

Digital Transformation of China's E-Commerce Industry

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Abstract: China's e-commerce industry has experienced a substantial digital transition following the COVID-19 outbreak. This transformation is evident in various dimensions, such as technical advancements, shifts in customer behavior, and adaptations in operational frameworks. This article looks at how COVID-19 has affected China's e-commerce sector and how it has affected businesses' digital transformation. It is discovered through data and case analysis analysis that digital transformation improves competitiveness, lowers costs, and increases efficiency. However, it also emphasizes that a variety of issues, including personnel, management, technology, and so forth, must be taken into account while implementing digital transformation. Lastly, a few recommendations are made to help China's e-commerce sector succeed in the digital revolution.

Keywords: Digital economy, e-commerce, digital transformation

1. Introduction

The world economy has been greatly impacted by the COVID-19 pandemic, and China's e-commerce sector has developed and changed significantly during this time. Strict lockdown and quarantine regulations, enforced by the Chinese government to manage the outbreak, have negatively impacted offline business operations. Customers' travel options were restricted, and some physical stores were forced to close. Customers' purchasing habits have altered as a result of spending more time alone at home, and there is a noticeable increase in demand for internet shopping [1].

There has never been a better time for businesses and the economy as a whole to embrace digital change. In addition to keeping businesses open during the pandemic, digital transformation promotes ongoing innovation and economic growth. Business continuity is ensured by internet sales and telecommuting. Businesses may enhance the scientific and accuracy of decision-making, carry out precision marketing and customized services, better understand consumer demands, foster innovation and new business models, and more by utilizing big data analytics and AI technologies [2]. This essay examines the state of digital transformation in the context of the pandemic, the challenges it faces in the new environment, and the pertinent digital transformation policies from the perspective of e-commerce.

2. Digital Transformation under the Impact of COVID-19

2.1. The Pandemic-Related Push By the Government for Digital Transformation

The COVID-19 pandemic has significantly impacted the e-commerce sector and presented a once-in-a-lifetime chance to digitally alter government governance. To be more precise, the government is fostering digital governance through developing intelligent surveillance systems, monitoring and controlling epidemic dynamics in real-time, and bolstering big data analysis capabilities nationwide to precisely develop and modify preventative and control measures. Accurate data collection and analysis are essential to this process because it helps predict the epidemic's progress and direct efforts toward prevention and control.

By placing a high value on information construction, government agencies have been able to respond to citizen requests much more quickly and efficiently. One example of this is the intelligent logistics system's ability to guarantee a steady supply of basic necessities. The widespread use of cloud computing enhances information exchange between various government agencies and boosts response times for public health situations[3]. A number of e-commerce rules were introduced at a faster pace by the government during the period of epidemic prevention and control, which further contributed to the rapid development of the digital economy. Higher standards for the protection of customers' personal privacy, for instance, are imposed by the introduction of stricter data security regulations for the oversight of the online market [3]. This surely contributes to the long-term, healthy development of the e-commerce platform. Currently, e-commerce companies can surely take advantage of these new digital governance techniques and technologies to speed up their own company's online, digital, and intelligent transformation.

2.2. The Digital Transformation of Industries

The COVID-19 pandemic has expedited China's e-commerce sector's digital transition. Consider the "618" shopping festival as an example. A large number of celebrities attended the live delivery of goods as guests, which not only contributed to the rapid rise of live e-commerce's entertainment and theater-style delivery mode but also greatly enhanced the user experience [4]. The emergence of this model accelerates the rate of digitalization of the industry's upstream suppliers while also signaling the integration of e-commerce live streaming with traditional media, such as TV stations, and live events, such as concerts and music festivals. In order to incorporate more high-quality supply chain resources, China's e-commerce platforms are supporting the direct supply model from factory to consumer by concentrating on the industrial belt structure. The local market, which is less erratic than the effects on other markets, offers a steady stream of orders and encourages the improvement and streamlining of the domestic supply chain. The need for digital transformation is especially pressing and significant. By working together with e-commerce platforms, manufacturers and brand owners can reduce resource waste in the industrial chain, increase the accuracy of industrial supply, and enhance production and marketing plans through data feedback. E-commerce systems' precise supply and demand docking not only satisfies customers' varied wants for commodities, but it also lowers inventory costs and boosts sales productivity for retailers [5].

