Research on Digital Transformation of International Trade

– *A Case Study on Amazon*

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Abstract: At present, digital economy is a new economic form that uses new technologies with new ideas to create new value. International trade is a crucial way of global economic flow, and its digital transformation is the product of the combination of the exploring trend of digital economy and international transaction rules, and is an important basis for countries to improve their core technologies in the era of trade globalization. Taking Amazon as an example, this paper focuses on the impact of Amazon's transformation on its market share. Based on the data change of Amazon stock market price from 1997 to 2023, this paper mainly analyzes the difficulties and countermeasures encountered by Amazon in the process of transformation. It is found that Amazon mainly relies on the development of its own technology and the clear and rigorous analysis of market environment and supply and demand data, and chooses the most suitable path on the road of transformation. This is of significant value to other similar enterprises and has a guiding role in promoting the global digitalization process.

Keywords: international trade, digital transformation, Amazon

1. Introduction

The economy of the digital age is becoming more virtual, and the current international trade situation has entered a new stage. To promote domestic technology research and develop business cooperation around the world, countries take advantage of the convenience of digitization to form new business models, and gradually change the traditional international trade situation. In the case of China-US trade, the US imposed export restrictions on Chinese digital services at the beginning of the trade war. Although China is the world's second largest economy after the United States, it is still subject to a certain degree of barriers in the development of core technology and digital economy.

Since the reform and opening up, China's economy has developed rapidly, and its GDP has continuously increased. However, due to the popularity of digital services in recent years, the trend of international economic trade under the new situation is informatization, internationalization and standardization [1]. Spurred by the trade war, China has quickly put the digital transformation of international trade on the agenda. For a long time, the academic community has been constantly studying and demonstrating the issue of digital transformation. Some scholars have summarized the methods of measuring digital economy [2], including replacing the added value of digital economy

with the added value of Information and Communications Technology industry. Some scholars mainly analyzed the differences between the export models of China and the United States in the service trade industry that is highly dependent on digital technology, and fully grasped the changing trend and the law behind it [3, 4]. By organizing the average value of external trade of various provinces in China, some scholars proposed that high-quality integration countermeasures such as cross-border e-payment system and dispute settlement system should be improved [5]. Others have proposed the value of government digitization in transforming international trade [6].

Based on the background of digital economy, this paper studies the digital transformation of international trade. Taking Amazon as an example, this paper summarizes the reasons and ideas for its success by analyzing the transformation path of this typical enterprise, and proposes a digital transformation scheme that can be applied to most enterprises, so as to help readers understand the advantages and disadvantages and internal logic of enterprise digital transformation.

2.   The Digitization Process of International Trade

The disunity of language, culture, currency, and even inflation rate will cause poor information of enterprises, and eventually lead to weak competitiveness of enterprises. Most of China's original international trade export enterprises still occupy the international market with price advantages, and enterprises and workers lack the awareness of improving production technology and improving production efficiency. In addition, the development of digital technology in China is relatively slow, the export trade products are mostly traditional industrial products, the export rate of products produced by high-tech is low, and it is still in the primary stage of development.

Now entering the era of digital economy, because of its high penetration, rapid and other characteristics [7], countries all over the world are scrambling to formulate digital economy development strategies, hoping to reach the high ground of digital economy faster. Despite China's late start and unbalanced inter-regional economic development, the construction of communication infrastructure has developed rapidly, and the penetration rate of mobile network have ranked among the top in the world [8]. China is seizing development opportunities to create new possibilities for backward regions, drawing on the experience of developed countries and regions in technology, system and other aspects, and promoting the improvement of economic operation efficiency.

Over the past two decades, international trade and corporate investment expansion have jointly promoted the interdependent global economy, and the achievements of trade liberalization have brought huge returns to countries around the world. However, according to the World Bank, the expected slowdown in the global trade economy, along with possible problems such as stagflation, will create additional obstacles for consumers and businesses. Therefore, the difference in the level of digital information technology has also become a major problem in the current digital transformation. When the country promotes the transformation of enterprises, it should also take into account that the difference in the level will lead to the widening gap, and the less developed areas fall into the "backward economic development - slow digital economy - slow economic growth" vicious circle.

3.   Case Study on Amazon

This paper chooses Amazon as a case study, mainly because Amazon relies on its innovative business model and digital transformation to successfully transform from the initial retailer into the world's largest Internet enterprise by market value, and to raise the development of international trade and digital economy.

