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Optimizing Customer Experience through Alibaba's Big Data Marketing Insights

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Abstract:

In today's digital age, data has become the key to enterprise success. In China, Alibaba, as one of the largest e-commerce giants, possesses a large amount of massive data, which contains infinite value and potential. Alibaba's big data analysis has a wide range of applications in Alibaba's business operations, including in-depth research and analysis of market data, user behavior data, logistics data, and supply chain information. On the one hand, Alibaba utilizes artificial intelligence technology to perform pattern recognition and data mining on big data through machine learning and deep learning algorithms, in order to extract valuable information and patterns. On the other hand, Alibaba's big data analysis relies on the Alibaba Cloud platform, which achieves large-scale data storage, calculation, and analysis through powerful cloud computing capabilities, ensuring data security and scalability. Therefore, this paper discusses Alibaba's big data marketing approach and its impact on user experience to help it use its vast data resources to gain insights into consumer behaviour, preferences, and trends.

Keywords: Big data marketing, User experience, E-commerce, Data-driven strategy.

1. Introduction

As the originator of domestic e-commerce and half of the domestic capital, Alibaba is the earliest to do big data marketing, but also the strength of the most powerful technology. In this aspect of big data marketing, Alibaba has done very well [1].

In recent years, with the development of the Internet, e-commerce has gradually penetrated all aspects of people's lives. The advent of the era of big data, for the e-commerce industry can be said to be both opportunities and challenges, it can be said that the extensive application of big data has subverted the traditional marketing model [1].

The active use of big data technology by Alibaba, through in-depth mining of user behaviour, demand market trends, and other information, not only to achieve precise positioning of the global market but also to provide enterprises with more personalized, customized products and services, the enterprise to open up the market, attract customers, occupy a foothold has an indispensable impact. At the same time, on the one hand, facing the increasingly fierce market competition, considering political, economic, social, technological, legal, and environmental factors, the external challenges and opportunities cannot be ignored. On the other hand, for an e-commerce giant like Alibaba that relies on big data for precision marketing, evaluating how Alibaba's internal resources support its big data plan and overall business strategy has both theoretical and practical significance.

In this context, this paper will take Alibaba's big data marketing as an example, based on the actual analysis of its internal and external situation, find out the problems and solve the problems, discuss how Alibaba uses big data to insight the user needs, and improve the user experience through precision marketing, and put forward relevant suggestions.

2. Big Data Marketing Analysis and the Identification of the Issues.

2.1 External Issues Identified with PESTLE Analysis

In terms of politics, considering that big data applications are greatly influenced by government policies and regulations, it is especially necessary to consider external political factors such as whether the government has an open attitude towards big data technology and whether it has supportive policies. In response to the political factors, consideration needs to be given to whether the government has enacted regulations to protect user data security and privacy, and has imposed strict security regulations

on big data applications to prevent data leakage and misuse [2]. Political factors have a significant impact on the development and application of big data applications. If the government supports the vigorous development of big data technology and formulates strong policies on data protection and security regulation, it can promote the healthy development of big data technology. With this government support, Alibaba has effectively used big data to reveal consumer patterns, purchases, and trends, enabling marketers to make informed strategic decisions and successfully promoting more diversified marketing activities [2].

From an economic perspective, on the one hand, economic factors have a significant impact on the application of big data. If companies can make full use of big data technologies to improve productivity and create new business opportunities, they can contribute to economic growth. Alibaba can use big data technology to better understand and meet the growing personalized needs of consumers, thereby promoting sales growth and improving user experience. On the other hand, inflationary pressures and exchange rate fluctuations increase production and distribution costs and affect profit margins, placing greater demands on companies' big data marketing activities [3]. In this context, Alibaba needs to use big data analysis to optimize pricing and control costs to maintain profit levels and consider adopting a balanced strategy to cope with the pressure from inflation [4].