In addition, every link in the supply chain is changing due to the rapid advancement of online, digital, and cognitive technologies, particularly in the area of e-commerce. The acquisition of raw materials, manufacture, and processing, as well as final sales and logistics distribution, are all making supply chain management more transparent and effective thanks to digital technology [6]. The new offline retail formats in the e-commerce industry have started to employ technology to speed the growth of online businesses due to the pressure of modernization and transformation as well as the epidemic-induced decrease in passenger flow. There is a steady emergence of new online forms,

including retail malls, live broadcasting in commercial areas, local life services, and brand stores. A portion of the deep cultural analysis and consumption patterns that are part of the upgrading and digital transformation of China's e-commerce can also be seen in the ongoing development of new business and service models that are tailored to the specific needs of the local market. A key requirement is the intimate fusion of social culture and municipal policy, which is both a profound integration of society and culture and a technological innovation and cannot simply continue the old way of information construction [7].

2.3. Digital Businesses Transformation in the Surroundings.

The new coronavirus epidemic has spread worldwide, posing previously unheard-of opportunities and difficulties for China's e-commerce sector, particularly in driving businesses toward digital transformation. Due to the epidemic's suddenness and persistence, businesses must speed up digitization, adapt swiftly to changes in the market, and optimize their online business processes. The e-commerce platform has steadily grown its penetration of the upstream of the industrial chain, forcing the traditional retail formats that were forced to close to depend on it. For instance, Taobao, Jingdong, and other e-commerce behemoths have introduced the "factory direct supply" model, which aims to achieve one-stop direct supply services from the production base to consumers by reducing intermediate links, opening up production and marketing links, and integrating superior resources. By modifying production schedules in real time, manufacturers that have been negatively impacted by the epidemic can efficiently address the issue of overcapacity thanks to this model's effective reduction of inventory costs and improvement of supply chain efficiency [8].

Concurrently, the expansion of electronic commerce speeds up the process of digitally modernizing factories and production areas. This not only enables manufacturing companies to promptly adapt to market demands, but also establishes the groundwork for their subsequent realignment within the global supply chain framework. Furthermore, the e-commerce platform leverages its data analysis capabilities to assist retailers in achieving tailored suggestions and precision marketing, hence increasing the rate at which products are sold. Technology-wise, e-commerce platforms are always looking for new ways to apply AI, big data, cloud computing, and other technologies that are widely used in logistics management, product recommendation algorithm optimization, and consumer behavior prediction[9]. This helps businesses better understand market dynamics and cater to the individual needs of their customers while also making their platform more user-sticky and competitive.

3. Problems and Challenges of Digital Development in the New Environment

3.1. Governance Challenges

The COVID-19 pandemic's long-term effects have encouraged China's e-commerce business to refocus on digital transformation; yet, this process of digital e-commerce development is fraught with both opportunities and difficulties. Among them is the requirement to reinforce the government's excellent digital governance framework. Information islands, shoddy data exchange mechanisms, and challenging interdepartmental cooperation are some of the issues facing government digital governance today. The absence of government support for the creation of industry digital standards and the application of regulatory laws is caused by several causes. For instance, the e-commerce platform quality control system installation faces challenges with supervision and low violation costs because of the absence of universal data standards and exchange channels.

In addition, the government's digital governance structure needs to be improved through cross-departmental coordination, unified data interfaces, and regulatory technology upgrades due to the lack of interdepartmental cooperation in preventing risks associated with e-commerce platforms and

establishing and improving consumer rights and interest protection mechanisms. Regulators must use big data technology to conduct intelligent monitoring and early warning on the sales behaviour of e-commerce platforms to realize real-time discovery and treatment of problematic commodities, given the frequency with which e-commerce sold phoney and subpar goods during the anti-epidemic period. In order to ensure that a good market order is maintained in the complex and dynamic network market environment, we also need to build and improve the digital governance framework in the field of e-commerce, introduce professionals, formulate effective policies and measures, and optimize the digital response mechanism to implement accurate policies. In conclusion, the government's digital governance is essential to the healthy and sustainable growth of China's e-commerce sector. The only way we can adjust to the new challenges and trends facing the e-commerce sector in the modern era is to continuously enhance and refine the structure of digital governance.

