Analysis on the Application of Artificial Intelligence in Cross-Border E-commerce

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ABSTRACT

As domestic e-commerce market becomes saturated, cross-border e-commerce, especially those focusing on emerging markets ones has gradually attracted enormous attention from both e-commerce platforms and enterprises. With the ever increasing application of technologies like big data and artificial intelligence, cross-border e-commerce is operating more intelligently and efficiently. And the era of intelligent cross-border e-commerce has now arrived. As more and more routine and practical works in cross-border e-commerce areas are being taken by artificial intelligence, e-commerce practitioners' main duties have now become to make scientific decisions. Intelligent trade has become dominating the trend of international trade development. While exhibiting obvious advantages in obtaining information, promoting communication, optimizing industrial chains, reducing costs, improving efficiency and better satisfying consumer preferences, artificial intelligence is casting the profound impact on the world division of labour and international trade.

Keywords: Cross-border, E-commerce, Industrial chain, Intelligent documents, Intelligent ports.

1. INTRODUCTION

As domestic e-commerce market becomes saturated, cross-border e-commerce, especially those focusing on emerging markets ones has gradually attracted enormous attention from both e-commerce platforms and enterprises. To improve efficiency, technologies like big data, internet of things and artificial intelligence (hereinafter referred to as AI) have gained quick application in e-commerce areas and become the driving force for industry innovation.

2. WHAT IS AI

The concept of AI, acronym for artificial intelligence, was first proposed at 1956 Dartmouth Conference when scientists discussed the possible utilization of machines to simulate human intelligence. AI, as its name stands for, means to equip machines or systems with human thinking activities so as to provide those machineries with intelligent behaviours like learning, thinking and decision-making. As a new branch of technical science, AI is to analyse and develop the theories, methods, techniques and application systems to simulate, extend and expand human intelligence.

The current key AI technologies include speech recognition, image recognition, computer vision, autonomous driving and intelligent robots, among which the multi-modes AI technologies like voice interaction and vision have gained extensive application. By mutual improvement in-between technology R&D and application scenarios, AI, big data and the real economy could reach a high degree of blending which in turn greatly increase enterprises' operational efficiency. "Industry + AI" is becoming the new way and new mode for enterprises to realise innovative development, transformation and upgrading.

The global economic and technological development is currently at the stage where digital economy and that of AI are alternating. And development of industrial automation and digital economy has made AI penetrate into almost every industry. As operation of cross-border e-commerce is getting more intelligent and efficient, how AI technology could be fully utilised has turned out to be an important way to enhance trade competitiveness.

3. AI'S IMPACT ON TRADE PATTERNS

3.1. Reduce Prices and Promote International Competition

Traditional trade modes involve many stages, long transaction time-periods, complicated procedures and relatively high transaction costs, a situation where only large enterprises could enjoy the obvious scale economy advantages. This is the main reason why for a long time till now, only large enterprises have the abilities to participate in international trade and competition.

But with the digital and low-cost advantages provided by e-commerce platforms (such as Google, Facebook and Alibaba, etc.), SMEs nowadays have also found the possibilities to participate in international competition. AI's application has promoted the redistribution of Internet resources, further improved SMEs' efficiency doing cross-border e-commerce, effectively reduced transaction costs and product prices, and provided SMEs with more opportunities to participate in international competition.

3.2. Better Satisfy Consumer Preferences

Trade happens mainly for two reasons: cost differences and products differentiation. As consumers have natural preferences for differentiated products, those enterprises who could better understand their consumers, accurately predict their taste changes, and timely deliver the right products satisfy consumers' preferences will gain obvious competitive advantage on international market.

Apart from thoroughly understanding changes in consumers' taste and preferences, AI's application could also help to predict the trend of consumption changes. All these information will be considered alongside the whole production stages so as to produce products that could better satisfy consumer preferences. AI's extensive application in various scenarios helps further customize product packaging, improve inventory management, enhance logistics efficiency, optimize the whole supply chain including "design-production-warehousing-distribution-logistics", and accurately satisfy consumer preferences.

3.3. Optimize International Division of Labour

First proposed by Germany in 2013, the concept Industry 4.0 describes the era of industrial intelligence based on Cyber Physical System (CPS) and dominated by intelligent manufacturing. A concept involves not only production efficiency improvement brought by innovation and optimization of information technology like cloud computing, big data and Internet of Things (IOT), but also the reshaping of global manufacturing supply chain and optimization of international division of labour.

