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Competitive Advantages and Challenges of E-Commerce

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Abstract: The rise of e-commerce, driven by the integration of technology into daily life and the increasing consumer preference for online shopping, has revolutionized the global trade of goods. Traditional retailing relied on physical stores, while e-commerce eliminated the need for a physical storefront by hosting merchandise in online stores. This shift reduced operational costs and offered consumers a vast variety of goods. However, e-commerce lacks the social experience of traditional retailing. This paper analyzes the evolution and current stage of e-commerce, evaluates the advantages and shortcomings of online retail, and provides insights into its future development. Understanding the transformative impact of e-commerce on the retail industry is crucial for stakeholders to make informed decisions and adapt to the changing landscape. By examining the past and present of e-commerce, this research contributes to a deeper understanding of its dynamics and implications. This knowledge serves as a foundation for anticipating the future trajectory of e-commerce and its continued growth.

Keywords: electronic commerce, online retailing, advantages and challenges

1. Introduction

As the Internet was invented, e-commerce, which utilizes the Internet to facilitate the exchange of goods, quickly proliferated on a global scale. This remarkable growth can be attributed to the pervasive integration of technology into the daily lives of the new generation and the increasing prevalence of online shopping among consumers [1]. Over the course of a decade, from 2012 to 2022, the percentage of total online retail sales experienced a substantial surge, climbing from 5.4% to 14.8% [2]. Reflecting this surge, the US online retail market achieved a staggering $1.04 trillion in total revenues in 2022, signifying a compound annual growth rate (CAGR) of 15.2% between 2017 and 2022[3].

Traditional retailing hinges on brick-and-mortar stores, where customers have the opportunity to physically visit and interact with products. In stark contrast, e-commerce leverages the digital realm, hosting merchandise in online stores and eliminating the need for a physical storefront. This transition from offline to online shopping has yielded substantial benefits, such as the significant reduction of operational costs associated with traditional retail operations. Moreover, e-commerce offers an unparalleled variety of goods to consumers, as the size of an online store is virtually limitless. The expansion of e-commerce has enabled businesses to overcome geographical barriers, reach wider customer bases, and provide access to an extensive range of products.

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However, it is important to recognize that e-commerce lacks the social experience intrinsic to traditional retailing. The interpersonal interactions between consumers and associates, as well as the opportunity to engage with fellow shoppers, are elements that have traditionally characterized the traditional retail environment. These social aspects create a sense of community and provide opportunities for personalized assistance and recommendations. E-commerce, while providing convenience and an abundance of product choices, has yet to replicate this social dimension.

This paper aims to comprehensively analyze the evolution and current stage of e-commerce, examining its advantages and shortcomings in the realm of online retail. By exploring the transformative impact of e-commerce on the retail industry, this research seeks to shed light on the dynamics and implications of this rapidly growing sector. Additionally, this study provides a forward-looking perspective on the development of e-commerce, offering insights into its future trajectory. By understanding the past and present state of e-commerce, stakeholders will be better equipped to make informed decisions and effectively navigate the evolving retail landscape.

2. Category Segments

E-commerce is divided into different segments, of which the most common for consumers is Business to Consumer (B2C) and Consumer to Consumer (C2C). B2C is defined as a provider selling goods directly to consumer, one example is amazon.com. Whereas B2B business sells its product or services to other companies to aid their functioning or management, one example is alibaba.com. Amazon.com is notably one of the largest global e-commerce platforms, Amazon.com mainly serves the European and American markets with 400 million customers worldwide which provides a large number of customer groups for online store sellers. According to the different cultures and lifestyles of customers in various countries, Amazon can offer new entrepreneurial opportunities and let strong buyer groups develop their own customers and grow their businesses. As a third-party platform, Amazon’s largest revenue comes from third-party seller services, which counts 59% of its online retail business. While Amazon allows other companies to place products on its website and deliver those products through Amazon's distribution services, Amazon charges a percentage of sales which is known as “third-party seller service fees”. Generally, this fee ranges from 6% to 45% depending on the types of products sold.

An example of C2C is eBay, which serves as a platform by offering buyers and sellers a wide range of choices to buy or sell goods through a listing, item condition, and delivery format. The major product segments available on eBay are antiques, books, clothing, shoes, collectibles, office equipment, crafts, etc. Ebay is well known for facilitating consumer to consumer transactions, enabling anyone to become a seller. Through its bidding option, sellers can put an item up for sale at no fixed price with consumers bidding against each other to win the item. This is particularly popular with second-hand items, where deciding the value of an item is more difficult. eBay generates revenue from each closed sale, by charging an average of 13% of the final sale price, and advertising fees from sellers.

