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The Genesis of a Digital Superpower: The History, Evolution, and Development of E-Commerce in China (1994-2018)

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ABSTRACT

This paper analysed the origin and evolution of e-commerce in China within the global context of e-commerce. The 38th Statistical Report on Internet Development in China explains the rise of Electronic Data Interchange (EDI) and its role in e-commerce. It also briefly examines the international framework in the field, the UNCITRAL framework, and the 1998 WTO recognition of e-commerce in Geneva. It studies the origin and development of the e-commerce ecosystem in China: the entry of the internet in 1994, utilisation of the Great Firewall and the rise of homegrown Chinese firms, early pioneers, the landmark year 1998 (8848, Alibaba, Joyo), the challenges of 2000 noted in CNNIC reports, the policies of 2002 and 2004, the Five-Year Plans, etc. After examining the broader effects of e-commerce, the paper presents market data: growth (CAGR) from 2003 to 2011, when China overtook the major international actor to rank second after the United States. It looks at data on broadband accounts (in 2011), internet penetration, and GDP, with Beijing, Shanghai, and Guangdong leading the way; country-wise spending in 2010 and 2013, with China ranking fifth; e-commerce sales from 2006 to 2016; cross-border trade from 2008 to 2015; and fresh e-commerce, which increased from 4.05 billion yuan in 2012 through 2020. The study comes to the conclusion that China has become a major e-commerce industry due to supporting policies, quick internet penetration, and a robust domestic platform ecosystem.

Keywords: e-commerce, China, EDI, digital economy, Alibaba, fresh e-commerce, cross-border e-commerce, CNNIC

1. Background

E-commerce is a relatively new idea that began to appear in business jargon in the 1970s (Qin, 2009, p. 3). In current times, e-commerce is needed owing to increased interconnectedness in the world. The beginning of e-commerce can be traced back to the invention and innovation in the field of information and communication technology. The inception of online shopping dates back to 1979, when an English inventor and businessman, Michael Aldrich (Aldrich, 2011), introduced it. It was developed by linking a television and a computer, and thus enabling transactions through a telephone line (Chilka, 2018, p. 30). Online purchases are an indispensable part of e-commerce. However, many refer to 'online purchases' as e-commerce.

The advancements experienced in the world of digital technology¹ became the ground for the birth of e-commerce. One of those key factors that gave rise to the idea of electronic commerce was the invention of Electronic Data Interchange (EDI), which was established in the 1960s by Ed Guilbert (known as the father of EDI) (Qin, 2009, p. 5). In developed nations, companies started using EDI in their business in the 1980s. In China as well, EDI was introduced in the 1980s. EDI is an electronic method of interaction between businesses and commerce in a standard format. In the beginning (1970s), it was confined to sending documents and data related to business, including purchasing invoices, in electronic format. Before 1990, EDI were not transferred through the use of the network, but by the Value-Added Network (VAN)² for safety issues. EDI employs software to decode the data (in this chapter, data and information are used interchangeably) from the buyer's database record into the EDI standard format (O'Callaghan & Turner, 1995, pp. 9-13). Different companies use different arrangements for this purpose.

There was a requirement to transform all the data into a particular standardised version to smooth the functioning of keeping transaction processes recorded. "EDI is basically one of the electronic communication methods that refers to a technology used to exchange information and data across organisations (Yunitarini et al., 2018, p. 124)." EDI implementation can impact all corporate functions and have a significant impact on relationships with exchange partners (Ibid.). EDI makes businesses more efficient by streamlining processes and reducing time and costs, as well as eliminating the mistakes and difficulties associated with maintaining document records. Some firms that utilise the features of EDI to enhance their businesses are

1 "The shift from machine-based and analogue-based technology to digital-based technology started around the last half of the twentieth century with the help of electronics, telecommunications and digital computers, this is also referred to as the third industrial revolution" (Qin, 2009, p. 5).

2 "A value-added network (VAN) is a private, hosted service that provides companies with a secure way to send and share data with their counterparties. Value-added networks were a common way to facilitate electronic data interchange (EDI) between companies. As the Internet created competition for this service with the advent of secure email, VANs responded by expanding their service offerings to include things like message encryption, secure email, and management reporting." (Frankenfield 2021).

Walmart, Volkswagen and Scania. However, the cost of VAN and other factors created obstacles to the growth rate of e-commerce. Big firms and companies mostly use EDI in their businesses; small and medium-sized enterprises (SMEs) and companies face challenges because, as mentioned earlier, using EDI in the commercial process was a costly affair. The need for economical and secure forms of sharing business information arises because of the high proliferation in the number of transnational companies³, SMEs⁴ and many new unicorns⁵ in the world.

“From the latter half of the 1990s, the internet became popular everywhere and became a global communication network” (Lee, 2014). Many traditional forms of businesses⁶ also started converting their way of doing business and shifted towards e-commerce platforms. Companies like Walmart, Volkswagen, Amazon, Yahoo, and eBay are the early adopters of the internet in doing business. The Internet became widespread so rapidly that it reached 150 nations by connecting more than 25,000 networks and around 520,000 mainframe computers⁷. In 1996, Vint Cerf, who had created the Internet, estimated that there would be 100 million people using the Internet by 2003. He was surprised by the Internet's tremendous growth, with 150,000,000 people using it (twice as many as in 1997) by the end of 1999 (Qin 2009: 6). Use of EDI, along with the Internet, is more effective in business performance. This is also referred to as internet EDI. Internet EDI helped in expanding and developing the e-commerce platform (Angeles, 2000).

According to the 48th Statistical Report on China's Internet Development, which was published in August 2021, the number of internet users in China is 1.007 billion; the number of domain names and registered websites is 31.36 million and 4.22 million, respectively. The expansion of the internet or the digital world has flooded the globe with entrepreneurs in all spheres. Cost-effective, time-effective, and large options to consumers as well as sellers through the expansion of customer and product base, revenue generation, etc., are some of the attractive features of e-commerce, which make it popular among the masses (Taher, 2021). Electronic commerce was originally acknowledged during the Second Ministerial Conference of the World Trade Organisation (WTO) in May 1998 in Geneva, where ministers adopted the Declaration on Global Electronic Commerce, directing the General Council to establish a comprehensive work programme to examine all trade-related issues relating to global electronic commerce, including those issues identified by the members (WTO, 1998; Ismail, 2020). On June 14, 1996, the United Nations Commission on International Trade Law adopted the Model Law on Electronic Commerce, giving electronic communications legal equivalence with paper-based ones, a key legal milestone for e-commerce (UNGA, 1996). Additionally, IBM's major “e-business” marketing campaign launched in 1997 helped popularise internet commerce worldwide (IBM, n.d.; Qin 2009: 7).

