Research on E-Commerce Logistics and Traditional Industry Integration Mode Based on Big Data

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Abstract. With the rapid development of information technology, China has entered the era of big data, which requires us to promote the transformation and upgrading of traditional industry sales. With the rapid development of e-commerce, e-commerce has formed a perfect logistics system, which will help the development of traditional industries. Through the whole process innovation, traditional industries will extend vertically and gather industries. At present, it is difficult for some traditional industries to integrate e-commerce logistics, which is mainly reflected in the centralized sales end. With the development of e-commerce products, services and personalized experience, e-commerce will become the sales channel and platform of traditional industries in the future, which will better integrate multiple industries. With the rapid development of big data, the integration and development of e-commerce and traditional industries has become the main direction, which can be integrated from various aspects, such as mining data value, o2o online and offline integration, etc. First of all, this paper analyzes the importance of the integration of e-commerce and traditional industries. Then, this paper analyzes the relevant factors. Finally, some suggestions are put forward.

Keywords: Big Data, E-Commerce, Logistics, Traditional Industry, Integration Mode

1. Introduction

With the popularization of Internet technology, the global economy has entered the information age, which provides a "fast track" for the development of e-commerce in China. E-commerce is a strategic emerging industry, which has broken the traditional time and geographical boundaries. Through the information platform, e-commerce provides an efficient way of transaction for many netizens\cite{1}. Therefore, e-commerce has seriously impacted the traditional industry, which requires us to integrate the traditional industry and develop together. According to the 45th survey report of CNNIC, by 2020, the number of Internet users in China has reached 904 million, and the Internet penetration rate has reached 64.5%. In 2019, China's e-commerce transaction volume will be 34.81 trillion yuan, an increase of 6.7% over the previous year\cite{2}. With the vigorous development of e-commerce, the traditional industry has been greatly impacted, which forces the traditional industry to continue to reform and upgrade. Therefore, the government should promote the integration of e-commerce and traditional industries. Through the construction of data linkage mechanism, traditional industries can
analyze relevant applications through data mining technology, which will give full play to the advantages of integration\textsuperscript{[3]}.

2. The importance of the integration of e-commerce and traditional industries

The integration of e-commerce logistics and traditional industries is very important for traditional industries, as shown in Figure 1.

2.1. Promote the whole process innovation centered on customer demand

E-commerce expands the sales channels of enterprises, which improves the efficiency of information exchange between supply and demand and reduces transaction costs. Through the upward extension, the traditional industrial enterprises have changed the traditional production mode, which will change from the original large-scale manufacturing mode to the diversified and personalized flexible manufacturing mode. Based on e-commerce, the transformation of traditional industries extends upward to design, which will pay more attention to user experience and collaborative innovation. Through e-commerce big data, we can understand the changeable personality and preference of customers\textsuperscript{[4]}. The future intelligent manufacturing mode is to realize high intelligence through data interaction, such as app my ride project. By collecting the voice of customers to guide the design of new cars, this will give more choices to consumers. By tracking and measuring feedback, the automotive industry can create, build, evaluate and improve the way products are manufactured. With the penetration of e-commerce from sales to design, traditional manufacturing industry will gradually reduce production costs and optimize product functions, which will become the main function of e-commerce\textsuperscript{[5]}. The integration path of e-commerce and traditional manufacturing industry is shown in Figure 2.

2.2. Promoting the vertical extension and cross-border integration of traditional industries

E-commerce has strong connectivity, which makes enterprises get rid of the constraints of tangible production factors. Through the establishment of new contacts and communication channels with
business partners, e-commerce has greatly promoted cross-border integration. Through integration, telecom operators, content service providers and equipment manufacturers in the industrial chain will speed up the extension to the upstream and downstream, which will create an industrial model integrating hardware, software and application services. The cross-border integration between industries will meet the new social needs, which will continuously tap the potential demand. By stimulating service marketing and production and consumption patterns, we will form a huge emerging market, which will give birth to new industrial chains and industrial clusters.[6]