At the societal level, the fact is that the big data industry has become a new economic growth point, with the global big data industry market size reaching $56 billion in 2022, growing at a rate of more than 10% [5]. As far as China's big data industry is concerned, the public cloud deployment of big data platforms in China maintains a high growth rate every year, and the proportion of the market size is increasing. Figure 1 shows the market share of big data platforms in China, and the big data market size is expected to exceed $20,000 million by 2025 [5].

At the same time, societal acceptance of certain technologies or applications may change with societal trends. For example, the collection and use of health-related data by society may increase as health and safety concerns grow [6]. Against this backdrop, Alibaba Group executive Yang Tao said, "Alibaba Group is committed to helping data and providing more value to data, and in particular, are committed to being an enabler of data trade and providing more value to data trade and people's well-being" [7].

From the technical point of view, the technical factor is one of the most important factors in big data applications. Big data applications require advanced technical support, such as big data platforms, storage, computing, and analysis tools [8]. The continuous innovation and improvement of technology have a positive impact on big data applications. Based on this, Alibaba has built B2B, B2C, C2C, and other commercial trading platforms around e-commerce, cooperated with banks to establish Alipay as an online payment platform, and at the same time providing value-added services such as search engine and online software services for enterprises, and always focuses on the satisfaction of customers' needs, which is also an important part of the company's DNA [9].

From a legal point of view, data privacy and security are very important, and with the collection and storage of large amounts of data, the public's concern about data privacy and security has increased, and relevant laws and regulations have been newly affirmed and regulated. Indeed, previously, executives from the cloud computing division of Alibaba Group Holding Ltd. were interviewed by Shanghai authorities over the leakage of a sizeable police database, largely because a gateway managing the database had been open on the public internet for more than a year without a password, thus making it easy for outsiders to steal and delete the contents of its database [9]. Given the importance of consumer personal data and privacy protection, it is important for Alibaba to avoid legal exposure and fines for non-compliance and to ensure the legality and compliance of its data collection.

