E-Commerce: Catalyst for a Paradigm Shift in U.S. Global Trade

Prakash Veenam

E-Commerce and Business Development Professional Arlington, VA 20148, US

pv87ki@gmail.com

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Abstract— In an ever-evolving world, innovation has become the pivot for sustained economic growth and development across nations. In the modern interconnected global village, e-commerce acts as a powerful catalyst for international trade creating the opportunity for small and mid-sized enterprises to enter the global arena with their goods and services, thus fueling economic growth and prosperity. Massive growth and penetration of the internet, mobile communication and digital technologies allow businesses to tap global markets much more easily than before while spoiling the consumers for choice. This article ads to the literature on e-commers; evaluates and highlights its role in facilitating and expanding US international trade and the advantages derived by businesses and consumers, while depicting how e-commerce has caused a paradigm shift in US's global trade.

Keywords— *E*-Commerce, Global trade, Supply chain, Online, Shopping.

1. Introduction

Online shopping for consumer goods and essentials (sometimes interspersed with non-essential things) from sites like Amazon or eBay has become a normal and indivisible part of our day-to-day lives. Strangely, the once incomprehensible concept of ecommerce, that might have occurred to many as irrational and reckless, has now become more of a norm than the exception. E-commerce has traversed a long road, from conceptualization to this giant, which has disrupted legacy retail and marketing practices thus becoming a paradigmshifting behemoth. Convenient streamlined operations with reduced cost have brought about a sea change in the way we look at retail and financial transactions not just domestic but at the international level as well [1].

The United States' global trade environment is portrayed by a trade deficit created by imports surpassing exports, despite rise in exports [2]. Their top trade partners in 2022 were the European Union, Canada, Mexico, China, Japan and Germany. As of July 2024, the country's top export destinations are Canada (\$27.7B), Mexico (\$28.7B), China (\$10.7B), Netherlands (\$7.52B) and Japan (\$7.1B) [3]. Globally, the USA is the second largest exporter of goods, coming next only to China [4]. A trade deficit of US\$ 70.43 bn was recorded in August 2024 with balance of trade (BoT) in the US averaging to US\$ 18.25 bn from 1950 till 2024. The all-time high in BoT was US\$ 1.95 bn in June 1975 while the all-time low of US\$ (-)101.91 bn was recorded in March 2022 [5]. Online orders from abroad represent roughly 3% of retail e-commerce revenue in the U.S. and Canada [6]. Amazon continues to dominate US ecommerce sales in 2024, with 11.5% increase in its US market reaching a whopping \$492.23 billion which is 37.8% of the total US market [7].

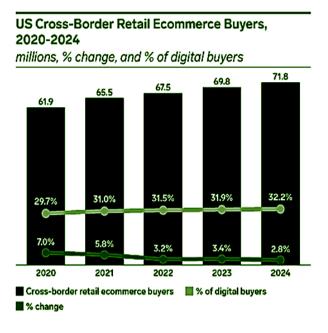


Figure 1. Cross-Border Retail e-shoppers in U.S, [8]

U.S. online transactions are expected to reach around \$1.2 trillion, reflecting an increase of 8.7% from the previous year. 16.2% of total retail sales in U.S. is likely to come from e-commerce segment and will be carried out, internationally, through the online channel and this trend is expected to keep growing. Historical high ecommerce sales of \$1.2 trillion was recorded in 2023 reflecting 330% increase from \$260.4 billion that was recorded in 2013. U.S. ecommerce sales stood at \$291.6 billion in Q2 of 2024 reflecting 0.82% growth quarter-onquarter and a 6.8% increase year-on-year [9]. The Q2 figures are the highest ever quarterly figure [10]. The total e-commerce sales in the country was pegged at \$579.45 billion in the first half of 2024. Expert estimates predict the sales to reach \$1.26 trillion by the end of 2024 and around \$1.72 trillion by 2027 with online sales making up around 22.6% of total US retail sales [11].

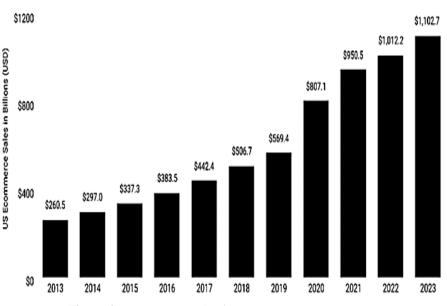


Figure 2. Ecommerce Sales for U.S. - Last 10 Years [10]

Globalization has swept aside the barriers that existed in movement of commodities, labor, and capital. However, globalization earned the bad reputation of favoring the large corporates in terms of growth and expansion. Whereas the e-commerce revolution has provided a more inclusive balance, considered to be fairer, that is reshaping the global business arena by offering more space and scope for small businesses [12]

2. Literature Review

The massive growth and penetration of information and communication technology (ICT) has resulted in today's interconnected world, which in turn is responsible for e-commerce emerging as a powerful catalyst for global trade in general and cross-border ecommerce in particular. Thanks to the exponential progress of online platforms and digital marketplaces, it is now possible for businesses of all stature to tap into global markets providing them reach and expanse like never before [13]. This article explores the important role that ecommerce can play in facilitating global trade from the perspective of the U.S. and how beneficial it can be for small businesses while bringing about an exemplary shift in U.S. Global Trade.

2.2 Economic Benefits of International Trade

The élan vital of the global economy is international trade as a driver of competitiveness, expansion, and growth; and a promoter of fairness. It encourages innovation, modernization, and efficiency. Within a rules-based system the flows of trade help to improve wages, increase investments and create jobs [14]. The innovations in technology have taken international trade, online. This is what we call electronic commerce or e-commerce.

