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Discussion on the Development Opportunities and Challenges of E-Commerce in the Big Data Era

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Abstract: The advent of the era of big data has brought both opportunities and challenges to the development of e-commerce in my country. The application of big data can promote the marketing of e-commerce, which is conducive to personalized and accurate product promotion, and is conducive to mining the potential value of data. But at the same time, e-commerce also needs to identify and collect real and useful information from a large amount of data and analyze and process massive data. It focuses on the challenges that e-commerce companies face in terms of big data ownership, big data processing, and privacy protection. And put forward corresponding suggestions and strategies.

Keywords: Development Opportunities, Challenges, E-Commerce, Big Data

1. INTRODUCTION

Big data is another subversive technological change in the IT industry after cloud computing and the Internet of Things, which will have a huge impact on the development of e-commerce. Today, big data analysis has become a research hotspot in the e-commerce industry, and it is creating huge value in various ways. E-commerce will usher in great opportunities, but there are also many obstacles to overcome and more challenges to be met in the future. This is the era of big data, and the future competition is data competition. The big data processing we care about refers to the ability to quickly obtain valuable information from various data. On the one hand, extracting value from diverse data has the feature of value; on the other hand, high-speed and high efficiency in data acquisition, data transmission, data processing, etc., has the feature of fast processing (velocity). The "data" in the concept of big data refers to massive data with analyzable and quantifiable characteristics. The "big" in the concept of big data refers to the two characteristics of "volume" and "variety".

At present, the mainstream software tools for processing big data include the open-source Hadoop platform, programming models and methods, and the more advanced data processing platform Spark. What can people do in the era of big data? Big data is generated and exists in all walks of life. Although it is difficult to analyze and process, it is also possible to statistically analyze big data and apply the results through correlation techniques. For example: in the field of education, use big data to analyze the personality and hobbies of students, truly teach students in accordance with their aptitude, and improve the quality of teaching; apply big data analysis in the field of enterprise management, truly turn extensive management into fine management, improve efficiency and save expenses , and deal with the management problems brought about by the company in the development process.

Apply big data analysis in enterprise production to optimize various production and work processes to improve efficiency and benefits. The data that enterprises can analyze, and use is growing explosively. Through the collection, integration, and analysis of big data, enterprises can discover new business opportunities, create new value, and bring about big markets, big profits, and big development. Angel Knowledge Network, which specializes in research and content services, found in a survey conducted by North American retail managers from May to June 2012: 62% of retailers believe that in the field of e-commerce and multi-channel procurement, they can benefit from "big data". benefit the most, followed by marketing (60%), merchandise (44%) and supply chain (29%).

Therefore, for e-commerce companies, there are huge business opportunities in the era of big data. The precision of e-commerce marketing in the era of small data is limited, which not only wastes resources, but may also push invalid information to interfere with users, affect the consumption experience, lead to excessive inventory, excessive logistics costs, and fall into price wars in the fierce domestic market competition, self-development is limited. In the era of big data, personalized and accurate product recommendation has become a new direction for the development of e-commerce in the future. Big data provides sufficient nutrients and fertile ground for sustainable development for personalized business applications. The interactive trading platform of e-commerce itself has multiple functions, which can record data on user clicks, browsing, comments, favorites, purchases, and other behaviors.

2. THE PROPOSED METHODOLOGY

2.1 Opportunities brought by the era of big data to the development of e-commerce

Each enterprise stores the data involved in external affairs on the e-commerce platform, such as sales, procurement, supplier management, bidding, bidding, and other data. The platform is responsible for keeping these data and providing data support to ensure that all enterprises can smoothly work together through the data exchange system. The data exchange system is responsible for dynamically generating data in a uniform format in a specific data exchange task and transmitting, converting, writing, etc. In this way, the e-commerce platform and the data exchange system are organically combined. The competition in the field of big data technology will directly affect national security and the future, and the competitiveness at the national level will be partly reflected in the scale, activity, interpretation, and application of data owned by a country ability.