The evolution of technology has also changed what “e-commerce” means. It is acknowledged that the dimension of e-commerce carries a combination of commercial applications and digital technology methods. In contemporary times, e-commerce is making its way into the medical field, education, administration, entertainment, occupation, security, surveillance, etc., unlike its earlier version, which was limited to commercial and data interchange purposes only. With more advancement in the digital field, e-commerce diversified into Business-to-business (B2B), Business-to-consumer (B2C) and Consumer-to-consumer (C2C) types. B2B is a type of e-commerce in which businesses or online sellers sell their goods, services, etc. to other businesses. Here, buyers can resell their commodities to consumers, and sometimes buyer companies themselves are end consumers. Dropbox, Samsung, Zoom, and Skype are some of the popular names falling under this category. Business-to-Consumer (B2C) e-commerce includes online business companies or firms that directly deal with target consumers. Some of the giant firms that fall under this category are Amazon, Google, Facebook, Tencent, Walmart, Alibaba, etc. Consumer-to-consumer, or C2C, is that type of e-commerce which provides a platform “whereby consumers engage in buying and selling with each other using a third-party platform; companies like eBay or Craigslist are such a kind of e-commerce company” (Taher 2021: 158).

Consumer-to-Business, or C2B, is described as a business model where customers provide value to a business instead of the other way around, as in a B2C model. Examples of C2B models include paid testimonials, freelancers, referral programs, affiliate marketing (like Google AdSense), customer surveys, etc. (Taher, 2021, p. 159). By using telecommunications networks, e-commerce involves exchanging business data, maintaining business connections, and carrying out commercial transactions. (Zwass 1996). Although e-commerce is attaining new heights, its definition is not fixed. To reach a clear definition, the availability of a standard for evaluating and measuring e-commerce at a universal level is necessary. Unlike the domain of the digital economy, evaluating and measuring e-commerce is not easy, and its definition is not fixed. Initially, the Organisation for Economic Co-operation and Development (OECD) declared that “an electronic transaction is the sale or purchase of goods or services, whether between businesses, households, individuals, governments, and other public or private organisations, conducted over computer-mediated networks.” (OECD 2011) Those networks are used to place orders for goods and services, and both online and offline payment methods are made available as options for final delivery of items. In 2004, it modified the definition to the sale or purchase of products or services made through computer networks using procedures created expressly for placing or receiving orders. (OECD 2011). Various states and organisations, like the World Trade Organisation (WTO), have also defined it in their own

3 Companies that are doing business in more than one nation in the world are referred to as Transnational corporations (TNCs) or multinational corporations (MNCs).

4 “Small and medium-sized enterprises (SMEs) are non-subsidiary, independent firms that employ fewer than a given number of employees. This number varies across countries. The most frequent upper limit designating an SME is 250 employees, as in the European Union. However, some countries set the limit at 200 employees, while the United States considers SMEs to include firms with fewer than 500 employees” (OECD, 2005, p. 17).

5 “Unicorn” is a term used in the venture capital industry to describe a privately held start-up company with a value of over \$1 billion. The term was first popularised by venture capitalist Aileen Lee, founder of Cowboy Ventures, a seed-stage venture capital fund based in Palo Alto, California (Chen, 2025).

6 Traditional form of business means mode of doing business through offline mode or without internet support or with minimal support of internet, especially non-involvement of internet.

7 “A mainframe or mainframe computer is a large, powerful computer which can be used by many people at the same time and which can do very large or complicated tasks” (Collins English Dictionary, n.d.).

way. However, the underlying features as well as functions of e-commerce are the same for all that is a business or trade that is done with the help of the internet.

2. Origin and Evolution of E-commerce in China⁸

E-commerce emerged as a major part of the Chinese digital economy. Its development started with the introduction of the Internet in China in 1994. This proved to be profitable for Small-Medium Enterprises as well as their Global Value Chain (GVC)⁹. The Chinese government was also focusing on the project of 'Going Global' and 'Bringing In', which are new pillars of economic growth in China. The Chinese government started significantly involving itself in developing its digital economy by making policies and regulations that helped its e-commerce sector in various ways. The setting up of the 'Great Firewall' was an important development, which regulated the internet in China by limiting access to various foreign websites, such as blocking or slowing down the speed, through legislative and technological means. Businesses of technological giants like Google, Facebook, Twitter, Dropbox, BBC, etc. were immensely impacted by this move. Simultaneously, took steps to develop their own digital ecosystem.

China has its own search engine called Baidu, which could be seen as similar to Google. Similarly, they have their homegrown social media platforms like WeChat and QQ. Regulation of foreign digital companies and discouraging them from doing business in the Chinese market through various government regulations has helped in the development of these homegrown companies and technological giants. Few people in the early phase (1996-2000) thought about the concept of fusing traditional business models with the Internet in order to create new business prospects and profits. As a result, e-commerce started to emerge in China, and 5.2 per cent of the e-commerce sector was founded between 1996 and 2000 (Yue, 2017, p. 1). The first e-commerce enterprise in China was the Nanjing Focus Technology Development Company, which was basically a B2B model and was established at Southeast University in 1996. China's first vertical business-to-business site was the first vertical site for chemicals, which was created in October 1997, and included detailed information on chemicals and ancillary activities (Lin 2017: 2365). The first website provider of e-commerce was developed in 1999. Subsequently, many other website providers came into existence, most of them being of Chinese origin.

The year 1999 could be considered a watershed moment in the history of the Chinese digital economy. This year, websites like 8848, e-commerce giant Alibaba (B2B model of Alibaba), and some other domestic B2C e-commerce sites were developed. Dangdang is a Chinese retail e-commerce company that, for the first time, began providing online book services within China in the same year. While China Merchants Bank is the first privately owned commercial bank of China, the state-owned China Construction Bank started online banking services and businesses and also commenced online payment services in China. Joyo, which deals in B2C e-commerce, was established in 2000 and was a leading company in this field. In the same year, Hui Cong International started its business website and dominated the northern markets of China, whereas Alibaba dominated the southern markets. The Chinese government established the China Electronic Commerce Association on June 21, 2000. From the year 2000, the e-commerce industry gained a significant place in China, and the Chinese digital economy gained momentum. But during the 2000s, China faced some significant obstacles in the field, viz., a smaller number of Internet consumers, inefficient logistics channels, and trust and confidence issues related to online shopping and payment.