All countries are likely to benefit economically from e-commerce. It is just a matter of time. Initially, the gains are likely to be lopsided towards developed countries. However, in the long run it would be the developing countries which would reap the maximum benefits. The sheer volume of international trade would increase with the use of ecommerce as the internet magnifies and extends its reach, and economies that are not averse to importing from high-income economies would reap the advantages of knowledge spillovers [15]. Additionally, e-commerce disrupts the job market while also creating new jobs [16].

2.3 Ecommerce Transforming Global Trade

Ecommerce is the key driver of conversion and modernization of global trade. It is also witnessing its fair share of technological innovation which have provided not just efficient but also the safe means for expansion of its worldwide market access. In the framework of international trade, Ecommerce now commands a crucial position as it enables companies to move to and enter international business arena and global souks comparatively easily [17]. Walmart, Target, and other mega players in the retail sector took advantage of their scale to procure goods in bulk and transfer the benefit of lower prices to U.S. consumers. Similarly, e-commerce platforms are offering the advantages of cost-rationalization through access to massive volume by providing enterprises with the ability to readily access billions of the world's customers [18].

E-commerce being а relatively novel technology, substantial effect of emerging technologies is becoming increasingly evident with time and the results are measurable for the users of the e-commerce system [7]. Digitalization of both local and international trade has done much more than simply transforming retail. It has taken a step further to disrupt and reinvent the operations pertaining to the financing of global trading. Ecommerce platforms generate humungous amounts of transactional data, which in turn facilitates more judicious credit assessments and risk considerations thus paving the way for better efficient and robust trade finance operations [17].

Global trade finance is being reshaped by innovations in digital technology using platforms built for international e-commerce transactions, and can offer functionalities such as payment processing, supply chain (SC) financing and guaranteeing flow of capital through real-time digital solutions that had so far remained big challenges [19]. This digital approach is crucial for the global market inclusion of SMEs, which hitherto faced significant entry barriers. Additionally, emerging policies and regulatory frameworks will support this digital transition, fortifying robust environment for growth and integration of e-commerce in global trade [17].

Global economy is transitioning to a knowledge-based era from an industrial era with ICT growing increasingly powerful and more important than capital and labor. This has provided the opportunity and paved the pathway for any country (developed or developing) to catapult into a wealthy economy. ICT also creates a level playing field where size of nation or corporation does not matter as need for huge investments and strong government support are not necessary. Singapore, India, Taiwan, China, Korea, Malaysia, Ireland, Israel, and Finland are all examples [20].

2.4 Changes in U.S. Global Trade

The US is steering through a paradigm shift in international trade. The country is focused on maintaining its leadership position in the worldwide technology market by cultivating and encouraging domestic innovation and production. This has huge potential in terms of job creation and economic growth, especially in sectors such as technology and manufacturing [21].

E-commerce can provide a platform for small and mid-sized enterprises (SMEs) to grow exponentially by granting access to broader consumer base both in the domestic market and in the global arena [22]. These platforms offer online services which match consumers to suppliers, facilitate online orders, accept electronic payments, and coordinate the SC for logistical support and delivery of the products to the final consumers. Data Catalyst reported that nearly 70% of SMEs in the U.S. employ online marketing platforms run by third party stakeholders while simultaneously using their own in-house web stores and most of these firms prefer to utilize multiple channels for online marketing and sale [23]. Several of these platforms are well known to the public not only in the U.S. but around the world, such as Facebook, Amazon, Etsy, PayPal, and Shopify; while others are specialists in niche markets. A study on eBay for U.S. SMEs on the e-commerce platform showed that 96% of the SMEs, listed on e-bay as sellers, export to an average of 17 different countries and the competition from foreign platforms is also on the growth path [23, 24].

E-commerce and online transactions provide customers the luxury to research and purchase products without leaving their place of residence or work. This not only widens access but is extremely convenient for the shoppers [25]. Through the implementation of online sales, enterprises can scale seamlessly and reach new markets and expand customer base, both domestically and internationally and this is particularly applicable to small and mid-sized enterprises or SMEs. While some online purchases are in place of in-store purchases, most other online purchases are new clients carrying out new purchases [23].

Multilateral trade rules are in existence and do cover some e-commerce issues, however they are not exhaustive in nature and are generally regarded as dated and ancient. FTAs (Free Trade Agreements) reached between certain countries, in recent years, include much stronger e-commerce obligations, but they are not widespread and allencompassing and are restricted to only a few countries and regions. There is an absence of common set of rules or global disciplines that can address or adjudicate the wide range of ecommerce issues [23].

Cross border ecommerce (CBEC) or marketing of goods and services across international borders with the help of internet, is witnessing exponential growth [26]. This article focuses primarily on small and medium sized enterprises going global and the factors they need to consider in order to attain success in the e-commerce international theatre. Ecommerce makes it possible for small and medium enterprises to foray into global markets by offering a low-cost and low-barrier entry positioning. Online marketing portals act as an easy gateway for entrepreneurs to have a global presence without any need for inventory maintenance by negating the need for physical stores or other investments for infrastructure support [13]. SMEs are thus able to compete with other global or local brands, generate jobs and create a whole ecosystem driving economic growth.

In today's world, a business as small as a single person selling products simply using the social media, is able to function as a global entity owing to the proliferation and increased accessibility of reasonably priced digital tools that allow them to procure, transport, deliver, make and receive payments and virtualize other key aspects of their operations [12]. The fast-emerging ecommerce ecosystem, that encompasses marketplaces, payment gateways and online logistics, is facilitating the reduction of trade barriers across borders, thus making it easier for SMEs to enter the foreign markets without having brick-and-mortar format in those countries [27]. A large majority of the SMEs believe that technology is creating a level playing field when it comes to international markets besides transforming the logistics industry and hence are focusing more on international market than domestic, despite facing shipping difficulties [20]. For traditional small businesses that do not sell online, export participation rate is 2-28% in most countries, compared to 97% from internet-enabled small businesses, as per the World Trade Organization [12, 19]

3. Technological Innovations Enhancing Trade

In an ever-evolving world, innovation has become the pivot for sustained economic growth and development of individual nations. Ecommerce has thus catapulted to becoming one of the main branches of the current e-world we are residents of. Running a business has become even more seamless as SC gaining more flexible by bringing down supplier costs, a catalogue of products and services to choose from, reduced turnaround times, and making information privy to all stakeholders thus building an enhanced customer convenience in the process. E-commerce is an inalienable tool for sustained economic growth and development [28]. The e-commerce market is highly dependent on superior quality websites to attract users [16].

