The survival of cross-border e-commerce under the pandemic - the example of Shein

Yunjie Wang

School of Economics and Management, Fuzhou University, Fuzhou, Fujian Province, China, 350000

yjvvang07@gmail.com

Abstract. Since the emergence of the pandemic in late 2019, all industries around the world have received a considerable impact. The economic market is in recession, but cross-border e-commerce has ushered in a rapid development opportunity. Chinese fast-fashion e-commerce brand Shein, as a representative of independent e-commerce platforms, has become a high-profile e-commerce brand with revenue of more than US$10 billion in 2020 and has topped the IOS software application charts in multiple countries several times. The pandemic brings both challenges and opportunities for the overall economic environment to vigorously develop cross-border e-commerce. This paper analyzes the performance and specific response measures of Shein, a representative cross-border e-commerce company in the era of the pandemic. It summarizes a series of response measures made by Shein in the face of the pandemic, such as differentiated marketing, flexible supply chain construction, brand building, etc., analyzes its advantages, and makes suggestions for the future development of cross-border e-commerce.

Keywords: Cross-border E-commerce, Pandemic, Shein, Future Development

1   Introduction

As the global economy continues to decline due to the impact of the pandemic, offline shopping has also been considerably restricted, so people have turned their attention to online shopping, ushering in an unexpected "spring" for cross-border e-commerce. Although the pandemic and changes in the international economic environment have led to a decline in human resources, a sharp rise in logistics costs, and changes in exchange rates, many cross-border e-commerce companies have quickly taken corresponding measures to deal with these problems, taking Shein as an example, to improve the entire supply chain and site. Through the case study method, comparative analysis method, and literature research method, Shein is used as the main research object to analyze and summarize some measures. Shein, as a "dark horse" of cross-border e-commerce, should be studied by other cross-border e-commerce companies, and some lessons can be drawn from them to look forward to the future development of cross-border e-commerce.

2   Definition of cross-border e-commerce

Cross-border e-commerce refers to international business activities in which trading entities belonging to different customs authorities conduct transactions, payments, and settlements through e-commerce platforms and deliver goods and transactions through cross-border logistics. Cross-border e-commerce is a new type of transaction with some characteristics such as global, intangible, anonymous, real-time, and paperless [1].

Cross-border e-commerce can be divided into different types according to different classification criteria. According to the flow of goods, cross-border e-commerce can be divided into export-cross-border e-commerce and import-cross-border e-commerce. Cross-border e-commerce can be divided into B2B, B2C, and C2C according to the attributes of transaction subjects, mainly B2C and B2B models. According to the operation mode, cross-border e-commerce can be divided into third-party platforms and independent websites [1]. In recent years, independent websites set up by brands to display and sell their products have developed rapidly in cross-border e-commerce.

3   The development status and dilemma of cross-border e-commerce

3.1   Development Status

Cross-border e-commerce helps create a favorable business environment for global trade. With the increase of global per capita purchasing power, the increase of internet penetration, the maturity of third-party payment transactions, and the improvement of logistics facilities, global cross-border e-commerce has shown a rapid growth trend, and the upstream and downstream industrial chains of cross-border e-commerce have also experienced an eruption of development. However, as the pandemic continues, the growth of cross-border e-commerce has slowed down due to the global economic downturn. Due to different policies on pandemic control, the development environment of cross-border e-commerce is unstable and the development prospects currently vary widely. On the contrary, consumers have shifted to online shopping in a big way, promoting the development of the global e-commerce industry.

From the perspective of cross-border e-commerce retailing, the global cross-border e-commerce B2C transaction volume exceeds 1 USD trillion in 2021, with an annual growth rate of over 20%, much higher than the offline level of 4.02%, which will show a good development trend in general. In terms of market maturity, the European and American markets, represented by the US, UK, Germany, Spain and France, have formed a good e-commerce ecosystem. The penetration rate of e-commerce users is high, and the growth rate and per capita consumption of e-commerce households are among the highest in the world [2].

Compared with Europe and the United States, which have gradually become saturated markets, the markets in Southeast Asia, Latin America, the Middle East, and Russia have shown greater dynamism. It is expected that in 2022, the growth rate of cross-border e-commerce sales in Southeast Asia will reach 20.6%, and the growth rate

in Latin America will reach 20.4%, and these two regions will greatly lead the global growth rate of cross-border e-commerce [3]. These emerging markets have great e-commerce development potential and are in the rapid growth phase of cross-border e-commerce development. As a result, there are also some cross-border e-merchants that have set their sights on these regions to enter the market in the early stages of cross-border e-commerce development in these regions and quickly capture market share. The mobile retail market is growing. Overall, Asia-Pacific creates about 62.6% of the retail market share, but has yet to significantly increase its market potential.