However, during the same period, China's e-commerce sector gained momentum by broadening and enlarging the range of its services and became a significant medium for numerous entrepreneurs and consumers. Internet users in China reached 210 million by 2007, according to CNNIC's 15th Statistical Report¹⁰ on Internet Development, of which 46.4 million (or 21.1% of all Internet users) were engaged in online shopping (CNNIC 2007). During 2007, 56.1 billion yuan was spent on online purchasing. Internet users grew tremendously this year. In 2002, China witnessed for the first time foreign capital investment in the mainland by the US company eBay (C2C), which invested a 33 per cent stake, and the stake was valued at US\$30 million. After a year, Alibaba launched Taobao, its own 25 C2C business model. It created the foundation for China's e-commerce sector. In 2004, just after Taobao's formation, Amazon, a US-based multinational company, acquired Joyo Net for US\$75 million and renamed the company Amazon. Jingdong Multimedia Network, a domestic Chinese e-commerce company, was established in 2004 and was a competitor to Alibaba's B2C business model. Alipay was created by Alibaba in October 2004. It is a third-party website that advertises online payment services. This helped solve trust and confidence issues for consumers during online shopping, whilst providing various online services. The first network business conference, which attracted 25 C2C businesses to the mainland, took place in the same year. The logistics and transportation problem, which was faced by this sector, was first addressed when Alibaba-owned Taobao came to an agreement with YT Express, which deals with express shipment.

Similarly, other issues related to the digital economy, like a low number of internet users, trust issues of customers, and payment issues, were also handled by digital companies through collaborations and innovations. In promoting and making e-commerce attractive for consumers, both the government and entrepreneurs played a very significant role. A large number of global internet users, along with successful attempts at the standardisation of transborder or global payment systems, proper transportation and other services, propelled China to become a giant e-commerce retail entity with a global presence.

⁸ This section has greatly benefited from the Inclusive and Sustainable Industrial Development Working Paper Series of the United Nations Industrial Development Organisation. The theme is the National Report on E-commerce Development in China, published by the Department of Policy, Research and Statistics of UNIDO IN 2017.

⁹ "Global Value Chains (GVCs) refer to international production sharing, a phenomenon where production is broken into activities and tasks carried out in different countries. They can be thought of as a large-scale extension of division of labour dating back to Adam Smith's time" (Seric & Tong, 2019).

¹⁰ "China Internet Network Information Centre is an administration and service organisation set up on June 3, 1997, upon the approval of the competent authority and undertakes the responsibilities as the national Internet network information centre" (CNNIC 2022).

Chinese global e-commerce platforms like AliExpress broadened their trade in the period from their establishment to 2014. Different SMEs also started to engage in trade in overseas markets.

The Chinese government created a favourable environment that benefited its e-commerce sector through a number of policies, including the 'E-commerce Development Five-Year Plan', the 'E-commerce Model Specification', the 'Online Shopping Service Standard', and 'The Guiding Opinions on the Development of E-commerce at the 12th Five-Year Plan'. During this time, businesses like Kaola, Tmall, Red, Jumei, etc. experienced tremendous growth. For instance, Alibaba's initial public offering (12th New York Stock Exchange in September 2014) was one of the biggest in US history, and Jumei shares reached 25th on the New York Stock Exchange. This was the time when many companies in China started trading in the global markets through cross-border e-commerce, and entrepreneurs also employed their own strategies to participate in the global capital race. Many provinces operating as regions were also involved in remarkable cross-border trade. Guangzhou province started the first global e-commerce structure on the southern coast. The regional government in southern China also set up a Refund Guarantee Fund to attract global e-commerce business. Fujian Province has developed cross-border e-commerce trade. Implementation programmes were launched in order to forge a solid 25e-commerce link between Fujian and Taiwan. In this way, steps were taken by China at the regional level to promote its digital economy worldwide.

Within the digital economy, e-commerce became a significant phenomenon. E-commerce generated many new significant dynamics in the industrial sector. It led to newer changes in the forms and structures of the traditional industries. Digitalised forms of markets and stores do not require any physical base or space, and possess high accessibility and dissemination capacity in the target market and audience in less time, at any point in the world. E-commerce consists of various other digital forms of services, including digital payments, digital advertising, digitally accessed logistics and transportation systems, etc.

3. The Broad Effects of Digital Commerce

The contemporary era is witnessing tremendous economic growth because of e-commerce development. It is crucial to understand that e-commerce has been and will continue to be the main driver of economic growth. (Albastroui 2007:5). Earlier, e-commerce did not flourish very well because of inferior technology or less digital development. However, the penetration of the internet among the masses made e-commerce very popular. Timely innovation and technological breakthroughs in the digital and technology sectors make it more efficient by providing a number of novel features. The internet, electronic data interchange, electronic payment and fund transfer systems, telephone, fax, television, and other media are some of the primary e-commerce tools that the World Trade Organisation has endorsed. (Albastroui *Ibid*). E-commerce is one such activity that has helped several countries recently reach higher levels of development and added a new dimension to economic progress. This has served to foster an environment for investment that is favourable to further economic growth (Purohit & Purohit, 2005, p. 2). Firms, prices and productivity are the elements that benefit from the expansion of e-commerce.

The methods of conducting business via the internet, e-commerce, and other digital applications make the supply chain¹¹ processes more efficient. Along with that, e-commerce also brings various benefits that enhance the value of products and services. For instance, product customisation is very much trending in the contemporary e-commerce world, where websites customise any product and service according to particular customer preferences and this customisation in turn makes the commodity attractive and suitable for consumers. It leads to customer satisfaction and sellers' profit, a win-win situation for both. These latest market innovations (here referred to as the online market sector) require heavy digital and internet application support for processing and execution of data properly.

E-commerce also helps firms and companies to identify target markets so that whatever input they provide can work in tune with production processes, and as a result, inefficiencies and the cost of production are reduced. This is possible because of the abundance of data and information and the availability of a seamless marketplace, all thanks to the digital world and e-market¹². E-commerce, with its amazing features, provides a number of advantages to business firms, such as quick global connectivity, flexible customer service facilities, time-saving deliveries of commodities and services, as well as enhanced professionalism. There are other main benefits, including a large client base, lower expenses, higher consumer satisfaction, and higher rates of client retention (Tamer, 2021, p. 18). Customers have also profited from e-commerce, mostly in the form of lower costs, more options for retailers from which to choose, and better deals. (Tamer *Ibid*).