3.2 Digital Payment Solutions

Trade at every stage of the global SC is supported by trade finance. It provides liquidity, adequate cashflows and risk mitigation to ensure that buyers get their purchases delivered and sellers receive their payments. Movement of goods and services across borders is impossible without support from trade finance. The banks, financial organizations and IT companies collaborate to ensure that liquidity flows to appropriate areas [14]. Global payments are anticipated to reach \$290 trillion (approx.) by 2030, aided by such trends as borderless cross-border e-commerce, and payment digitalization across industries [29]. SMEs look for banking partners capable of offering digital solutions for their growing requirements since customary banks and credit unions fail to offer cutting-edge digital tools. Hence, several small business owners are ready to change over to institutions offering superior financial management solutions [30].

Innovations in cross-border payments are led by Fintech companies. Wise (erstwhile TransferWise), Revolut, PayPal, and similar other companies offer seamless and intelligible platforms, platforms that facilitate cheaper and faster online money transfer across international borders, in comparison to traditional banks, for both individuals and businesses. To reduce currency conversion costs, they frequently use a peer-to-peer model to match transactions amongst Recognizing users. smartphones' omnipresence, incipient fintech solutions now focus on payments through mobile phones. Money services such as Kenya's M-Pesa, that use mobile technology, provide banking services to unbanked populations thus facilitating cross-border remittances and payments and extending financial inclusion [31]. For better efficiency and security of cross-border financial transactions, there is an increased application of Artificial Intelligence (AI) and Machine Learning (ML). Algorithms powered by AI identify fraudulent transactions in real time through pattern analysis and anomaly detection. Also, AI optimizes currency exchange processes through market prediction and automated currency conversion at favorable rates [31].

3.3 SC Automation and Efficiency

U.S. has just begun reaping the benefits of recent supply-side revolution. Massive investments in e-commerce design and infrastructure during last two decades are yielding fruits through reduction in barriers for businesses of all sizes to enter the market. Besides expanding market, this is generating greater scope for economies of scale, specialization, and collaboration. Consequent productivity gains are reducing business costs, controlling consumer prices, and fostering growth and investment [18].

Online international retailing involves delivering goods to customers located at different locations across the globe which presents serious challenges such as the risk of not receiving a shipment and relatively low-customer loyalty; the cost, time, and quality of delivery; and handling product returns [32]. With continuous growth of ecommerce industry, more resources and time are being used to research and streamline logistics and development. From self-driving shipment trucks to delivery robotics, latest innovations in SC enables online brands to catapult their business to a global level while adhering to customer demands regarding fast and economically feasible delivery.

A key innovation in inventory management is on-demand warehousing which by offering warehouses that have excess space to online brands needing temporary inventory storage and order fulfilment but do not want to spend much on warehouse management [33]. Though costeffective, the lack of vetted fulfillment providers and low visibility into operations has made techenabled third-party logistics (3PL) provider a better choice in international logistics management [34]. The scalability and flexibility provided by 3PL companies in the US are crucial assets for businesses navigating volatile international markets and consumer demand. 3PL is also vital to successful last mile delivery - the stage in which a carrier picks up orders from the designated distribution center or warehouse and delivers the product to the customer [35]. The key objective is faster delivery of products to their buyers. Speed and safety are no more things of the past but is expected to be a common attribute for any international e-retailer of repute. The standards have already been set by eminent international players like Amazon and Walmart Marketplace [36]. But last mile delivery is expensive and can account for up to 28% of the company's shipping expenses [37]. Despite criticality of investment in last mile operations for it directly impact on customer experience, the need for cost optimization is ever-present, specifically when ensuring free and

same-day deliveries are essential.

Companies are employing AI systems in their SCs to help optimize distribution routes, boost productivity, streamline warehouse factory workflows, and more [38]. An automated SC reduces manual work while offering logistics costs savings aided by the automation of the timeconsuming tasks. Implementation of inventory automation, logistics automation and automated order fulfillment technology help to manage fulfillment process, which helps to speed up processes, save time, and reduce human error. In 3PL automated shipping technology maps out the most optimize route to ship out an order [39]. AI can offer enormous SC productivity benefits while reducing operational costs, but technology implementation can be tough and expensive, specifically where training custom-made ML models on proprietary data are involved. Manufacturers and logistics providers must prepare their SCs for AI integration and the transmutation that they bring to logistics network management and operation.

3.4 Data Analytics and Market Insights

Organizations deploying are modern technologies to reap the benefits offered by data science. Big Data (BD), the diverse and humongous amount of data generated in the digitally intertwined world, handles this enormous amount of data which usually exceeds the capacity of conventional data management tools, making it difficult if not impossible to effectively analyze this using traditional information means [40]. Technological revolution led BD to create opportunities for businesses by offering a model for innovation and transformation, since tech giants and big enterprises utilize big data because of enlarged data volumes [41]. Online businesses are scouting for ways to increase customer satisfaction and for customer retention in a fiercely competitive market. Appropriate tools like big data can offer a smooth and seamless customer experience by enabling businesses to expedite decision-making, enhance performance, optimize supply chains, acquire competitive edge, and streamline workflows [40]. It provides useful insights on customer behavior to firms for formulating marketing strategies strategies and supply chain integration that enhances linkages and collaboration between various businesses [42]. Now-a-days big data is readily available making it easy for eCommerce businesses to get information overloaded. Additionally big data-based tools offer several real-time assistances including fraud detection and coupon generation [43].