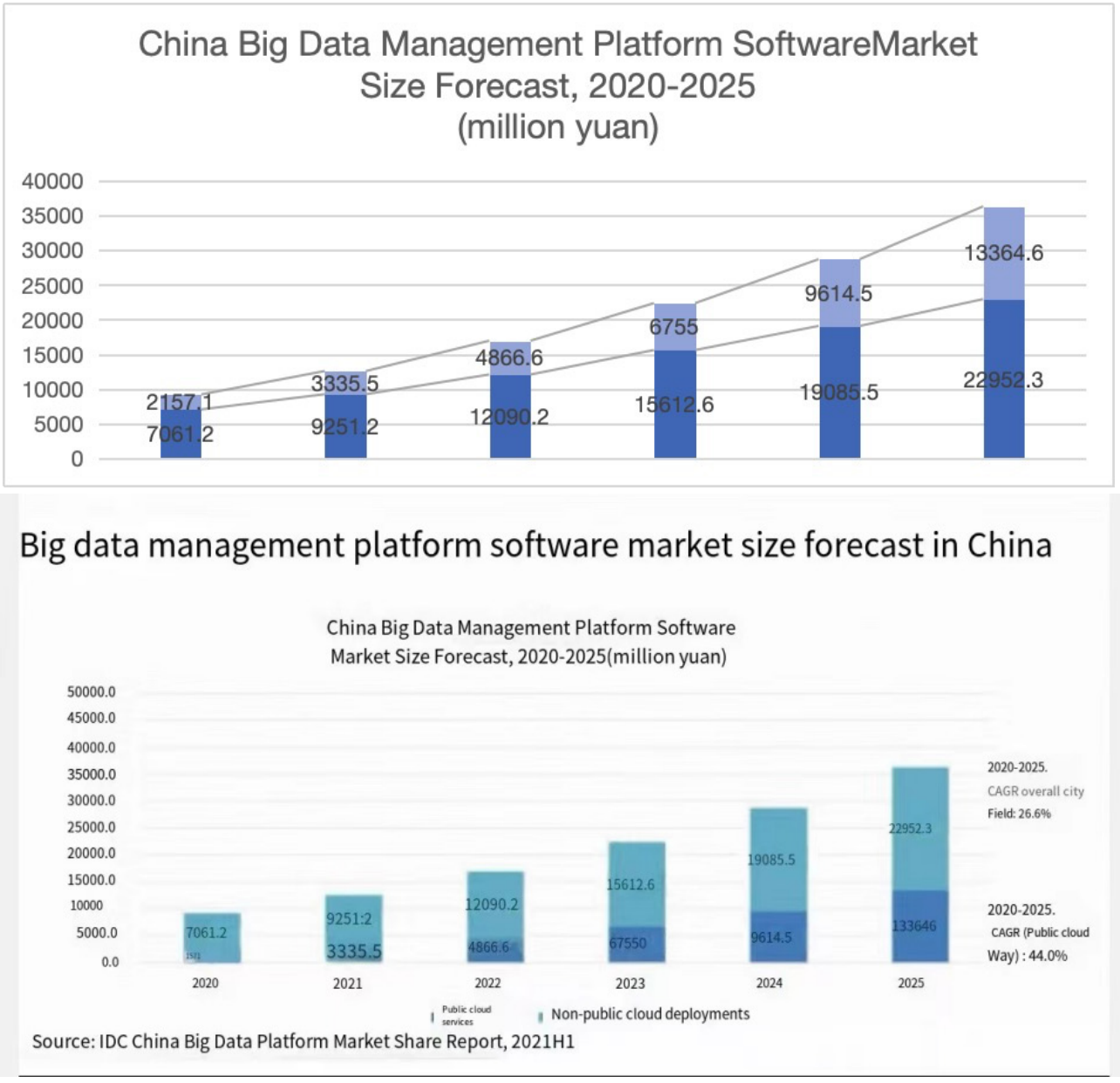

Fig. 1 Big data management platform software market size in China [10].

On an environmental level, some consumers blamed society for the increased level of carbon emissions because of the fact that people order products from different countries [10]. Therefore, Alibaba can use big data technology to optimize logistics routes, improve distribution efficiency, and reduce unnecessary energy consumption and carbon emissions. Also, big data can be used to identify and promote sustainable products, enabling consumers to make informed choices and fostering a positive brand image. In addition, increasingly stringent regulatory requirements for environmental compliance and growing emphasis on the importance of sustainable supply chains and ethical sourcing by all stakeholders make it crucial to upgrade organisations' sustainability certification and adopt sustainable strategies to adapt to the changing environment and subsequent demands [10]. Alibaba needs to use big data analysis technology to evaluate and screen the environmental performance of suppliers, choose more environmentally friendly and ethical sources, provide consumers with more green and sustainable product choices, meet the growing environmental needs of consumers, and improve user experience.

2.2 Internal Issues Identified with VRIO Analysis

First of all, in terms of value, the essence of quantitative marketing is to collect and analyse digital data to

understand consumer behaviour and optimise marketing campaigns. Considering that Alibaba's ecosystem encompasses platforms such as Taobao, Tmall, and Alipay, which generate a large amount of data related to user demographics, browsing history, purchasing behaviour, and payment preferences, specific approaches include removing pollution at the source, unifying data standards, making data granular, incorporating more external data, strengthening the management of data security, and establishing a data committee [11]. Figure 2 shows user-related and financial-related statistics for three major Chinese tech companies (Alibaba, Tencent, and Jingdong). Overall, in comparison, Tencent and Jingdong have equally large user bases and substantial revenues, but Alibaba's focus on e-commerce and its data breadth (across multiple platforms and services) gives it a unique advantage in big data marketing, and the data integration of Alibaba's ecosystems (e.g., Taobao, Tmall, and Alipay) enables a seamless and customised user experience, from browsing to purchasing to payment.