Through the replacement of labour operations by online processing of data and improved use of the internet, e-commerce reduced transaction costs at a significant level (Wen 2004: 188). Actually, e-commerce is not only responsible for improvement in the production sector, but those businesses and firms that do not deal with e-commerce also benefit and enhance productivity with the help of the digital economy and ICT (Information and Communication Technology). ICT has been used by all economic sectors in an effort to boost productivity, expand market reach, and cut costs (OECD, 2014, p. 70). The fusion of globalisation and ICT presence at every stage of life helped in the creation of the digital economy. International companies are expanding their business through e-commerce. Expansion of e-commerce inside a nation or outside depends upon its type. Due to globalisation, e-commerce flourished a lot and made a global emergence. (Kraemer et al. 2002: 2). However, not all types of e-commerce can establish a very successful global presence. B2B e-commerce is more global than any other kind of e-commerce. B2C is more of a localised structure (B2B e-commerce is more global than any other kind of e-commerce, whereas B2C operates within a more localised structure (Kraemer et al., 2005, pp. 331-335). The B2B model of e-commerce involves

11 A supply chain is the network of organizations and processes that transport goods and services from the raw material supplier to the final consumer. It includes obtaining raw materials and providing the final product (Mentzer et al., 2001, pp. 15, 17).

12 "E-marketing is a process of planning and executing the conception, distribution, promotion, and pricing of products and services in a computerised, networked environment, such as the Internet and the World Wide Web, to facilitate exchanges and satisfy customer demands (E-marketing n.d.).

upstream activities, and they are directly connected from business house to business house. Direct interaction and direct flow of goods and transactions take place. Unlike B2C, which involves complex activities throughout the whole process of production, from selling to payment to logistics, it involves complex downstream activities. Downstream activities comprising Business-to-Consumer deals are more local (domestic or regional) or multi-domestic in nature, and “upstream activities”¹³ which include B2B deals, are more globally oriented (Kraemer et al., 2005, p. 334).

International Big enterprises or multinational companies mainly do business in a B2B structure, which is more globalised in nature, as compared to small enterprises, which do business in a B2C structure, which is more localised in nature. This suggests that less globalised business firms can seek out chances in local markets as opposed to attempting to use the internet to reach distant international markets (Totonchi and Kakamanshadi, 2011 pp. 274-275). Whatever the type of e-commerce, it helped in the generation of employment. International companies are expanding their business through e-commerce. Expansion of e-commerce inside a nation or outside depends upon its type. However, not all types of e-commerce can make a successful global presence. B2B e-commerce is more global than any other kind of e-commerce. B2C has a more localised structure (Kraemer 2002: 8). There are various reasons why international Companies are more global (because of the B2B model), whilst the small and local are more localised, but this stems in a large measure due to B2C e-commerce. Global firms may find it difficult to ensure cultural and linguistic elements and trust for their customers while expanding their businesses in the local market of any country. Similarly, small and local firms may not be able to manage tough competition inside the B2C e-commerce model of big firms. Moreover, economic and cultural factors affect global firms in local markets. Global economic factors like the cost of connectivity and cultural elements, such as linguistic and working-hour variances, are both included. The researchers discovered that simply translating papers does not guarantee that the translation will have the same cultural meanings as the original. (Gattiker et al.: 2000:132).

Data collection¹⁴ is a cost-driven process, especially when it is about cross-border data collection, which also acts as a barrier to trade and businesses. Other issues like searching for suppliers, negotiating costs, marketing, transportation, etc., outside the domestic domain are cost-effective processes. But with the help of e-commerce, all these barriers and costs get eliminated, and business processes happen without having any close geographic proximity between sellers and customers. Hence, e-commerce initiates and enhances trade on the global stage by breaking the barriers. Services like Research and Development (R&D), management of inventory and stock, quality control checks, advertising, distribution, accounting, etc., also became traceable because of e-commerce. Countries, whether they are developed or developing, all benefit from the tremendous growth in global e-commerce. Historical connections become less significant as global markets develop through the Internet, and this means that developing nations, which have had the fewest previous trade connections, will benefit the most from the Internet (Freund & Weinhold, 2004).

However, in some cases, e-commerce has not proved so cost-friendly. For instance, when commodities are of such kinds that can be converted into digital format, like books, films, software, other media products, etc., the cost of trading in other countries has proven to be economical. But when the commodities are non-convertible, like clothes, merchandise, food items, accessories, etc., the cost of deliveries and trading is not so cheap. Hence, the trade of commodities that are convertible to digital goods enhances global e-commerce. The expansion of trade in digital media products between 1990 and 1996 averaged about 10%, which is nearly 1.5 times higher than the growth in global merchandise trade as a whole. This rate of growth is substantial and exceeds the average rate of growth of all trade (Mattoo & Schuknecht, 2000). Trade in services will be significantly impacted by e-commerce. In fact, by 2008, it was expected that the global market for electronic services would be worth more than half a trillion US dollars, making it the sector with the fastest pace of growth in terms of international trade. (ECLAC 2002: 20). Services like outsourcing also expanded their roots in line with the expansion of communication costs as well as digital networks. Trade of some goods and services gets more accelerated than others because of the e-commerce business model. The most Internet-intensive industries, according to preliminary studies based on data from the United States and Europe, appear to be electronic components, food, pharmaceuticals, and forest/paper products. It is probable that these same sectors and businesses would be impacted by outsourcing brought on by e-commerce in other regions. Transnational corporations (TNCs) are projected to be the most frequent users of electronic trade, according to recent studies. (UNCTAD 2002).

4. A brief analysis of the Chinese E-commerce market

E-commerce revolutionises the retail world and creates enormous opportunities for entrepreneurs. As a significant component of the e-commerce industry in China, e-tailing¹⁵, which is an essential part of the sector, contributed significantly to economic growth. The Chinese e-tailing market's compound annual growth rate¹⁶ (CAGR) from 2003-11, was the highest in the world. The Chinese e-tailing sector was not so developed during the period 2003-2005. In Figure 1, it is shown that the e-tailing business in China has witnessed tremendous growth since 2007. It was consistently expanding and witnessed a rise in its graph from 2006. In 2011, its growth was more than the value of the U.K, Japan, Germany, South Korea, France, Brazil, Russia, and Canada, with sales value of \$120 billion (RMB 774 billion) at second rank, following the U.S. Chinese e-tailing has given tough competition to the

13 It involves mainly B2B activities, “upstream activities such as inbound logistics and operations are not dependent on location, and can be organised globally to achieve economies of scale. On the other hand, downstream activities such as marketing, sales and customer service are dependent on location and must be organised on a multi-domestic basis” (Kraemer et al., 2002, p. 8).