A recent study in the USA indicates that big data analytics (BDA) contributes to more than 10% of the growth for over half of firms [44, 41]. A large chunk of the global companies is investing in BDA projects and the number is increasing exponentially [45]. BDA solidifies transformative benefits (e.g., real-time customer service, dynamic personalized offers, or pricing, improved interaction) conferred by emerging internet-based technologies by allowing informed decisionmaking guided by critical insights [46]. For instance, BA allows ShipBob to pick the best value carrier while passing the savings to customers. Thus, company and its customers gain from fast and affordable delivery [39]. Using big data Amazon analyzes customers' buying activities, products in the cart, items viewed and most searched [43, 46] to generate sales leads.

Blockchain offers additional transparency into the whole SC network alongside quick approvals and processing checkpoints. The automatically recorded data offers protection from changing, hacking, or cheating the framework and hence higher security for brands expanding distribution networks. Blockchain transactions make it easier for e-retailers to share and access common data that is also being viewed by their third parties that are managing different parts of their supply chain like 3PL or carrier partners [39].

4. Regulatory and Compliance Landscape

E-commerce laws and regulations are constantly evolving. Online businesses must change rapidly and simultaneously to stay legally compliant, as also a step ahead of the latest industry trends. Keeping abreast of online business regulation changes is amongst the best ways of predicting economic and market movements [47]. Ecommerce firms operating in the U.S. encounter a myriad maze of laws and regulations guiding

- (1) data privacy
- (2) automatic renewal disclosures;
- (3) accessibility;
- (4) enforceability of arbitration clauses; and
- (5) class waivers [48].

Several existing regulations impact the U.S. ecommerce industry. Sellers must provide truthful product descriptions, honor warranty obligations, and comply with their return policies, and divulge relevant terms and conditions clearly. The Federal Trade Commission (FTC) prohibits misleading business practices, requiring companies to compensate for any damage from their products. The Fair Packaging and Labeling Act (FPLA) issued through the FTC and the Food and Drug Administration, mandates labeling of all consumer commodities according to clear standards, indicating:

(1) Product identity

(2) Names and locations of producers, packers, or distributors

(3) Net weight or numerical count of the commodity or any other physical measure [47].

Neither omnibus nor uniform federal data privacy law exists in the U.S. Instead, a few federal laws and a gamut of state laws govern data privacy [48]. Laws such as the California Consumer Privacy Act (CCPA) protect data privacy and enhance consumer privacy rights [47].

5. Consumer Behavior and Market Trends

E-retailing is universally recognised and accepted as an economical, profitable, and always accessible platform to buy and sell products. Online shopping, though a comparatively recent occurrence in the e-business world, is slated to become the irrevocable future of shopping international e-commerce. Most companies have started their in-house shopping portals to market their products and services online. Almost every commodity nowadays can be sold online [49]

In the U.S. online shopping has become so common that over 75% of its consumers now shop online. The volume is set to increase in the future. U.S. retail e-commerce sales are predicted to rise almost 9% during 2024-2029 [50]. E-shopping has become popular over the years primarily because of the convenience and ease of shopping from the comfort of residence or workplace. Modern stressful lifestyle has made adoption of online imperative for consumers globally as an alternative to physical shopping and save time and money. A key enticing factor, especially during holiday seasons is the absence of long wait and the need to stand in the queue and searching for a particular item across store [51].

Most U.S. consumers (56%) prefer online shopping, and this trend peaks among millennials

(60%), as per data from GWI, a target audience company, while over 50% of Gen Z and Gen X consumers prefer online to in-store shopping [52].

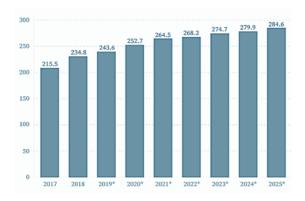


Figure 3. Online Shoppers in the U.S. (in Millions) 2017-2025 [53]

From groceries to latest fashions, the internet has redefined time, place, and manner of shopping. According to a survey by Pew Research Center on impact of personalization and omnichannel strategies on consumer preferences, social media has turned into a powerful tool shaping consumption, as several Americans – specifically younger adults – follow and rely on influencers for recommendations [54].

6. Key Challenges and Barriers to Growth

6.2 Logistical

Cross border movement of goods, the key element in international e-commerce and crossborder logistics, require that goods pass through customs inspection and clearance without hassles.

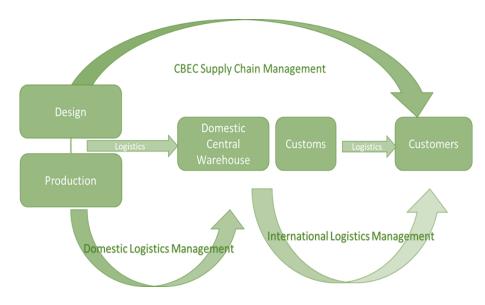


Figure 4. CBCE Supply Chain

A key challenge here is handling the myriads of intricate customs clearance procedures varying across countries [55]. Customs duties, standards, procedures, and inspection regulations differ between countries and regions, requiring complex paperwork for clearances. On-line shopping is significantly influenced by demographic factors (age, gender, marital status, family size, etc.) and income [56].