Company	User-related data and statistics	Financial-related data and statistics
Alibaba	Early 2015: over 300 million registered users and 37 million small businesses on Alibaba Group marketplaces including Taobao and Tmall.com (alibabagroup.com, 2015).	Fourth quarter of 2014: revenue $4.2 billion (Alibaba Group, 2015)
	Early 2015: Taobao had over 500 million registered accounts and over 7 million merchants, which sold 4,800 items per minute (forbes.com, 2015).	
Tencent	Early 2015: QQ had over 800 million users.	Total revenues: US $7.5 billion (first half of 2015) (Tencent.com, 2015)
	Mid-2015: WeChat had 550 million active users.	
JD.com	Mid 2015: 100 million active customers (Lohr, 2015).	Annual revenue: $20 billion

Fig. 2 User-Related and Financial-Related Statistics for Three Major Chinese Tech Companies [12].

Second, in terms of rarity, Alibaba has already achieved 100% of its core systems in the cloud, while making breakthroughs in artificial intelligence, big data, blockchain, and other technologies, and has a strong uniqueness in terms of its data sources and analytical capabilities. Compared with other companies in the same industry, as a platform-type technology company, Alibaba continuously improves the ability of technology infrastructure, and vigorously promotes the combination of technology and business, transforming it into plug-and-play services for merchants, with better uniqueness and product irreplaceability [12].

Next, in terms of imitability, on the one hand, although other companies are also trying to use big data technology to carry out precision marketing, Alibaba has maintained its competitive advantage through continuous innovation and optimisation of its platform. Alibaba's digital economy infrastructure not only generates a steady stream of data but also allows the ecology to continue to thrive and grow because of the widespread use of data. In the era of the digital economy, computing power is becoming a new generation of productivity, and Alibaba is facing a vast opportunity to upgrade not one industry, but all industries [13]. On the other hand, with the popularisation of technology and the intensification of competition, e-commerce platforms such as Jingdong and Pinduoduo are also improving their big data marketing system and have achieved certain results. For Alibaba, the digital economy-oriented business, finance, logistics, cloud computing, and other infrastructure open to all customers and partners to help them fully complete the digitalisation and move towards intelligence will be the top priority for its future development [13].

Finally, in terms of organisation, Alibaba has established a complete big data marketing system, including data collection, data storage, data analysis, precision marketing, and effect evaluation. Alibaba plans to serve 2 billion consumers worldwide by 2036, create 100 million jobs, and help 10 million SMEs become profitable. Meeting the needs of small businesses and consumers for digital technology and platforms is a foothold for advancing globalisation. At the same time, Alibaba maintains its team's ability to innovate and grasp the technological frontier through continuous training and development of employee skills.

3. Problem with Alibaba's Big Data Marketing

To see it as a whole, for the Alibaba enterprise big data marketing situation, although the enterprise has been

committed to achieving the digital economy, through the business, culture, technology, talent, organisational security strategic objectives, but there are still some problems, specifically:

3.1 Cultural and Value Conflicts in Global Big Data Markets

To begin with, common values and corporate culture conflicts occur from time to time. In the process of big data marketing, cultural conflicts are inevitable due to differences in national cultural backgrounds and cultural values [14]. Notably, the difference in values may affect the normal operation of Alibaba's overseas subsidiaries, increase the difficulty of integrating the organizational structure and product lines of the acquired overseas enterprises, thereby affecting the efficiency and coherence of big data marketing execution, and further make a negative impact on the consistency of user experience, such as reducing their willingness of purchase. The derivation and the conflicts of corporate culture would result in a compromised user experience in certain cases.