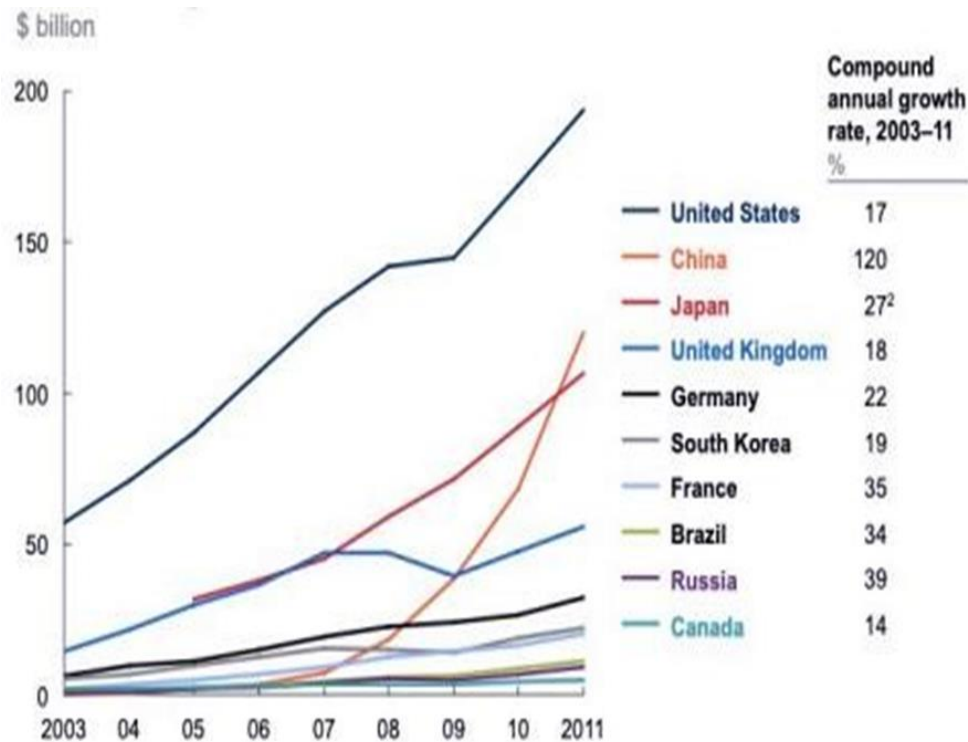
14 It refers to goods or commodities that any company holds for the purpose of resale, production,

15 “Electronic retailing is the sale of goods and services through the internet. E-tailing can include business-to-business (B2B) and business-to-consumer (B2C) sales of products and services (Hargrave, 2021).

16 It is a measure of an investment's annual growth rate over time, with the effect of compounding taken into account. It is often used to measure and compare the past performance of investments, or to project their expected future returns

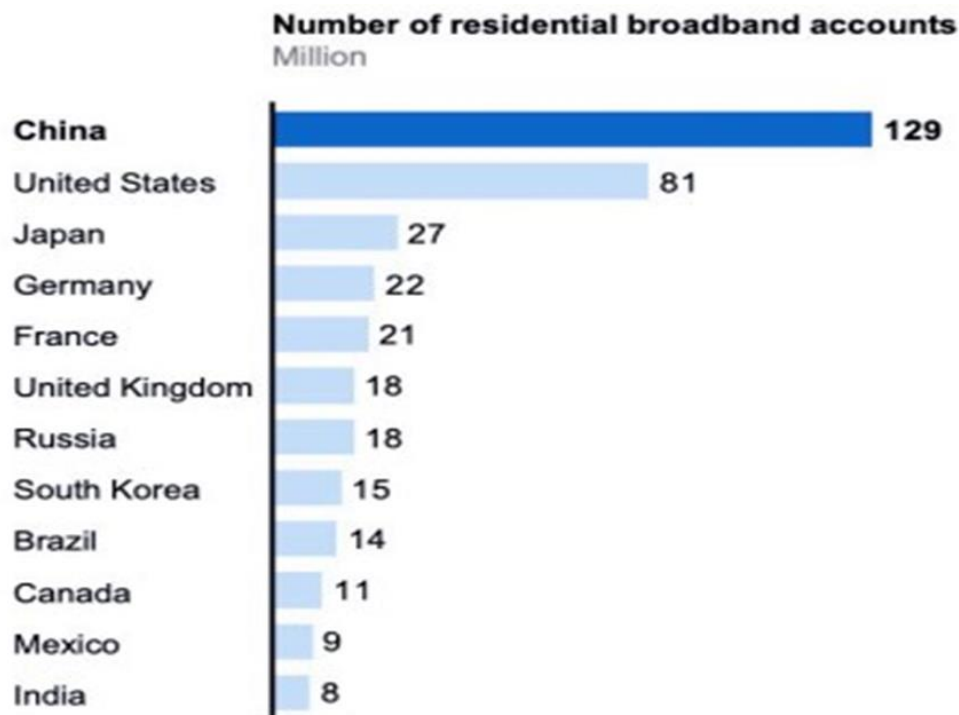
U.S e-tailing market since 2011, and surpassed the growth rate compared to any other nation's e-tailing market. In 2011, after the US, China was the second-largest e-tailing market (Fig. 1).

Figure 1: E-tailing Market of different countries



Source: Euromonitor, Forrester, US Census Bureau, Japanese Ministry of Economy, Trade and Industry, iResearch, McKinsey Global Institute, (Dobbs et al. 2013: 11) (Japan's Compound Annual Growth Rate is shown from the year 2005 in this figure), E-tailing market of China (2003-2011) shows the highest growth rate. (E-tailing market record shown in this figure, excluding online travel).