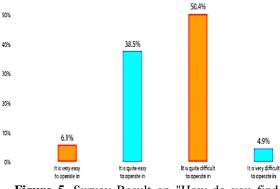


Figure 5. Survey Result on "How do you find the business environment for CBEC transactions today?" - No. Of Respondents – 244 [57]

Generally, cross-border logistics face information transparency and monitoring difficulties due to elongated logistics information transmission chains and inclusion of numerous participants and links. Real-time tracking of transportation status, location, and movement of goods in transit is difficult making efficient inventory management and logistics process monitoring very challenging thus aggravating logistics risks. Cross-border logistics services' stability is affected by factors such as Local policies, traffic, and weather [58]. Changing

customs policies, flight cancellation, freight strike, and other emergencies cause disruptions and delays in product movement impacting the timeliness of goods delivery and customer satisfaction [59].

6.3 Cultural and Market Differences

Habits, language, culture, and expectations, everything differ amongst CBEC customers [60]. Culture significantly influences consumer behavior and attitude, thus determining buying behavior [61]. Despite momentous growth of e-commerce over the years, the same has not been shared equally by every country, and culture difference is a key reason. An individual's attitude towards and desire for a product are habitually influenced by his cultural environment. For instance, same food item will be accepted differently or rejected completely depending upon the native cultures. Culture also governs the trustworthiness of CBEC among consumer [62]. beliefs about electronic service quality, consumers' demand for uniqueness and apparent behavioral control, determine attitudes toward international sites and decision to but from them [63]. Purchase behaviors are also shaped by the standardizing structure of cross-border online purchasing [64]. After sales services, a key determinant of consumers' trust and loyalty becomes challenging due to cross border cultural differences [65]. Massive costs are involved in building and maintaining specialized crew that can cater to customers following their cultures and in their language. Product information on websites must follow local standards and be available in local languages [66]. An important reason why Amazon China's failed was intense competition from domestic e-commerce giants and colossal cultural differences that set the Chinese consumers

part from others [67].

7. Future Trends and Prospects

Efforts at harmonizing regulatory frameworks across various jurisdictions is crucial to overcoming the difficulties in cross-border payments. Financial Action Task Force (FATF), the Basel Committee on Banking Supervision are other international bodies are toiling to create standardized regulations for facilitating smoother CBEC. Besides reducing compliance costs these regulations will ease complications for payment providers, promoting efficiency and security for global payment ecosystem.

CBEC creates overabundance of opportunities for global expansion of businesses in an increasing e-connected world. Moreover, the brisk development of mobile ICT, increasing need for instant gratification and intensified globalization develop markets unrestricted by geographical boundaries. Simultaneously challenges keep mounting and must be handled before for CBEC to thrive and flourish. The major hurdles include regulatory, technological, cultural, and logistic. Information asymmetry and a lack of trust continue to keep transaction (execution and monitoring) and bargaining costs elevated which are likely to dissipate with better technologies, more userfriendly platforms, easier checkouts, and more conducive regulatory frameworks as businesses become more seasoned and start understanding the dynamics of online transactions better.

An increasing number of US companies are adopting emerging technologies such as AI-driven SC automation and blockchain technology to provide seamless and superior consumer experience that is helping to expand overseas markets besides retaining existing customers. Reduction in transaction costs, solving information asymmetry issues amongst firms and consumers, better SC efficiencies, increased consumers' trust and market demand for cross-border products are some of the benefits conferred blockchain. Chatbots and Generative AI tools provide faster conversational and contextual responses helping customers and customer service agents.

Ecommerce continues to have a bright future in US global trade, with major potential for continued growth led by innovation especially. Global eCommerce has a complex landscape. Companies must stay abreast of regulatory developments in the markets they operate and adapt to changes quickly to position their businesses for success and navigate and overcome emerging challenges. While reducing burden on customer service representatives AI driven automations will increase

process compliance while enhancing efficiency though access to unambiguous and reliable relevant SC data.

8. Conclusion

The face of global trade is changing and US is also following the bandwagon. This article underscores how e-commerce catalyzing this shift and is the future of global shopping. Every day tons of sellers are going online with their offerings. Though majority of US companies now simultaneously run both online shops and brick-and-mortar formats, there is still ample opportunity to grow as the foreign markets have been thrown open to the home-grown small and medium enterprises who can now reach out to a much larger customer base. Shipping and delivery remain costly barriers and varied regional regulatory frameworks remain a significant hurdle. Nevertheless, companies are spending significant amount of money to circumvent these bottlenecks. They are also spending on technological upgradation, automation of SC and on data security and privacy measures to ensure a healthy and prosperous overseas presence.

References

- George Washington University, "History of E-Commerce: Facts, Stats & Tips on What's Next," 2019. [Online]. Available: https://healthcaremba.gwu.edu/history-ofecommerce. [Accessed 15 Oct 2024].
- [2] BEA, "International Trade in Goods and Services | Bureau of Economic Analyss (BEA), United States Government," 08 Oct 2024. [Online]. Available: https://www.bea.gov/data/intl-tradeinvestment/international-trade-goods-andservices. [Accessed 15 Oct 2024].
- [3] OEC, "United States (USA) Exports, Imports, and Trade Partners | The Observatory of Economic Complexity (OEC)," 2024. [Online]. Available: https://oec.world/en/profile/country/usa. [Accessed 15 Oct 2024].
- [4] S. I. Akhtar, C. D. Cimino-Isaacs and K. M. Sutter, "U.S. Trade Policy: Background and Current Issues: Congressional Research Services," 21 Feb 2024. [Online]. Available: chrome-

extension://efaidnbmnnnibpcajpcglclefindmkaj /https://crsreports.congress.gov/product/pdf/IF/

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IF10156#:~:text=The%20top%20U.S.%20part ners%20(total,and%20Germany%20(\$304%20 bn).&text=Source:%20Bureau%20of%20Econ omic%20Analysis,policy%20(see%20Text%2 0Bo. [Accessed 15 Oct 2024].