3.1. Background Description

In 1994, at the age of 30, Jeff Bezos quit his job to start an Internet-based bookstore. Within two months of selling its first book, it was available in all 50 states, but it still cannot compete with Barnes and Noble or Borders. It is still considered a minor player in the publishing industry. In July 1996, Amazon launched the Affiliate Program, an integral part of Amazon E-commerce. Bezos has always cared about long-term investments. In 2012, DeepField Networks reported that a third of Internet users use Amazon's servers on a daily basis. During this period, Amazon launched a lot of services, like Prime. They all be praised in the future. Amazon is actually an online store. The e-commerce business contributes more than 50% of the company's total revenue. In fact, a significant portion of the company's revenue comes from third-party businesses that sell products on its platform. Amazon has seen impressive growth over the past few years, much of it driven by its core business of commerce. As of June 2022, Amazon held 37.8 percent of the U.S. e-commerce market, making it the leading online retailer in the United States [9]. Figure 1 below shows the trend of the stock price of Amazon, which also describes the trend of digital transformation in the current era.
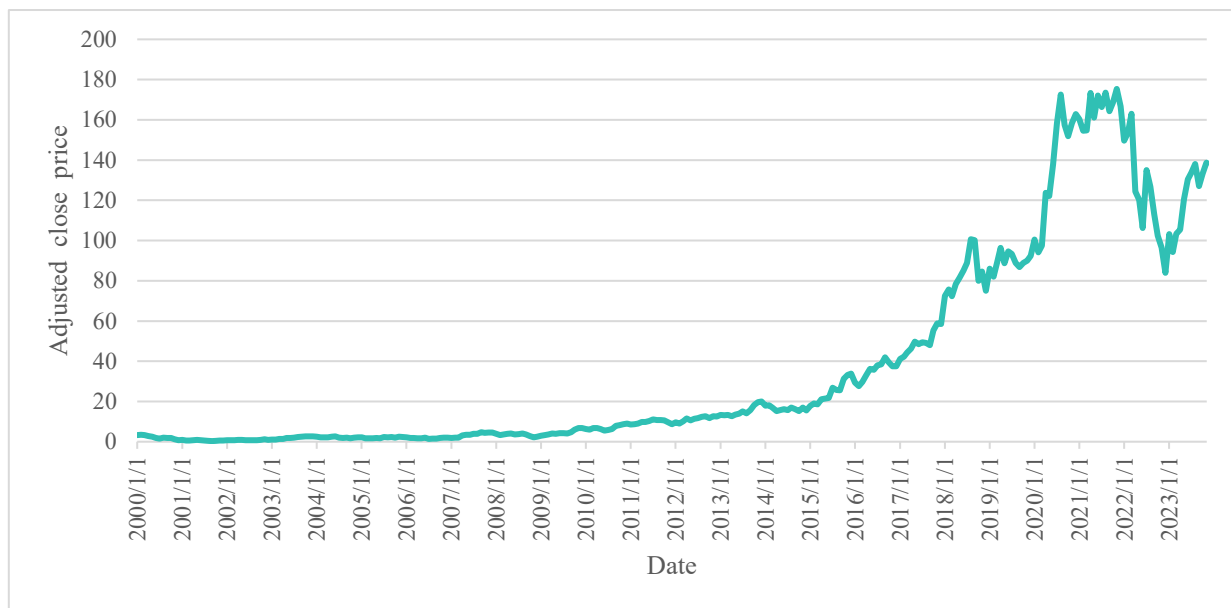

Figure 1: The stock price of Amazon between 2000-2023(Source: Yahoo Finance)

3.2. Challenge from Complex Environment

Sellers are facing challenges of shipping options, FBA (Fulfillment by Amazon) logistics and Map issues. There are lots of problems not yet been mentioned, but it means Amazon's success needs keeping up with changing environment and experts, both internally and through agencies like ad Lucent. This is how they run a healthy and profitable program. It means sellers need to learn lots of things to adapt Amazon's new policy or new decision. Amazon need to protect its marketplace from others, retain its sellers.

To solve this question, first, the performance potential on Amazon can be compared to other channels, the resources can be reallocated accordingly. Take advantage of what Amazon has to offer, including Amazon's Boost with FBA campaign, and Amazon Web Services (AWS). AWS is a product that will offer the backbone for businesses to run their Internet businesses from the cloud. Companies can get the information they want about Amazon from this. Different to other Website, Amazon has improved search and suggestions based on prior purchase. In addition, when combined with Prime membership, Amazon has a 360-degree view of its consumers and sellers, including data

on online transactions let sellers know what's the main products consumers like and entertainment preferences can also do that too. One of Amazon's big strengths is that it is a 27-year-old digital company that avoids the outdated technology that hinders today's sellers. The company led the move to the cloud with AWS, eliminating the need to invest in mainframes, inflexible and expensive relationship technologies, and massive data centers [10].

3.3. Challenge of Profitability

Amazon's profitability is not guaranteed. Depending on the customer's sales structure, profit, shipping costs, and competition for similar products, profits on Amazon can vary greatly, and many sellers do not know if they are really profitable. At a major retail conference, there was a big question called "Is it worth selling on Amazon?" Tumi, a maker of luxury handbags, has been selling its products to Amazon at regular prices for years. The head of Tumi said Amazon misunderstood consumer demand and left only a small inventory of handbags, but there was always more demand for hand bags. Amazon is often seen as the king of online marketplaces, however, there are still many other marketplaces that can compete with Amazon in terms of features and overall user experience.