2.3. Promoting the horizontal expansion and agglomeration of industries
E-commerce has the characteristics of real-time, virtual and interactive, which can expand the virtual boundary of traditional industrial clusters. By extending to the whole industry value chain, e-commerce can improve the trade exchange and resource flow of traditional industries, which improves the cluster effect. At the same time, through the information flow to balance the market supply and demand, e-commerce can optimize the allocation of resources, which will better regulate the market order and reduce transaction costs. Through the integration with e-commerce, traditional industries can gather related upstream and downstream enterprises and gradually get rid of the low-cost competition mode, which will promote technological innovation and industrial structure optimization and upgrading.[7]

3. Research on the integration mode of e-commerce logistics and traditional industry

3.1. Fusion influencing factor model
The factors influencing the integration of e-commerce and traditional industries can be divided into four levels, as shown in Figure 3.

![Figure 3. The influencing factors model was integrated.](image)

3.2. Analysis of fusion process
According to the theory of industrial integration, the integration of traditional industry and e-commerce includes the process of technology integration, business integration, market integration, industrial integration and regulatory integration, which is a dynamic process from low-level to high-level. Technology integration makes the boundary of traditional industries gradually blurred, which will gradually penetrate into business processes, products and services. With the gradual improvement of e-commerce foundation, the market integration among industries can improve the
resource allocation efficiency, management level and innovation ability of traditional industries, which will realize the transformation and upgrading of traditional industries. The integration of e-commerce logistics and traditional industries can be divided into three stages, which will promote the transformation and upgrading of traditional industries, as shown in Figure 4.

![Figure 4. Integration mechanism of e-commerce logistics and traditional industries.](image)

4. E-commerce logistics and traditional industry integration strategy

4.1. Flexible sales online and offline
E-commerce platform has always been to win by price, which is the most basic strategy superior to offline physical stores. With the increase of competitiveness, the operation cost of e-commerce platform also increases. The "Online + offline" layout of e-commerce brands integrates the operation costs of all parties, which will gradually integrate the online and offline channels for unified development. Through e-commerce, the traditional industry can realize the supply of goods, member management and payment, which will realize the same price for the same money online and offline. At the same time, the goods in offline physical stores can be set with two-dimensional codes. When shopping, consumers can scan the QR code to realize online shopping, which can enjoy preferential activities on the e-commerce platform. At the same time, according to the needs of consumers, businesses can deliver goods home through logistics. Online promotion will drive offline sales, which will effectively solve the problem of channel conflict. Through flexible online and offline sales, traditional industries will be better integrated with e-commerce.

4.2. E-commerce mode of industrial service platform
90% of China's overall online retailers operate on platforms, such as Alibaba, Jingdong, Suning, etc., which will have a highly concentrated market. The Internet has strengthened competition, which is one of the few e-commerce platforms to provide services. Initially, through the Trinity membership mode of "network + journal + trade", e-commerce will realize online and offline multi line linkage. By building a smart Industrial Ecological Park, e-commerce can provide integrated services of logistics, information and transaction for enterprises. Through the extension of upstream and downstream, e-commerce can expand the value-added space of B2C online business. At the same time, the innovation mode of e-commerce also needs to be tested by the market, and the supporting services of the whole industrial chain still need to be further deepened and explored.

4.3. "E-commerce + manufacturing" integration mode of customer participation in innovation
Some enterprises began to try to operate independent online shopping mall, which will pay more attention to tap the potential value. Through the gradual establishment of differentiation advantages, enterprises will explore o2o mode more conveniently through self-operated shopping mall. Through big data analysis, enterprises can capture the age distribution, consumption habits, hobbies and characteristics of consumers, which in turn can accurately position and adjust products. With the help
of e-commerce sales, enterprises can focus on mining and analyzing customer characteristics and demand information in transactions. Through feedback to the product development system, enterprises can gradually accumulate small group characteristics from small samples. By gradually implanting information technology, enterprises can optimize product design, which will gradually become a new benchmark of personalized market.

5. Conclusion
E-commerce is the product of the times. Driven by the era of big data, more and more online e-commerce brands are going offline. The "Online + offline" layout is the general trend. Therefore, the integration of e-commerce logistics and traditional industries will become the future development trend. By mining the value of data, traditional industries can improve information productivity, which is the real value of the era of big data.

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