- [5] Trading Economics, "United States Balance of Trade," Sep 2024. [Online]. Available: https://tradingeconomics.com/unitedstates/balance-oftrade#:~:text=The%20United%20States%20re corded%20a,Billion%20in%20March%20of% 202022.. [Accessed 15 Oct 2024].
- [6] Statista, "Cross-border e-commerce in North America - statistics and facts," 15 Apr 2024.
 [Online]. Available: https://www.statista.com/topics/8853/crossborder-e-commerce-in-north-america/.
 [Accessed 16 Oct 2024].
- [7] M. Ceisel, "6 Strategies for Ecommerce Success in 2024 | Coveo," 10 Jan 2024.
 [Online]. Available: https://www.coveo.com/blog/strategies-forecommerce-success/. [Accessed 19 Oct 2024].
- [8] E. Cramer-Flood, V. Dong, S. Davidkhanian and A. Rotondo, "US Cross-Border Buyers Forecast 2023: Inflation Drives Consumers to Low-Cost Goods From Overseas: EMARKETER," 16 May 2023. [Online]. Available: https://www.emarketer.com/content/us-crossborder-buyers-forecast-2023. [Accessed 16 Oct 2024].
- [9] A. Haleem, "US ecommerce sales hit new highs in Q2 2024 | Digital Commerce 360," 21 Aug 2024. [Online]. Available: https://www.digitalcommerce360.com/article/q uarterly-online-sales/. [Accessed 17 Oct 2024].
- [10] Oberlo, "US ecommerce sales: key data," Sep 2024. [Online]. Available: https://www.oberlo.com/statistics/usecommerce-sales. [Accessed 17 Oct 2024].
- [11] Sellers Commerce, "43 eCommerce Statistics In 2024 (Global and U.S. Data)," 10 Sep 2024.
 [Online]. Available: https://www.sellerscommerce.com/blog/ecom merce-

statistics/#:~:text=Growing%20at%20more%2 0than%202x,profitable%20choice%20for%20c ompanies%20worldwide.&text=Source:%20e Marketer.&text=The%20United%20States%20 retail%20eCommerce,Source:%20United%20S tates%20Cen. [Accessed 15 Oct 2024].

- [12] Henadi Al-Saleh, "E-commerce is globalization's shot at equality," World Economic Forum Annual Meeting, 19 Jan 2020.
- [13] Inductus Global, "The Role of E-commerce in Facilitating International Trade | LinkedIn," 28 Jul 2023. [Online]. Available: https://www.linkedin.com/pulse/role-ecommerce-facilitating-international-tradeinductusglobal/. [Accessed 16 Oct 2024].
- [14] M. Wreford and N. Louat, "The digital transformation of trade finance: An urgent present and a bright future | World Bank Blogs," 02 Mar 2021. [Online]. Available: https://blogs.worldbank.org/en/trade/digitaltransformation-trade-finance-urgent-presentand-bright-future. [Accessed 17 Oct 2024].
- [15] N. Terzi, "The impact of e-commerce on international trade and employment," Procedia - Social and Behavioral Sciences, vol. 24, pp. 745-753, 2011.
- [16] C. Banescu, E. Titan and D. M. Todose, "The Impact of E-Commerce on the Labor Market," Sustainability, vol. 17, no. 9, pp. 1-17, 2022.
- [17] Financely, "The Importance of E-commerce in Shaping Modern Global Trade Finance," 2021.
 [Online]. Available: https://blog.financelygroup.com/the-importance-of-e-commerce-inglobal-tradefinance/#:~:text=E%2Dcommerce%20is%20a %20driving,for%20expanding%20global%20 market%20access.. [Accessed 18 Oct 2024].
- [18] D. Ikenson, "The E-Commerce Revolution Is Transforming Global Trade And Benefitting The U.S. Economy | Forbes," 13 Jun 2022.
 [Online]. Available: https://www.forbes.com/sites/danikenson/2022 /06/13/the-e-commerce-revolution-istransforming-global-trade-and-benefitting-theus-economy/. [Accessed 16 Oct 2024].
- [19] WTO, "WORLD TRADE REPORT 2016 : LEVELLING THE TRADING FIELD FOR SMES," 2016. [Online]. Available: chromeextension://efaidnbmnnnibpcajpcglclefindmkaj /https://www.wto.org/english/res_e/booksp_e/ wtr16-2_e.pdf. [Accessed 22 Oct 2024].

- [20] Hasmik Hovhannisyan and A. Chobanyan, " Economy impacts of ICT industry: Case of Armenia," Marketing and Management of Innovations, no. 3, pp. 260-267, 2018.
- [21] M. Bretzfield, "Navigating Global Trade Shifts: Strategies for a Resilient Future in International Markets | LinkedIn," 11 Dec 2023. [Online]. Available: https://www.linkedin.com/pulse/navigatingglobal-trade-shifts-strategies-resilientbretzfield-px0nc/. [Accessed 19 Oct 2024].
- [22] S. Asanprakit and T. Kraiwanit, "Causal factors influencing the use of social commerce platforms," Journal of Open Innovation: Technology, Market, and Complexity, vol. 9, no. 4, pp. 1-11, 2023.
- [23] R. F. Fefer, "International Trade and Ecommerce: Congressional Research Service," 14 Mar 2022. [Online]. Available: chromeextension://efaidnbmnnnibpcajpcglclefindmkaj /https://crsreports.congress.gov/product/pdf/IF/ IF11194#:~:text=International%20Trade%20a nd%20E%2Dcommerce&text=The%20Corona virus%20Disease%202019%20(COVID,hinder %20further%20e%2Dcommerce%20growth.. [Accessed 15 Oct 2024].
- [24] eBay, "Global Trade : At a Glance," 2024. [Online]. Available: https://www.ebaymainstreet.com/issues/global

trade#:~:text=According%20to%20eBay's%20 Small%20Online,on%20four%20or%20more %20continents.. [Accessed 20 Oct 2024].

