovation Strategies and Applications in the Era of Big Data[J]. Shanghai Business, 2022, (11):43-45.