The United States has taken the lead in raising the application of big data from commercial behavior to national will: on March 29, 2012, the Obama administration of the United States invested 200 million U.S. dollars to launch the "Big Data Research and Development Program", proposing that "by collecting and processing huge and complex data information, gain knowledge and insights, enhance capabilities, accelerate the pace of innovation in science and engineering, strengthen U.S. homeland security, and transform education and learning." In our country, industries related to big data have just started, and will undoubtedly usher in good development opportunities. Customer structure, traffic, click rate, purchase cycle and interest will generate a large amount of data on the e-commerce platform. With the collection, integration and analysis of big data, e-commerce companies can accurately identify consumers' tastes and consumption intentions, actively provide them with personalized and accurate sales products and services and increase sales and profit margins.

In the field of e-commerce, Amazon is a worthy example. It provides intelligent shopping guides for users through personalized technology, which greatly improves user experience and sales performance. Big data has never been a free lunch. Big data is diverse and mixed with pros and cons, which poses a huge challenge to the collection and processing of data by e-commerce. With the advent of the big data boom, some new problems about big data emerge one after another, for example, it is mixed with false information, there is not much real and useful information, and false information will destroy the core information. Therefore, screening data during the collection process to ensure data quality is a key issue that e-commerce companies cannot ignore. Facing the tide of data, if it is not screened and screened, it will be difficult to ensure the integrity and objectivity of the data. Data analysis and integration based on this will inevitably be full of mistakes and lose its use value. The data itself is safe and the challenge of personal privacy leakage. In the flood of massive data, online conversations and online transactions are increasing, and their security threats are more serious. In the big data environment, through the in-depth analysis of user data, it is easy to understand user behavior and preferences, which will seriously lead to the leakage of business secrets and personal privacy of enterprises.

2.2 Challenges faced by e-commerce in the era of big data

For small and medium-sized e-commerce companies, the challenge of owning big data will become more prominent and severe. Therefore, in the face of this challenge, e-commerce companies should first realize the value of big data ideologically and attach great importance to data collection. Secondly, enterprises need to restructure their IT architecture, increase the carrying capacity of infrastructure, rent enough space, further strengthen investment and construction of informatization, and adapt to the requirements of the big data era. Che Pinjue, the pioneer of big data practice, mentioned in "Decisive Battle of Big Data" that the fault is the most serious problem we face.

Those who collect data don't know what those who use the data need to do, which is a major key to big data at present. Big data requires more proactive management and more innovation. For e-commerce companies, if the people at the front end of the website only know data such as clicks, but rarely pay attention to the commercial data at the back end; the staff who operate the transaction link at the back end of the website only know about selling things and rarely pay attention to the front end data, behavioral data and business data are not connected. Network bandwidth capability and challenges to data processing capabilities. Network bandwidth is a bottleneck, especially in the interconnection and intercommunication between various network access providers; in the era of big data, the network must have sufficient bandwidth support to ensure real-time data .

Data computing capability is another challenge when dealing with data floods. Distributed computing can solve some of these problems, but the deployment is relatively complicated. Submitted the special report "Planning the Digital Future" to Obama and Congress and raised the work of data collection and use to a strategic level. The first challenge of the report is the "data" issue, that is: "How to collect, store, maintain, manage, analyze, and share data that is growing exponentially is an important challenge we must face." In this way, website decision makers do not know the behavioral characteristics of the core user group of the website, nor do they know how to expand the scale of core users, nor do they know what links need to be cleared from the time a user logs in to the website until they leave. This e-commerce company is not far from closing. up.