3.2   Development dilemma

Shortage of human resources and increase in labor costs.

Due to the massive spread of the New Coronavirus worldwide, many countries and regions have taken measures to prevent and treat the disease, and also, due to its strong contagiousness, many industries have been restricted, especially the logistics industry, where people move around a lot. As a result, the daily work of employees in many logistics centers has been restricted, and the whole process of logistics transportation has become extremely slow and difficult. Due to various factors, some countries require local authorities to approve the reopening of logistics centers. Only a small percentage of logistics center employees were able to get approval to return to their jobs, but workers' wages rose due to the risk of a pandemic. At the same time, because online consumption is in its prime, the rise in the number of laborers needed for the large number of orders for goods and the shortfall in labor numbers caused by the pandemic are in conflict, making it even more necessary to increase wages in order to prevent an exodus of employees, which makes the labor costs and the risk from the pandemic increase significantly.

Inventory order form backlog and out-of-stock situation is serious.

Most cross-border e-commerce companies like Amazon have many overseas warehouses around the world. Sellers and suppliers usually do not have direct knowledge of the total inventory in stock, and many items may pile up or be scrapped due to improper management practices. In the early stages of the pandemic, due to strong buyer demand, some of the daily and medical supplies used to prevent and control the occurrence of the pandemic were out of stock, and suppliers booked warehouse space based on buyer orders, but their own supplies could not be followed. This resulted in a situation of large inventory space but inefficient inventory utilization. As a result of the pandemic, sales of some goods fell, and some non-essential items were overstocked. After the strengthening of pandemic prevention measures, some suppliers resumed work and production as scheduled, and there was an adequate supply of daily necessities and medical measures [4]. However, a lack of warehouse personnel, as well as various pandemic conditions around the world, resulted in low turnover of goods and a significant lack of storage space in some countries and regions.

Decline in international transportation capacity.

There are two main forms of cross-border e-commerce logistics: cross-border direct mail and overseas warehouse delivery. Cross-border direct mail has a great demand for air transportation. As a result of the pandemic, most countries in the world imposed travel and traffic controls, and the number of international flights was significantly reduced to prevent and control the pandemic. During the pandemic, many flights were canceled and airline companies closed down. As a result, civilian charter resources were very limited, passenger aircraft belly cargo capacity was significantly reduced, and air transportation capacity was cut in half. As the pandemic was brought under control and the overall situation stabilized, international air cargo capacity began to grow overall. International Air Transport Association (IATA) data on international air cargo capacity shows that the overall trend is essentially the same in 2021 and 2019, except for European airline companies. In shipping, port congestion became a serious problem after the 2019 coronavirus outbreak, with severe container shortages, difficulties in reserving space and planning, and inconsistency between transport resources and cross-border e-commerce market demand [5].

Increased logistics costs and reduced timeliness.

The pandemic has directly led to a lack of cross-border logistics capacity and an exponential increase in transportation costs. Container transportation costs are reported to be at an all-time high and will increase more than five times. At the same time, flight transport capacity in the air transport sector has dropped sharply, and air transport costs are at an all-time high. For example, China Post's e-Postal mailing costs have risen sharply, and UPS and DPL have raised their international express prices. Both the logistics costs for shipping to overseas warehouses and the final end-haul delivery were greatly hampered by the spread of the pandemic, which led to a basic disruption of international flights and severe congestion at ports, resulting in a significant drop in logistics timeliness. Due to the quarantine restrictions imposed by governments due to the pandemic, the demand for online shopping was released and the number of parcels increased significantly, which led to the overload of express logistics and the frequent explosion of international export express warehouses. In 2020, due to the frequent outages of China-European trains, railways have become an uncontrollable logistics method, and the time limit of about 25 days in the past has directly soared to more than 50 days. In addition, in order to prevent goods or transporters from carrying the new coronavirus, governments have strengthened the control of import and export goods, increased inspection procedures, and extended the disinfection and sterilization processes, which can effectively reduce the adverse effects of the pandemic on the one hand, but also extend the transportation time, leading to a further decline in logistics timeliness.