3. Effect of COVID-19

Businesses are susceptible to external influences, and a recent example of this is the global pandemic caused by the outbreak of COVID-19. The devastating effects of the virus not only led to a significant economic crisis but also brought about substantial changes in people's purchasing habits, particularly in terms of shifting away from offline physical stores. Government regulations implemented to curb the spread of the virus, such as maintaining social distancing and wearing masks, prompted individuals to stay at home and avoid physical shopping environments. This trend was especially prominent in countries like China, where strict restrictions on outdoor activities were enforced.

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Consequently, the scarcity of masks, disinfectants, and essential supplies intensified people's reliance on e-commerce platforms due to their fear of contracting the virus and the limited availability of these items in offline stores. The impact of COVID-19 on people's purchasing behavior was profound, and although life has largely returned to normal, the influence of the pandemic on e-commerce remains significant.

The shift towards increased e-commerce adoption during the pandemic has persisted even after the subsiding of COVID-19. People have grown accustomed to the convenience and efficiency offered by online shopping, leading to a continued preference for e-commerce platforms. e-commerce provides unparalleled convenience, allowing consumers to browse and purchase products from the comfort of their own homes. The ability to shop anytime, anywhere, and have items delivered directly to their doorstep has become increasingly appealing to consumers. Furthermore, e-commerce platforms offer a vast array of products, far beyond what traditional retail stores can accommodate. The virtually unlimited virtual shelf space allows for a diverse range of choices and enables consumers to find niche or specialized items that may not be readily available in local stores.

However, e-commerce companies face a unique set of challenges in recent years. One significant challenge is ensuring the security of online transactions and protecting consumers' personal information from cyber threats. Data breaches and online scams have become increasingly prevalent, eroding consumer trust and confidence in online shopping. E-commerce companies must invest in robust security measures and adopt stringent privacy policies to address these concerns. Additionally, intense competition within the e-commerce industry has led to price wars and thin profit margins. Maintaining profitability while offering competitive prices and providing quality customer service remains a persistent challenge for e-commerce companies.

4. Big Data Analytics for Online Retailing

In recent years, traditional industries including financial, telecommunications, manufacturing, transportation, and healthcare providers have become the main force in driving the use of big data analysis. Data analytics are also widely used in e-commerce to process data gathered from customer. When shopping online, due to the lack of personal interaction between store operator and customers, customers can not always quickly find what they want to buy, the average US e-commerce bounces rate is at 47 percent which means that nearly half of people who land on a page take no further action. These are likely to be caused by customers not being attracted to the goods or because the prices are too high. E-commerce platforms are able to generate vast amounts of data related to customer behavior, such as browsing patterns, purchase history, preferences, items saved in the shopping cart, and demographics. E-commerce platforms can use these data to analyze consumer behavior, for example, Amazon creates groups of alike consumers, i.e. persona, who purchase similar items. Based the purchase history of people within the same group, Amazon can offer items for sale to the remain consumer of the group, such as “you may also like these items….”. by doing so, it will not only enhances the shopping experience but also increases customer satisfaction and drives higher conversion rates. Thus, it will enhance shopping experience, and increase customer satisfaction. Analyzing these data can provide valuable insights in the industry that the seller is operating, such as identify trends, optimize marketing strategies, enhance product offerings. By analyzing competitor’s products, pricing, and market trends, businesses can better position their products in the marketplace. One example is dynamic pricing, where seller can adjust prices in real-time based on factors like demand, supply, customer demographics, to maximize revenue. Another typical technique that is often used in e-commerce is natural language processing (NLP). The NLP technique can use data to provide insights into customer sentiments, preferences, and satisfaction levels. This information can be invaluable for businesses in understanding customer sentiment, improving product quality, and addressing customer concerns promptly.

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Another point is that Amazon is very strict about the quality of products, which leads to the particularity that Amazon has many customers and few merchants. According to Amazon's report, the total number of sellers on Amazon is nearly 9.7 million with 1.9 million active sellers in 2022, and the active global buyers have exceeded 300 million [4]. Compared with other e-Commerce platforms, the seller group is small, which means that the products can get a higher guarantee, and customers can choose the products that best meet their own conditions from fewer stores. In addition, Amazon also has its own scoring system, which also helps customers to select higher quality products. Buying goods through electronic platforms, sometimes customs not only need to pay the price of the goods, they also need to pay delivery fees. In the delivery fee, the cost of the last mile accounts for 53% of the total cost, but the proportion of the cost of the last mile for different delivery companies will vary. For the delivery company, if the buyers living in the same residential area all use the same retailer/delivery company, it means that the delivery company can deliver many packages in the shortest journey, sharing the cost of the last mile between more people, therefore reducing delivery cost per order. Amazon accounts for 37.8 % of the US e-commerce in 2022, which makes it one of the largest digital platforms of e-commerce. Because of this, Amazon.com can charge lower delivery fees than other platforms.