- [25] V. Santos, T. Augusto, J. Vieira, L. Mendes, B.
 B. Sousa and D. Pontes, "Chapter: 12 E-Commerce: Issues, Opportunities, Challenges, and Trends," in Promoting Organizational Performance Through 5G and Agile Marketing, IGI Global, 2023, pp. 224-244.
- [26] F. Cassia and F. Magno, "Cross-border ecommerce asa foreign market entry modeamong SMEs:therelationship between export capabilities and performance," Review of International Business and Strategy, vol. 32, no. 2, pp. 267-283, 2022.
- [27] Agility, "Ship for Success: SMEs and International Trade," Jul 2019. [Online]. Available: chromeextension://efaidnbmnnnibpcajpcglclefindmkaj

/https://www.agility.com/wpcontent/uploads/2019/07/Agility-ShipaFreight-Ship-For-Success-Report.pdf. [Accessed 20 Oct 2024].

- [28] S. Akanibo and T. A. Abbiyesuku, "E-Commerce As a Catalyst for Sustainable Growth and Economic Development in the Contemporary Nigeria," International Journal of Business & Law Research, vol. 9, no. 3, pp. 85-93, 2021.
- [29] J.P. Morgan, "4 ways digital innovation is transforming cross-border payments landscape," 22 Aug 2024. [Online]. Available: https://www.jpmorgan.com/insights/payments/ cross-border-payments/digital-innovationtransforming-cross-border-payments. [Accessed 19 Oct 2024].
- [30] PYMNTS, "70% of Small Businesses Want Better Cash Management Services From Banks," 31 Jul 2024. [Online]. Available: https://www.pymnts.com/smbs/2024/70percent-of-small-businesses-want-better-cashmanagement-services-from-banks/. [Accessed 20 Oct 2024].
- [31] P. Ayade, "The Rise of Cross-Border Digital Payments: Global Fintech Series," 23 May 2024. [Online]. Available: https://globalfintechseries.com/featured/therise-of-cross-border-digital-payments/. [Accessed 19 Oct 2024].
- [32] A. Kawa, A. Abubakari and K. S. Ofori, "Cross-Border E-commerce and Supply Chain Management," in The Palgrave Handbook of Supply Chain Management, J. Sarkis, Ed., Palgrave Macmillan, 2024, pp. 1179-1196.
- [33] K. Lopienski, "On-Demand Warehousing: Is Excess and Shared Warehouse Space Innovative or a Risk?," 09 Sep 2024. [Online]. Available: https://www.shipbob.com/blog/thedownside-of-on-demand-warehousing/. [Accessed 18 Oct 2024].
- [34] N. Masson, "3PL vs In-House Logistics : A comprehensive guide for businesses," 19 Jun 2024. [Online]. Available: https://www.massoninternational.com/blog/thir d-party-logistics/3pl-vs-in-house-logistics. [Accessed 20 Oct 2024].
- [35] M. Flora, "Last-Mile Delivery 101: How a 3PL Works With Last-Mile Carriers for Best-in-

Class Fulfillment," 07 Oct 2024. [Online]. Available: https://www.shipbob.com/blog/how-last-miledelivery-works/. [Accessed 18 Oct 2024].

- [36] K. Lopienski, "Selling on Walmart Marketplace: Benefits + Best Practices for Walmart Sellers," 14 Aug 2023. [Online]. Available: https://shipbob.com/blog/walmartmarketplace/. [Accessed 18 Oct 2024].
- [37] K. Puri, "What is Last Mile Logistics? 7 Key Last Mile Logistics Challenges & How to Solve it | FarEye," 26 Sep 2024. [Online]. Available: https://fareye.com/resources/blogs/last-milelogistics. [Accessed 17 Oct 2024].
- [38] J. Tsidulko, "Benefits of AI in the Supply Chain | Oracle," 11 Jan 2024. [Online]. Available: https://www.oracle.com/in/scm/aisupplychain/#:~:text=Key%20Takeaways,facilities% 20on%20a%20coordinated%20schedule.. [Accessed 18 Oct 2024].
- [39] K. Lopienski, "Logistic Innovations Trending in Supply Chain Management: ShipBob," 29 Aug 2024. [Online]. Available: https://www.shipbob.com/blog/logisticsinnovations/. [Accessed 18 Oct 2024].
- [40] K. Atłasik, "How do companies use big data | SoftwareMill," 23 Aug 2023. [Online]. Available: https://softwaremill.com/how-docompanies-use-big-data/. [Accessed 19 Oct 2024].
- [41] S. Akter and S. F. Wamba, "Big data analytics in E-commerce: a systematic review and agenda for future research," Electronic Markets, vol. 26, no. 2, 2016.
- [42] E. O. Osir, D. S. Muli and D. E. Namusonge, "Supply Chain Integration and Performance of Classified Tourism Enterprises in Kenya," International Journal of Supply Chain Management, vol. 9, no. 5, pp. 13-40, 2024.
- [43] H. Oza, "How Amazon Used Big Data to Rule E-Commerce?: HData Systems," 01 Jun 2021.
 [Online]. Available: https://www.hdatasystems.com/blog/amazonused-big-data-ai-to-rule-e-commerce.
 [Accessed 19 Oct 2024].