4   Measures taken by Shein

4.1   Introduction to Shein

Chinese e-commerce company Shein is a fast-fashion, cross-border e-commerce site focused on fast-fashion, high-cost women's clothing. The site has established communities that provide experience exchange, dating, and shopping services. Shein integrates production, research and development, and marketing, providing stable and manageable supply and product integration with a range of information technologies such as data collection, analysis and integration, and intelligent data processing. From 2013 to 2020, Shein's sales exceeded 100% for eight consecutive years, representing an independent site e-commerce platform use [6]. In 2019 and 2020, Shein completed Phase D and Phase E financing to begin expanding its business in menswear, children's wear, swimwear, and other apparel segments.

4.2   Measures

Seize the opportunity and enhance brand awareness.
Caught off guard by the pandemic, many industries were hit hard, all aspects of life were restricted, and many consumers turned to the Internet and online shopping. Shein took advantage of this opportunity and quickly stood out with the output of the fast fashion DTC model. Compared with other traditional cross-border e-commerce brands, Shein's pendant positioning is more accurate, and it chooses the fast fashion industry that is suitable for the development of contemporary cross-border e-commerce. The most prominent feature of Shein is that its products are good value for money, in other e-commerce platforms such as Amazon on the price of $30 dress on shein can be bought for $15, which makes Shein successful through other e-commerce platforms for their own platform to attract traffic to expand brand awareness. Accurately targeting the European and American markets and the younger generation of female consumers, Shein achieved sales of 65.3 billion yuan and a growth rate of 308% in 2020, exceeding 100% for six consecutive years. In the first half of 2022, Shein surpassed $16 billion in sales, with a year-over-year growth rate of over 50%. 6.8 million installs of Shein on mobile in the U.S. in the second quarter of 2022 once again surpassed Amazon, with 13% YoY growth. A person familiar with the matter revealed that Shein has surpassed 30 million DAUs (peaking at 32 million) in Q2, with a growth rate of 15% [7].

Correct prediction of propensity to use large network data.
Considering the markets of different countries and regions, cross-border e-commerce companies need to adjust their product design styles accordingly. In the early stage, Shein used Google Trend Finder and self-developed web browsing and tracking system tools to collect data related to fashion fabrics, colors, patterns, designs, price trends, etc., to analyze and evaluate popular foreign fashion elements and predict fashion trends; in 2018, Shein accurately predicted trends for American lace styles and Indian cotton fabrics [8]. As the brand expands and the number of users increases, Shein will add advanced technologies such as big data, cloud computing, independent

search, and real-time data collection, analysis, and utilization of browsing records, product clicks, and shopping cart and purchase characteristics of mobile app users to study different market preferences of consumers and lead the development of recommendations. As a result, Shein has a 50% probability of predicting the most popular fashion items of the moment, while the product lag rate is only 10%, much lower than other fast fashion e-commerce brands. The cycle of accumulation over time, through targeted production and sales, will not only succeed in keeping up with trends and gaining extremely high customer loyalty, but also greatly reduce the costs associated with stagnant products.

Create a matrix of social platform accounts to implement differentiated marketing.

Shein's circulation channels are mainly cross-border independent websites and mobile apps. Fan traffic is central to marketing, and large social platforms are the main source of fan traffic. With the emergence of TikTok and other big social hits, Shein hired a dedicated marketing consultancy to run accounts on the social platforms and monitor the operations of these platforms. Creating a diverse and personalized account matrix, Shein created not only accounts for overseas social platforms such as Instagram, Facebook, Twitter, Pinterest, and TikTok, but also more than 80 sub-accounts for different countries and regional markets under the main account, as well as for different types of apparel products [6]. These sub-accounts are set up according to different types of clothing such as women's, men's, and children's clothing, and also set up differentiated marketing for different countries and regions such as the U.S., U.K., and France, which are applicable to localized style and content. Shein classifies the target markets, refines the characteristics of different markets, and carefully analyzes the needs of each market to further expand the brand's influence and attract traffic through social Shein has also invited the brand's social media to attract more customers to its platform. Shein has also invited many KOLs to promote the brand, and based on the number of followers, posts, content and likes of bloggers on major social media platforms. Shein classifies bloggers into three levels: head influencers, mid-range influencers, niche influencers and ordinary users, and uses different types of cooperation and hierarchical management for different levels of influencers, for example, Shein has worked with Katy Perry, Lil Nas X, Hailey Bieber, Yara Shahidi and other overseas celebrities [6]. In addition, Shein will provide the official platform with outstanding creative content from regular users.