In order to solve this problem, agents can use reporting tools to capture statistics, so that buyers find is a better way. Tumi uses this as a way to increase profits. Tumi prefers to sell to other companies that can see Tumi's products on Amazon. This decision allows Tumi to have better control over inventory and better sales data. Most of the time sellers do not need to care about this problem, because Amazon do have a large range of tools to help sellers manage their business on the platform. Though other marketplaces also have this same type of tools, it is hard to use and not on the same level. Amazon's big difference with other marketplaces is it has 12 million products for purchase. Compare to other marketplace, such like eBay has less selection. There are both advantages and disadvantages for sellers. Less selection means less compete, which also means less exposure rate. Most of time sellers will choose Amazon, because they can gain more profit on it [11].

4. Discussion and Suggestions

4.1. Discussion

At the Amazon Cloud Technology China Summit held in June 2023, Amazon Cloud Technology emphasized that it would build a value achievement system mainly through building enterprise core capabilities, deeply mining industry needs and striving to cover the whole field, and use technology, sales and talent as the pillars to support the system, in order to achieve greater value of the enterprise.

4.1.1. Improvement of Technology

Amazon uses the word "deep" to summarize its advantages at the level of building core competencies. With the recent spurt of generative artificial intelligence (AI) technology, Amazon rapidly deployable infrastructure covering the world through internally developed chips and rich and sophisticated computing, while improving the ability to stabilize the system, creating a solid foundation for the enterprise's underlying architecture.

AI and machine learning have also been a focus for Amazon over the past two decades. Whether in the production of technical products or the application of the commercial field, Amazon relies on the strong computing power of cloud technology to support and continuously deepen and excavate industry capabilities in various subdivisions, deeply integrate with the real economy, and promote the reshaping of industry digital construction. Taking Veeva System, which came out on June 6 2023, as an example, it is based on the commercial operation platform launched by Amazon in the field of life sciences, and uses a wide range of services about scientific machine learning and database analysing

to help pharmaceutical companies realize the digital management of the whole process of drug marketing, which greatly improves the efficiency of platform operation. It also ensures the safety and compliance of the business.

4.1.2. External Environment

At the summit, Amazon's global vice president mentioned that "to face hard-won opportunities and new demands that cutting-edge technology bringing in this time of both accidents and challenges, we must be forward-looking, target global users and improve the resilience of business products." In the process of transformation and development, Amazon not only continuously pays attention to customer demand and business load which are greatly affected by the speed of scientific and technological progress, so that the staff is able to adjust the thinking of technological change in time, but also creates differentiation advantages of enterprises according to the changes in the economic situation of international trade.

4.2. Recommendations

4.2.1. For Other Enterprises in the Same Industry

Amazon is able to improve their existing products by sharing experience, advanced technology, and a broad user base because of its dynamic capabilities [12]. If companies in the same industry as Amazon can also pay more attention to independently developed chips and high-tech, and analyze customer groups through formal technical means to create their own unique advantages. It would make the transformation of enterprises smoother and more in line with the development trend of digitalization. For example, Internet companies can distinguish the system of settling in and paying commission for individual sellers and enterprise sellers on the platform, and provide more accurate push and service for customers with different interests and preferences. In short, the ability of companies to embrace new technologies is the key to future success.

4.2.2. Government Support

First of all, the government should strongly support enterprises that are willing to carry out digital transformation, such as issuing some relevant policies or regulations to provide different levels of financial subsidies according to different levels of company development stage, so that enterprises have greater motivation to carry out technological innovation. Secondly, the government should actively use and promote cross-border payment systems, encourage enterprises to use local currencies as international trade settlement currencies, further develop the international trade order of currency diversification, and accumulate transaction credit in the international market at the same time. In addition, with the help of funds and systems, the government should also pay attention to the infrastructure construction of the digital economy such as blockchain and big data, attract high-end enterprises to enter the digital economy park, promote the integration of digital centers, promote the application of technologies such as the Internet of things in international trade, and consolidate the digital industry.

5. Conclusion

Now in the era of digital economy, the trend of enterprises transforming from the traditional model to the digital model through the development of science and technology has been further strengthened. The use of science and technology to find the right digital transformation can not only bring more economic benefits to enterprises, but also promote the international trade transformation through the transaction between enterprises. Through the analysis of Amazon, a typical enterprise case, this paper

hopes to provide more help to more enterprises in the transformation of international trade under the background of digitalization. The article mainly emphasizes the challenges encountered by Amazon in the implementation of enterprise transformation and the countermeasures, and summarizes some transformation suggestions based on experience. For example, the primary task of the enterprise is to strengthen the development of digital technology and clarify the market demand, while the government should pay attention to the establishment of the business system and the improvement of incentive policies for enterprise development.

However, since this paper only analyzes Amazon, the digital transformation countermeasures and suggestions obtained may not be applicable to the development of all enterprises and cities. In the following research, data of more enterprises will be collected to supplement the conclusions of this paper.

Authors Contribution

All the authors contributed equally and their names were listed in alphabetical order.

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