Figure 2 Country-wise number of broadband accounts in the year 2011

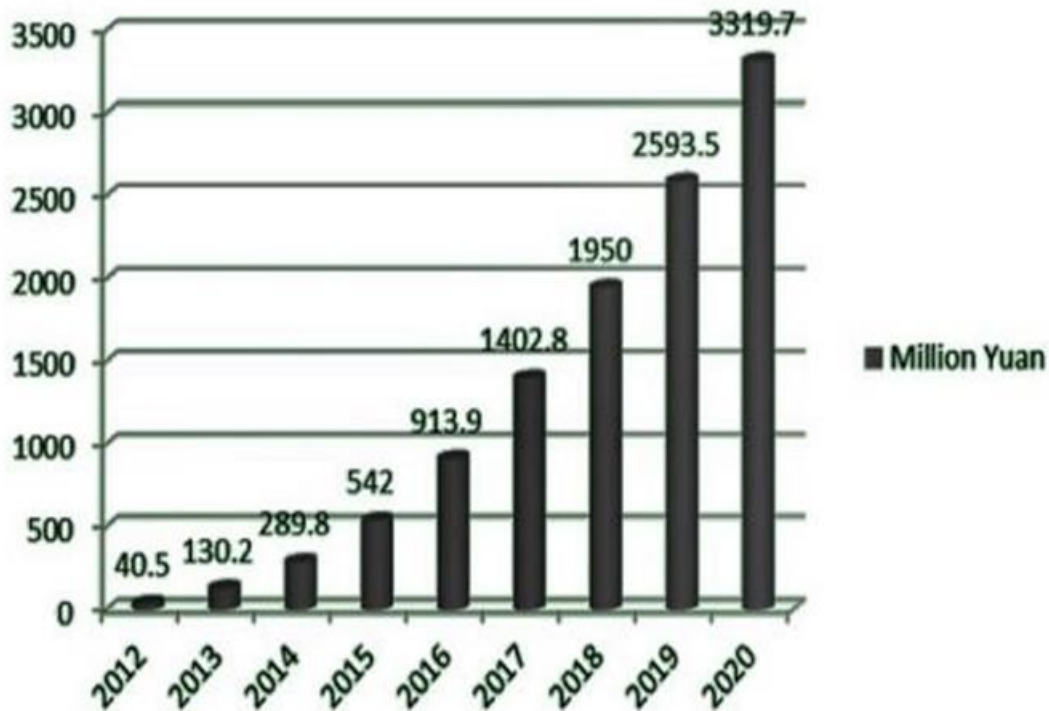


Source: Pyramid Research, McKinsey Global Institute (Dobbs et al. 2013: 13).

A growing number of internet users, online purchasers, etc., makes development in the field of E-tailing via e-commerce feasible. The number of people using the internet was highest in 2011, and this was because of the highest number of broadband accounts in China. This accounted for around 129 million accounts, which also surpassed the value of the US, which had only 81 million residential broadband accounts (Fig. 2).

It was also witnessed in China that the growth in the Gross Domestic Product was directly related to the penetration rate of the internet (Fig. 3). High penetration of the internet led to growth in the number of internet users and online consumers, which in turn also helped in the growth of the GDP.

Figure 3 Fresh E-market commerce's size in China from 2012 to 2022



Source: Run and Ping 2020: 14, School of Logistics, Chengdu University of Information.

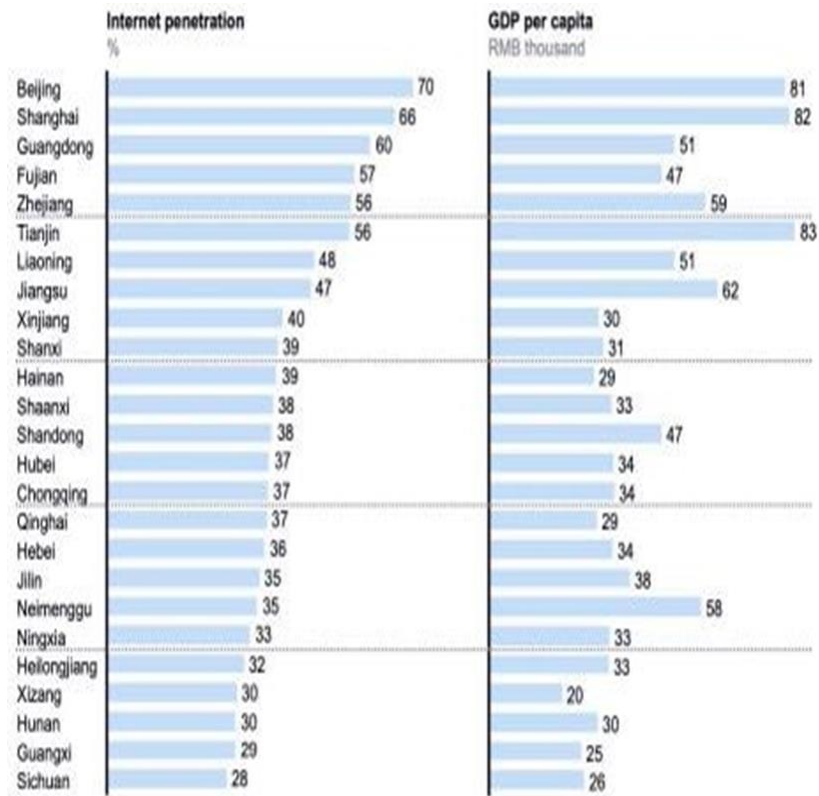
With the spread of urbanisation in China, there was an increasing demand for fresh items like eggs, dairy products, fruits, vegetables, meat and other edible items from the urban consumers. But procuring them physically from the markets was also beginning to face many problems. It was a time-consuming process in addition to quality, price and return or refund issues. The arrival of the online platform offered new solutions to these issues. Now, fresh items could be delivered within a fixed time, proper quality checks were done on the processing of the items, prices were fixed and non-negotiable (which saves time during the bargaining process), and if quality issues are found, measures are taken.

Fresh e-commerce¹⁷ provides the return and refund policy of fresh items, like other commodities, which are problematic and often not possible through offline mode. Fresh e-commerce also played a major role in increasing the e-commerce value of China consistently. During 2012-2020, the market share value of Fresh e-commerce categories created consistent, enormous growth. In the year 2012, the value of Fresh e-commerce accounted for 4.05 billion yuan, showing year-on-year growth. Fresh e-commerce is playing an important role in raising its market share; in 2013, it made 13.02 billion yuan in value, in 2014, it was 28.98 billion yuan, 54.2 billion yuan in 2015, 91.39 billion yuan in 2016, respectively. In the year 2020, it reached the share value of 331.97 billion yuan (forecast) (fig. 3). MissFresh, Freshhema, Suning small store, and the Original Life are significant businesses in this field. Amongst these, Freshhema is Alibaba's electronic business association, and has a solid financial foundation, specific consumer resources, and depends on Alipay (Alibaba group's electronic payment tool) for payment and transaction processes. (Fig. 3).

E-commerce significantly boosted the country's economy and worked as an essential component of the digital economy. All of this is mostly made feasible by digital innovation, discoveries and its acceptability among the masses. However, e-commerce is not the only reason behind GDP growth. Other elements of the digital economy are also accelerated because of a higher internet penetration rate. In the year 2011, higher internet penetration led to an increase in the value of GDP in many regions of China (Fig. 4).