3.2. Development Imbalance Among Regions

China's e-commerce industry has developed at a high-level thanks in large part to the digital transformation. The digital divide between regions is the most significant problem facing the digital development of e-commerce during the COVID-19 pandemic. This divide is particularly evident in regional variances in digital skills, availability of e-commerce services, and uneven digital infrastructure. For instance, there are still certain developing nations and areas with limited access to high-speed Internet, which prevents local companies and consumers from fully benefiting from the ease and opportunity that come with e-commerce. Furthermore, county-level and township markets' consumers' digital awareness, logistics distribution efficiency, and access rate to electronic payments lag significantly behind those of first-tier cities, which puts a direct brake on the growth and popularization of e-commerce. Regarding e-commerce platforms, an upper-level design model is frequently adopted, which is insufficient to meet the precision marketing based on regionally differentiated needs, despite attempts to compensate for this difference through the strategy of sinking the market. This is because there is a lack of thorough understanding of local consumption habits and cultural characteristics in actual operation.

The lack of e-commerce merchants in some areas is also a result of the unequal regional distribution of digital talent, making it difficult for such areas to sustain sophisticated digital operations and administration. This exacerbates the already existing digital divide between the regions. In response, the development of regional digital infrastructure—particularly the augmentation of network coverage and speed—has emerged as a crucial requirement for the accomplishment of digital transformation. Establishing a more thorough regional differentiated e-commerce development strategy, utilizing the unique qualities and possibilities of each region, and achieving accurate service and operation of differentiated markets are also essential. Additionally, in order to address the skills deficit in the e-commerce sector and facilitate the closing of the digital divide between regions, it is imperative that universities and businesses collaborate to train composite talents to meet the demands of the future digital economy.

3.3. Lack of Data Protection

Even though China's e-commerce sector has rapidly transformed digitally since the COVID-19 pandemic, there have been numerous issues and difficulties along the way. In particular, the limitations in social data governance have been more apparent. Big data use in contemporary e-commerce systems typically faces issues including inconsistent data quality, non-standard data collection, and insufficient data privacy protection. Using the live delivery mode that is being aggressively investigated by e-commerce behemoths as an example, it creates a new consumption trend but also generates a vast amount of data, such as supply chain data, transaction data, and user

behavior data [9]. Ensuring user privacy and security is challenging without sufficient compliance management, and data loss and misuse are commonplace. Furthermore, the current e-commerce data governance system is not yet complete and lacks systematic and modular data processing and analysis tools, which makes it difficult to fully develop and utilize data value and results in low data governance efficiency in the face of ever-expanding types of data and massive data scale [10].

However, the issue of data islands persists due to the absence of a mechanism for sharing data. There are still a lot of ambiguous boundaries and seamless integrations in data governance, which definitely exacerbates data security threats and prevents digital transformation from progressing deeply. The industry has come up with solutions to this issue, such as introducing blockchain technology to ensure immutable data traceability and concentrating on the creation of a transparent and secure data governance architecture. In conclusion, a sound data governance system must be built first in order to ensure the long-term and healthy development of the e-commerce industry. Standardized management of various links, such as data collection, storage, and analysis, must also be strengthened. Sharing of data resources must also be actively encouraged, and data resources must be optimized and integrated among Internet enterprises, a unified data governance platform must be established, and data security oversight must be strengthened. Raise the general public's understanding of data governance and its significance.