"Small order and quick reorder" production mode.

Inventory management is a daunting task for apparel companies that need a lot of new garments every day. The "Small Order and Fast Reorder" production model developed on the basis of Shein's cloud factory platform solves the problem of managing the inventory of new garments in bulk. According to the "small order and quick reorder" production model, Shein can control the whole process of designing, producing and selling new clothes online in 7 days, which is 7 days less than the cycle time of Zara, which is also a fast fashion brand. Unlike Zara, which starts with at least 1,000

orders for a single garment, Shein is able to control the number of orders for a single garment to between 100 and 500, creating a competitive advantage for a flexible and rapid market response [8]. If a new product is well received, Shein's intelligent management system can communicate order demand information in real time through the cloud factory platform and enable mass sales of the product in as little as three days. Shein is able to add an average of 2,000 SKUs per day, while the inventory turnover days is only 30 days, as the same fast fashion brands ZARA and H&M inventory turnover days to reach 92 days and 138 days, which reveals the advantages of Shein's production model and greatly improves Shein's brand competitiveness. The advantages of this type of production model become more apparent in the era of pandemics, reducing storage costs and boosting profits.

Digital and scaled supply chain.
 Shein has established a digital supply system, MES intelligent collaboration management system, and introduced suppliers to the platform. The cloud platform provides various information modules for suppliers, including material requirement management, procurement management, order management, and training center. Suppliers can send purchase orders through the platform, and Shein can manage suppliers through the platform[6]. Around 2019, Shein launched a mobile version of its GMP inventory management system. So far, Shein suppliers can receive pending confirmation notifications, readiness confirmation, pending confirmation of goods information, and orders from Shein via WeChat on cell phones and other mobile devices,which makes the whole production and supply process more clear and controllable.

 In terms of warehouse management, some cross-border e-commerce platforms such as Amazon and eBay will have a large amount of goods delivered to the warehouse every day. If the platform merchants have wrong estimation of the sales situation, it will make a large number of goods pile up in the warehouse, making the warehouse utilization rate greatly reduced. For warehouse management, Shein chose the JIT (Just-in-time) production model. When a new product is launched, Shein will first place an order for 300 pieces to the supplier according to the new product, but the 300 pieces will not be sent out by the supplier at once, it will be triggered to deliver after reaching certain conditions many times according to the logic of 10+7/15+7/18+7 [9]. The triggering condition is that the weekly sales are greater than or equal to 30 pieces.

 In terms of logistics and transportation, since Shein's suppliers and storage center are in Panyu, Guangzhou, the supplier can deliver the goods to the central warehouse and then have them shipped by Shein. At the same time, because Shein controls hundreds of suppliers and has the "privilege" of shipping large volumes of goods globally, it will also have more opportunities to participate in logistics negotiations [9]. Like other cross-border e-commerce platforms, they also offer the option for merchants to ship their own goods, rather than the platform carrying out uniform shipping of goods all together, which will make the platform lose part of the negotiable with the logistics third party by signing a large-scale transport orders to reduce transport costs of capital. In other words, Shein has made a cost difference in the cross-border e-commerce supply chain, which originally accounted for the largest proportion of costs in the Amazon model, by virtue of the scale of transportation and intensive management.

5 Implications for other cross-border e-commerce

5.1 Focus on supply chain design

The current trend is that some cross-border e-commerce companies are gradually preferring to build their own independent websites rather than relying on large third-party platforms like Amazon. To build a successful cross-border e-commerce platform, the supply chain plays an important role in improving the competitiveness of enterprises. Enterprises should focus on user analysis and data processing, efficiency, and targeted implementation of the characteristics of target customers and target markets in the entire process of product development, production, sales, transportation, and after-sales, so as to avoid unnecessary waste and delays. For example, enterprises can use big data to optimize the entire system and share information effectively among various links to reduce costs, improve inventory turnover and enhance service quality. In addition, enterprises should also step up the layout of overseas supply chains, deploy warehouses and logistics centers overseas, shorten international logistics time through warehouse frontage, and improve distribution efficiency as well as enterprise anti-risk capability [10]. Therefore, cross-border e-commerce enterprises should deepen their upstream and downstream supply chains according to their own conditions, improve the supply chain interdepartmental and cross-industry coordination mechanism, effectively reduce costs, improve competitiveness and create barriers. While building the supply chain, from upstream to downstream, more service providers are involved, which can also form a good partnership and form a certain solid system to cope with external competitive pressure.