With technical features like highly automated, highly informational and highly networked, intelligent manufacturing owns obvious advantages in areas like research and development, manufacturing and data analysis. By digitalization of supply chain information, intelligent manufacturing, which is the combination and deep integration of industrial production and Internet, collaborates R&D, design, procurement, production, sales, management and other procedures to realize fast and effective responds to market changes. While strengthening and extending global supply chain, intelligent manufacturing is inevitably casting a profound impact on enterprises' development strategy, international trade systems and even global economic landscape.

4. AI'S APPLICATION IN CROSS-BORDER E-COMMERCE

AI technologies like intelligent translation, voice technology, machine vision and machine learning are gaining extensive application in many areas like sales, logistics, supply chain management and customer services and thus playing an ever increasingly prominent role in e-commerce related field. AI's application brings with not only modes innovation, cost reduction and efficiency improvement to cross-border e-commerce, but also better user experience to customers.

4.1. Intelligent Translation

Language related issues are among the first primary barriers facing cross-border e-commerce. By efficiently overcoming language barriers to facilitate real-time communication, intelligent translation has been proved to be the effective means for cross-border e-commerce enterprises to provide consumers from different countries with fast and accurate product information and also effective communication.

In addition to classifying products and publishing commercial ads, when installed on e-commerce platform, intelligent translation could also be used for product search. Therefore translation quality has been improved, translation related search cost reduced and search matching accuracy improved. The application of intelligent translation also improves communication across trading partners on the platform and reduces transaction costs, which in turn promotes the development of digital intelligent trading platforms.

4.2. Intelligent Consumer Experience

Under the background of AI and big data, consumers' activities are being digitized. Cross-border

e-commerce sellers could now easily obtain consumers' shopping information, gather comprehensively and systematically information like buying habits and purchasing power, and conduct timely analysis and processing so as to better understand consumers' preferences, match their tastes with possible choices and help them find their preferred products.

With the extensive application in mobile payment areas like accounts, tools, systems and supervision and the continuous innovation of payment modes, AI and big data are promoting the maximization of personalized shopping experience and satisfaction while changing the interaction mode between e-commerce enterprises and consumers to improve their user experience.

4.3. Intelligent Management

In addition to providing consumers with better consumer experience, the application of AI and big data could also help enterprises optimize management process and improve management efficiency. Various data obtained with the help of AI like consumer shopping frequency, accepted price range, monthly sales volume, commodity inventory and logistics information help enterprises better analyse their markets, prepare production and procurement plans, design best prices and optimize inventory and logistics management. While efficiently helping customers solve various problems and greatly reducing enterprises' labour costs, AI customer service system embedded on e-commerce platform has also been collecting huge amount of feedback information which is now being used to improve every aspect of e-commerce activities.

While obtaining personalized information like consumers' buying habits, AI and big data could also help enterprises distinguish among consumers so as to prepare customized marketing programs accordingly.

4.4. Intelligent Documents

At present, cross-border e-commerce B2B are still following "online + offline" mode and therefore involves various trade documents such as L/C. Because of great variety of documents and differences in their layout format, checking procedures of these documents are somewhat complicated and there are relatively strict requirements for processing efficiency and risk control. Taking L/C settlement as the example, the whole checking process involves such documents like L/C, bills of lading (B/L), insurance policies, packing lists, invoices, customs declaration and other related documents as required.

Based on AI and machine learning, intelligent document system could realise unmannedness and zero mistake in some stages and thus effectively improve processing efficiency. In addition, AI could also help the

application of such cutting-edge technologies as block chain and therefore promote the optimization and upgrading of e-commerce related businesses.

4.5. Intelligent Ports

Ocean transportation is the most important mode of transportation in international trade and this is also true for cross-border e-commerce. With the increasingly extensive application of new technologies like AI, Internet of Things (IOT) and warehousing robots, intelligent and efficient marine logistics systems are gradually being established and ports are part of these great revolution.

Intelligent port system has now already been able to undertake functions such as intelligent tally, unmanned lifting, intelligent gating and unmanned driving. Procedures like loading and unloading, palletizing and sorting can also be done by intelligent logistics and warehousing robots. For less intervention and uninterrupted logistics reasons, and with the help of intelligent detection equipment and the application of AI technology, customs has established a new mode of automatic port intelligent monitoring system which brings customs with efficient supervision and operation.

5. CONCLUSION

AI's extensive application is now pushing cross-border e-commerce into AI era and intelligent trade will dominate the trend of international trade development. As various new software and technologies appear on the market, more and more routine and practical works in cross-border e-commerce areas will be replaced and taken by AI and practitioners' main duties have now become to make scientific decisions. AI has exhibited obvious advantages in obtaining information, promoting communication, optimizing the industrial chain, reducing costs, improving efficiency and better meeting consumer preferences and is thus casting the profound impact on the world division of labour and international trade.

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