4. Policy Suggestions for Promoting Digital Transformation in Our Country

4.1. Government Management Perspective

Promoting China's e-commerce industry's digital transformation has become a primary priority in light of the unique coronavirus epidemic. For the time being, the government should expedite its own digital transformation in order to raise the bar for modern government governance. Measures that can be taken in the area of government services include putting in place the development of e-government cloud platforms, encouraging the use of big data analysis in public decision-making, and creating platforms for cross-departmental government information sharing in order to accomplish data interconnection. By creating a uniform system to standardize the e-commerce platform's transaction process, the government can play a regulatory and guiding role while upholding the principles of digital governance and enhancing the transparency and equity of the sector as a whole. Additionally, small businesses can be encouraged to modernize their technology and be guided in their transition to digital platforms through government procurement and other channels. In particular, the quality and transformation efficiency of the e-commerce business will be strongly impacted by support in the areas of mobile payment, cloud computing services, and intelligent logistics. In addition to bolstering government oversight of the market, this can encourage businesses to advance their digital and intelligent direction in order to provide customers a wider range of handy services. The government must enhance pertinent laws and policies to foster an atmosphere that motivates businesses to invest in R&D, innovation, and digital economy adaptation in order to assist the digital transformation of businesses. To lessen the financial strain on businesses undergoing transition, it is recommended that the government boost fiscal and tax incentives, offer tax breaks to businesses that spend extensively in digital construction, and provide financial support for technological innovation. In addition, to train and introduce technical staff, an enterprise-wide study and research personnel training system must be established. Professional technical training must also be provided, along with a framework for talent development and incentive. This means that in order to collaboratively produce highly innovative talent that will satisfy the demands of future e-commerce development, the government must work with universities and research institutions. Ensuring the sustainable development of digital platforms during the digital transformation process necessitates bolstering the protection of personal privacy and data security[10].

In addition to providing thorough guidance and technical support for the security of businesses during the data processing, storage, and transmission processes, it is imperative to establish strong legal protection for the security of consumers' personal information through legislation and technological means. In conclusion, the government has recommended the following policies for digital transformation: creating an e-government cloud and big data analysis platform; creating a cross-departmental system for sharing government information; supporting businesses in their digital transformation efforts with policy guidance and tax and fiscal incentives; collaborating with the education sector to develop professional and technical staff; and bolstering data security and privacy protection. We have good reason to think that China's e-commerce sector will be more stable while it undergoes digital transformation as a result of these initiatives.

4.2. Extend the Digital Industry Chain

The post-pandemic digital transformation of e-commerce is largely attributed to the new generation of information technology, whose extensive use not only increases the operational effectiveness of businesses but also sparks the creation of numerous creative business models. The following policy suggestions are made in an effort to strengthen information technology integration and vertical segmentation in the e-commerce industry: First and foremost, there should be more funding allocated to the study and development of critical technologies like 5G, the Internet of Things, big data, cloud computing, and artificial intelligence [11]. These technologies can then be applied in vertical industries like supply chain management and e-commerce logistics. By using 5G technology, for instance, warehouse management systems may be upgraded, items can be automatically picked by drones and robots, real-time cargo information tracking and updating is possible, and logistics distribution efficiency is significantly increased. In addition, conventional e-commerce sites and businesses engaged in scientific and technical innovation are urged to collaborate on research projects, enhance recommendation system precision through algorithm optimization, and accomplish effective and targeted marketing. In addition, the government ought to implement policies that are conducive to the digital upgrading of businesses in specialized industries, like tax exemptions, capital subsidies, and innovation rewards. Through this initiative, market participants will be encouraged to be more dynamic, openly share data resources, fully utilize the benefits of a variety of application scenarios, collaborate within the industry and across borders, expand new consumption scenarios, and provide customers with a more colorful shopping experience.

Lastly, a special fund for e-commerce digital transformation is suggested, with an emphasis on supporting the modernization of e-commerce businesses' data analysis skills and intelligent algorithm applications, encouraging the creative creation of personalized services and precision marketing, strengthening the capacity to safeguard user privacy and data security, and constructing the fundamental security defence line of digital transformation. By using these strategies, China's e-commerce sector will undergo a digital revolution propelled by a new generation of information technology, which will actually realize a comprehensive upgrade in terms of efficiency, safety, and wisdom. Additionally, these strategies will offer robust support for the industry's healthy and sustainable growth as well as for economic transformation and upgrading.

5. Conclusion

The COVID-19 pandemic has sped up the evolution of China's e-commerce sector, encouraging innovation in technology and alterations in consumer behavior. The e-commerce sector will continue to encounter new opportunities and difficulties in the future. To stay competitive and fulfill the evolving needs of customers, the sector must continuously adjust to changes in the market. After the COVID-19 outbreak, promoting the digital transformation of China's e-commerce sector will require

cooperation and coordinated efforts from a variety of angles. Businesses should aggressively pursue technology innovation and strategic repositioning, and the government should support policies and give legal assurances. Strengthening consumer education and guidance is also necessary. By taking these steps, the e-commerce sector may become more competitive, develop sustainably, and respond to changes in the market.

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