5.2 Emphasis on digitalization construction

The digital construction of enterprises requires a full range of digitalization, including supply chain, sales, management and other digitalization stages. By building an intelligent platform that connects logistics and finance, we provide a series of solutions for the industry. At the same time, as the terminals are integrated with data, they can share service data more effectively, improve system efficiency and increase user satisfaction. Cross-border e-commerce involves customs clearance, cross-border logistics, cross-border payment, trade financing, credit guarantee, exchange and tax refund, e-commerce operation and promotion, etc. Through the digital construction of the platform supply chain from upstream to downstream, we continuously improve the cross-border e-commerce industry chain, build the cross-border e-commerce ecosystem, improve the construction of cross-border e-commerce infrastructure, promote the collaborative development of all related industries, realize information sharing, and create an efficient, stable, equal and mutually beneficial market environment [11]. The introduction of digital technology by companies not only allows them to better capture and quickly respond to the needs of new users and determine consumer preferences, but also allows brands to connect more closely with consumers. It is the superior digital capabilities that enable Shein to work efficiently and respond quickly to user requests, thus enabling it to stand out among the many cross-border e-commerce companies.

Through digital construction, it can effectively reduce some non-essential costs, and at the same time, because of its ability to process data quickly and accurately, it can effectively carry out differentiated analysis and keep up with the trend of the times, so that it can quickly make feedback and adjustment in the face of unexpected situations and flexibly face different market environments.

5.3   Pay attention to brand system construction

The shift from product-centric to brand-centric is the future trend of the cross-border e-commerce market, and branding has become the key to enhancing consumer stickiness and thus increasing manufacturers' revenue. In the context of intensifying homogeneous competition, establishing a tonally unified product system, gaining insight into changes in consumer demand, implementing precise marketing strategies, and highlighting brand image will become the keys to breakthrough for cross-border e-commerce enterprises. Brand positioning refers to the organizational movement positioning of enterprises and customers to innovate, develop and protect the brand and achieve brand competitive advantage in the process of continuous interaction. Brand building starts with market segmentation, building supply chains, and creating quality products. Finally, to create a brand through the DTC brand independent website template, we not only need the overall system and overall business strategy and other aspects of the expansion of the relationship, but also need to establish a marketing and content optimization team, through different software website advertising, KOL publicity, etc., to create brand heat and create brand image. It should also pay attention to user experience, segment and further analyze users according to market information and user behavior, create complete and effective user portraits, personalize user management, and use various camp differentiated marketing methods to improve user retention and user conversion rates. Therefore, strengthening consumer management, providing customers with a personalized shopping experience, improving brand self-improvement, and consumer word-of-mouth are important tools for cross-border e-commerce to maintain sustainable development [12].

6   Conclusion

In today's network era, because the emergence of the pandemic makes more and more consumers turn their attention to online consumption, but also the cross-border e-commerce ushered in a period of rapid development, Shein as a case of successful cross-border e-commerce has been competing to imitate, Shein's successful supply chain management, brand marketing and data processing capabilities worth all cross-border e-commerce reference, while Shein in addition to the market on the In addition to the already mature and saturated markets in Europe and the United States, Shein is also expanding its business footprint, and has also set its sights on the Middle East market. These changes from strategic decisions to day-to-day operations also point to a clear path for cross-border e-commerce companies that want to set up independent sites. However, as Shein's financial statements are difficult to know, it is difficult to do

detailed and targeted analysis of the specific business performance, so it also brings certain limitations. At the same time, as the pandemic gradually stabilizes and offline activities gradually start, people will inevitably resume offline shopping and cross-border e-commerce will also face certain pressure. Bloomberg said Shein's sales growth slowed from the peak brought about by the overseas pandemic, putting pressure on its $100 billion valuation target. So, the development of cross-border e-commerce is not always smooth and still need to continue to explore. The future will focus on the development of cross-border e-commerce in the post-pandemic era, in response to the economic recovery after the pandemic, as cross-border e-commerce, especially independent station platforms should be how to survive and develop.

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