3.2 Localization and Personnel Issues in Big Data Markets

What's more, with the acceleration of Alibaba's internationalisation process and its comprehensive layout, it is facing more and more challenges, one of which is the problem of management personnel, which needs to be solved urgently. Considering that big data marketing requires the collaborative efforts and data sharing of teams from all over the world, poor cross-cultural management and communication may affect the collaborative efficiency of global teams and the consistency of global user experience, which makes it difficult for expatriates to integrate into the local market and carry out their work effectively [15]. Also, there are differences in product preferences, shopping habits, and interaction methods among users from different countries. If big data marketing does not fully consider these differences, the personalized recommendations and marketing content provided may not match user needs, affecting the user experience. At the same time, Alibaba failed to pay enough attention to the localisation of overseas employees in the early stage and lacked the selection and appointment of excellent management talents in the host country, which to some extent, has affected the speed of its overseas market expansion and the localization level of big data marketing, which may affect the experience perception of local users [16].

3.3 Quality Control and Brand Reputation Concerns of E-commerce Platforms

In addition, Alibaba's cross-border e-commerce platforms were once plagued by counterfeit and substandard goods due to the lack of supervision and lagging development in the early stage. The counterfeit and substandard commodities were once rampant and were boycotted and prosecuted by international brands such as Gucci, and the U.S. International Counterfeiting Alliance formally revoked Alibaba's membership in 2016 on the grounds of ineffective anti-counterfeiting, which seriously damaged Alibaba's image and corporate reputation overseas. Moreover, competition on Alibaba's e-commerce platforms is fierce, and some sellers are forced to lower their prices to maintain their original profits, which increases the likelihood that sellers will substitute the best for the best, affecting the shopping experience of overseas buyers and their trust in Alibaba's e-commerce platforms.

4. Relevant Suggestions for Alibaba's Big Data Marketing

In terms of Big Data Marketing, Alibaba should focus on using massive data to gain insights into consumer behaviours, preferences, trends, etc., and optimise marketing strategies accordingly. To address the current problems, Alibaba can consider the following suggestions.

4.1 Enhancing Cultural Sensitivity and Integration

First of all, cultural intelligence building can be the most important aspect to be lifted. Alibaba can choose to improve common values and reduce corporate culture conflicts through social marketing. Considering that at present, the social marketing of e-commerce mainly consists of two ways: cooperating with social networking sites and building its community-based sharing platforms, Alibaba can choose to acquire external data information by taking a stake in social networking platforms such as Stranger and Sina Weibo, and establish community platforms on platforms such as Taobao and Alipay, so that consumers can see the information that their friends have shared and posted. The establishment of social platforms, strengthens consumers‘ sense of belonging and reliance on the website, thereby affecting the efficiency and coherence of big data marketing execution. On the one hand, the advantage of cooperating with social platforms is that there is no need to invest a lot of manpower, resources, and money to develop and build the platform, and it can directly make use of the original user resources on the social platforms to quickly disseminate information as well as collect data. E-commerce enterprises can also choose which social platform to cooperate with according to their own needs, with strong initiative. On the other hand, Alibaba can strengthen the adhesion of users to e-commerce enterprises by establishing its own community-based sharing platform and can guide e-commerce enterprises to provide

products or services to satisfy regional consumer needs by collecting data through its own platform, and foster a more inclusive corporate culture to bridge gaps between headquarters and international subsidiaries [17].

4.2 Optimizing Social Engagement and Community Building

In addition, Research has shown that personalised services help to increase consumer satisfaction and brand reputation, and facing the situation of variations in user preferences across different regions challenges the precision of personalized marketing strategies. In the big data and internet environment, for Alibaba, personalisation of customer service becomes possible because web technology can effectively identify the needs of different customers and provide products to meet their needs [16]. As e-commerce companies can collect huge amounts of data information related to consumers and thus know their preferences, they can efficiently interact with them accordingly and provide them with personalised services.