- [44] BARC, "How Companies Benefit from Big Data," 22 Apr 2024. [Online]. Available: https://bi-survey.com/big-data-benefits.
 [Accessed 19 Oct 2024].
- [45] S. Akter, S. F. Wamba, A. Gunasekaran, R. Dubey and S. J. Childe, "How to improve firm performance using big data analytics capability and business strategy alignment?," International Journal of Production Economics, vol. 182, pp. 113-131, 2016.
- [46] Invisibly, "How Amazon Uses Big Data in 2024," 20 Dec 2021. [Online]. Available: https://www.invisibly.com/learn-blog/howamazon-uses-big-data/. [Accessed 19 Oct 2024].
- [47] A.Yaskevich, "All The E-commerce Laws and Regulations You Need to Know : Legal & Compliance Standards | Amasty," 07 Feb 2024. [Online]. Available: https://amasty.com/blog/ecommerce-laws-andregulations/. [Accessed 20 Oct 2024].
- [48] P. Stockburger, "E-commerce in the US: A complicated legal landscape | Dentons," 20 Jun 2022. [Online]. Available: https://www.dentons.com/en/insights/articles/2 022/june/20/e-commerce-in-the-us-acomplicated-landscape. [Accessed 21 Oct 2024].
- [49] T. Jindal, "Influence Of Demographic Profile Of Consumers On Online Shopping," in Conference: Influence Of Demographic Profile Of Consumers On Online Shopping behaviour, Punjab, 2021.
- [50] Statista, "Online shopping behavior in the United States statistics & facts," 27 Sep 2024.
 [Online]. Available: https://www.statista.com/topics/2477/online-shopping-behavior/#:~:text=In%20the%20United%20States%2C%20for,percent%20between%202024%20and%202029.. [Accessed 20 Oct 2024].
- [51] T. Jindal, D. P. Bassi and D. M. Kaur, "Influence Of Demographic Profile Of Consumers On Online Shopping," THINK INDIA (Quarterly Journal), vol. 22, no. 4, pp. 4338-4352, 2019.
- [52] R. Clapp, "Majority of US consumers prefer to shop online: An overview of consumer preference for shopping channels in the US |

WARC," 2024. [Online]. Available: https://www.warc.com/content/paywall/article/ warc-digital-commerce-datapointsgwi/majority-of-us-consumers-prefer-to-shoponline/en-gb/146788?. [Accessed 22 Oct 2024].

- [53] F. Taheer, "Online Shopping Statistics: How Many People Shop Online in 2024?: Optinmonster," 08 Sep 2024. [Online]. Available: https://optinmonster.com/onlineshopping-statistics/. [Accessed 22 Oct 2024].
- [54] M. Faverio and M. Anderson, "For shopping, phones are common and influencers have become a factor – especially for young adults: Pew Research Center," 21 Nov 2022. [Online]. Available: https://www.pewresearch.org/shortreads/2022/11/21/for-shopping-phones-arecommon-and-influencers-have-become-afactor-especially-for-young-adults/. [Accessed 22 Oct 2024].
- [55] Plusius, "Cross-Border e-Commerce: Top 5 Payment Related Challenges: LinkedIn," 22 Feb 2024. [Online]. Available: https://www.linkedin.com/pulse/cross-bordere-commerce-top-5-payment-relatedchallenges-plusius-oljxf/. [Accessed 26 Aug 2024].
- [56] D. Richa, "Impact of demographic factors of consumers on online shopping behaviour," International Journal of Engineering and Management Services, vol. 3, no. 1, pp. 43-52, 2012.
- [57] Avalara, "THE STATE OF GLOBAL CROSS-BORDER E-COMMERCE REPORT 2023-24," Reuters & Avalara, 2024.
- [58] S. Wei, "Cross-border Electronic Commerce's Development Trend and Challenges in International Trade," in 4 8th International Conference on Education Technology, Management and Humanities Science (ETMHS 2024), 2024.
- [59] B. Robinson, "The challenges of cross-border ecommerce in a world open for business," 03 Aug 2023. [Online]. Available: https://www.avalara.com/blog/en/northamerica/2023/08/challenges-of-cross-borderecommerce.html. [Accessed 30 Aug 2024].
- [60] T. Y. Kim, R. Dekker and C. Heij, "Cross-Border Electronic Commerce: Distance Effects

and Express Delivery in European Union Markets," International Journal of Electronic Commerce, vol. 21, no. 2, pp. 184-218, 2017.

- [61] B. B. Hazarika and R. Mousavi, "Review of Cross-Border E-Commerce and Directions for Future Research," JGIM, vol. 30, no. 2, pp. 1-18, 2022.
- [62] Z. Deng, M. Xiao and X. Yan, "An early risk warning of cross-border e-commerce using BP neural network," Mobile Information Systems, vol. 2021, pp. 1-8, 2021.
- [63] X. Zhao, "A study on the applications of big data in cross-border e-commerce," Proceedings
 2018 IEEE 15th International Conference on e-Business Engineering, ICEBE 2018, pp. 280-284, 2018.
- [64] B. Han, M. Kim and J. Lee, "Exploring consumer attitudes and purchasing intentions of cross-border online shopping in Korea," Journal of Korea Trade, vol. 22, no. 2, pp. 86-104, 2018.
- [65] Y. Huang, "Influence of Cultural Differences on the Establishment of Consumer Trust in a Socialized Cross-Border E-Commerce," Mobile Information Systems, vol. 2022, no. 1, pp. 1-7, 2022.
- [66] H.-C. Ho, C. L. Chiu, D. Jiang and J. Shen, "Influence of Language of Packaging Labels on Consumers' Buying Preferences," Journal of Food Products Marketing, vol. 25, no. 6, pp. 1-27, 2019.
- [67] Y. Zhang, "Analysis of Strategies for the Development of Cross Border E-commerce, Taking Amazon as an Example," Advances in Economics Management and Political Sciences, vol. 49, no. 1, pp. 39-44, 2023.
- [68] Agility, "Ship for Success Highlights," Mar 2022. [Online]. Available: chromeextension://efaidnbmnnnibpcajpcglclefindmkaj /https://www.agility.com/wpcontent/uploads/2022/03/Agility-Ship-for-Success-Highlights.pdf. [Accessed 10 Oct 2024].