5. Challenges

Although e-commerce has become a trend in today’s society, some products are still not suitable for online purchases, which is one of the most important challenges that e-commerce is facing nowadays. This type of product usually requires the use of the five senses to assist people to select, such as groceries, furniture, and clothes. For certain products, such as clothing, furniture, or luxury items, the sensory experience is essential to evaluate quality, texture, fit, or craftsmanship. When customers are unable to touch, try on, or examine products in person, they may feel uncertain about their purchase decisions, leading to hesitation or increased product returns. For example, out of the overall fashion retail sales worldwide, only 21 percent are e-commerce transactions [5]. In addition, certain products have features or functionalities that are best demonstrated in person. Complex products, machinery, or technological gadgets often require hands-on interaction to fully understand their capabilities. In an e-commerce setting, presenting these features effectively can be a challenge. Businesses need to rely on high-quality product images, videos, detailed descriptions, and customer reviews to convey the product's value, which may not always suffice to replicate the in-person experience. According to PYMNTS, 32% of the worldwide electronic devices purchased were through online transactions [6].

The operation of e-commerce is extremely vulnerable to external influence. While e-commerce sales are still on an upward trend, it's worth noting that Amazon's e-commerce sales fell 2% to $64.5 billion from $66 billion in the fourth quarter of 2021. Inflation in the United States, the United Kingdom and other regions brought by the coronavirus pandemic and the Russian Ukrainian war has led to customers preferring to choose low-priced products during online- shopping. According to Adobe Analytics, across 11 e-commerce categories, high-cost items lost market share significantly to low-cost items. For example, more expensive personal care brands had a 31% market share in January 2019, by the end of February 2023 these products had only 7% market share. The market share of the cheapest product doubled to 54% [7]. Obviously, inflation is having an impact on overall consumer spending. In face of these persistent headwinds, retailers must elevate the consumer shopping experience in order to keep customers interested in online shopping. At the same time, inflation decreased the purchasing power parity in the United States and other regions, which also causes an effect on e-commerce. According to Experian, average total consumer debt in 2022 was $101,915 which is 10% increase from 2020 [8]. High levels of personal debt can limit consumers' ability to spend on discretionary items, including online shopping. When individuals have significant debt obligations to fulfill, they may cut back on non-essential purchases, which can negatively impact e-

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commerce sales. Reduced consumer spending can slow down the growth of e-commerce businesses and make it harder for them to achieve their revenue targets.

In terms of social influence, e-commerce has led to a large number of unemployment. E-commerce businesses often leverage technology and automation to streamline operations and improve efficiency. This automation can replace certain manual tasks previously performed by human workers, such as order processing, inventory management, and logistics. As e-commerce operations become more automated, it can lead to reduced employment opportunities for certain roles within the supply chain. E-commerce not only reduces employee demand, but also affects traditional retail. The rise of e-commerce has disrupted traditional retail, leading to store closures and job losses in the retail sector. As consumers increasingly shift their shopping habits online, traditional retail establishments may struggle to compete, resulting in reduced demand for retail workers. In many small counties, some middle-aged laid-off workers who have not gone to college or have relatively low education maintain their basic survival by running mom-and-pop stores. The core nature of the employment created by e-commerce is that a group of young, college-educated, Internet-savvy people have replaced the businesses that those with lower cultural qualities depend on for survival. Not only that, every job created in e-commerce, four and a half jobs are lost by traditional retailers [9]. This means that if e-commerce leads to the employment of 10,000 people, then at the same time, it will cause 45,000 people to lose their jobs. Those who are unemployed or underemployed may face financial hardships, struggle to meet basic needs, and experience a decline in their overall standard of living. The wealth gap between the employed and unemployed may widen, leading to social and economic disparities [10].

6. Conclusion

The impact of pandemic is going to have a long-lasting effect in terms of consumer shopping habits, the online retail industry is projected to continue to grow as consumers have become accustomed to the convenience of online shopping, and more businesses have established online distribution channels and highly developed delivery networks. However, with e-commerce facing the challenges described above, and the ending of the COVID-19 pandemic, online retail in the U.S. is forecasted to decelerate, with an anticipated annual growth of 8.3% for five year period 2022-2027. Since the retail shoppers are very price sensitive, and there is no switching cost, future online retail growth will be mainly based on the dominant players such as Amazon, eBay, etc., as they are benefiting from the economies of scale. Unfortunately, people will see more closure of the brick-and-mortar store in the foreseeable future and subsequent job loss. But, the workforce exiting the physical store can be trained to work at other adjacent service industries such as delivery drivers, and restaurant workers, flight attendants to alleviate the unemployment issue.

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