However, many e-commerce companies today are playing the game of "coincidence" every day: recommend A's products today and remove A's products tomorrow; do low-price promotions today, and offline activities tomorrow. These changes in decision-making, without indication or good monitoring of the logical relationship between behavioral data and business models, are "by chance" with closed eyes. The process of extracting hidden and potentially useful information and knowledge from massive data is very complicated and requires repeated "removing the false and preserving the true". It usually goes through multiple steps such as business understanding, data understanding, data preparation, establishment of mining models, evaluation, and deployment. That is, before we start data analysis, we must understand the business needs, and clarify business goals and requirements according to the needs; the next step is to evaluate the existing data, and organize, clean up, integrate, and transform the original data. A series of data collection and analysis preprocessing work.

In the era of big data, Internet users' comments, pictures, videos, personal information, hobbies, transaction information, visited websites, etc. are all recorded by enterprises. Enterprises have mastered a large amount of consumer behavior data, integrate, and analyze big data, to discover new business opportunities and create new value. However, these data often contain real information of consumers, such as real name, home address, bank account number and other important real information during transactions on Taobao, which has gradually aroused our concerns about personal privacy. As Diebold, a famous American computer expert, said, in the information age, every data and every byte in a computer constitutes the flesh and blood of a privacy.

3. CONCLUSION

The era of big data has arrived, and the opportunities and challenges it brings to mankind are unprecedented. In some key industries and key areas, big data analysis and processing problems have emerged, such as the controversial 12306.cn Spring Festival ticketing system. Only by understanding big data in advance and meeting the challenges brought by it comprehensively and courageously can we not fall behind in the era of big data. E-commerce is about to enter a

competitive era in which data prospers and enterprises prosper, and data strengthens enterprises. Big data will become the new weapon of e-commerce, and whoever has big data and powerful processing capabilities for big data will have the weight to win and will eventually win the market.

4. REFERENCES

[1] Gan Lixin, Tu Wei. Discussion on the Opportunities and Challenges of E-commerce in the Big Data Era[J]. Science and Technology Square, 2013(3):4.

[2] Lu Hui. Research on Opportunities and Challenges of E-commerce in the Big Data Era [J]. Science and Technology Innovation Herald, 2019, 16(32): 2.

[3] Yuan Yanxing. Analysis of the Opportunities and Challenges of E-commerce in the Big Data Era [J]. Science and Technology Innovation Herald, 2019, 16(32): 2.

[4] Chen Lan. Opportunities and challenges of e-commerce in the era of big data [J]. China Management Informationization, 2021, 024(010):P.62-63.

[5] Liu Wei. Opportunities and challenges of media e-commerce in the era of big data [J]. News Front, 2015(4):2.

[6] Hou Limin. Discussion on the development of e-commerce under the background of big data [C]// 2018 Academic Conference on Smart Education and Artificial Intelligence Development. 0.

[7] Yu Lei. Opportunities, Challenges and Responses of Management Accounting in the Big Data Era [J]. Taxation, 2019(5): 1.

[8] Wang Mi. Challenges and Strategic Countermeasures for the Development of E-Commerce in the "Internet +" Era [J]. National Business Conditions: Economic Theory Research, 2016, No.2093(03):20-21.

[9] Anonymous. Opportunities and Challenges of E-Commerce and Marketing in the Era of Big Data [C]// The Fifth R Language Conference—Shanghai Venue. 2012.

[10] Wang Jiahao. Opportunities and challenges of e-commerce in the era of big data [J]. Industrial Innovation Research, 2020(17):2.

[11] Maqbool Khan Ma Quan. Generalization Theory and Application Research of Big Data Graph in Cloud Environment [D]. Nanjing University, 2018.

[12] Wang Xuelian. Analysis of e-commerce research in the era of big data [J]. New Business Weekly, 2018.

[13] Bai Xue. Analysis of Opportunities and Challenges in the Big Data Era [C]// 2015 Water Conservancy and Hydropower Foundation and Foundation Engineering—Proceedings of the 13th National Academic Symposium of the Foundation and Foundation Engineering Professional Committee of the Chinese Hydraulic Society. 2015.

[14] Yang Bin. Analysis of Opportunities and Challenges of E-Commerce in the Big Data Era [J]. Modern Marketing: Information Edition, 2019(10):1.