4.3 Rigorous Quality Control and Brand Enhancement

Currently, there are many e-commerce platforms and fierce competition, while the transfer cost for consumers to choose to shop on other e-commerce platforms is almost zero. Therefore, focusing on service quality improvement plays an important role in attracting and retaining customers, which makes service failure remediation as well as brand integration of great importance. Service errors are often encountered by enterprises in the process of interaction with consumers [18]. For e-commerce enterprises, service errors are reflected in the fact that web pages cannot be opened normally, transactions cannot be completed in time, commodities cannot be delivered in time, consulting information cannot be replied to in time, and products do not conform to the descriptions, etc., which will have a very unfavourable impact on the marketing of the enterprise. Therefore, e-commerce enterprises should pay attention to the needs of consumers and focus on service failure remediation. At the same time, the reputation of e-commerce enterprises is an important determinant that affects consumers' judgment of whether they are safe and culpable [16]. Therefore, e-commerce enterprises represented by Alibaba should strengthen their brand building and improve their corporate reputation to distinguish themselves from other competitors and gain consumers' trust. Currently, when consumers choose e-commerce platforms, they increasingly see corporate reputation because a good corporate reputation often means high quality, social status, etc. Building a good corporate reputation, it can reduce the wind of consumer use, increase consumer loyalty, avoid getting into a price war with competitors offering similar products, and can also weaken the perceived risk of predicted price, social, and security before consumer use [17].

4.4 Promoting Sustainability and Environmental Responsibility

Finally, it is worth noting that as a leading global e-commerce company, Alibaba needs to take up the corresponding social responsibility to promote green and sustainable development. By optimising logistics and supply chain management, it can reduce carbon emissions and enhance environmental sustainability [18]. This can help Alibaba enhance its corporate image and meet the expectations of environmentally conscious consumers. In this way, Alibaba can continuously determine which types of content are more effective for different user groups and adjust its strategy based on feedback to guide consumers' purchasing decisions.

5. Further Study

Based on the analysis of Alibaba's internal and external environment, and clarifying the problems it faces in big data marketing, this article believes that future research can be carried out from the following aspects:

To begin with, focus on the ethical impact of Alibaba's big data marketing strategy, especially how to achieve data privacy protection and mitigate potential biases in its algorithms, as well as the impact on user privacy. Research can start from how to truly deepen and implement individual protection awareness, adhere to customer first, analyze the effectiveness of measures taken by enterprises to ensure data security and user personal information protection, actively implement corporate responsibility, and effectively protect the legitimate rights and interests of consumers.

In addition, future research should also examine the efforts made by enterprises toward environmental sustainability, as well as the effectiveness of their big data marketing methods in reducing carbon emissions. Researchers can evaluate Alibaba's specific practices in this area, such as using big data to identify and promote environmentally friendly products, optimizing logistics paths to reduce energy consumption, and reducing inventory backlog and waste through data analysis.

Last but not least, the research on the innovative model and development path of Alibaba's big data marketing has good theoretical and practical significance. Considering that Alibaba is currently strengthening institutional construction and improving its personal information protection management system, strengthening the internal data governance mechanism of the enterprise, strengthening

the construction and implementation of personal information protection systems, and promoting the construction of professional talents, products, and tools for personal information protection, this study can analyze how Alibaba can use cutting-edge technology to empower marketing innovation, systematically sort out and theoretically extract the innovative practices of Alibaba's big data marketing, and provide inspiration for the future development of digital marketing.

6. Conclusion

To sum up, the advent of the big data era has brought great changes to the marketing of enterprises, through the collection of massive data, the use of big data technology for analysis and processing, all-round and refined understanding of consumer behaviour and demand. With the development of the Internet, e-commerce is increasingly prosperous, e-commerce plays an increasingly important role in people's lives, and the development of big data brings good development opportunities to the e-commerce industry, but also makes enterprises face unprecedented challenges. Therefore, this study takes Alibaba as the research object, conducts a detailed analysis of its marketing practices both internally and externally in the context of big data, and puts forward relevant recommendations based on the internal and external challenges it is currently facing, including cultural conflicts, management of localisation issues, counterfeit goods, and data security issues, etc., to enable it to achieve sustained growth in the era of big data and to maintain its competitive advantage, depending on the challenges it faces. Continuously innovate to adapt to changing market trends and user needs.

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