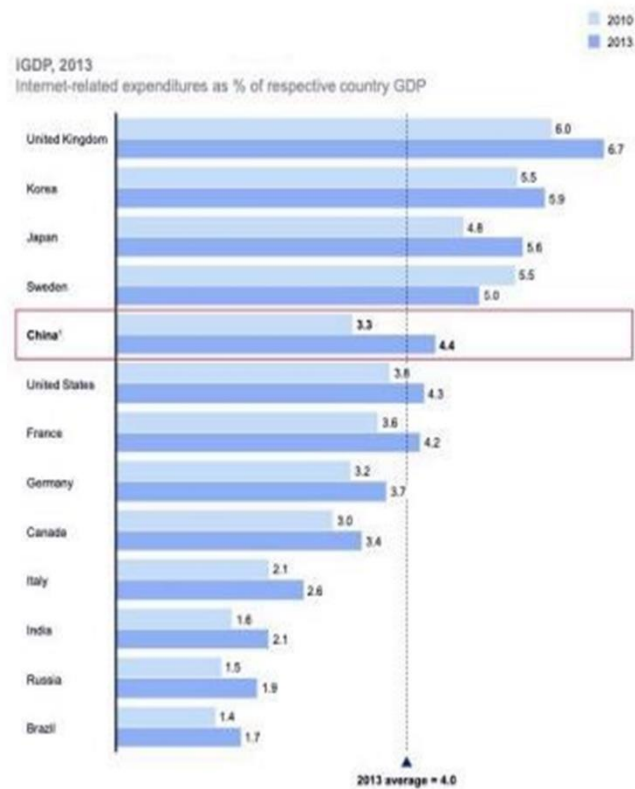
¹⁷ "Fresh e-commerce refers to the direct sale of fresh products, including vegetables, fruits, meat, poultry, eggs and milk, aquatic products and other products of e-commerce model, namely internet marketing" (Sun 2021: 1).

Figure.4 Rise in value of internet penetration leads to rise in GDP in 2011.



Source: CNNIC, CEIC, McKinsey Global Institute, (Dobbs et al. 2013: 29).

Figure 5 Country-wise list of percentage of internet-related expenditure in 2010 & 2013.

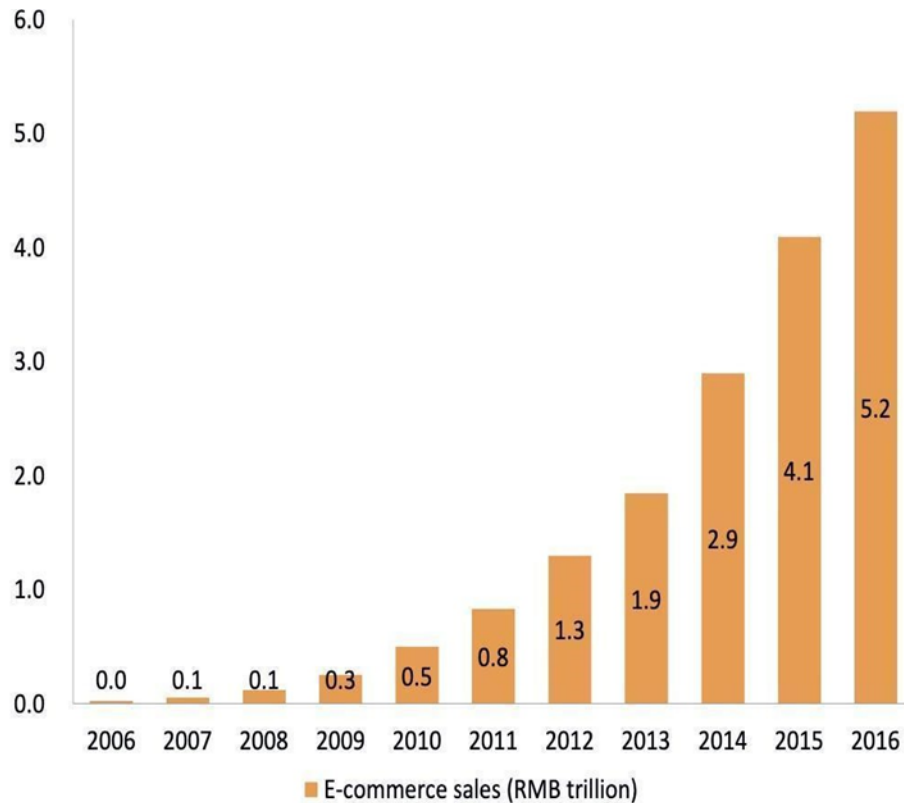


Source: McKinsey Global Institute (Woetzel et al. 2014: 6)

Consequently, e-commerce strengthened the economy by contributing to the GDP. The digital economy, which was mostly served by e-commerce, was 3.3% of China's GDP in 2011, lagging behind most developed states, but by 2013, it reached 4.4%, and competed with strong economies like the US (Fig. 5).

E-commerce in China has steadily enlarged its place in the Chinese economy. From 2007 to 2016, China had shifted its e-commerce value from 0.1 trillion RMB to 5.2 trillion RMB with 26.2% year-on-year growth, which was more than double the growth rate of total retail sales (UNCTAD Ali Research 2017: 16) (Fig. 6).

Figure.6 E-commerce sales value of China from 2006 to 2016 in trillion RMB



Source: China National Bureau of Statistics

Note. From *Inclusive Growth and E-commerce: China's Experience* (p. 4), by AliResearch, 2017 (unctad.org). In the public domain.

In 2002, Xiudian Dai explained how efficiently China is able to significantly contribute to transforming the digital world. Dai's research reveals that, despite the country's poor and developing status, China's government has made appropriate preparations to embrace the possibilities and challenges associated with rising ICTs in ways that are compatible with local socio-economic factors. Dai proposed a "twin-track strategy for economic development," which combines informatisation¹⁸ and industrialisation. (Dai 2002: 145-148). According to Dai, although China was a developing state and a latecomer in the sphere of ICT, the State has played a major role in initiating the measures and policies to catch up with Western leaders.

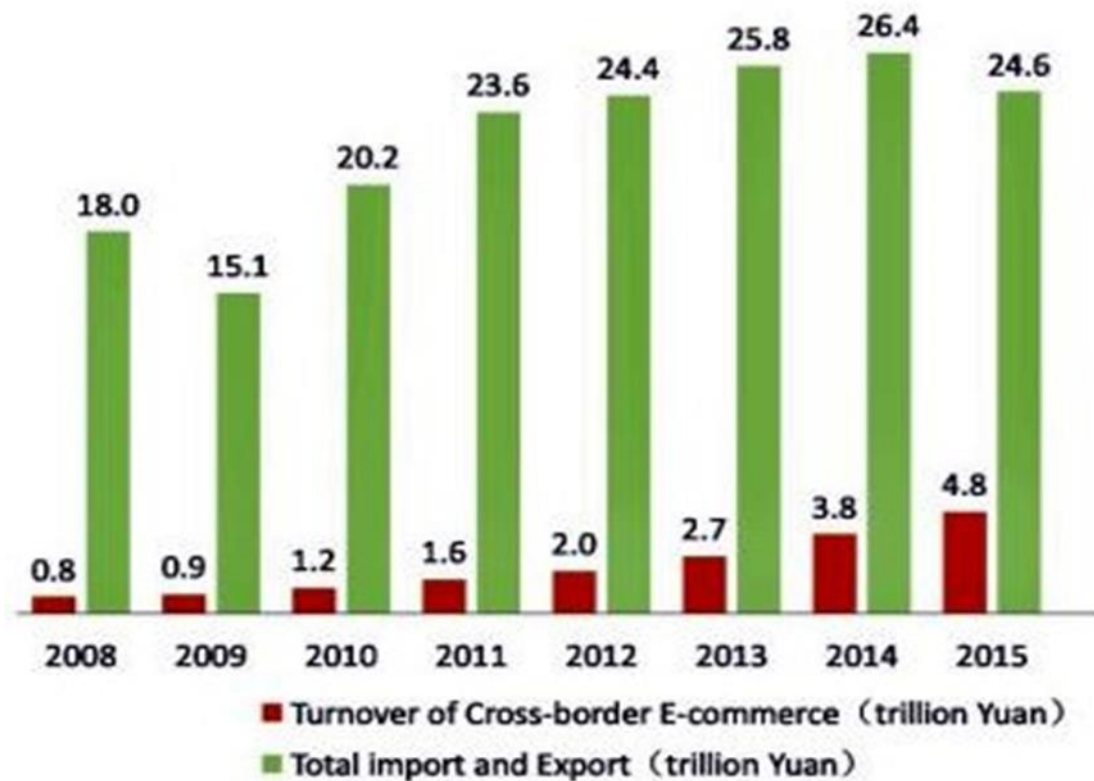
Tse has highlighted how Chinese entrepreneurship (especially e-commerce models) transformed the state economy, with the help of domestic and cross-border trade. According to him, China made an amazing journey of making itself a digitally recognisable state on the globe, from the stage where it was digitally backward and under tight state control (Tse, 2014). China's advanced digital economy is shaping the E-commerce model and vice versa. It provides an exceptional precedent for developing countries so that they can learn from Chinese growth in this sector. (Gervasi 2016). Domestic and cross-border e-commerce businesses have both contributed significantly to the growth of the economy in general and the digital economy in particular. Nonetheless, the Chinese government exercised strict controls in the case of foreign entities' entry into the boundary of their digital economy, while they have succeeded in making their own place overseas with the use of cross-border e-commerce.

Cross-border e-commerce works on the basis of a liberal, open, accessible, free, universal international business platform, where a number of consumers and traders are directly connected across the world, within which the vision of international connection and communication is fulfilled. International trade was slow or at a stagnant stage in 2015. On the other hand, cross-border e-commerce in China was exploding, with both import and export values

¹⁸ Informatisation is the process through which the new communication technologies are used as a means for furthering socioeconomic development as a nation becomes more and more an information society'' (Rogers, 2010, p. 71).

skyrocketing. Cross-border e-commerce in China accounted for RMB 4.8 trillion in 2015, out of RMB 24.6 trillion in export and import, with a 28% growth rate. (Fig. 7).

Figure.7 Turnover of cross-border E-commerce and data of total export and import of China from 2008 to 2015



Note. From *Inclusive Growth and E-commerce: China's Experience* (p. 18), by AliResearch, 2017 (unctad.org). In the public domain.

5. Conclusion

China's e-commerce did not simply flourish by integrating with the global market rules. It emerged out of cooperation between global and domestic policies altogether. The UNCITRAL Model Law (1996) and the WTO Declaration on Global Electronic Commerce (1998) provided the foundation in beginning phase, but China's pathways soon diverged from it. Behind the protection of its Great Firewall, homegrown firms such as Alibaba, Tencent, and Baidu built services around Chinese consumers rather than following foreign market models. The data in this paper not showing how far protection explains this successful result, however it continue with a separate, domestically grounded digital structure, and it reflects that "following the global model" is not fully appropriate as starting point for describing the Chinese case.

Scale and momentum are what stand out. E-tail grew at 120 per cent a year between 2003 and 2011, as contrast to 17 per cent in the United States. By 2011 with 129 million residential broadband accounts China became the world's second largest e-commerce market, and by 2016 its sales had reached RMB 5.2 trillion. Although the evidences also show challenges to this story. China expenditure in internet-related arena reached 4.4 per cent of GDP in 2013 that makes its fifth in the list, behind the United Kingdom, South Korea, Japan, and Sweden. The internet penetration rate varied from 70% in Beijing to 28% in Sichuan, indicating that the advantages were not uniformly distributed and that size expansion occurred more quickly than depth. Success in the world rankings coexisted with China's unfinished growth.

Technology is not the only factor that shapes the digital economy; a state can participate in international norm-setting while also creating its own digital order at home. This tension has been more apparent since the period of this paper. Since the European Union implemented a temporary flat duty in 2026 and the United States terminated duty-free de minimis treatment in 2025, Chinese-affiliated platforms have been at the centre of recent debates over the customs treatment of low-value goods. Additionally, WTO members failed to extend the 1998 Declaration's original prohibition on customs charges on electronic transmissions in March 2026. Thus, the rules that made this tale possible are now under scrutiny.

The paper has its scope. It includes forecasts for Fresh e-commerce through 2020 and covers the early years up until the mid-2010s. It employs secondary datasets with varying definitions, particularly for cross-border trade, and describes associations rather than causes. Further research is needed to demonstrate the connection between the infrastructure detailed here and later developments like live-stream commerce, super-app ecosystems, and platforms like Shein and Temu. Future research should examine how cross-border expansion is influencing the governance of international digital trade and how far the Chinese model can be reproduced elsewhere.

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